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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:
12/05/2019 – 01/16/2020
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1911290211-01-R2.ZNF

FCC ID: **ZNFL455DL**

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

DUT Type:	Portable Handset
Application Type:	Class II Permissive Change
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
Permissive Change(s):	See FCC Change Document
Date of Original Certification:	12/23/2019

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	0.35	0.63	0.63	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.19	0.46	0.46	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.30	0.52	0.52	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.33	0.84	0.84	3.16
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.31	0.74	0.74	2.90
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.22	0.36	0.34	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.29	0.44	0.37	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.37	0.93	0.70	3.01
PCE	LTE Band 71	665.5 - 695.5 MHz	0.26	0.46	0.46	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.33	0.56	0.63	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.32	0.60	0.60	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.36	0.52	0.52	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	0.31	0.77	0.77	2.86
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	0.34	0.86	0.86	3.17
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	0.20	0.59	0.68	3.08
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.06	0.44	0.44	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.88	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.48	0.96	N/A	1.85
NII	U-NII-2C	5500 - 5720 MHz	0.48	0.36	N/A	0.87
NII	U-NII-3	5745 - 5825 MHz	0.36	0.63	0.63	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.28	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.42	1.59	1.58	3.84

Note: This revised Test Report (S/N: 1M1911290211-01-R2.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)*				
	Channel	*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	**22.3**	**22.3**	**22.3**	**22.3**	**22.3**	**21.7**	**21.7**	**22.3**	**21.2**	**22.3**
	Nominal	**21.8**	**21.8**	**21.8**	**21.8**	**21.8**	**21.2**	**21.2**	**21.8**	**20.7**	**21.8**
UMTS Band 2 (1900 MHz)	Maximum	**22.7**	**22.7**	**22.7**	**22.7**	**22.7**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**22.2**	**22.2**	**22.2**	**22.2**	**22.2**	**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	**22.5**
	Nominal	**22.0**
LTE Band 4 (AWS)	Maximum	**22.5**
	Nominal	**22.0**
LTE Band 25 (PCS)	Maximum	**22.7**
	Nominal	**22.2**
LTE Band 2 (PCS)	Maximum	**22.7**
	Nominal	**22.2**
LTE Band 41 (PC3)	Maximum	**22.7**
	Nominal	**22.2**
LTE Band 41 (PC2)	Maximum	**25.2**
	Nominal	**24.7**

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. LTE Downlink Carrier Aggregation was fully addressed in the original filing. Per FCC Guidance, no additional measurements were required since there were no changes to the downlink CA implementation for this C2PC.

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. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

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:

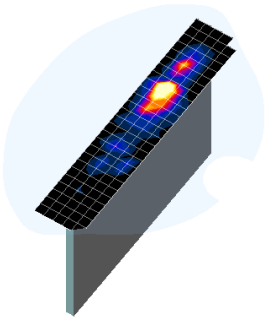


Figure 4-1
Sample SAR Area Scan

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].

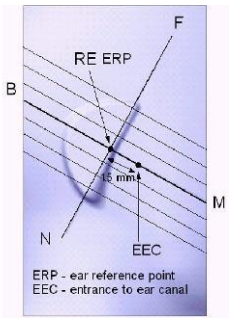


Figure 5-1
Close-Up Side view of ERP

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

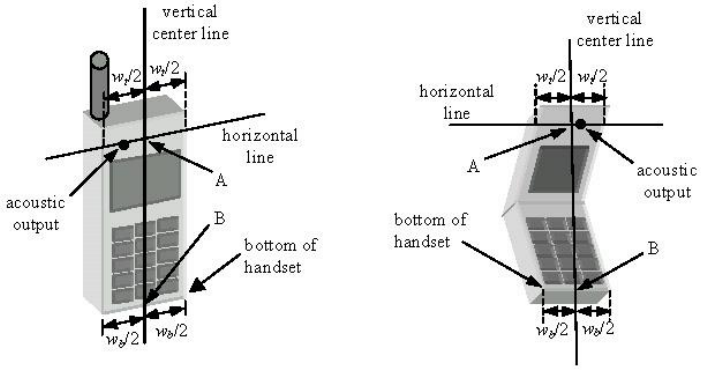


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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.

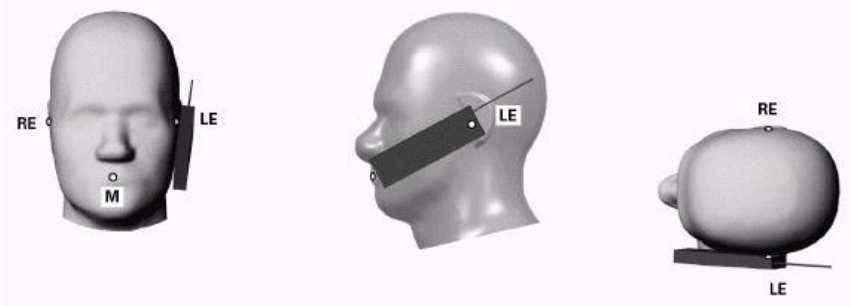


Figure 6-1 Front, Side and Top View of Cheek Position

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).

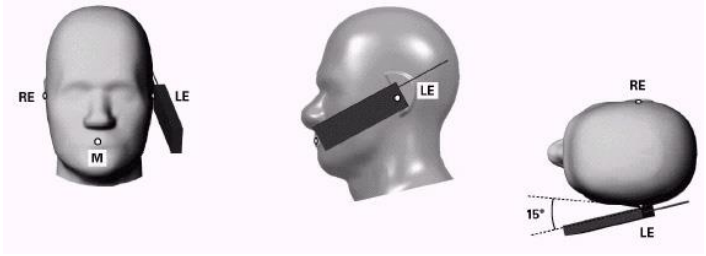


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

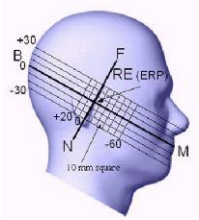


Figure 6-3
Side view w/ relevant markings

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.

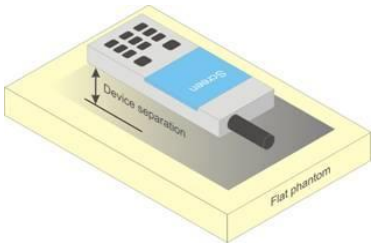


Figure 6-4
Sample Body-Worn Diagram

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 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 F.

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]
Cellular	564	90S	820.1	24.61	24.66	23.69	24.70	24.70	24.69
Cellular	1013	22H	824.7	24.61	24.68	23.68	24.70	24.70	24.68
	384	22H	836.52	24.60	24.67	23.66	24.66	24.69	24.70
	777	22H	848.31	24.54	24.60	23.63	24.59	24.60	24.63
PCS	25	24E	1851.25	24.27	24.36	23.35	24.31	24.30	24.32
	600	24E	1880	24.26	24.35	23.32	24.29	24.26	24.27
	1175	24E	1908.75	24.48	24.56	23.50	24.49	24.55	24.46

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	22.58	22.65	21.62	22.64	22.63	22.66
	600	24E	1880	22.58	22.64	21.61	22.65	22.60	22.62
	1175	24E	1908.75	22.75	22.82	21.81	22.84	22.80	22.83

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	33.50	33.51	32.20	30.48	**29.45**	27.42	26.31	24.20	23.15
	190	33.42	33.43	32.10	30.36	**29.42**	27.34	26.25	24.09	23.12
	251	33.46	33.46	32.14	30.40	**29.37**	27.30	26.21	24.25	23.01
GSM 1900	512	30.62	30.62	28.70	26.50	**25.66**	26.40	25.58	24.24	23.41
	661	30.50	30.50	28.54	26.34	**25.48**	26.25	25.39	24.01	23.10
	810	30.38	30.39	28.42	26.26	**25.21**	26.49	25.64	24.25	23.39

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	24.47	24.48	26.18	26.22	**26.44**	18.39	20.29	19.94	20.14
	190	24.39	24.40	26.08	26.10	**26.41**	18.31	20.23	19.83	20.11
	251	24.43	24.43	26.12	26.14	**26.36**	18.27	20.19	19.99	20.00
GSM 1900	512	21.59	21.59	22.68	22.24	**22.65**	17.37	19.56	19.98	20.40
	661	21.47	21.47	22.52	22.08	**22.47**	17.22	19.37	19.75	20.09
	810	21.35	21.36	22.40	22.00	**22.20**	17.46	19.62	19.99	20.38

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

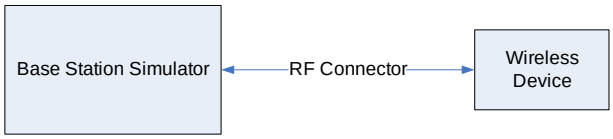


Figure 9-2
Power Measurement Setup

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]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	24.64	24.53	24.56	24.57	24.59	24.56	24.63	24.60	24.64	-
99		12.2 kbps AMR	24.61	24.56	24.50	24.46	24.49	24.48	24.57	24.52	24.54	-
6	HSDPA	Subtest 1	23.55	23.46	23.53	23.60	23.65	23.60	23.54	23.55	23.54	0
6		Subtest 2	23.51	23.41	23.49	23.51	23.47	23.53	23.49	23.49	23.51	0
6		Subtest 3	23.00	22.88	22.97	23.09	23.15	23.06	23.03	22.95	23.02	0.5
6		Subtest 4	22.96	22.86	22.96	23.03	23.06	23.06	23.00	22.88	23.02	0.5
6	HSUPA	Subtest 1	21.47	21.36	21.43	21.55	21.53	21.50	21.45	21.41	21.43	0
6		Subtest 2	21.45	21.39	21.42	21.53	21.51	21.53	21.45	21.42	21.45	2
6		Subtest 3	22.44	22.36	22.42	22.50	22.57	22.57	22.43	22.42	22.45	1
6		Subtest 4	20.88	20.86	20.94	21.02	21.03	21.01	20.97	20.94	20.97	2
6		Subtest 5	22.41	22.36	22.39	22.48	22.49	22.50	22.45	22.39	22.45	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	22.01	22.03	22.00	22.66	22.64	22.62	-
99		12.2 kbps AMR	22.04	22.00	22.03	22.66	22.61	22.59	-
6	HSDPA	Subtest 1	22.15	22.21	22.15	22.53	22.48	22.49	0
6		Subtest 2	22.12	22.14	22.13	22.43	22.41	22.44	0
6		Subtest 3	21.59	21.63	21.59	21.90	21.94	21.89	0
6		Subtest 4	21.65	21.61	21.58	21.90	21.92	21.91	0
6	HSUPA	Subtest 1	20.38	20.31	20.39	20.42	20.41	20.46	0
6		Subtest 2	20.38	20.39	20.37	20.43	20.38	20.43	0
6		Subtest 3	21.11	21.13	21.11	21.36	21.41	21.40	0
6		Subtest 4	19.72	19.74	19.72	19.79	19.72	19.76	0
6		Subtest 5	21.14	21.12	21.12	21.43	21.39	21.42	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	24.50	0	0
	1	50	**24.70**		0
	1	99	24.59		0
	50	0	23.52	0-1	1
	50	25	**23.62**		1
	50	50	23.59		1
	100	0	23.55		1
16QAM	1	0	23.70	0-1	1
	1	50	23.67		1
	1	99	23.69		1
	50	0	22.53	0-2	2
	50	25	22.63		2
	50	50	22.58		2
	100	0	22.55		2
64QAM	1	0	22.63	0-2	2
	1	50	22.70		2
	1	99	22.64		2
	50	0	21.47	0-3	3
	50	25	21.48		3
	50	50	21.44		3
	100	0	21.46		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	24.46	0	0
	1	36	24.47		0
	1	74	24.41		0
	36	0	23.53	0-1	1
	36	18	23.57		1
	36	37	23.53		1
	75	0	23.49		1
16QAM	1	0	23.68	0-1	1
	1	36	23.66		1
	1	74	23.61		1
	36	0	22.51	0-2	2
	36	18	22.52		2
	36	37	22.49		2
	75	0	22.49		2
64QAM	1	0	22.61	0-2	2
	1	36	22.60		2
	1	74	22.56		2
	36	0	21.52	0-3	3
	36	18	21.55		3
	36	37	21.50		3
	75	0	21.47		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	24.54	24.49	24.48	0	0
	1	25	24.58	24.53	24.54		0
	1	49	24.46	24.42	24.44		0
	25	0	23.52	23.53	23.53	0-1	1
	25	12	23.59	23.54	23.53		1
	25	25	23.54	23.55	23.53		1
	50	0	23.55	23.53	23.54		1
16QAM	1	0	23.70	23.70	23.64	0-1	1
	1	25	23.69	23.68	23.69		1
	1	49	23.70	23.58	23.70		1
	25	0	22.51	22.54	22.56	0-2	2
	25	12	22.57	22.54	22.55		2
	25	25	22.53	22.48	22.58		2
	50	0	22.53	22.51	22.56		2
64QAM	1	0	22.66	22.67	22.67	0-2	2
	1	25	22.68	22.69	22.68		2
	1	49	22.67	22.56	22.63		2
	25	0	21.49	21.53	21.57	0-3	3
	25	12	21.56	21.55	21.56		3
	25	25	21.53	21.46	21.56		3
	50	0	21.51	21.51	21.55		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	24.55	24.35	24.58	0	0
	1	12	24.65	24.62	24.64		0
	1	24	24.66	24.34	24.67		0
	12	0	23.61	23.44	23.64	0-1	1
	12	6	23.66	23.53	23.58		1
	12	13	23.68	23.44	23.56		1
	25	0	23.67	23.45	23.68		1
16QAM	1	0	23.69	23.54	23.66	0-1	1
	1	12	23.70	23.69	23.67		1
	1	24	23.60	23.50	23.55		1
	12	0	22.63	22.43	22.45	0-2	2
	12	6	22.67	22.53	22.58		2
	12	13	22.67	22.42	22.51		2
	25	0	22.67	22.44	22.66		2
64QAM	1	0	22.66	22.57	22.55	0-2	2
	1	12	22.68	22.66	22.62		2
	1	24	22.69	22.48	22.49		2
	12	0	21.68	21.45	21.58	0-3	3
	12	6	21.68	21.55	21.68		3
	12	13	21.63	21.45	21.69		3
	25	0	21.67	21.45	21.70		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	25.01	0	0
	1	25	**25.17**		0
	1	49	25.05		0
	25	0	**24.15**	0-1	1
	25	12	24.14		1
	25	25	24.14		1
	50	0	24.14		1
16QAM	1	0	24.16	0-1	1
	1	25	24.17		1
	1	49	24.13		1
	25	0	23.06	0-2	2
	25	12	23.09		2
	25	25	23.05		2
	50	0	23.03		2
64QAM	1	0	22.69	0-2	2
	1	25	22.83		2
	1	49	22.72		2
	25	0	22.20	0-3	3
	25	12	22.17		3
	25	25	22.09		3
	50	0	22.11		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	25.07	25.09	25.04	0	0
	1	12	25.16	25.19	25.17		0
	1	24	25.01	25.06	24.97		0
	12	0	24.11	24.11	24.12	0-1	1
	12	6	24.16	24.17	24.15		1
	12	13	24.09	24.13	24.01		1
	25	0	24.12	24.13	24.03		1
16QAM	1	0	24.12	24.08	24.19	0-1	1
	1	12	24.17	24.10	24.11		1
	1	24	24.13	24.05	24.08		1
	12	0	23.04	23.07	23.04	0-2	2
	12	6	23.11	23.10	23.15		2
	12	13	23.09	23.10	23.14		2
	25	0	23.07	23.10	23.03		2
64QAM	1	0	23.04	23.15	23.03	0-2	2
	1	12	23.18	23.20	23.16		2
	1	24	23.09	23.17	23.09		2
	12	0	22.10	22.14	22.02	0-3	3
	12	6	22.16	22.18	22.09		3
	12	13	22.10	22.19	22.00		3
	25	0	22.07	22.15	22.08		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	25.11	25.09	25.05	0	0
	1	7	25.18	25.19	25.20		0
	1	14	25.07	25.08	24.98		0
	8	0	24.08	24.10	24.09	0-1	1
	8	4	24.13	24.14	24.09		1
	8	7	24.10	24.09	24.03		1
	15	0	24.06	24.06	24.05		1
16QAM	1	0	24.20	24.19	24.17	0-1	1
	1	7	24.20	24.19	24.16		1
	1	14	24.19	24.20	24.20		1
	8	0	23.17	23.19	23.18	0-2	2
	8	4	23.19	23.16	23.18		2
	8	7	23.15	23.18	23.13		2
	15	0	23.08	23.11	23.11		2
64QAM	1	0	22.99	22.97	22.92	0-2	2
	1	7	23.14	23.15	23.09		2
	1	14	22.98	22.97	23.02		2
	8	0	22.12	22.15	22.11	0-3	3
	8	4	22.16	22.17	22.15		3
	8	7	22.10	22.13	22.09		3
	15	0	22.04	22.07	22.04		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	25.09	25.15	24.91	0	0
	1	2	25.19	25.16	25.05		0
	1	5	25.10	25.13	24.89		0
	3	0	25.08	25.10	25.06		0
	3	2	25.13	25.13	25.14		0
	3	3	25.11	25.08	25.11		0
	6	0	24.18	24.14	24.06	0-1	1
16QAM	1	0	24.12	24.16	24.15	0-1	1
	1	2	24.18	24.16	24.17		1
	1	5	24.14	24.09	24.09		1
	3	0	24.11	24.20	24.04		1
	3	2	24.17	24.19	24.02		1
	3	3	24.12	24.12	24.02		1
	6	0	23.08	23.11	23.04	0-2	2
64QAM	1	0	22.89	23.18	23.06	0-2	2
	1	2	23.03	23.19	23.16		2
	1	5	22.88	23.15	23.14		2
	3	0	23.03	23.18	23.05		2
	3	2	23.08	23.18	23.09		2
	3	3	23.06	23.16	23.09		2
	6	0	22.17	22.04	22.10	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	24.00	0	0
	1	25	**24.20**		0
	1	49	24.01		0
	25	0	23.08	0-1	1
	25	12	23.17		1
	25	25	**23.20**		1
	50	0	23.19		1
16QAM	1	0	23.16	0-1	1
	1	25	23.20		1
	1	49	23.18		1
	25	0	22.04	0-2	2
	25	12	22.15		2
	25	25	22.20		2
	50	0	22.06		2
64QAM	1	0	22.20	0-2	2
	1	25	22.19		2
	1	49	22.17		2
	25	0	21.18	0-3	3
	25	12	21.10		3
	25	25	21.04		3
	50	0	21.12		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	23.77	0	0
	1	12	24.00		0
	1	24	23.73		0
	12	0	22.99	0-1	1
	12	6	22.96		1
	12	13	23.00		1
	25	0	22.97		1
16QAM	1	0	23.01	0-1	1
	1	12	23.09		1
	1	24	23.02		1
	12	0	21.91	0-2	2
	12	6	21.95		2
	12	13	21.96		2
	25	0	21.99		2
64QAM	1	0	21.89	0-2	2
	1	12	22.13		2
	1	24	21.91		2
	12	0	21.00	0-3	3
	12	6	21.02		3
	12	13	21.06		3
	25	0	21.10		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	25.15	0	0
	1	36	**25.18**		0
	1	74	24.97		0
	36	0	**24.20**	0-1	1
	36	18	24.12		1
	36	37	24.16		1
	75	0	24.14		1
16QAM	1	0	24.14	0-1	1
	1	36	24.17		1
	1	74	24.11		1
	36	0	23.19	0-2	2
	36	18	23.15		2
	36	37	23.13		2
	75	0	23.14		2
64QAM	1	0	22.98	0-2	2
	1	36	23.00		2
	1	74	23.04		2
	36	0	21.96	0-3	3
	36	18	21.96		3
	36	37	21.95		3
	75	0	21.93		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	24.81	24.91	24.77	0	0
	1	25	25.01	25.01	24.96		0
	1	49	24.85	24.77	24.83		0
	25	0	23.85	23.95	23.90	0-1	1
	25	12	23.89	23.92	23.88		1
	25	25	23.96	23.92	23.79		1
	50	0	23.89	23.92	23.84		1
16QAM	1	0	24.13	24.19	23.89	0-1	1
	1	25	24.18	24.17	24.07		1
	1	49	24.16	24.13	23.90		1
	25	0	22.91	22.99	22.97	0-2	2
	25	12	22.94	22.97	22.95		2
	25	25	23.00	22.96	22.89		2
	50	0	22.87	22.91	22.91		2
64QAM	1	0	22.69	22.95	22.72	0-2	2
	1	25	22.92	23.13	22.88		2
	1	49	22.83	22.94	22.74		2
	25	0	21.88	22.01	22.04	0-3	3
	25	12	21.92	21.97	22.02		3
	25	25	21.97	21.95	22.01		3
	50	0	21.94	21.93	21.96		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	24.66	24.82	24.71	0	0
	1	12	24.94	25.05	25.01		0
	1	24	24.71	24.77	24.76		0
	12	0	23.79	23.87	23.86	0-1	1
	12	6	23.91	23.92	23.88		1
	12	13	23.84	23.87	23.75		1
	25	0	23.84	23.85	23.85		1
16QAM	1	0	23.92	24.03	23.75	0-1	1
	1	12	24.20	24.19	24.01		1
	1	24	23.95	24.03	23.77		1
	12	0	22.79	23.02	22.87	0-2	2
	12	6	22.87	23.06	22.90		2
	12	13	22.82	22.95	22.78		2
	25	0	22.85	22.84	22.89		2
64QAM	1	0	22.80	22.87	22.93	0-2	2
	1	12	23.07	23.11	23.19		2
	1	24	22.87	22.86	22.92		2
	12	0	21.82	21.78	21.97	0-3	3
	12	6	21.95	21.82	21.98		3
	12	13	21.90	21.75	21.91		3
	25	0	21.84	21.86	21.92		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	24.79	24.73	24.81	0	0
	1	7	24.91	24.97	24.97		0
	1	14	24.84	24.70	24.86		0
	8	0	23.82	23.87	23.86	0-1	1
	8	4	23.91	23.90	23.82		1
	8	7	23.86	23.83	23.81		1
	15	0	23.83	23.86	23.83		1
16QAM	1	0	24.05	24.00	23.94	0-1	1
	1	7	24.20	24.19	24.07		1
	1	14	24.16	23.94	23.87		1
	8	0	22.91	22.83	22.93	0-2	2
	8	4	22.98	22.88	22.96		2
	8	7	22.92	22.85	22.87		2
	15	0	22.85	22.84	22.80		2
64QAM	1	0	22.69	22.88	22.67	0-2	2
	1	7	22.88	23.07	22.89		2
	1	14	22.77	22.78	22.77		2
	8	0	21.86	21.86	21.94	0-3	3
	8	4	21.90	21.90	21.95		3
	8	7	21.84	21.88	21.90		3
	15	0	21.79	21.84	21.96		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	24.89	24.80	24.77	0	0
	1	2	24.94	24.90	24.88		0
	1	5	24.89	24.75	24.78		0
	3	0	24.80	24.84	24.83		0
	3	2	24.83	24.88	24.86		0
	3	3	24.82	24.86	24.84		0
	6	0	23.89	23.95	23.87	0-1	1
16QAM	1	0	24.00	24.11	23.86	0-1	1
	1	2	24.08	24.20	23.96		1
	1	5	24.04	24.12	23.84		1
	3	0	23.93	23.84	23.97		1
	3	2	23.95	23.86	23.94		1
	3	3	23.94	23.82	23.91		1
	6	0	22.95	22.89	22.84	0-2	2
64QAM	1	0	23.00	22.87	22.67	0-2	2
	1	2	23.16	22.97	22.81		2
	1	5	23.12	22.91	22.68		2
	3	0	22.93	22.85	22.90		2
	3	2	22.93	22.89	22.90		2
	3	3	22.93	22.84	22.93		2
	6	0	21.73	21.90	21.90	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	24.10	24.22	24.14	0	0
	1	50	24.37	**24.50**	24.44		0
	1	99	24.08	24.28	24.15		0
	50	0	23.41	23.43	23.45	0-1	1
	50	25	23.44	**23.50**	23.42		1
	50	50	23.40	23.49	23.48		1
	100	0	23.43	23.47	23.41		1
16QAM	1	0	23.51	23.55	23.47	0-1	1
	1	50	23.68	23.70	23.69		1
	1	99	23.53	23.60	23.47		1
	50	0	22.41	22.45	22.53	0-2	2
	50	25	22.48	22.44	22.55		2
	50	50	22.43	22.48	22.47		2
	100	0	22.47	22.52	22.52		2
64QAM	1	0	22.65	22.67	22.46	0-2	2
	1	50	22.69	22.69	22.70		2
	1	99	22.66	22.70	22.44		2
	50	0	21.41	21.43	21.59	0-3	3
	50	25	21.44	21.41	21.54		3
	50	50	21.42	21.50	21.49		3
	100	0	21.45	21.46	21.52		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	24.26	24.21	24.14	0	0
	1	36	24.32	24.30	24.27		0
	1	74	24.25	24.19	24.25		0
	36	0	23.43	23.43	23.38	0-1	1
	36	18	23.41	23.43	23.41		1
	36	37	23.48	23.48	23.42		1
	75	0	23.45	23.46	23.42		1
16QAM	1	0	23.65	23.69	23.43	0-1	1
	1	36	23.66	23.68	23.50		1
	1	74	23.67	23.70	23.45		1
	36	0	22.37	22.40	22.35	0-2	2
	36	18	22.36	22.38	22.38		2
	36	37	22.41	22.45	22.37		2
	75	0	22.48	22.47	22.40		2
64QAM	1	0	22.25	22.22	22.22	0-2	2
	1	36	22.39	22.36	22.33		2
	1	74	22.25	22.21	22.28		2
	36	0	21.41	21.36	21.48	0-3	3
	36	18	21.41	21.39	21.45		3
	36	37	21.42	21.45	21.50		3
	75	0	21.45	21.40	21.40		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	24.24	24.22	24.23	0	0
	1	25	24.44	24.40	24.38		0
	1	49	24.20	24.25	24.25		0
	25	0	23.38	23.36	23.35	0-1	1
	25	12	23.40	23.41	23.42		1
	25	25	23.42	23.51	23.33		1
	50	0	23.40	23.45	23.39		1
16QAM	1	0	23.60	23.68	23.61	0-1	1
	1	25	23.68	23.67	23.69		1
	1	49	23.64	23.63	23.67		1
	25	0	22.46	22.42	22.52	0-2	2
	25	12	22.50	22.48	22.51		2
	25	25	22.57	22.57	22.52		2
	50	0	22.46	22.45	22.43		2
64QAM	1	0	22.48	22.33	22.36	0-2	2
	1	25	22.63	22.48	22.48		2
	1	49	22.45	22.26	22.30		2
	25	0	21.49	21.38	21.42	0-3	3
	25	12	21.53	21.43	21.46		3
	25	25	21.58	21.47	21.43		3
	50	0	21.48	21.45	21.41		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	24.18	23.91	23.99	0	0
	1	12	24.41	24.19	24.28		0
	1	24	24.12	23.90	24.04		0
	12	0	23.22	23.16	23.21	0-1	1
	12	6	23.27	23.23	23.26		1
	12	13	23.20	23.17	23.17		1
	25	0	23.20	23.22	23.16		1
16QAM	1	0	23.39	23.30	23.17	0-1	1
	1	12	23.60	23.59	23.40		1
	1	24	23.37	23.27	23.15		1
	12	0	22.38	22.14	22.23	0-2	2
	12	6	22.44	22.23	22.29		2
	12	13	22.42	22.22	22.17		2
	25	0	22.22	22.23	22.22		2
64QAM	1	0	22.27	22.19	22.34	0-2	2
	1	12	22.50	22.46	22.57		2
	1	24	22.19	22.17	22.30		2
	12	0	21.25	21.21	21.29	0-3	3
	12	6	21.29	21.26	21.32		3
	12	13	21.24	21.24	21.25		3
	25	0	21.30	21.19	21.27		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	24.22	24.12	24.07	0	0
	1	7	24.33	24.22	24.24		0
	1	14	24.22	24.08	24.10		0
	8	0	23.30	23.13	23.22	0-1	1
	8	4	23.30	23.21	23.22		1
	8	7	23.23	23.16	23.16		1
	15	0	23.24	23.16	23.24		1
16QAM	1	0	23.34	23.67	23.58	0-1	1
	1	7	23.49	23.68	23.65		1
	1	14	23.29	23.66	23.47		1
	8	0	22.29	22.29	22.33	0-2	2
	8	4	22.33	22.34	22.35		2
	8	7	22.26	22.35	22.29		2
	15	0	22.17	22.27	22.33		2
64QAM	1	0	22.10	22.20	22.40	0-2	2
	1	7	22.28	22.31	22.52		2
	1	14	22.12	22.19	22.32		2
	8	0	21.30	21.24	21.23	0-3	3
	8	4	21.36	21.30	21.26		3
	8	7	21.31	21.21	21.19		3
	15	0	21.38	21.16	21.25		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	24.08	24.06	23.98	0	0
	1	2	24.18	24.17	24.08		0
	1	5	24.09	24.08	23.98		0
	3	0	24.18	24.11	24.17		0
	3	2	24.23	24.16	24.23		0
	3	3	24.19	24.13	24.21		0
	6	0	23.25	23.15	23.15	0-1	1
16QAM	1	0	23.25	23.39	23.45	0-1	1
	1	2	23.32	23.46	23.51		1
	1	5	23.25	23.39	23.46		1
	3	0	23.29	23.34	23.21		1
	3	2	23.35	23.34	23.21		1
	3	3	23.34	23.33	23.16		1
	6	0	22.17	22.29	22.21	0-2	2
64QAM	1	0	22.04	22.55	22.26	0-2	2
	1	2	22.15	22.64	22.31		2
	1	5	22.03	22.60	22.28		2
	3	0	22.24	22.32	22.25		2
	3	2	22.27	22.28	22.24		2
	3	3	22.25	22.29	22.23		2
	6	0	21.28	21.07	21.19	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	21.97	21.75	21.85	0	0
	1	50	22.06	**22.17**	22.12		0
	1	99	21.87	22.05	21.90		0
	50	0	22.01	22.02	22.09	0-1	0
	50	25	22.06	22.06	**22.10**		0
	50	50	22.01	22.07	22.00		0
	100	0	22.03	22.00	22.05		0
16QAM	1	0	22.37	21.60	22.34	0-1	0
	1	50	22.43	21.95	22.45		0
	1	99	22.40	21.59	22.00		0
	50	0	22.00	22.03	22.15	0-2	0
	50	25	22.06	22.04	22.13		0
	50	50	22.02	22.04	22.03		0
	100	0	22.08	22.07	22.13		0
64QAM	1	0	22.07	22.48	22.10	0-2	0
	1	50	22.43	22.50	22.11		0
	1	99	22.07	22.47	22.06		0
	50	0	21.35	21.27	21.40	0-3	0.8
	50	25	21.38	21.29	21.40		0.8
	50	50	21.34	21.34	21.37		0.8
	100	0	21.36	21.27	21.39		0.8

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	22.09	22.04	21.99	0	0
	1	36	22.20	22.12	22.06		0
	1	74	22.07	21.99	21.98		0
	36	0	22.13	22.06	22.08	0-1	0
	36	18	22.07	22.06	22.09		0
	36	37	22.12	22.09	22.10		0
	75	0	22.10	22.09	22.08		0
16QAM	1	0	22.27	22.24	22.29	0-1	0
	1	36	22.31	22.28	22.31		0
	1	74	22.20	22.15	22.26		0
	36	0	22.11	22.08	22.09	0-2	0
	36	18	22.10	22.10	22.12		0
	36	37	22.13	22.10	22.07		0
	75	0	22.08	22.09	22.08		0
64QAM	1	0	22.48	22.48	22.32	0-2	0
	1	36	22.50	22.49	22.41		0
	1	74	22.43	22.49	22.23		0
	36	0	21.39	21.32	21.32	0-3	0.8
	36	18	21.36	21.36	21.36		0.8
	36	37	21.41	21.36	21.32		0.8
	75	0	21.39	21.33	21.31		0.8

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	21.99	21.98	21.97	0	0
	1	25	22.18	22.17	22.16		0
	1	49	21.97	21.96	21.96		0
	25	0	22.10	22.01	22.05	0-1	0
	25	12	22.08	22.02	22.13		0
	25	25	22.07	22.05	22.03		0
	50	0	22.07	22.01	22.05		0
16QAM	1	0	22.44	22.26	22.22	0-1	0
	1	25	22.43	22.29	22.40		0
	1	49	22.28	22.18	22.28		0
	25	0	22.12	22.08	22.16	0-2	0
	25	12	22.13	22.08	22.18		0
	25	25	22.10	22.09	22.08		0
	50	0	22.12	22.10	22.09		0
64QAM	1	0	22.20	22.22	22.31	0-2	0
	1	25	22.41	22.39	22.49		0
	1	49	22.29	22.15	22.25		0
	25	0	21.38	21.27	21.37	0-3	0.8
	25	12	21.34	21.27	21.38		0.8
	25	25	21.34	21.31	21.32		0.8
	50	0	21.31	21.23	21.25		0.8

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	21.86	21.84	21.91	0	0
	1	12	21.92	21.92	21.99		0
	1	24	21.84	21.84	21.90		0
	12	0	22.04	22.00	22.09	0-1	0
	12	6	22.06	22.03	22.11		0
	12	13	22.06	22.02	22.03		0
	25	0	22.04	21.99	22.07		0
16QAM	1	0	22.50	22.21	22.47	0-1	0
	1	12	22.50	22.46	22.50		0
	1	24	22.48	22.17	22.48		0
	12	0	22.12	22.03	22.19	0-2	0
	12	6	22.13	22.07	22.19		0
	12	13	22.10	22.04	22.09		0
	25	0	22.04	22.03	22.06		0
64QAM	1	0	22.18	22.43	22.24	0-2	0
	1	12	22.47	22.50	22.47		0
	1	24	22.17	22.43	22.21		0
	12	0	21.29	21.28	21.31	0-3	0.8
	12	6	21.30	21.35	21.33		0.8
	12	13	21.27	21.31	21.25		0.8
	25	0	21.37	21.28	21.37		0.8

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	22.05	22.00	21.92	0	0
	1	7	22.23	22.08	22.23		0
	1	14	22.02	22.02	21.91		0
	8	0	22.05	22.07	22.01	0-1	0
	8	4	22.02	21.94	22.02		0
	8	7	22.04	21.99	21.99		0
	15	0	22.01	21.97	22.01		0
16QAM	1	0	22.49	22.28	22.49	0-1	0
	1	7	22.46	22.40	22.47		0
	1	14	22.41	22.22	22.48		0
	8	0	22.23	22.20	22.05	0-2	0
	8	4	22.19	22.15	22.04		0
	8	7	22.19	22.15	22.07		0
	15	0	22.05	21.97	22.13		0
64QAM	1	0	22.24	22.26	22.28	0-2	0
	1	7	22.36	22.43	22.46		0
	1	14	22.21	22.21	22.28		0
	8	0	21.32	21.27	21.19	0-3	0.8
	8	4	21.27	21.22	21.20		0.8
	8	7	21.32	21.23	21.15		0.8
	15	0	21.28	21.16	21.21		0.8

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	22.05	21.97	21.95	0	0
	1	2	22.17	21.97	22.02		0
	1	5	22.04	21.96	21.87		0
	3	0	22.08	21.97	22.02		0
	3	2	22.08	21.96	22.04		0
	3	3	22.06	21.98	22.08		0
	6	0	22.06	21.96	22.09	0-1	0
16QAM	1	0	22.45	22.36	22.48	0-1	0
	1	2	22.48	22.36	22.50		0
	1	5	22.40	22.36	22.44		0
	3	0	22.11	22.36	22.23		0
	3	2	22.13	22.37	22.20		0
	3	3	22.16	22.36	22.23		0
	6	0	22.18	22.36	22.01	0-2	0
64QAM	1	0	22.49	22.49	22.30	0-2	0
	1	2	22.50	22.50	22.48		0
	1	5	22.48	22.49	22.23		0
	3	0	21.97	21.81	21.99		0
	3	2	22.19	21.82	22.02		0
	3	3	22.03	21.90	22.11		0
	6	0	21.26	21.27	21.37	0-3	0.8

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	24.00	24.27	24.22	0	0
	1	50	24.26	24.51	**24.52**		0
	1	99	24.08	24.27	24.35		0
	50	0	23.32	23.41	**23.56**	0-1	1
	50	25	23.33	23.44	23.46		1
	50	50	23.33	23.36	23.36		1
	100	0	23.31	23.44	23.52		1
16QAM	1	0	23.55	23.60	23.55	0-1	1
	1	50	23.69	23.70	23.70		1
	1	99	23.57	23.61	23.59		1
	50	0	22.35	22.48	22.64	0-2	2
	50	25	22.40	22.43	22.50		2
	50	50	22.37	22.41	22.53		2
	100	0	22.35	22.42	22.57		2
64QAM	1	0	22.60	22.65	22.52	0-2	2
	1	50	22.69	22.63	22.70		2
	1	99	22.61	22.65	22.50		2
	50	0	21.33	21.45	21.65	0-3	3
	50	25	21.33	21.45	21.61		3
	50	50	21.34	21.38	21.61		3
	100	0	21.31	21.39	21.63		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	24.09	24.26	24.14	0	0
	1	36	24.17	24.32	24.23		0
	1	74	24.09	24.26	24.25		0
	36	0	23.22	23.27	23.38	0-1	1
	36	18	23.29	23.33	23.40		1
	36	37	23.27	23.36	23.38		1
	75	0	23.24	23.33	23.45		1
16QAM	1	0	23.62	23.46	23.35	0-1	1
	1	36	23.66	23.52	23.45		1
	1	74	23.60	23.44	23.29		1
	36	0	22.19	22.26	22.38	0-2	2
	36	18	22.22	22.27	22.40		2
	36	37	22.21	22.28	22.39		2
	75	0	22.21	22.26	22.41		2
64QAM	1	0	22.12	22.56	22.19	0-2	2
	1	36	22.14	22.63	22.27		2
	1	74	22.07	22.57	22.16		2
	36	0	21.16	21.22	21.48	0-3	3
	36	18	21.24	21.30	21.47		3
	36	37	21.23	21.27	21.44		3
	75	0	21.19	21.22	21.38		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	24.19	24.14	24.16	0	0
	1	25	24.34	24.35	24.37		0
	1	49	24.17	24.15	24.21		0
	25	0	23.23	23.27	23.41	0-1	1
	25	12	23.23	23.33	23.43		1
	25	25	23.23	23.29	23.26		1
	50	0	23.20	23.29	23.43		1
16QAM	1	0	23.31	23.66	23.60	0-1	1
	1	25	23.49	23.68	23.67		1
	1	49	23.29	23.61	23.49		1
	25	0	22.22	22.31	22.56	0-2	2
	25	12	22.25	22.35	22.56		2
	25	25	22.23	22.29	22.51		2
	50	0	22.22	22.23	22.49		2
64QAM	1	0	22.13	22.15	22.43	0-2	2
	1	25	22.25	22.33	22.66		2
	1	49	22.05	22.12	22.41		2
	25	0	21.25	21.21	21.57	0-3	3
	25	12	21.32	21.31	21.60		3
	25	25	21.28	21.26	21.46		3
	50	0	21.24	21.24	21.54		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	24.19	24.10	24.19	0	0
	1	12	24.41	24.40	24.44		0
	1	24	24.11	24.12	24.20		0
	12	0	23.19	23.26	23.37	0-1	1
	12	6	23.29	23.32	23.41		1
	12	13	23.26	23.32	23.26		1
	25	0	23.21	23.29	23.30		1
16QAM	1	0	23.43	23.40	23.30	0-1	1
	1	12	23.65	23.64	23.54		1
	1	24	23.39	23.40	23.24		1
	12	0	22.37	22.22	22.39	0-2	2
	12	6	22.46	22.30	22.49		2
	12	13	22.43	22.23	22.34		2
	25	0	22.21	22.29	22.45		2
64QAM	1	0	22.27	22.23	22.46	0-2	2
	1	12	22.50	22.51	22.67		2
	1	24	22.22	22.26	22.42		2
	12	0	21.15	21.24	21.51	0-3	3
	12	6	21.22	21.32	21.57		3
	12	13	21.16	21.25	21.49		3
	25	0	21.21	21.24	21.54		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	24.18	24.22	24.19	0	0
	1	7	24.34	24.36	24.36		0
	1	14	24.15	24.22	24.33		0
	8	0	23.24	23.28	23.36	0-1	1
	8	4	23.26	23.34	23.36		1
	8	7	23.23	23.28	23.32		1
	15	0	23.22	23.27	23.36		1
16QAM	1	0	23.36	23.67	23.68	0-1	1
	1	7	23.52	23.66	23.68		1
	1	14	23.32	23.65	23.55		1
	8	0	22.26	22.38	22.52	0-2	2
	8	4	22.29	22.42	22.53		2
	8	7	22.25	22.35	22.46		2
	15	0	22.14	22.31	22.53		2
64QAM	1	0	22.18	22.20	22.48	0-2	2
	1	7	22.30	22.35	22.63		2
	1	14	22.14	22.18	22.44		2
	8	0	21.28	21.29	21.45	0-3	3
	8	4	21.28	21.32	21.46		3
	8	7	21.27	21.25	21.39		3
	15	0	21.31	21.22	21.51		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	24.09	24.27	24.19	0	0
	1	2	24.25	24.35	24.37		0
	1	5	24.16	24.25	24.28		0
	3	0	24.24	24.24	24.42		0
	3	2	24.27	24.28	24.49		0
	3	3	24.24	24.24	24.42		0
	6	0	23.30	23.32	23.38	0-1	1
16QAM	1	0	23.29	23.49	23.54	0-1	1
	1	2	23.44	23.59	23.64		1
	1	5	23.32	23.52	23.52		1
	3	0	23.39	23.38	23.38		1
	3	2	23.43	23.37	23.37		1
	3	3	23.42	23.35	23.33		1
	6	0	22.25	22.43	22.38	0-2	2
64QAM	1	0	22.16	22.60	22.44	0-2	2
	1	2	22.23	22.65	22.52		2
	1	5	22.10	22.61	22.46		2
	3	0	22.31	22.40	22.50		2
	3	2	22.31	22.39	22.49		2
	3	3	22.27	22.34	22.49		2
	6	0	21.28	21.19	21.44	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	22.08	22.22	22.31	0	0
	1	50	22.37	**22.56**	22.55		0
	1	99	22.11	22.31	22.34		0
	50	0	22.33	22.37	22.53	0-1	0
	50	25	22.39	22.50	**22.58**		0
	50	50	22.35	22.41	22.47		0
	100	0	22.33	22.44	22.53		0
16QAM	1	0	22.02	22.61	22.49	0-1	0
	1	50	22.28	22.70	22.37		0
	1	99	22.01	22.67	22.45		0
	50	0	22.33	22.44	22.65	0-2	0
	50	25	22.42	22.51	22.60		0
	50	50	22.37	22.45	22.56		0
	100	0	22.32	22.47	22.59		0
64QAM	1	0	22.70	22.46	22.49	0-2	0
	1	50	22.27	22.54	22.52		0
	1	99	22.57	22.54	22.61		0
	50	0	21.32	21.46	21.69	0-3	1
	50	25	21.45	21.58	21.64		1
	50	50	21.42	21.45	21.63		1
	100	0	21.36	21.45	21.60		1

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	22.35	22.25	22.38	0	0
	1	36	22.42	22.34	22.54		0
	1	74	22.32	22.28	22.54		0
	36	0	22.32	22.38	22.49	0-1	0
	36	18	22.40	22.44	22.59		0
	36	37	22.40	22.43	22.57		0
	75	0	22.40	22.45	22.59		0
16QAM	1	0	22.70	22.67	22.66	0-1	0
	1	36	22.67	22.64	22.68		0
	1	74	22.67	22.44	22.69		0
	36	0	22.37	22.45	22.57	0-2	0
	36	18	22.42	22.44	22.61		0
	36	37	22.41	22.42	22.55		0
	75	0	22.38	22.54	22.56		0
64QAM	1	0	22.53	22.65	22.63	0-2	0
	1	36	22.64	22.63	22.66		0
	1	74	22.56	22.59	22.62		0
	36	0	21.39	21.46	21.56	0-3	1
	36	18	21.43	21.47	21.59		1
	36	37	21.40	21.44	21.59		1
	75	0	21.35	21.46	21.59		1

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	22.42	22.40	22.31	0	0
	1	25	22.56	22.58	22.69		0
	1	49	22.39	22.43	22.55		0
	25	0	22.42	22.45	22.58	0-1	0
	25	12	22.45	22.47	22.58		0
	25	25	22.45	22.47	22.56		0
	50	0	22.41	22.46	22.53		0
16QAM	1	0	22.69	22.69	22.65	0-1	0
	1	25	22.69	22.70	22.68		0
	1	49	22.70	22.65	22.68		0
	25	0	22.46	22.50	22.67	0-2	0
	25	12	22.52	22.51	22.60		0
	25	25	22.49	22.49	22.57		0
	50	0	22.48	22.51	22.61		0
64QAM	1	0	22.65	22.63	22.64	0-2	0
	1	25	22.65	22.63	22.69		0
	1	49	22.61	22.63	22.65		0
	25	0	21.42	21.43	21.64	0-3	1
	25	12	21.43	21.44	21.59		1
	25	25	21.45	21.46	21.56		1
	50	0	21.41	21.45	21.52		1

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	22.26	22.28	22.29	0	0
	1	12	22.35	22.37	22.36		0
	1	24	22.26	22.30	22.30		0
	12	0	22.39	22.40	22.49	0-1	0
	12	6	22.44	22.45	22.58		0
	12	13	22.44	22.43	22.48		0
	25	0	22.43	22.45	22.57		0
16QAM	1	0	22.56	22.44	22.41	0-1	0
	1	12	22.32	22.27	22.48		0
	1	24	22.21	22.53	22.66		0
	12	0	22.49	22.48	22.57	0-2	0
	12	6	22.53	22.52	22.61		0
	12	13	22.52	22.50	22.52		0
	25	0	22.40	22.42	22.58		0
64QAM	1	0	22.59	22.58	22.64	0-2	0
	1	12	22.57	22.58	22.58		0
	1	24	22.57	22.59	22.48		0
	12	0	21.36	21.40	21.59	0-3	1
	12	6	21.42	21.41	21.69		1
	12	13	21.40	21.42	21.56		1
	25	0	21.49	21.48	21.66		1

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	22.41	22.47	22.50	0	0
	1	7	22.58	22.63	22.69		0
	1	14	22.45	22.48	22.56		0
	8	0	22.44	22.45	22.59	0-1	0
	8	4	22.41	22.45	22.54		0
	8	7	22.44	22.43	22.57		0
	15	0	22.40	22.40	22.58		0
16QAM	1	0	22.67	22.69	22.62	0-1	0
	1	7	22.67	22.66	22.59		0
	1	14	22.66	22.67	22.49		0
	8	0	22.64	22.64	22.67	0-2	0
	8	4	22.59	22.59	22.69		0
	8	7	22.62	22.57	22.68		0
	15	0	22.47	22.44	22.65		0
64QAM	1	0	22.69	22.67	22.65	0-2	0
	1	7	22.68	22.66	22.69		0
	1	14	22.67	22.63	22.68		0
	8	0	21.46	21.44	21.58	0-3	1
	8	4	21.40	21.39	21.53		1
	8	7	21.44	21.42	21.55		1
	15	0	21.36	21.34	21.57		1

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	22.40	22.46	22.49	0	0
	1	2	22.54	22.56	22.58		0
	1	5	22.38	22.40	22.42		0
	3	0	22.45	22.45	22.53		0
	3	2	22.49	22.47	22.58		0
	3	3	22.48	22.42	22.63		0
	6	0	22.46	22.46	22.65	0-1	0
16QAM	1	0	22.44	22.39	22.49	0-1	0
	1	2	22.51	22.52	22.64		0
	1	5	22.43	22.35	22.49		0
	3	0	22.50	22.47	22.55		0
	3	2	22.53	22.52	22.55		0
	3	3	22.57	22.56	22.56		0
	6	0	22.60	22.59	22.52	0-2	0
64QAM	1	0	22.52	22.49	22.46	0-2	0
	1	2	22.64	22.66	22.63		0
	1	5	22.46	22.48	22.38		0
	3	0	22.37	22.33	22.60		0
	3	2	22.57	22.52	22.63		0
	3	3	22.47	22.41	22.69		0
	6	0	21.36	21.34	21.63	0-3	1

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	24.34	24.41	24.44	24.50	24.40	0	0
	1	50	24.43	24.44	24.42	24.52	24.45		0
	1	99	24.45	24.38	24.40	**24.60**	24.32		0
	50	0	23.45	23.45	23.45	**23.70**	23.44	0-1	1
	50	25	23.47	23.46	23.44	23.68	23.38		1
	50	50	23.44	23.47	23.36	23.69	23.35		1
	100	0	23.50	23.43	23.43	23.49	23.40		1
16QAM	1	0	23.43	23.46	23.45	23.16	23.49	0-1	1
	1	50	23.45	23.40	23.50	23.28	23.41		1
	1	99	23.48	23.41	23.49	23.10	23.37		1
	50	0	22.41	22.47	22.43	22.50	22.48	0-2	2
	50	25	22.48	22.48	22.42	22.48	22.48		2
	50	50	22.50	22.38	22.42	22.41	22.49		2
	100	0	22.49	22.49	22.39	22.50	22.48		2
64QAM	1	0	22.61	22.51	22.49	22.68	22.46	0-2	2
	1	50	22.59	22.65	22.56	22.57	22.51		2
	1	99	22.47	22.58	22.61	22.49	22.50		2
	50	0	21.66	21.69	21.63	21.69	21.55	0-3	3
	50	25	21.60	21.64	21.62	21.68	21.56		3
	50	50	21.47	21.61	21.63	21.65	21.52		3
	100	0	21.69	21.49	21.60	21.64	21.49		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	24.15	24.13	24.16	24.19	24.28	0	0
	1	36	24.20	24.08	24.20	24.08	24.34		0
	1	74	24.14	23.99	24.08	24.27	24.18		0
	36	0	23.27	23.17	23.25	23.34	23.37	0-1	1
	36	18	23.40	23.21	23.26	23.36	23.36		1
	36	37	23.37	23.13	23.20	23.30	23.35		1
	75	0	23.31	22.94	23.23	23.44	23.36		1
16QAM	1	0	23.06	23.02	23.21	23.24	23.13	0-1	1
	1	36	23.17	22.88	22.81	23.35	23.26		1
	1	74	23.01	22.86	22.66	23.18	23.06		1
	36	0	22.31	22.15	22.19	22.35	22.40	0-2	2
	36	18	22.28	22.16	22.19	22.36	22.39		2
	36	37	22.25	22.13	22.23	22.35	22.35		2
	75	0	22.33	22.15	21.98	22.43	22.37		2
64QAM	1	0	22.03	22.05	22.38	22.18	22.23	0-2	2
	1	36	22.26	22.05	22.20	22.29	22.20		2
	1	74	22.17	21.83	21.94	22.18	22.60		2
	36	0	21.20	21.14	21.16	21.39	21.35	0-3	3
	36	18	21.22	21.15	21.15	21.41	21.33		3
	36	37	21.23	21.13	21.13	21.37	21.30		3
	75	0	21.22	21.14	21.16	21.39	21.37		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	24.33	24.45	24.47	24.58	24.41	0	0
	1	25	24.46	24.61	24.51	24.67	24.57		0
	1	49	24.42	24.52	24.43	24.48	24.33		0
	25	0	23.57	23.66	23.54	23.70	23.48	0-1	1
	25	12	23.53	23.70	23.49	23.66	23.40		1
	25	25	23.52	23.66	23.58	23.67	23.42		1
	50	0	23.53	23.63	23.54	23.69	23.51		1
16QAM	1	0	23.56	23.35	23.31	23.43	23.25	0-1	1
	1	25	23.69	23.33	23.31	23.38	23.19		1
	1	49	23.57	23.39	23.33	23.42	23.18		1
	25	0	22.54	22.68	22.58	22.65	22.49	0-2	2
	25	12	22.56	22.65	22.53	22.69	22.47		2
	25	25	22.52	22.61	22.55	22.64	22.44		2
	50	0	22.47	22.61	22.58	22.67	22.47		2
64QAM	1	0	22.57	22.43	22.38	22.41	22.30	0-2	2
	1	25	22.67	22.62	22.57	22.65	22.49		2
	1	49	22.61	22.42	22.58	22.37	22.25		2
	25	0	21.51	21.62	21.62	21.66	21.48	0-3	3
	25	12	21.48	21.61	21.61	21.64	21.43		3
	25	25	21.50	21.59	21.52	21.58	21.39		3
	50	0	21.52	21.56	21.55	21.61	21.40		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	24.37	24.36	24.33	24.49	24.24	0	0
	1	12	24.64	24.53	24.66	24.70	24.56		0
	1	24	24.43	24.34	24.52	24.50	24.34		0
	12	0	23.47	23.50	23.53	23.62	23.42	0-1	1
	12	6	23.53	23.56	23.62	23.65	23.45		1
	12	13	23.48	23.52	23.56	23.65	23.43		1
	25	0	23.53	23.49	23.54	23.64	23.42		1
16QAM	1	0	23.33	23.52	23.64	23.67	23.56	0-1	1
	1	12	23.54	23.70	23.70	23.70	23.68		1
	1	24	23.33	23.48	23.60	23.68	23.50		1
	12	0	22.49	22.44	22.50	22.55	22.39	0-2	2
	12	6	22.54	22.50	22.57	22.59	22.45		2
	12	13	22.51	22.47	22.49	22.60	22.40		2
	25	0	22.52	22.44	22.49	22.52	22.36		2
64QAM	1	0	22.60	22.14	22.27	22.32	22.16	0-2	2
	1	12	22.61	22.67	22.68	22.69	22.68		2
	1	24	22.62	22.12	22.28	22.30	22.19		2
	12	0	21.44	21.40	21.45	21.47	21.31	0-3	3
	12	6	21.47	21.41	21.47	21.53	21.37		3
	12	13	21.42	21.35	21.40	21.47	21.30		3
	25	0	21.41	21.56	21.59	21.70	21.46		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	22.39	22.28	22.16	22.22	22.20	0	0
	1	50	22.47	22.44	22.46	**22.60**	22.23		0
	1	99	22.30	22.19	22.19	22.27	22.10		0
	50	0	22.27	22.41	22.36	**22.53**	22.43	0-1	0
	50	25	22.38	22.46	22.43	22.41	22.47		0
	50	50	22.39	22.41	22.33	22.30	22.40		0
	100	0	22.36	22.43	22.36	22.35	22.40		0
16QAM	1	0	22.28	22.35	22.37	22.27	22.42	0-1	0
	1	50	22.53	22.64	22.52	22.02	22.13		0
	1	99	22.35	22.35	22.33	21.82	22.41		0
	50	0	22.37	22.57	22.40	22.46	22.43	0-2	0
	50	25	22.48	22.54	22.49	22.47	22.41		0
	50	50	22.49	22.52	22.48	22.38	22.34		0
	100	0	22.39	22.56	22.38	22.46	22.38		0
64QAM	1	0	22.43	22.55	22.32	22.51	22.58	0-2	0
	1	50	22.70	22.69	22.53	22.55	22.70		0
	1	99	22.47	22.56	22.36	22.44	22.45		0
	50	0	21.70	21.51	21.36	21.41	21.42	0-3	1
	50	25	21.49	21.52	21.42	21.42	21.42		1
	50	50	21.45	21.44	21.32	21.32	21.32		1
	100	0	21.45	21.53	21.34	21.42	21.42		1

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	22.44	22.40	22.23	22.42	22.26	0	0
	1	36	22.63	22.55	22.38	22.47	22.34		0
	1	74	22.47	22.45	22.26	22.39	22.20		0
	36	0	22.51	22.45	22.40	22.50	22.37	0-1	0
	36	18	22.53	22.46	22.42	22.51	22.41		0
	36	37	22.57	22.42	22.37	22.49	22.38		0
	75	0	22.53	22.43	22.37	22.53	22.38		0
16QAM	1	0	22.46	22.24	22.16	22.35	22.13	0-1	0
	1	36	22.51	22.33	22.32	22.43	22.14		0
	1	74	22.48	22.28	22.16	22.36	22.04		0
	36	0	22.57	22.47	22.35	22.52	22.30	0-2	0
	36	18	22.54	22.43	22.35	22.51	22.35		0
	36	37	22.59	22.41	22.32	22.51	22.32		0
	75	0	22.55	22.48	22.34	22.52	22.34		0
64QAM	1	0	22.46	22.24	22.22	22.28	22.22	0-2	0
	1	36	22.46	22.41	22.39	22.40	22.28		0
	1	74	22.62	22.25	22.20	22.28	22.17		0
	36	0	21.55	21.45	21.32	21.53	21.32	0-3	1
	36	18	21.61	21.45	21.35	21.51	21.37		1
	36	37	21.55	21.41	21.37	21.49	21.35		1
	75	0	21.51	21.40	21.36	21.50	21.38		1

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	22.62	22.55	22.41	22.46	22.29	0	0
	1	25	22.68	22.61	22.51	22.58	22.37		0
	1	49	22.59	22.48	22.38	22.42	22.25		0
	25	0	22.68	22.58	22.53	22.62	22.43	0-1	0
	25	12	22.67	22.57	22.52	22.59	22.41		0
	25	25	22.68	22.55	22.50	22.56	22.41		0
	50	0	22.66	22.60	22.51	22.57	22.44		0
16QAM	1	0	22.50	22.36	22.28	22.45	22.50	0-1	0
	1	25	22.66	22.53	22.45	22.40	22.66		0
	1	49	22.51	22.39	22.36	22.41	22.47		0
	25	0	22.66	22.66	22.59	22.66	22.46	0-2	0
	25	12	22.70	22.64	22.61	22.64	22.46		0
	25	25	22.69	22.70	22.53	22.62	22.47		0
	50	0	22.66	22.63	22.55	22.63	22.43		0
64QAM	1	0	22.44	22.31	22.37	22.39	22.46	0-2	0
	1	25	22.68	22.51	22.56	22.61	22.48		0
	1	49	22.46	22.31	22.38	22.36	22.46		0
	25	0	21.68	21.60	21.53	21.62	21.43	0-3	1
	25	12	21.66	21.56	21.50	21.58	21.43		1
	25	25	21.70	21.53	21.49	21.54	21.45		1
	50	0	21.63	21.53	21.46	21.54	21.46		1

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	22.55	22.36	22.28	22.36	22.26	0	0
	1	12	22.67	22.58	22.53	22.60	22.50		0
	1	24	22.58	22.45	22.39	22.51	22.28		0
	12	0	22.61	22.50	22.41	22.51	22.34	0-1	0
	12	6	22.68	22.55	22.46	22.56	22.35		0
	12	13	22.67	22.52	22.42	22.52	22.35		0
	25	0	22.64	22.48	22.43	22.51	22.34		0
16QAM	1	0	22.69	22.61	22.58	22.53	22.45	0-1	0
	1	12	22.62	22.64	22.54	22.70	22.69		0
	1	24	22.64	22.52	22.43	22.49	22.39		0
	12	0	22.65	22.64	22.52	22.51	22.36	0-2	0
	12	6	22.65	22.55	22.45	22.51	22.40		0
	12	13	22.65	22.60	22.51	22.52	22.39		0
	25	0	22.61	22.55	22.45	22.48	22.29		0
64QAM	1	0	22.35	22.26	22.25	22.25	22.15	0-2	0
	1	12	22.70	22.69	22.70	22.67	22.67		0
	1	24	22.52	22.26	22.20	22.24	22.12		0
	12	0	21.50	21.47	21.39	21.45	21.26	0-3	1
	12	6	21.61	21.42	21.44	21.50	21.31		1
	12	13	21.57	21.40	21.35	21.39	21.26		1
	25	0	21.68	21.60	21.47	21.58	21.42		1

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	26.43	26.51	26.56	26.62	26.48	0	0
	1	50	26.79	26.74	26.74	26.85	26.60		0
	1	99	26.58	26.47	26.54	**26.80**	26.38		0
	50	0	25.64	25.76	25.70	25.80	25.59	0-1	1
	50	25	25.72	25.75	25.66	25.77	25.61		1
	50	50	25.68	25.73	25.65	25.73	25.51		1
	100	0	25.63	25.73	25.69	25.79	25.51		1
16QAM	1	0	25.48	25.83	25.74	25.72	25.91	0-1	1
	1	50	25.75	25.94	25.93	25.81	25.87		1
	1	99	25.66	25.74	25.76	25.69	25.81		1
	50	0	24.57	24.80	24.72	24.78	24.58	0-2	2
	50	25	24.67	24.89	24.70	24.79	24.64		2
	50	50	24.68	24.71	24.65	24.75	24.53		2
	100	0	24.59	24.77	24.74	24.81	24.65		2
64QAM	1	0	24.76	24.73	24.71	24.98	24.34	0-2	2
	1	50	24.91	25.00	24.96	24.94	24.48		2
	1	99	24.92	24.72	24.73	24.91	24.26		2
	50	0	23.56	23.85	23.74	23.79	23.65	0-3	3
	50	25	23.67	23.85	23.77	23.79	23.63		3
	50	50	23.69	23.77	23.70	23.72	23.54		3
	100	0	23.61	23.82	23.77	23.78	23.61		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	26.70	26.68	26.84	26.75	26.70	0	0
	1	36	26.81	26.78	26.88	26.86	26.76		0
	1	74	26.75	26.66	26.78	26.75	26.61		0
	36	0	25.79	25.83	25.94	25.95	25.96	0-1	1
	36	18	25.85	25.85	25.93	25.98	25.85		1
	36	37	25.84	25.83	25.94	25.94	25.83		1
	75	0	25.84	25.83	25.94	25.98	25.93		1
16QAM	1	0	25.88	25.92	25.97	25.93	25.94	0-1	1
	1	36	25.99	25.97	26.05	26.00	25.92		1
	1	74	25.92	25.87	25.95	25.90	25.83		1
	36	0	24.78	24.79	24.81	24.90	24.79	0-2	2
	36	18	24.83	24.82	24.84	24.99	24.78		2
	36	37	24.83	24.77	24.85	24.91	24.76		2
	75	0	24.81	24.79	24.85	24.97	24.75		2
64QAM	1	0	24.89	24.88	25.15	24.94	24.91	0-2	2
	1	36	24.97	25.18	25.17	25.06	25.15		2
	1	74	24.87	24.80	25.14	24.96	24.79		2
	36	0	23.82	23.83	23.87	23.93	23.81	0-3	3
	36	18	23.84	23.84	23.88	23.93	23.80		3
	36	37	23.86	23.81	23.89	23.91	23.77		3
	75	0	23.83	23.81	23.99	23.92	23.79		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	26.92	26.80	26.87	26.95	26.87	0	0
	1	25	26.99	26.86	26.92	26.96	26.93		0
	1	49	26.94	26.77	26.88	26.91	26.77		0
	25	0	25.91	25.90	25.97	26.02	25.84	0-1	1
	25	12	25.93	25.89	25.92	26.03	25.85		1
	25	25	25.91	25.89	25.94	26.01	25.81		1
	50	0	25.87	25.89	25.96	26.04	25.82		1
16QAM	1	0	26.17	26.03	26.11	26.18	26.15	0-1	1
	1	25	26.18	26.16	26.14	26.20	26.18		1
	1	49	26.01	25.99	26.10	26.14	26.19		1
	25	0	24.97	24.98	25.05	25.09	24.92	0-2	2
	25	12	24.97	24.95	25.00	25.14	24.89		2
	25	25	24.97	24.92	24.99	25.05	24.88		2
	50	0	24.96	24.93	24.98	25.06	24.87		2
64QAM	1	0	25.10	24.99	25.07	25.14	25.04	0-2	2
	1	25	25.19	25.13	25.19	25.16	25.12		2
	1	49	25.08	24.97	25.07	25.13	24.98		2
	25	0	23.90	23.97	24.04	24.10	23.81	0-3	3
	25	12	23.90	23.97	24.00	24.04	23.77		3
	25	25	23.88	23.95	23.98	24.02	23.75		3
	50	0	23.93	23.93	23.97	24.00	23.81		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	26.74	26.76	26.86	26.87	26.71	0	0
	1	12	27.03	27.00	26.84	27.12	26.93		0
	1	24	26.84	26.76	26.85	26.93	26.73		0
	12	0	25.87	25.88	25.93	26.04	25.84	0-1	1
	12	6	25.90	25.90	25.97	26.07	25.87		1
	12	13	25.87	25.88	25.90	26.04	25.83		1
	25	0	25.88	25.86	25.95	26.06	25.85		1
16QAM	1	0	26.03	26.08	26.19	26.20	26.10	0-1	1
	1	12	26.12	26.12	26.20	26.17	26.07		1
	1	24	26.03	26.16	26.15	26.03	26.03		1
	12	0	24.84	24.86	24.92	25.04	24.83	0-2	2
	12	6	24.92	24.93	25.01	25.06	24.91		2
	12	13	24.88	24.87	24.92	25.05	24.85		2
	25	0	24.82	24.82	25.01	24.98	24.78		2
64QAM	1	0	25.02	25.00	25.12	25.13	25.02	0-2	2
	1	12	25.15	25.14	25.20	25.16	25.04		2
	1	24	25.05	24.97	25.10	25.15	25.01		2
	12	0	23.84	23.84	24.01	23.98	23.74	0-3	3
	12	6	23.88	23.89	24.08	24.02	23.77		3
	12	13	23.82	23.85	24.01	23.95	23.73		3
	25	0	23.95	24.00	23.96	24.11	23.86		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	24.56	24.62	24.66	24.60	24.68	0	0
	1	50	24.80	24.83	24.83	**24.84**	24.81		0
	1	99	24.69	24.63	24.68	24.58	24.64		0
	50	0	24.67	24.91	24.76	**24.97**	24.80	0-1	0
	50	25	24.86	24.91	24.75	24.92	24.75		0
	50	50	24.91	24.85	24.75	24.79	24.67		0
	100	0	24.76	24.83	24.72	24.82	24.75		0
16QAM	1	0	24.99	24.83	25.01	24.86	25.13	0-1	0
	1	50	25.20	25.05	25.20	24.99	25.16		0
	1	99	25.17	24.91	25.01	24.82	24.98		0
	50	0	24.79	24.92	24.78	24.94	24.57	0-2	0
	50	25	24.91	24.96	24.82	24.89	24.58		0
	50	50	24.91	24.94	24.74	24.84	24.54		0
	100	0	24.82	24.93	24.76	24.92	24.56		0
64QAM	1	0	24.41	25.16	24.49	25.10	24.98	0-2	0
	1	50	24.79	25.20	24.68	25.20	25.19		0
	1	99	24.56	25.19	24.47	25.15	24.89		0
	50	0	23.79	24.00	23.79	23.96	23.63	0-3	1
	50	25	23.89	24.03	23.79	23.94	23.66		1
	50	50	23.94	23.96	23.73	23.89	23.55		1
	100	0	23.84	23.98	23.78	23.94	23.59		1

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	24.77	24.85	24.81	24.85	24.71	0	0
	1	36	24.98	24.89	24.94	24.93	24.81		0
	1	74	24.84	24.81	24.82	24.87	24.71		0
	36	0	24.92	24.96	24.90	24.92	24.79	0-1	0
	36	18	24.96	24.96	24.88	24.91	24.81		0
	36	37	24.98	24.90	24.86	24.91	24.79		0
	75	0	24.95	24.96	24.87	24.99	24.80		0
16QAM	1	0	25.05	25.11	25.03	25.09	24.94	0-1	0
	1	36	25.18	25.17	25.14	25.17	25.01		0
	1	74	25.11	25.03	25.04	25.07	24.90		0
	36	0	24.89	24.95	24.87	24.93	24.76	0-2	0
	36	18	24.95	24.93	24.87	24.90	24.80		0
	36	37	24.95	24.90	24.86	24.94	24.73		0
	75	0	24.89	24.93	24.84	24.90	24.76		0
64QAM	1	0	25.04	25.04	25.01	25.04	24.87	0-2	0
	1	36	25.15	25.08	25.09	25.13	24.94		0
	1	74	25.05	24.95	25.01	25.01	24.83		0
	36	0	23.96	24.02	23.91	23.94	23.80	0-3	1
	36	18	24.00	24.00	23.91	23.91	23.82		1
	36	37	23.95	23.94	23.89	23.98	23.80		1
	75	0	24.01	23.97	23.89	23.96	23.81		1

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	24.93	24.81	24.83	24.89	24.79	0	0
	1	25	25.06	24.87	24.92	24.95	24.84		0
	1	49	24.98	24.78	24.82	24.85	24.80		0
	25	0	25.03	24.96	24.91	25.01	24.82	0-1	0
	25	12	25.05	24.98	24.88	24.96	24.80		0
	25	25	25.12	24.94	24.88	24.95	24.82		0
	50	0	25.05	24.92	24.88	24.97	24.81		0
16QAM	1	0	25.20	25.19	25.19	25.15	24.99	0-1	0
	1	25	25.20	25.20	25.20	25.19	25.15		0
	1	49	25.15	25.19	25.19	25.09	24.99		0
	25	0	25.14	25.07	24.98	25.08	24.87	0-2	0
	25	12	25.16	25.06	24.98	25.05	24.88		0
	25	25	25.17	25.03	24.94	25.05	24.89		0
	50	0	25.07	25.01	24.92	25.02	24.84		0
64QAM	1	0	25.16	25.09	25.08	25.09	24.93	0-2	0
	1	25	25.17	25.17	25.12	25.16	25.17		0
	1	49	25.11	25.09	25.08	25.05	24.95		0
	25	0	24.11	23.98	23.91	24.06	23.87	0-3	1
	25	12	24.10	24.00	23.89	24.03	23.82		1
	25	25	24.13	23.97	23.88	24.01	23.86		1
	50	0	24.06	24.01	23.90	24.00	23.84		1

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	24.85	24.73	24.89	24.63	24.82	0	0
	1	12	24.76	24.81	24.74	24.87	24.96		0
	1	24	24.59	24.77	24.73	24.62	24.74		0
	12	0	24.94	25.00	24.80	24.75	24.87	0-1	0
	12	6	24.91	24.95	24.85	24.81	24.93		0
	12	13	24.90	25.00	24.82	24.74	24.89		0
	25	0	24.49	25.05	24.81	24.78	24.88		0
16QAM	1	0	24.82	24.92	25.20	24.97	24.98	0-1	0
	1	12	24.61	24.85	25.12	25.18	24.78		0
	1	24	24.71	24.72	25.01	24.93	24.69		0
	12	0	24.97	25.01	24.79	24.74	24.90	0-2	0
	12	6	24.89	25.10	24.87	24.82	24.97		0
	12	13	24.80	25.05	24.83	24.75	24.90		0
	25	0	24.59	25.01	24.74	24.77	24.84		0
64QAM	1	0	25.09	25.12	25.02	25.11	24.98	0-2	0
	1	12	25.01	25.18	25.00	25.18	25.20		0
	1	24	24.59	25.15	25.06	25.11	25.11		0
	12	0	24.01	24.02	23.75	23.81	23.86	0-3	1
	12	6	23.97	24.03	23.83	23.86	23.90		1
	12	13	23.84	23.96	23.78	23.78	23.84		1
	25	0	23.79	24.16	23.88	23.81	23.98		1

9.4.8 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-61
LTE B41 Uplink Carrier Aggregation Maximum 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 PC3	20	41055	2636.5	QPSK	1	99	LTE B41 PC3	20	41253	2656.3	QPSK	1	0	24.52	24.60

	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	41055	2636.5	QPSK	1	99	LTE B41 PC2	20	41253	2656.3	QPSK	1	0	26.67	26.80

Table 9-62
LTE B41 Uplink Carrier Aggregation Reduced 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 PC3	20	41055	2636.5	QPSK	50	0	LTE B41 PC3	20	40857	2616.7	QPSK	50	50	22.41	22.53

	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	41055	2636.5	QPSK	50	0	LTE B41 PC2	20	40857	2616.7	QPSK	50	50	24.68	24.97

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.

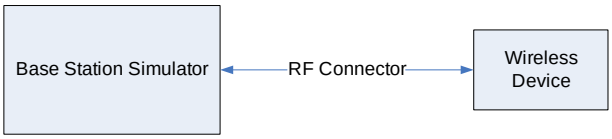


Figure 9-4
Power Measurement Setup

9.5 WLAN Conducted Powers

Table 9-63
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 9-64
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 9-65
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 9-66
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.

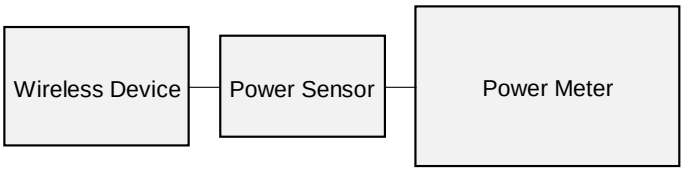


Figure 9-5
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-67
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.

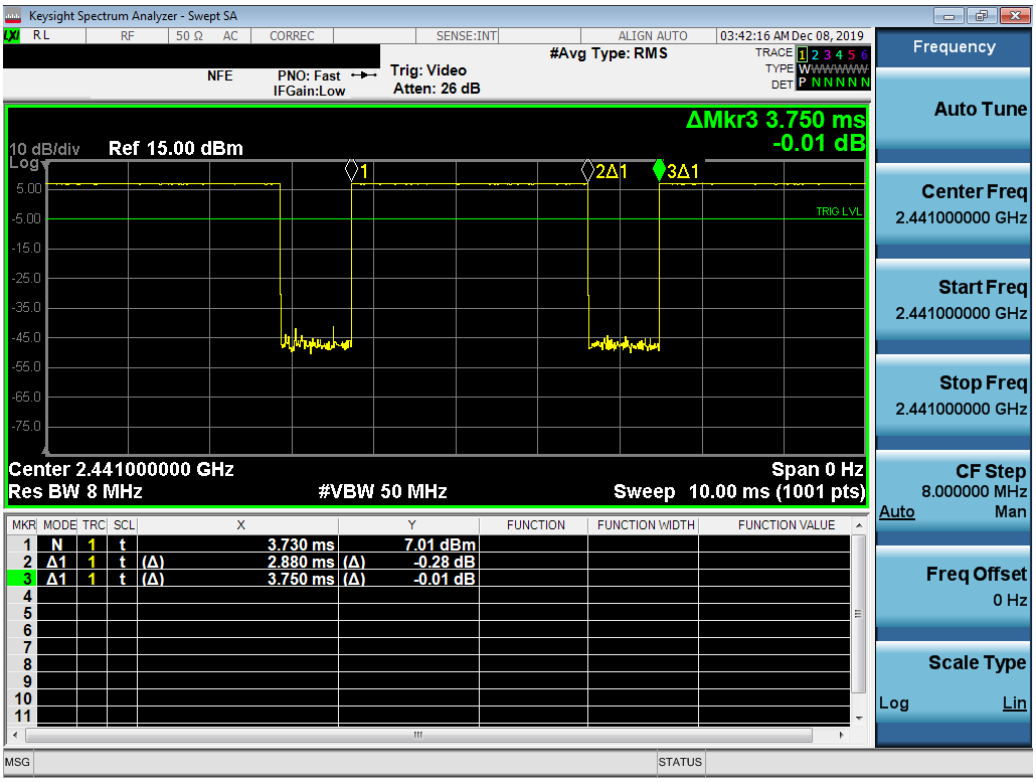


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

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

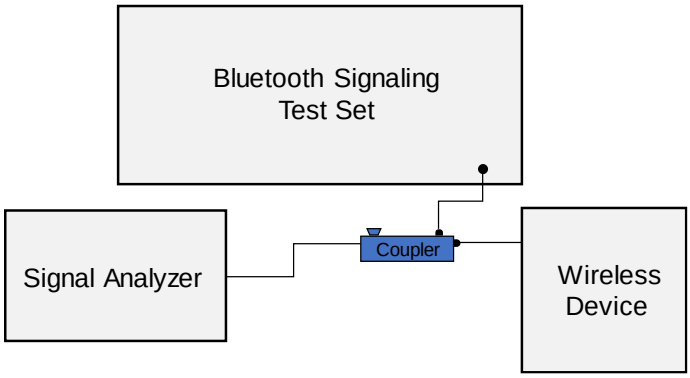


Figure 9-7
Power Measurement Setup

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
1/5/2020	700 Head	20.4	680	0.844	41.641	0.888	42.305	-4.95%	-1.57%
			695	0.849	41.593	0.889	42.227	-4.50%	-1.50%
			700	0.851	41.575	0.889	42.201	-4.27%	-1.48%
			710	0.855	41.543	0.890	42.149	-3.93%	-1.44%
			725	0.860	41.492	0.891	42.071	-3.48%	-1.38%
			740	0.866	41.436	0.893	41.994	-3.02%	-1.33%
			750	0.870	41.400	0.894	41.942	-2.68%	-1.29%
			755	0.871	41.383	0.894	41.916	-2.57%	-1.27%
			770	0.877	41.342	0.895	41.838	-2.01%	-1.19%
			785	0.882	41.298	0.896	41.760	-1.56%	-1.11%
			800	0.888	41.252	0.897	41.682	-1.00%	-1.03%
1/6/2020	835 Head	21.1	820	0.887	42.504	0.899	41.578	-1.33%	2.23%
			835	0.902	42.308	0.900	41.500	0.22%	1.95%
			850	0.917	42.113	0.916	41.500	0.11%	1.48%
1/8/2020	835 Head	20.2	820	0.903	40.374	0.899	41.578	0.44%	-2.90%
			835	0.909	40.306	0.900	41.500	1.00%	-2.88%
			850	0.915	40.249	0.916	41.500	-0.11%	-3.01%
1/4/2020	1750 Head	22.0	1710	1.340	39.385	1.348	40.142	-0.59%	-1.89%
			1720	1.351	39.313	1.354	40.126	-0.22%	-2.03%
			1745	1.379	39.193	1.368	40.087	0.80%	-2.23%
			1750	1.383	39.180	1.371	40.079	0.88%	-2.24%
			1770	1.401	39.088	1.383	40.047	1.30%	-2.39%
			1790	1.420	38.988	1.394	40.016	1.87%	-2.57%
1/6/2020	1900 Head	20.0	1850	1.401	39.963	1.400	40.000	0.07%	-0.09%
			1860	1.407	39.942	1.400	40.000	0.50%	-0.15%
			1880	1.419	39.908	1.400	40.000	1.36%	-0.23%
			1900	1.430	39.892	1.400	40.000	2.14%	-0.27%
			1905	1.433	39.888	1.400	40.000	2.36%	-0.28%
			1910	1.436	39.884	1.400	40.000	2.57%	-0.29%
12/5/2019	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%
			2510	1.901	38.901	1.866	39.123	1.88%	-0.57%
1/8/2020	2450 Head	20.7	2400	1.814	38.303	1.756	39.289	3.30%	-2.51%
			2450	1.855	38.213	1.800	39.200	3.06%	-2.52%
			2500	1.895	38.134	1.855	39.136	2.16%	-2.56%
			2510	1.903	38.107	1.866	39.123	1.98%	-2.60%
			2535	1.924	38.058	1.893	39.092	1.64%	-2.65%
			2550	1.939	38.044	1.909	39.073	1.57%	-2.63%
			2560	1.948	38.036	1.920	39.06	1.46%	-2.62%
			2600	1.981	37.959	1.964	39.009	0.87%	-2.69%
			2650	2.025	37.855	2.018	38.945	0.35%	-2.80%
			2680	2.053	37.822	2.051	38.907	0.10%	-2.79%
1/14/2020	2450 Head	23.0	2400	1.835	37.933	1.756	39.289	4.50%	-3.45%
			2450	1.873	37.846	1.800	39.200	4.06%	-3.45%
			2500	1.908	37.798	1.855	39.136	2.86%	-3.42%
1/16/2020	2450 Head	21.6	2400	1.759	37.754	1.756	39.289	0.15%	-3.91%
			2450	1.792	37.668	1.800	39.200	-0.43%	-3.91%
			2550	1.863	37.526	1.909	39.073	-2.41%	-3.96%
			2560	1.871	37.508	1.920	39.060	-2.55%	-3.97%
			2600	1.903	37.459	1.964	39.009	-3.11%	-3.97%
			2650	1.939	37.389	2.018	38.945	-3.91%	-4.00%
			2680	1.963	37.338	2.051	38.907	-4.29%	-4.03%
			2700	1.978	37.310	2.073	38.882	-4.58%	-4.04%

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (˚C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
12/9/2019	5200-5800 Head	22.0	5250	4.555	34.508	4.706	35.929	-3.21%	-3.96%
			5260	4.567	34.489	4.717	35.917	-3.18%	-3.98%
			5270	4.579	34.473	4.727	35.906	-3.13%	-3.99%
			5280	4.590	34.459	4.737	35.894	-3.10%	-4.00%
			5290	4.601	34.452	4.748	35.883	-3.10%	-3.99%
			5300	4.612	34.443	4.758	35.871	-3.07%	-3.98%
			5310	4.619	34.429	4.768	35.860	-3.13%	-3.99%
			5320	4.625	34.415	4.778	35.849	-3.20%	-4.00%
			5560	4.857	34.086	5.024	35.574	-3.32%	-4.18%
			5580	4.885	34.042	5.045	35.551	-3.17%	-4.24%
			5600	4.913	34.013	5.065	35.529	-3.00%	-4.27%
			5610	4.924	33.995	5.076	35.518	-2.99%	-4.29%
			5620	4.935	33.987	5.086	35.506	-2.97%	-4.28%
			5640	4.955	33.981	5.106	35.483	-2.96%	-4.23%
			5660	4.968	33.956	5.127	35.460	-3.10%	-4.24%
			5670	4.976	33.933	5.137	35.449	-3.13%	-4.28%
			5680	4.987	33.901	5.147	35.437	-3.11%	-4.33%
			5690	4.999	33.872	5.158	35.426	-3.08%	-4.39%
			5700	5.011	33.848	5.168	35.414	-3.04%	-4.42%
			5710	5.024	33.839	5.178	35.403	-2.97%	-4.42%
			5720	5.039	33.839	5.188	35.391	-2.87%	-4.39%
			5745	5.069	33.833	5.214	35.363	-2.78%	-4.33%
			5750	5.075	33.826	5.219	35.357	-2.76%	-4.33%
			5755	5.077	33.822	5.224	35.351	-2.81%	-4.33%
			5765	5.084	33.815	5.234	35.340	-2.87%	-4.32%
			5775	5.092	33.801	5.245	35.329	-2.92%	-4.33%
			5785	5.101	33.776	5.255	35.317	-2.93%	-4.36%
			5795	5.112	33.750	5.265	35.305	-2.91%	-4.40%
			5800	5.116	33.738	5.270	35.300	-2.92%	-4.42%
			5805	5.121	33.728	5.275	35.294	-2.92%	-4.44%
			5825	5.147	33.702	5.296	35.271	-2.81%	-4.45%

Table 10-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
12/28/2019	700 Body	21.5	680	0.949	53.289	0.958	55.804	-0.94%	-4.51%
			695	0.955	53.226	0.959	55.745	-0.42%	-4.52%
			700	0.957	53.206	0.959	55.726	-0.21%	-4.52%
			710	0.961	53.170	0.960	55.687	0.10%	-4.52%
			725	0.966	53.136	0.961	55.629	0.52%	-4.48%
			740	0.971	53.120	0.963	55.570	0.83%	-4.41%
			750	0.974	53.108	0.964	55.531	1.04%	-4.36%
			755	0.976	53.102	0.964	55.512	1.24%	-4.34%
			770	0.981	53.066	0.965	55.453	1.66%	-4.30%
			785	0.987	53.010	0.966	55.395	2.17%	-4.31%
			800	0.993	52.950	0.967	55.336	2.69%	-4.31%
12/18/2019	835 Body	19.9	820	0.958	53.916	0.969	55.258	-1.14%	-2.43%
			835	0.966	53.962	0.970	55.200	-0.41%	-2.24%
			850	0.973	53.996	0.988	55.154	-1.52%	-2.10%
12/30/2019	1750 Body	20.7	1710	1.474	52.831	1.463	53.537	0.75%	-1.32%
			1720	1.487	52.790	1.469	53.511	1.23%	-1.35%
			1745	1.516	52.684	1.485	53.445	2.09%	-1.42%
			1750	1.521	52.663	1.488	53.432	2.22%	-1.44%
			1770	1.543	52.586	1.501	53.379	2.80%	-1.49%
			1790	1.565	52.512	1.514	53.326	3.37%	-1.53%
1/9/2019	1750 Body	21.1	1710	1.464	53.246	1.463	53.537	0.07%	-0.54%
			1720	1.476	53.201	1.469	53.511	0.48%	-0.58%
			1745	1.505	53.091	1.485	53.445	1.35%	-0.66%
			1750	1.510	53.069	1.488	53.432	1.48%	-0.68%
			1770	1.530	52.978	1.501	53.379	1.93%	-0.75%
			1790	1.550	52.894	1.514	53.326	2.38%	-0.81%
1/10/2019	1750 Body	22.1	1710	1.485	51.796	1.463	53.537	1.50%	-3.25%
			1720	1.496	51.759	1.469	53.511	1.84%	-3.27%
			1745	1.524	51.660	1.485	53.445	2.63%	-3.34%
			1750	1.529	51.640	1.488	53.432	2.76%	-3.35%
			1770	1.551	51.559	1.501	53.379	3.33%	-3.41%
			1790	1.573	51.481	1.514	53.326	3.90%	-3.46%
1/11/2019	1750 Body	20.6	1710	1.476	53.044	1.463	53.537	0.89%	-0.92%
			1720	1.488	52.997	1.469	53.511	1.29%	-0.96%
			1745	1.516	52.891	1.485	53.445	2.09%	-1.04%
			1750	1.522	52.870	1.488	53.432	2.28%	-1.05%
			1770	1.543	52.788	1.501	53.379	2.80%	-1.11%
			1790	1.564	52.709	1.514	53.326	3.30%	-1.16%
1/5/2020	1900 Body	22.3	1850	1.528	51.840	1.520	53.300	0.53%	-2.74%
			1860	1.538	51.811	1.520	53.300	1.18%	-2.79%
			1880	1.558	51.745	1.520	53.300	2.50%	-2.92%
			1900	1.578	51.678	1.520	53.300	3.82%	-3.04%
			1905	1.583	51.660	1.520	53.300	4.14%	-3.08%
			1910	1.588	51.643	1.520	53.300	4.47%	-3.11%
1/6/2020	1900 Body	22.0	1850	1.514	51.551	1.520	53.300	-0.39%	-3.28%
			1860	1.524	51.492	1.520	53.300	0.26%	-3.39%
			1880	1.550	51.420	1.520	53.300	1.97%	-3.53%
			1900	1.577	51.410	1.520	53.300	3.75%	-3.55%
			1905	1.583	51.409	1.520	53.300	4.14%	-3.55%
			1910	1.589	51.407	1.520	53.300	4.54%	-3.55%
1/8/2020	1900 Body	22.1	1850	1.524	51.108	1.520	53.300	0.26%	-4.11%
			1860	1.535	51.077	1.520	53.300	0.99%	-4.17%
			1880	1.557	51.004	1.520	53.300	2.43%	-4.31%
			1900	1.578	50.931	1.520	53.300	3.82%	-4.44%
			1905	1.583	50.912	1.520	53.300	4.14%	-4.48%
			1910	1.589	50.895	1.520	53.300	4.54%	-4.51%
1/11/2020	1900 Body	21.8	1850	1.523	51.417	1.520	53.300	0.20%	-3.53%
			1860	1.534	51.386	1.520	53.300	0.92%	-3.59%
			1880	1.556	51.313	1.520	53.300	2.37%	-3.73%
			1900	1.579	51.230	1.520	53.300	3.88%	-3.88%
			1905	1.584	51.208	1.520	53.300	4.21%	-3.92%
			1910	1.590	51.187	1.520	53.300	4.61%	-3.96%
1/5/2020	2450 Body	23.2	2400	1.984	51.751	1.902	52.767	4.31%	-1.93%
			2450	2.041	51.608	1.950	52.700	4.67%	-2.07%
			2500	2.099	51.452	2.021	52.636	3.86%	-2.25%
			2510	2.112	51.433	2.035	52.623	3.78%	-2.26%
1/6/2020	2450 Body	20.6	2400	1.976	52.409	1.902	52.767	3.89%	-0.68%
			2450	2.013	52.372	1.950	52.700	3.23%	-0.62%
			2500	2.068	52.254	2.021	52.636	2.33%	-0.73%
			2510	2.082	52.273	2.035	52.623	2.31%	-0.67%
			2535	2.101	52.280	2.071	52.592	1.45%	-0.59%
			2550	2.105	52.224	2.092	52.573	0.62%	-0.66%
1/8/2020	2450 Body	24.2	2400	1.976	51.783	1.902	52.767	3.89%	-1.86%
			2450	2.036	51.644	1.950	52.700	4.41%	-2.00%
			2500	2.097	51.492	2.021	52.636	3.76%	-2.17%
			2510	2.109	51.466	2.035	52.623	3.64%	-2.20%
			2535	2.140	51.390	2.071	52.592	3.33%	-2.29%
			2550	2.158	51.344	2.092	52.573	3.15%	-2.34%
			2560	2.170	51.315	2.106	52.560	3.04%	-2.37%
			2600	2.217	51.187	2.163	52.509	2.50%	-2.52%
			2650	2.280	51.032	2.234	52.445	2.06%	-2.69%
			2680	2.316	50.940	2.277	52.407	1.71%	-2.80%
			2700	2.339	50.876	2.305	52.382	1.48%	-2.88%
1/13/2020	2450 Body	21.9	2400	1.949	50.711	1.902	52.767	2.47%	-3.90%
			2450	2.007	50.570	1.950	52.700	2.92%	-4.04%
			2500	2.063	50.428	2.021	52.636	2.08%	-4.19%
			2510	2.075	50.398	2.035	52.623	1.97%	-4.23%
			2535	2.105	50.325	2.071	52.592	1.64%	-4.31%
			2550	2.124	50.288	2.092	52.573	1.53%	-4.35%
			2560	2.136	50.263	2.106	52.560	1.42%	-4.37%
			2600	2.182	50.146	2.163	52.509	0.88%	-4.50%
			2650	2.244	49.982	2.234	52.445	0.45%	-4.70%
			2680	2.280	49.890	2.277	52.407	0.13%	-4.80%
			2700	2.302	49.823	2.305	52.382	-0.13%	-4.89%

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
12/23/2019	5200-5800 Body	23.2	5180	5.455	47.102	5.276	49.041	3.39%	-3.95%
			5190	5.466	47.095	5.288	49.028	3.37%	-3.94%
			5200	5.477	47.072	5.299	49.014	3.36%	-3.96%
			5210	5.489	47.054	5.311	49.001	3.35%	-3.97%
			5220	5.502	47.032	5.323	48.987	3.36%	-3.99%
			5240	5.532	46.982	5.346	48.960	3.48%	-4.04%
			5250	5.545	46.967	5.358	48.947	3.49%	-4.05%
			5260	5.556	46.957	5.369	48.933	3.48%	-4.04%
			5270	5.570	46.937	5.381	48.919	3.51%	-4.05%
			5280	5.585	46.908	5.393	48.906	3.56%	-4.09%
			5290	5.600	46.886	5.404	48.892	3.63%	-4.10%
			5300	5.612	46.888	5.416	48.879	3.62%	-4.07%
			5310	5.621	46.875	5.428	48.865	3.56%	-4.07%
			5320	5.631	46.853	5.439	48.851	3.53%	-4.09%
			5500	5.873	46.530	5.650	48.607	3.95%	-4.27%
			5510	5.888	46.517	5.661	48.594	4.01%	-4.27%
			5520	5.902	46.495	5.673	48.580	4.04%	-4.29%
			5530	5.915	46.486	5.685	48.566	4.05%	-4.28%
			5540	5.926	46.478	5.696	48.553	4.04%	-4.27%
			5550	5.936	46.461	5.708	48.539	3.99%	-4.28%
			5560	5.947	46.438	5.720	48.526	3.97%	-4.30%
			5580	5.979	46.386	5.743	48.499	4.11%	-4.36%
			5600	6.015	46.347	5.766	48.471	4.32%	-4.38%
			5610	6.031	46.331	5.778	48.458	4.38%	-4.39%
			5620	6.046	46.322	5.790	48.444	4.42%	-4.38%
			5640	6.071	46.303	5.813	48.417	4.44%	-4.37%
			5660	6.092	46.273	5.837	48.390	4.37%	-4.37%
			5670	6.104	46.253	5.848	48.376	4.38%	-4.39%
			5680	6.117	46.227	5.860	48.363	4.39%	-4.42%
			5690	6.131	46.199	5.872	48.349	4.41%	-4.45%
			5700	6.146	46.171	5.883	48.336	4.47%	-4.48%
			5710	6.163	46.166	5.895	48.322	4.55%	-4.46%
			5720	6.180	46.160	5.907	48.309	4.62%	-4.45%
			5745	6.216	46.128	5.936	48.275	4.72%	-4.45%
			5750	6.221	46.117	5.942	48.268	4.70%	-4.46%
			5755	6.225	46.111	5.947	48.261	4.67%	-4.45%
			5765	6.236	46.103	5.959	48.248	4.65%	-4.45%
			5775	6.249	46.083	5.971	48.234	4.66%	-4.46%
			5785	6.262	46.062	5.982	48.220	4.68%	-4.48%
			5795	6.277	46.037	5.994	48.207	4.72%	-4.50%
			5800	6.284	46.023	6.000	48.200	4.73%	-4.52%
			5805	6.293	46.013	6.006	48.193	4.78%	-4.52%
			5825	6.324	45.988	6.029	48.166	4.89%	-4.52%
12/29/2019	5200-5800 Body	22.9	5240	5.463	46.953	5.346	48.960	2.19%	-4.10%
			5250	5.478	46.920	5.358	48.947	2.24%	-4.14%
			5260	5.490	46.897	5.369	48.933	2.25%	-4.16%
			5270	5.502	46.889	5.381	48.919	2.25%	-4.15%
			5280	5.524	46.878	5.393	48.906	2.43%	-4.15%
			5290	5.545	46.848	5.404	48.892	2.61%	-4.18%
			5300	5.557	46.819	5.416	48.879	2.60%	-4.21%
			5310	5.565	46.803	5.428	48.865	2.52%	-4.22%
			5320	5.571	46.794	5.439	48.851	2.43%	-4.21%
			5500	5.816	46.501	5.650	48.607	2.94%	-4.33%
			5510	5.829	46.481	5.661	48.594	2.97%	-4.35%
			5520	5.840	46.480	5.673	48.580	2.94%	-4.32%
			5530	5.855	46.474	5.685	48.566	2.99%	-4.31%
			5540	5.865	46.458	5.696	48.553	2.97%	-4.31%
			5550	5.871	46.433	5.708	48.539	2.86%	-4.34%
			5560	5.881	46.423	5.720	48.526	2.81%	-4.33%
			5580	5.918	46.395	5.743	48.499	3.05%	-4.34%
			5600	5.948	46.339	5.766	48.471	3.16%	-4.40%
			5610	5.961	46.322	5.778	48.458	3.17%	-4.41%
1/5/2020	5200-5800 Body	22.6	5220	5.447	48.005	5.323	48.987	2.33%	-2.00%
			5240	5.475	47.969	5.346	48.960	2.41%	-2.02%
			5250	5.495	47.949	5.358	48.947	2.56%	-2.04%
			5260	5.513	47.923	5.369	48.933	2.68%	-2.06%
			5270	5.525	47.895	5.381	48.919	2.68%	-2.09%
			5280	5.536	47.887	5.393	48.906	2.65%	-2.08%

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)	$Deviation_{1g}$ (%)
M	750	HEAD	01/05/2020	21.9	20.4	0.200	1003	7308	1.740	8.280	8.700	5.07%
D	835	HEAD	01/06/2020	22.1	21.1	0.200	4d133	3914	1.980	9.430	9.900	4.98%
M	835	HEAD	01/08/2020	20.9	20.2	0.200	4d047	7308	1.990	9.420	9.950	5.63%
H	1750	HEAD	01/04/2020	22.9	22.0	0.100	1148	7406	3.490	37.000	34.900	-5.68%
L	1900	HEAD	01/06/2020	21.9	20.0	0.100	5d148	7410	4.210	39.100	42.100	7.67%
E	2450	HEAD	12/05/2019	22.7	20.8	0.100	981	7417	5.290	52.300	52.900	1.15%
E	2450	HEAD	01/08/2020	22.9	20.7	0.100	719	7417	5.550	53.100	55.500	4.52%
E	2450	HEAD	01/14/2020	22.7	23.0	0.100	981	7417	5.560	52.300	55.600	6.31%
E	2600	HEAD	01/08/2020	22.9	20.7	0.100	1004	7417	6.030	55.900	60.300	7.87%
E	2600	HEAD	01/16/2020	22.3	21.1	0.100	1064	7417	5.730	58.100	57.300	-1.38%
H	5250	HEAD	12/09/2019	22.0	23.0	0.050	1191	7406	3.780	80.800	75.600	-6.44%
H	5600	HEAD	12/09/2019	22.0	23.0	0.050	1191	7406	3.910	82.700	78.200	-5.44%
H	5750	HEAD	12/09/2019	22.0	23.0	0.050	1191	7406	3.610	80.200	72.200	-9.98%
L	750	BODY	12/28/2019	22.2	21.5	0.200	1161	7410	1.810	8.430	9.050	7.35%
L	835	BODY	12/18/2019	21.1	19.9	0.200	4d047	7410	2.040	9.470	10.200	7.71%
I	1750	BODY	12/30/2019	20.4	20.7	0.100	1148	7357	3.480	37.700	34.800	-7.69%
M	1750	BODY	01/10/2020	22.0	22.1	0.100	1148	7308	4.030	37.700	40.300	6.90%
P	1900	BODY	01/05/2020	20.7	21.7	0.100	5d148	7551	4.140	39.100	41.400	5.88%
P	1900	BODY	01/06/2020	21.9	22.0	0.100	5d080	7551	4.060	39.200	40.600	3.57%
P	1900	BODY	01/08/2020	21.9	22.1	0.100	5d149	7551	4.130	39.400	41.300	4.82%
K	2450	BODY	01/05/2020	23.4	22.2	0.100	719	7547	5.300	50.800	53.000	4.33%
L	2450	BODY	01/06/2020	20.6	21.9	0.100	981	7410	4.950	50.900	49.500	-2.75%
K	2450	BODY	01/08/2020	24.2	22.8	0.100	981	7547	5.200	50.900	52.000	2.16%
K	2450	BODY	01/13/2020	22.9	21.9	0.100	981	7547	5.040	50.900	50.400	-0.98%
K	2600	BODY	01/08/2020	24.2	22.8	0.100	1064	7547	5.590	55.600	55.900	0.54%
K	2600	BODY	01/13/2020	22.9	21.9	0.100	1064	7547	5.350	55.600	53.500	-3.78%
G	5250	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	3.800	77.000	76.000	-1.30%
G	5600	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	4.080	78.600	81.600	3.82%
G	5750	BODY	12/23/2019	23.0	22.0	0.050	1191	7409	3.880	76.900	77.600	0.91%
G	5250	BODY	01/05/2020	23.5	22.0	0.050	1191	7409	3.890	77.000	77.800	1.04%

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)	$Deviation_{10g}$ (%)
I	1750	BODY	01/09/2020	21.5	21.1	0.100	1148	7357	2.070	19.800	20.700	4.55%
M	1750	BODY	01/11/2020	21.4	20.6	0.100	1148	7308	2.090	19.800	20.900	5.56%
P	1900	BODY	01/06/2020	21.9	22.0	0.100	5d080	7551	2.090	20.600	20.900	1.46%
P	1900	BODY	01/11/2020	21.9	21.8	0.100	5d149	7551	2.140	20.700	21.400	3.38%
K	2450	BODY	01/13/2020	22.9	21.9	0.100	981	7547	2.320	24.200	23.200	-4.13%
K	2600	BODY	01/13/2020	22.9	21.9	0.100	1064	7547	2.370	25.000	23.700	-5.20%
G	5250	BODY	12/29/2019	23.9	22.5	0.050	1191	7409	1.080	21.400	21.600	0.93%
G	5600	BODY	12/29/2019	23.9	22.5	0.050	1191	7409	1.170	21.900	23.400	6.85%

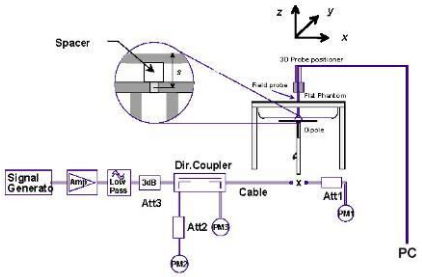


Figure 10-1
System Verification Setup Diagram

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	33.42	0.14	Right	Cheek	05482	1	1:8.3	0.243	1.067	0.259	
836.60	190	GSM 850	GSM	33.7	33.42	0.04	Right	Tilt	05482	1	1:8.3	0.123	1.067	0.131	
836.60	190	GSM 850	GSM	33.7	33.42	-0.04	Left	Cheek	05482	1	1:8.3	0.244	1.067	0.260	
836.60	190	GSM 850	GSM	33.7	33.42	-0.04	Left	Tilt	05482	1	1:8.3	0.138	1.067	0.147	
836.60	190	GSM 850	GPRS	29.7	29.42	0.12	Right	Cheek	05482	4	1:2.076	0.308	1.067	0.329	
836.60	190	GSM 850	GPRS	29.7	29.42	0.12	Right	Tilt	05482	4	1:2.076	0.165	1.067	0.176	
836.60	190	GSM 850	GPRS	29.7	29.42	-0.06	Left	Cheek	05482	4	1:2.076	0.327	1.067	0.349	A1
836.60	190	GSM 850	GPRS	29.7	29.42	-0.04	Left	Tilt	05482	4	1:2.076	0.190	1.067	0.203	
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	30.50	-0.07	Right	Cheek	05490	1	1:8.3	0.110	1.047	0.090	
1880.00	661	GSM 1900	GSM	30.7	30.50	0.03	Right	Tilt	05490	1	1:8.3	0.095	1.047	0.099	
1880.00	661	GSM 1900	GSM	30.7	30.50	0.04	Left	Cheek	05490	1	1:8.3	0.151	1.047	0.158	
1880.00	661	GSM 1900	GSM	30.7	30.50	0.02	Left	Tilt	05490	1	1:8.3	0.086	1.047	0.090	
1880.00	661	GSM 1900	GPRS	25.7	25.48	0.03	Right	Cheek	05490	4	1:2.076	0.131	1.052	0.138	
1880.00	661	GSM 1900	GPRS	25.7	25.48	0.02	Right	Tilt	05490	4	1:2.076	0.111	1.052	0.117	
1880.00	661	GSM 1900	GPRS	25.7	25.48	-0.04	Left	Cheek	05490	4	1:2.076	0.180	1.052	0.189	A2
1880.00	661	GSM 1900	GPRS	25.7	25.48	0.16	Left	Tilt	05490	4	1:2.076	0.107	1.052	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 11-3
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	24.53	0.06	Right	Cheek	05482	1:1	0.288	1.040	0.300	A3
836.60	4183	UMTS 850	RMC	24.7	24.53	0.01	Right	Tilt	05482	1:1	0.178	1.040	0.185	
836.60	4183	UMTS 850	RMC	24.7	24.53	0.01	Left	Cheek	05482	1:1	0.266	1.040	0.277	
836.60	4183	UMTS 850	RMC	24.7	24.53	-0.10	Left	Tilt	05482	1:1	0.162	1.040	0.168	
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	24.59	0.19	Right	Cheek	05482	1:1	0.153	1.026	0.157	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.07	Right	Tilt	05482	1:1	0.121	1.026	0.124	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.01	Left	Cheek	05482	1:1	0.317	1.026	0.325	A4
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.02	Left	Tilt	05482	1:1	0.103	1.026	0.106	
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	24.60	0.04	Right	Cheek	05490	1:1	0.166	1.023	0.170	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.03	Right	Tilt	05490	1:1	0.158	1.023	0.162	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.12	Left	Cheek	05490	1:1	0.302	1.023	0.309	A5
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.05	Left	Tilt	05490	1:1	0.123	1.023	0.126	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
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	24.66	0.10	Right	Cheek	05482	1:1	0.219	1.009	0.221	A6
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.66	0.03	Right	Tilt	05482	1:1	0.124	1.009	0.125	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.66	0.11	Left	Cheek	05482	1:1	0.175	1.009	0.177	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.66	0.01	Left	Tilt	05482	1:1	0.101	1.009	0.102	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.69	0.02	Right	Cheek	05482	1:1	0.197	1.002	0.197	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.69	0.07	Right	Tilt	05482	1:1	0.112	1.002	0.112	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.69	0.02	Left	Cheek	05482	1:1	0.158	1.002	0.158	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.69	0.03	Left	Tilt	05482	1:1	0.090	1.002	0.090	
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	24.67	-0.13	Right	Cheek	05482	1:1	0.283	1.007	0.285	A7
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.67	0.20	Right	Tilt	05482	1:1	0.130	1.007	0.131	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.67	0.03	Left	Cheek	05482	1:1	0.222	1.007	0.224	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.67	0.05	Left	Tilt	05482	1:1	0.117	1.007	0.118	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.70	-0.11	Right	Cheek	05482	1:1	0.237	1.000	0.237	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.70	0.02	Right	Tilt	05482	1:1	0.118	1.000	0.118	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.70	0.01	Left	Cheek	05482	1:1	0.186	1.000	0.186	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.70	0.03	Left	Tilt	05482	1:1	0.106	1.000	0.106	
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	24.35	0.07	Right	Cheek	05490	1:1	0.190	1.084	0.206	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.35	0.09	Right	Tilt	05490	1:1	0.169	1.084	0.183	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.35	0.06	Left	Cheek	05490	1:1	0.339	1.084	**0.367**	A8
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.35	0.07	Left	Tilt	05490	1:1	0.159	1.084	0.172	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.27	0.09	Right	Cheek	05490	1:1	0.160	1.104	0.177	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.27	0.07	Right	Tilt	05490	1:1	0.140	1.104	0.155	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.27	0.13	Left	Cheek	05490	1:1	0.279	1.104	0.308	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.27	0.00	Left	Tilt	05490	1:1	0.123	1.104	0.136	
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	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	24.70	-0.08	0	Right	Cheek	1	50	05516	1:1	0.258	1.000	0.258	A9
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.02	1	Right	Cheek	50	25	05516	1:1	0.203	1.019	0.207	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	0.00	0	Right	Tilt	1	50	05516	1:1	0.150	1.000	0.150	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.03	1	Right	Tilt	50	25	05516	1:1	0.107	1.019	0.109	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	0.07	0	Left	Cheek	1	50	05516	1:1	0.231	1.000	0.231	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.03	1	Left	Cheek	50	25	05516	1:1	0.172	1.019	0.175	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	0.01	0	Left	Tilt	1	50	05516	1:1	0.120	1.000	0.120	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.14	1	Left	Tilt	50	25	05516	1:1	0.090	1.019	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 11-10
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	25.17	0.02	0	Right	Cheek	QPSK	1	25	05516	1:1	0.328	1.007	0.330	A10
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.03	1	Right	Cheek	QPSK	25	0	05516	1:1	0.244	1.012	0.247	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	-0.01	0	Right	Tilt	QPSK	1	25	05516	1:1	0.163	1.007	0.164	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	0.01	1	Right	Tilt	QPSK	25	0	05516	1:1	0.122	1.012	0.123	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.08	0	Left	Cheek	QPSK	1	25	05516	1:1	0.272	1.007	0.274	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.01	1	Left	Cheek	QPSK	25	0	05516	1:1	0.215	1.012	0.218	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.02	0	Left	Tilt	QPSK	1	25	05516	1:1	0.132	1.007	0.133	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.06	1	Left	Tilt	QPSK	25	0	05516	1:1	0.117	1.012	0.118	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-11
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	24.20	0.05	0	Right	Cheek	QPSK	1	25	05516	1:1	0.310	1.000	0.310	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.18	1	Right	Cheek	QPSK	25	25	05516	1:1	0.256	1.000	0.256	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.03	0	Right	Tilt	QPSK	1	25	05516	1:1	0.183	1.000	0.183	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.06	1	Right	Tilt	QPSK	25	25	05516	1:1	0.138	1.000	0.138	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.02	0	Left	Cheek	QPSK	1	25	05516	1:1	0.319	1.000	0.319	A11
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.06	1	Left	Cheek	QPSK	25	25	05516	1:1	0.237	1.000	0.237	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.10	0	Left	Tilt	QPSK	1	25	05516	1:1	0.200	1.000	0.200	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.11	1	Left	Tilt	QPSK	25	25	05516	1:1	0.157	1.000	0.157	
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	25.18	-0.10	0	Right	Cheek	QPSK	1	36	05516	1:1	0.354	1.005	0.356	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.02	1	Right	Cheek	QPSK	36	0	05516	1:1	0.286	1.000	0.286	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	0.02	0	Right	Tilt	QPSK	1	36	05516	1:1	0.211	1.005	0.212	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.02	1	Right	Tilt	QPSK	36	0	05516	1:1	0.151	1.000	0.151	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	-0.03	0	Left	Cheek	QPSK	1	36	05516	1:1	0.288	1.005	0.289	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.00	1	Left	Cheek	QPSK	36	0	05516	1:1	0.236	1.000	0.236	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	0.08	0	Left	Tilt	QPSK	1	36	05516	1:1	0.166	1.005	0.167	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.05	1	Left	Tilt	QPSK	36	0	05516	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 11-13
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)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	0.03	0	Right	Cheek	QPSK	1	50	05516	1:1	0.165	1.047	0.173	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.06	1	Right	Cheek	QPSK	50	25	05516	1:1	0.134	1.047	0.140	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.02	0	Right	Tilt	QPSK	1	50	05516	1:1	0.159	1.047	0.166	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.06	1	Right	Tilt	QPSK	50	25	05516	1:1	0.119	1.047	0.125	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	0.06	0	Left	Cheek	QPSK	1	50	05516	1:1	0.292	1.047	0.306	A13
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.03	1	Left	Cheek	QPSK	50	25	05516	1:1	0.242	1.047	0.253	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	0.12	0	Left	Tilt	QPSK	1	50	05516	1:1	0.117	1.047	0.122	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.10	1	Left	Tilt	QPSK	50	25	05516	1:1	0.092	1.047	0.096	
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)	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.16	0	Right	Cheek	QPSK	1	50	05508	1:1	0.184	1.042	0.192	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.11	1	Right	Cheek	QPSK	50	0	05508	1:1	0.145	1.033	0.150	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.03	0	Right	Tilt	QPSK	1	50	05508	1:1	0.180	1.042	0.188	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.14	1	Right	Tilt	QPSK	50	0	05508	1:1	0.131	1.033	0.135	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.04	0	Left	Cheek	QPSK	1	50	05508	1:1	0.326	1.042	0.340	A14
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.02	1	Left	Cheek	QPSK	50	0	05508	1:1	0.239	1.033	0.247	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.05	0	Left	Tilt	QPSK	1	50	05508	1:1	0.145	1.042	0.151	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.16	1	Left	Tilt	QPSK	50	0	05508	1:1	0.107	1.033	0.111	
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	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.14	0	Right	Cheek	QPSK	1	99	05508	1:1.58	0.102	1.023	0.104	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.12	1	Right	Cheek	QPSK	50	0	05508	1:1.58	0.074	1.000	0.074	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.17	0	Right	Tilt	QPSK	1	99	05508	1:1.58	0.152	1.023	0.155	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.09	1	Right	Tilt	QPSK	50	0	05508	1:1.58	0.114	1.000	0.114	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.80	-0.03	0	Right	Tilt	QPSK	1	99	05508	1:2.31	0.185	1.096	0.203	A15
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.52	0.16	0	Right	Tilt	QPSK	1	99	05508	1:1.58	0.143	1.042	0.149	
	SCC	2656.30	41253												0						
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.67	-0.02	0	Right	Tilt	QPSK	1	99	05508	1:2.31	0.170	1.130	0.192	
	SCC	2656.30	41253												0						
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.12	0	Left	Cheek	QPSK	1	99	05508	1:1.58	0.116	1.023	0.119	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.04	1	Left	Cheek	QPSK	50	0	05508	1:1.58	0.084	1.000	0.084	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.10	0	Left	Tilt	QPSK	1	99	05508	1:1.58	0.123	1.023	0.126	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.11	1	Left	Tilt	QPSK	50	0	05508	1:1.58	0.092	1.000	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 11-16
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	0.07	Right	Cheek	05524	1	99.1	1.091	0.727	1.194	1.009	0.876	
2437	6	802.11b	DSSS	22	17.0	16.07	0.05	Right	Cheek	05524	1	99.1	1.208	0.844	1.239	1.009	**1.055**	A16
2462	11	802.11b	DSSS	22	17.0	16.03	0.03	Right	Cheek	05524	1	99.1	1.121	0.801	1.250	1.009	1.010	
2412	1	802.11b	DSSS	22	17.0	16.23	-0.04	Right	Tilt	05524	1	99.1	0.680	0.521	1.194	1.009	0.628	
2412	1	802.11b	DSSS	22	17.0	16.23	-0.07	Left	Cheek	05524	1	99.1	0.327	-	1.194	1.009	-	
2412	1	802.11b	DSSS	22	17.0	16.23	0.09	Left	Tilt	05524	1	99.1	0.345	-	1.194	1.009	-	
2437	6	802.11b	DSSS	22	17.0	16.07	0.13	Right	Cheek	05524	1	99.1	1.321	0.825	1.239	1.009	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								

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	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	0.04	Right	Cheek	05524	6	97.0	1.043	0.465	1.002	1.031	**0.480**	A17
5300	60	802.11a	OFDM	20	14.0	13.99	0.02	Right	Tilt	05524	6	97.0	0.958	0.424	1.002	1.031	0.438	
5300	60	802.11a	OFDM	20	14.0	13.99	0.15	Left	Cheek	05524	6	97.0	0.573	-	1.002	1.031	-	
5300	60	802.11a	OFDM	20	14.0	13.99	0.03	Left	Tilt	05524	6	97.0	0.590	-	1.002	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	0.06	Right	Cheek	05524	6	97.0	0.802	0.343	1.143	1.031	0.404	
5600	120	802.11a	OFDM	20	14.0	13.42	0.03	Right	Tilt	05524	6	97.0	0.798	0.407	1.143	1.031	**0.480**	
5600	120	802.11a	OFDM	20	14.0	13.42	0.02	Left	Cheek	05524	6	97.0	0.718	-	1.143	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	0.16	Left	Tilt	05524	6	97.0	0.678	-	1.143	1.031	-	
5825	165	802.11a	OFDM	20	13.0	12.59	-0.01	Right	Cheek	05524	6	97.0	0.720	-	1.099	1.031	-	
5825	165	802.11a	OFDM	20	13.0	12.59	0.02	Right	Tilt	05524	6	97.0	0.752	0.319	1.099	1.031	0.361	
5825	165	802.11a	OFDM	20	13.0	12.59	0.03	Left	Cheek	05524	6	97.0	0.393	-	1.099	1.031	-	
5825	165	802.11a	OFDM	20	13.0	12.59	0.04	Left	Tilt	05524	6	97.0	0.546	-	1.099	1.031	-	

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

Table 11-18
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	0.05	Right	Cheek	05524	1	76.8	0.196	1.112	1.302	**0.284**	A18
2480.00	78	Bluetooth	FHSS	9.0	8.54	-0.03	Right	Tilt	05524	1	76.8	0.159	1.112	1.302	0.230	
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.03	Left	Cheek	05524	1	76.8	0.055	1.112	1.302	0.080	
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.11	Left	Tilt	05524	1	76.8	0.056	1.112	1.302	0.081	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Head
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	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	33.42	-0.03	10 mm	05490	1	1:8.3	back	0.437	1.067	0.466	
824.20	128	GSM 850	GPRS	29.7	29.45	-0.09	10 mm	05490	4	1:2.076	back	0.568	1.059	0.602	
836.60	190	GSM 850	GPRS	29.7	29.42	0.00	10 mm	05490	4	1:2.076	back	0.592	1.067	0.632	A19
848.80	251	GSM 850	GPRS	29.7	29.37	-0.04	10 mm	05490	4	1:2.076	back	0.577	1.079	0.623	
1880.00	661	GSM 1900	GSM	30.7	30.50	-0.01	10 mm	05490	1	1:8.3	back	0.362	1.047	0.379	
1880.00	661	GSM 1900	GPRS	25.7	25.48	-0.01	10 mm	05490	4	1:2.076	back	0.436	1.052	0.459	A20
836.60	4183	UMTS 850	RMC	24.7	24.53	-0.02	10 mm	05490	N/A	1:1	back	0.501	1.040	0.521	A21
1712.40	1312	UMTS 1750	RMC	24.7	24.57	-0.14	10 mm	05482	N/A	1:1	back	0.789	1.030	0.813	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	-0.13	10 mm	05482	N/A	1:1	back	0.819	1.026	0.840	A22
1752.60	1513	UMTS 1750	RMC	24.7	24.56	-0.04	10 mm	05482	N/A	1:1	back	0.784	1.033	0.810	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.04	10 mm	05482	N/A	1:1	back	0.793	1.026	0.814	
1852.40	9262	UMTS 1900	RMC	24.7	24.63	0.00	10 mm	05482	N/A	1:1	back	0.563	1.016	0.572	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.12	10 mm	05482	N/A	1:1	back	0.720	1.023	0.737	A23
1907.60	9538	UMTS 1900	RMC	24.7	24.64	-0.19	10 mm	05482	N/A	1:1	back	0.656	1.014	0.665	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	24.7	24.70	0.00	10 mm	05490	N/A	1:1	back	0.359	1.000	0.359	A24
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	24.7	24.66	-0.20	10 mm	05490	N/A	1:1	back	0.432	1.009	0.436	A26
1851.25	25	PCS CDMA	TDSO / SO32	24.7	24.31	0.04	10 mm	05490	N/A	1:1	back	0.699	1.094	0.765	
1880.00	600	PCS CDMA	TDSO / SO32	24.7	24.29	-0.03	10 mm	05490	N/A	1:1	back	0.800	1.099	0.879	
1908.75	1175	PCS CDMA	TDSO / SO32	24.7	24.49	0.03	10 mm	05490	N/A	1:1	back	0.888	1.050	**0.932**	A28
1908.75	1175	PCS CDMA	TDSO / SO32	24.7	24.49	-0.05	10 mm	05490	N/A	1:1	back	0.873	1.050	0.917	
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 entries represent variability measurements.

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	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	24.70	0.07	0	05516	QPSK	1	50	10 mm	back	1:1	0.462	1.000	0.462	A30
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.03	1	05516	QPSK	50	25	10 mm	back	1:1	0.325	1.019	0.331	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.02	0	05516	QPSK	1	25	10 mm	back	1:1	0.555	1.007	0.559	A31
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.06	1	05516	QPSK	25	0	10 mm	back	1:1	0.433	1.012	0.438	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.01	0	05516	QPSK	1	25	10 mm	back	1:1	0.597	1.000	0.597	A33
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	-0.01	1	05516	QPSK	25	25	10 mm	back	1:1	0.464	1.000	0.464	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	-0.02	0	05516	QPSK	1	36	10 mm	back	1:1	0.513	1.005	0.516	A34
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.00	1	05516	QPSK	36	0	10 mm	back	1:1	0.410	1.000	0.410	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.37	-0.04	0	05516	QPSK	1	50	10 mm	back	1:1	0.714	1.079	0.770	A35
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.08	0	05516	QPSK	1	50	10 mm	back	1:1	0.669	1.047	0.700	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.44	0.00	0	05516	QPSK	1	50	10 mm	back	1:1	0.676	1.062	0.718	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	-0.05	1	05516	QPSK	50	25	10 mm	back	1:1	0.630	1.047	0.660	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.26	0.03	0	05508	QPSK	1	50	10 mm	back	1:1	0.708	1.107	0.784	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.51	-0.02	0	05508	QPSK	1	50	10 mm	back	1:1	0.768	1.045	0.803	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.04	0	05508	QPSK	1	50	10 mm	back	1:1	0.826	1.042	0.861	A36
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.33	-0.02	1	05508	QPSK	50	25	10 mm	back	1:1	0.555	1.089	0.604	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.44	-0.03	1	05508	QPSK	50	25	10 mm	back	1:1	0.587	1.062	0.623	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	-0.02	1	05508	QPSK	50	0	10 mm	back	1:1	0.649	1.033	0.670	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.52	-0.04	1	05508	QPSK	100	0	10 mm	back	1:1	0.633	1.042	0.660	
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 11-21
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	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.09	0	05516	QPSK	1	99	10 mm	back	1:1.58	0.439	1.023	0.449	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.04	1	05516	QPSK	50	0	10 mm	back	1:1.58	0.325	1.000	0.325	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.80	0.08	0	05516	QPSK	1	99	10 mm	back	1:2.31	0.534	1.096	0.585	A37
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.52	0.02	0	05516	QPSK	1	99	10 mm	back	1:1.58	0.421	1.042	0.439	
	SCC	2656.30	41253											0							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.67	0.03	0	05516	QPSK	1	99	10 mm	back	1:2.31	0.497	1.130	0.562	
	SCC	2656.30	41253											0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-22
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	-0.15	10 mm	05524	1	back	99.1	0.487	0.358	1.219	1.009	**0.440**	A39
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-23
NII Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	16.0	15.88	0.02	10 mm	05524	6	back	97.0	1.868	0.885	1.028	1.031	0.938	
5280	56	802.11a	OFDM	20	16.0	15.87	-0.04	10 mm	05524	6	back	97.0	2.005	0.900	1.030	1.031	**0.956**	A40
5300	60	802.11a	OFDM	20	14.0	13.99	-0.09	10 mm	05524	6	back	97.0	1.186	0.571	1.002	1.031	0.590	
5320	64	802.11a	OFDM	20	14.0	13.92	-0.08	10 mm	05524	6	back	97.0	1.101	0.550	1.019	1.031	0.578	
5600	120	802.11a	OFDM	20	14.0	13.42	0.00	10 mm	05524	6	back	97.0	0.639	0.307	1.143	1.031	0.362	
5785	157	802.11a	OFDM	20	16.0	15.84	-0.03	10 mm	05524	6	back	97.0	1.228	0.589	1.038	1.031	0.630	
5280	56	802.11a	OFDM	20	16.0	15.87	-0.09	10 mm	05524	6	back	97.0	1.824	0.898	1.030	1.031	0.954	
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 11-24
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	0.11	10 mm	05524	1	back	76.8	0.036	1.112	1.302	**0.052**	A42
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram				

11.3 Standalone Hotspot SAR Data

Table 11-25
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	29.45	-0.09	10 mm	05490	4	1:2.076	back	0.568	1.059	0.602	
836.60	190	GSM 850	GPRS	29.7	29.42	0.00	10 mm	05490	4	1:2.076	back	0.592	1.067	0.632	A19
848.80	251	GSM 850	GPRS	29.7	29.37	-0.04	10 mm	05490	4	1:2.076	back	0.577	1.079	0.623	
836.60	190	GSM 850	GPRS	29.7	29.42	-0.04	10 mm	05490	4	1:2.076	front	0.399	1.067	0.426	
836.60	190	GSM 850	GPRS	29.7	29.42	-0.04	10 mm	05490	4	1:2.076	bottom	0.220	1.067	0.235	
836.60	190	GSM 850	GPRS	29.7	29.42	0.05	10 mm	05490	4	1:2.076	right	0.578	1.067	0.617	
836.60	190	GSM 850	GPRS	29.7	29.42	-0.05	10 mm	05490	4	1:2.076	left	0.355	1.067	0.379	
1880.00	661	GSM 1900	GPRS	25.7	25.48	-0.01	10 mm	05490	4	1:2.076	back	0.436	1.052	0.459	A20
1880.00	661	GSM 1900	GPRS	25.7	25.48	-0.02	10 mm	05490	4	1:2.076	front	0.262	1.052	0.276	
1880.00	661	GSM 1900	GPRS	25.7	25.48	-0.01	10 mm	05490	4	1:2.076	bottom	0.261	1.052	0.275	
1880.00	661	GSM 1900	GPRS	25.7	25.48	0.09	10 mm	05490	4	1:2.076	left	0.357	1.052	0.376	
836.60	4183	UMTS 850	RMC	24.7	24.53	-0.02	10 mm	05490	N/A	1:1	back	0.501	1.040	0.521	A21
836.60	4183	UMTS 850	RMC	24.7	24.53	0.05	10 mm	05490	N/A	1:1	front	0.346	1.040	0.360	
836.60	4183	UMTS 850	RMC	24.7	24.53	-0.03	10 mm	05490	N/A	1:1	bottom	0.188	1.040	0.196	
836.60	4183	UMTS 850	RMC	24.7	24.53	-0.04	10 mm	05490	N/A	1:1	right	0.398	1.040	0.414	
836.60	4183	UMTS 850	RMC	24.7	24.53	0.02	10 mm	05490	N/A	1:1	left	0.295	1.040	0.307	
1712.40	1312	UMTS 1750	RMC	24.7	24.57	-0.14	10 mm	05482	N/A	1:1	back	0.789	1.030	0.813	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	-0.13	10 mm	05482	N/A	1:1	back	0.819	1.026	0.840	A22
1752.60	1513	UMTS 1750	RMC	24.7	24.56	-0.04	10 mm	05482	N/A	1:1	back	0.784	1.033	0.810	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.04	10 mm	05482	N/A	1:1	front	0.485	1.026	0.498	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.17	10 mm	05482	N/A	1:1	bottom	0.393	1.026	0.403	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.02	10 mm	05482	N/A	1:1	left	0.679	1.026	0.697	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.04	10 mm	05482	N/A	1:1	back	0.793	1.026	0.814	
1852.40	9262	UMTS 1900	RMC	24.7	24.63	0.00	10 mm	05482	N/A	1:1	back	0.563	1.016	0.572	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.12	10 mm	05482	N/A	1:1	back	0.720	1.023	0.737	A23
1907.60	9538	UMTS 1900	RMC	24.7	24.64	-0.19	10 mm	05482	N/A	1:1	back	0.656	1.014	0.665	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.06	10 mm	05482	N/A	1:1	front	0.367	1.023	0.375	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.01	10 mm	05482	N/A	1:1	bottom	0.356	1.023	0.364	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.01	10 mm	05482	N/A	1:1	left	0.573	1.023	0.586	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.70	0.01	10 mm	05490	N/A	1:1	back	0.336	1.000	0.336	A25
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.70	0.01	10 mm	05490	N/A	1:1	front	0.236	1.000	0.236	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.70	0.01	10 mm	05490	N/A	1:1	bottom	0.097	1.000	0.097	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.70	0.01	10 mm	05490	N/A	1:1	right	0.260	1.000	0.260	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.70	-0.08	10 mm	05490	N/A	1:1	left	0.181	1.000	0.181	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.69	-0.04	10 mm	05490	N/A	1:1	back	0.371	1.002	0.372	A27
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.69	0.03	10 mm	05490	N/A	1:1	front	0.265	1.002	0.266	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.69	0.10	10 mm	05490	N/A	1:1	bottom	0.146	1.002	0.146	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.69	-0.07	10 mm	05490	N/A	1:1	right	0.280	1.002	0.281	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.69	0.04	10 mm	05490	N/A	1:1	left	0.197	1.002	0.197	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.30	0.00	10 mm	05490	N/A	1:1	back	0.558	1.096	0.612	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.03	10 mm	05490	N/A	1:1	back	0.606	1.107	0.671	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.55	0.01	10 mm	05490	N/A	1:1	back	0.678	1.035	0.702	A29
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	0.03	10 mm	05490	N/A	1:1	front	0.364	1.107	0.403	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.09	10 mm	05490	N/A	1:1	bottom	0.339	1.107	0.375	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.03	10 mm	05490	N/A	1:1	left	0.483	1.107	0.535	
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	24.70	0.07	0	05516	QPSK	1	50	10 mm	back	1:1	0.462	1.000	0.462	A30
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.03	1	05516	QPSK	50	25	10 mm	back	1:1	0.325	1.019	0.331	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	-0.08	0	05516	QPSK	1	50	10 mm	front	1:1	0.282	1.000	0.282	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.01	1	05516	QPSK	50	25	10 mm	front	1:1	0.222	1.019	0.226	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	0.02	0	05516	QPSK	1	50	10 mm	bottom	1:1	0.119	1.000	0.119	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.02	1	05516	QPSK	50	25	10 mm	bottom	1:1	0.086	1.019	0.088	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	-0.06	0	05516	QPSK	1	50	10 mm	right	1:1	0.409	1.000	0.409	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.03	1	05516	QPSK	50	25	10 mm	right	1:1	0.302	1.019	0.308	
680.50	133297	Mid	LTE Band 71	20	24.7	24.70	-0.15	0	05516	QPSK	1	50	10 mm	left	1:1	0.244	1.000	0.244	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.17	1	05516	QPSK	50	25	10 mm	left	1:1	0.205	1.019	0.209	
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	25.17	0.02	0	05516	QPSK	1	25	10 mm	back	1:1	0.555	1.007	0.559	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.06	1	05516	QPSK	25	0	10 mm	back	1:1	0.433	1.012	0.438	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.02	0	05516	QPSK	1	25	10 mm	front	1:1	0.365	1.007	0.368	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.01	1	05516	QPSK	25	0	10 mm	front	1:1	0.281	1.012	0.284	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.06	0	05516	QPSK	1	25	10 mm	bottom	1:1	0.154	1.007	0.155	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	0.02	1	05516	QPSK	25	0	10 mm	bottom	1:1	0.118	1.012	0.119	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.07	0	05516	QPSK	1	25	10 mm	right	1:1	0.625	1.007	0.629	A32
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	0.10	1	05516	QPSK	25	0	10 mm	right	1:1	0.481	1.012	0.487	
707.50	23095	Mid	LTE Band 12	10	25.2	25.17	0.07	0	05516	QPSK	1	25	10 mm	left	1:1	0.394	1.007	0.397	
707.50	23095	Mid	LTE Band 12	10	24.2	24.15	-0.06	1	05516	QPSK	25	0	10 mm	left	1:1	0.296	1.012	0.300	
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	24.20	-0.01	0	05516	QPSK	1	25	10 mm	back	1:1	0.597	1.000	0.597	A33
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	-0.01	1	05516	QPSK	25	25	10 mm	back	1:1	0.464	1.000	0.464	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.03	0	05516	QPSK	1	25	10 mm	front	1:1	0.409	1.000	0.409	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	-0.02	1	05516	QPSK	25	25	10 mm	front	1:1	0.316	1.000	0.316	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.01	0	05516	QPSK	1	25	10 mm	bottom	1:1	0.180	1.000	0.180	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.03	1	05516	QPSK	25	25	10 mm	bottom	1:1	0.143	1.000	0.143	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.01	0	05516	QPSK	1	25	10 mm	right	1:1	0.513	1.000	0.513	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.03	1	05516	QPSK	25	25	10 mm	right	1:1	0.408	1.000	0.408	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.01	0	05516	QPSK	1	25	10 mm	left	1:1	0.337	1.000	0.337	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.04	1	05516	QPSK	25	25	10 mm	left	1:1	0.262	1.000	0.262	
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	25.18	-0.02	0	05516	QPSK	1	36	10 mm	back	1:1	0.513	1.005	0.516	A34
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.00	1	05516	QPSK	36	0	10 mm	back	1:1	0.410	1.000	0.410	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	-0.01	0	05516	QPSK	1	36	10 mm	front	1:1	0.360	1.005	0.362	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.01	1	05516	QPSK	36	0	10 mm	front	1:1	0.287	1.000	0.287	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	-0.03	0	05516	QPSK	1	36	10 mm	bottom	1:1	0.199	1.005	0.200	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.06	1	05516	QPSK	36	0	10 mm	bottom	1:1	0.160	1.000	0.160	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	-0.05	0	05516	QPSK	1	36	10 mm	right	1:1	0.410	1.005	0.412	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.01	1	05516	QPSK	36	0	10 mm	right	1:1	0.337	1.000	0.337	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.18	0.05	0	05516	QPSK	1	36	10 mm	left	1:1	0.289	1.005	0.290	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.03	1	05516	QPSK	36	0	10 mm	left	1:1	0.226	1.000	0.226	
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	24.37	-0.04	0	05516	QPSK	1	50	10 mm	back	1:1	0.714	1.079	0.770	A35
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.08	0	05516	QPSK	1	50	10 mm	back	1:1	0.669	1.047	0.700	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.44	0.00	0	05516	QPSK	1	50	10 mm	back	1:1	0.676	1.062	0.718	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	-0.05	1	05516	QPSK	50	25	10 mm	back	1:1	0.630	1.047	0.660	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.02	0	05516	QPSK	1	50	10 mm	front	1:1	0.365	1.047	0.382	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.03	1	05516	QPSK	50	25	10 mm	front	1:1	0.286	1.047	0.299	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	0.02	0	05516	QPSK	1	50	10 mm	bottom	1:1	0.325	1.047	0.340	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.19	1	05516	QPSK	50	25	10 mm	bottom	1:1	0.264	1.047	0.276	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.01	0	05516	QPSK	1	50	10 mm	left	1:1	0.535	1.047	0.560	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	-0.02	1	05516	QPSK	50	25	10 mm	left	1:1	0.438	1.047	0.459	
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)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.26	0.03	0	05508	QPSK	1	50	10 mm	back	1:1	0.708	1.107	0.784	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.51	-0.02	0	05508	QPSK	1	50	10 mm	back	1:1	0.768	1.045	0.803	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.04	0	05508	QPSK	1	50	10 mm	back	1:1	0.826	1.042	**0.861**	A36
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.33	-0.02	1	05508	QPSK	50	25	10 mm	back	1:1	0.555	1.089	0.604	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.44	-0.03	1	05508	QPSK	50	25	10 mm	back	1:1	0.587	1.062	0.623	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	-0.02	1	05508	QPSK	50	0	10 mm	back	1:1	0.649	1.033	0.670	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.52	-0.04	1	05508	QPSK	100	0	10 mm	back	1:1	0.633	1.042	0.660	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.02	0	05508	QPSK	1	50	10 mm	front	1:1	0.461	1.042	0.480	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.08	1	05508	QPSK	50	0	10 mm	front	1:1	0.342	1.033	0.353	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	-0.05	0	05508	QPSK	1	50	10 mm	bottom	1:1	0.464	1.042	0.483	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.05	1	05508	QPSK	50	0	10 mm	bottom	1:1	0.354	1.033	0.366	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.05	0	05508	QPSK	1	50	10 mm	left	1:1	0.584	1.042	0.609	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.06	1	05508	QPSK	50	0	10 mm	left	1:1	0.474	1.033	0.490	
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 MHz	FREQUENCY Ch.		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.09	0	05516	QPSK	1	99	10 mm	back	1:1.58	0.439	1.023	0.449	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.04	1	05516	QPSK	50	0	10 mm	back	1:1.58	0.325	1.000	0.325	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	-0.21	0	05516	QPSK	1	99	10 mm	front	1:1.58	0.257	1.023	0.263	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.16	1	05516	QPSK	50	0	10 mm	front	1:1.58	0.220	1.000	0.220	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	-0.05	0	05508	QPSK	1	99	10 mm	bottom	1:1.58	0.502	1.023	0.514	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.03	1	05508	QPSK	50	0	10 mm	bottom	1:1.58	0.429	1.000	0.429	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.80	0.03	0	05508	QPSK	1	99	10 mm	bottom	1:2.31	0.621	1.096	0.681	A38
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.52	0.05	0	05508	QPSK	1	99	10 mm	bottom	1:1.58	0.472	1.000	0.492	
	SCC	2656.30	41253											0							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	27.2	26.67	0.10	0	05508	QPSK	1	99	10 mm	bottom	1:2.31	0.572	1.130	0.646	
	SCC	2656.30	41253											0							
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.11	0	05516	QPSK	1	99	10 mm	right	1:1.58	0.132	1.023	0.135	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.03	1	05516	QPSK	50	0	10 mm	right	1:1.58	0.100	1.000	0.100	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	-0.19	0	05516	QPSK	1	99	10 mm	left	1:1.58	0.052	1.023	0.053	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.15	1	05516	QPSK	50	0	10 mm	left	1:1.58	0.045	1.000	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-33
WLAN Hotspot SAR

MEASUREMENT RESULTS																	
FREQUENCY MHz	FREQUENCY Ch.	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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
2412	1	802.11b	DSSS	22	21.0	20.14	-0.15	10 mm	05524	1	back	99.1	0.487	0.358	1.219	1.009	**0.440**	A39
2412	1	802.11b	DSSS	22	21.0	20.14	0.02	10 mm	05524	1	front	99.1	0.412	0.284	1.219	1.009	0.349	
2412	1	802.11b	DSSS	22	21.0	20.14	-0.03	10 mm	05524	1	top	99.1	0.354	-	1.219	1.009	-	
2412	1	802.11b	DSSS	22	21.0	20.14	-0.01	10 mm	05524	1	left	99.1	0.366	-	1.219	1.009	-	
5180	36	802.11a	OFDM	20	16.0	15.98	-0.08	10 mm	05524	6	back	97.0	1.547	0.738	1.005	1.031	0.765	
5200	40	802.11a	OFDM	20	16.0	15.93	-0.15	10 mm	05524	6	back	97.0	1.519	0.757	1.016	1.031	0.793	
5220	44	802.11a	OFDM	20	16.0	15.91	-0.07	10 mm	05524	6	back	97.0	1.533	0.823	1.021	1.031	0.866	A41
5240	48	802.11a	OFDM	20	16.0	15.78	-0.06	10 mm	05524	6	back	97.0	1.610	0.807	1.052	1.031	**0.875**	
5180	36	802.11a	OFDM	20	16.0	15.98	-0.11	10 mm	05524	6	front	97.0	0.241	-	1.005	1.031	-	
5180	36	802.11a	OFDM	20	16.0	15.98	0.13	10 mm	05524	6	top	97.0	0.737	-	1.005	1.031	-	
5180	36	802.11a	OFDM	20	16.0	15.98	-0.14	10 mm	05524	6	left	97.0	0.889	0.389	1.005	1.031	0.403	
5785	157	802.11a	OFDM	20	16.0	15.84	-0.03	10 mm	05524	6	back	97.0	1.228	0.589	1.038	1.031	0.630	
5785	157	802.11a	OFDM	20	16.0	15.84	0.01	10 mm	05524	6	front	97.0	0.362	-	1.038	1.031	-	
5785	157	802.11a	OFDM	20	16.0	15.84	-0.01	10 mm	05524	6	top	97.0	0.798	0.361	1.038	1.031	0.386	
5785	157	802.11a	OFDM	20	16.0	15.84	-0.01	10 mm	05524	6	left	97.0	0.598	-	1.038	1.031	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram				

Table 11-34
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	0.11	10 mm	05524	1	back	76.8	0.036	1.112	1.302	**0.052**	A42
2480	78	Bluetooth	FHSS	9.0	8.54	0.05	10 mm	05524	1	front	76.8	0.020	1.112	1.302	0.029	
2480	78	Bluetooth	FHSS	9.0	8.54	0.11	10 mm	05524	1	top	76.8	0.026	1.112	1.302	0.038	
2480	78	Bluetooth	FHSS	9.0	8.54	-0.04	10 mm	05524	1	left	76.8	0.019	1.112	1.302	0.028	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Body** **1.6 W/kg (mW/g)** averaged over 1 gram									

11.4 Standalone Phablet 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	24.57	-0.03	2 mm	05482	1:1	back	2.030	1.030	2.091	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	-0.04	2 mm	05482	1:1	back	2.030	1.026	2.083	
1752.60	1513	UMTS 1750	RMC	24.7	24.56	-0.05	2 mm	05482	1:1	back	2.110	1.033	2.180	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	-0.04	0 mm	05482	1:1	front	1.790	1.026	1.837	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.03	0 mm	05482	1:1	bottom	1.210	1.026	1.241	
1712.40	1312	UMTS 1750	RMC	24.7	24.57	0.01	0 mm	05482	1:1	left	2.800	1.030	2.884	
1732.40	1412	UMTS 1750	RMC	24.7	24.59	0.09	0 mm	05482	1:1	left	2.800	1.026	2.873	
1752.60	1513	UMTS 1750	RMC	24.7	24.56	-0.08	0 mm	05482	1:1	left	3.060	1.033	3.161	A43
1712.40	1312	UMTS 1750	RMC	22.3	22.01	-0.09	0 mm	05482	1:1	back	2.230	1.069	2.384	
1732.40	1412	UMTS 1750	RMC	22.3	22.03	-0.08	0 mm	05482	1:1	back	2.240	1.064	2.383	
1752.60	1513	UMTS 1750	RMC	22.3	22.00	-0.09	0 mm	05482	1:1	back	2.260	1.072	2.423	
1752.60	1513	UMTS 1750	RMC	24.7	24.56	-0.08	0 mm	05482	1:1	left	3.000	1.033	3.099	
1852.40	9262	UMTS 1900	RMC	24.7	24.63	-0.09	2 mm	05490	1:1	back	2.270	1.016	2.306	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.09	2 mm	05490	1:1	back	2.310	1.023	2.363	
1907.60	9538	UMTS 1900	RMC	24.7	24.64	-0.06	2 mm	05490	1:1	back	2.360	1.014	2.393	
1852.40	9262	UMTS 1900	RMC	24.7	24.63	0.04	0 mm	05490	1:1	front	2.000	1.016	2.032	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	0.06	0 mm	05490	1:1	front	2.070	1.023	2.118	
1907.60	9538	UMTS 1900	RMC	24.7	24.64	0.05	0 mm	05490	1:1	front	2.130	1.014	2.160	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.01	0 mm	05490	1:1	bottom	1.210	1.023	1.238	
1852.40	9262	UMTS 1900	RMC	24.7	24.63	-0.01	0 mm	05490	1:1	left	2.630	1.016	2.672	
1880.00	9400	UMTS 1900	RMC	24.7	24.60	-0.03	0 mm	05490	1:1	left	2.760	1.023	2.823	
1907.60	9538	UMTS 1900	RMC	24.7	24.64	0.01	0 mm	05490	1:1	left	2.810	1.014	2.849	
1852.40	9262	UMTS 1900	RMC	22.7	22.66	-0.07	0 mm	05490	1:1	back	2.620	1.009	2.644	
1880.00	9400	UMTS 1900	RMC	22.7	22.64	-0.08	0 mm	05490	1:1	back	2.720	1.014	2.758	
1907.60	9538	UMTS 1900	RMC	22.7	22.62	-0.06	0 mm	05490	1:1	back	2.850	1.019	2.904	A44
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.05	2 mm	05490	1:1	back	2.140	1.096	2.345	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.05	2 mm	05490	1:1	back	2.150	1.107	2.380	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.55	-0.03	2 mm	05490	1:1	back	2.420	1.035	2.505	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	0.01	0 mm	05490	1:1	front	1.630	1.107	1.804	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.03	0 mm	05490	1:1	bottom	1.050	1.107	1.162	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.30	0.09	0 mm	05490	1:1	left	2.290	1.096	2.510	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.26	0.07	0 mm	05490	1:1	left	2.530	1.107	2.801	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.55	0.03	0 mm	05490	1:1	left	2.520	1.035	2.608	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.0	22.63	-0.06	0 mm	05490	1:1	back	2.550	1.089	2.777	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	22.60	-0.05	0 mm	05490	1:1	back	2.670	1.096	2.926	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.0	22.80	-0.03	0 mm	05490	1:1	back	2.870	1.047	3.005	A45
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	24.37	-0.09	0	05508	QPSK	1	50	2 mm	back	1:1	1.900	1.079	2.050	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.09	0	05508	QPSK	1	50	2 mm	back	1:1	1.980	1.047	2.073	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.44	-0.07	0	05508	QPSK	1	50	2 mm	back	1:1	2.370	1.062	2.517	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	-0.08	1	05508	QPSK	50	25	2 mm	back	1:1	1.630	1.047	1.707	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.47	-0.08	1	05508	QPSK	100	0	2 mm	back	1:1	1.640	1.054	1.729	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.02	0	05508	QPSK	1	50	0 mm	front	1:1	1.520	1.047	1.591	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.03	1	05508	QPSK	50	25	0 mm	front	1:1	1.250	1.047	1.309	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	-0.05	0	05508	QPSK	1	50	0 mm	bottom	1:1	0.908	1.047	0.951	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	-0.03	1	05508	QPSK	50	25	0 mm	bottom	1:1	0.753	1.047	0.788	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.37	0.03	0	05508	QPSK	1	50	0 mm	left	1:1	2.260	1.079	2.439	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.50	0.04	0	05508	QPSK	1	50	0 mm	left	1:1	2.310	1.047	2.419	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.44	0.04	0	05508	QPSK	1	50	0 mm	left	1:1	2.360	1.062	2.506	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.50	0.04	1	05508	QPSK	50	25	0 mm	left	1:1	1.900	1.047	1.989	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.47	0.06	1	05508	QPSK	100	0	0 mm	left	1:1	1.890	1.054	1.992	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.5	22.06	-0.06	0	05508	QPSK	1	50	0 mm	back	1:1	2.380	1.107	2.635	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.5	22.17	-0.12	0	05508	QPSK	1	50	0 mm	back	1:1	2.590	1.079	2.795	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.12	-0.07	0	05508	QPSK	1	50	0 mm	back	1:1	2.540	1.091	2.771	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.5	22.06	-0.05	0	05508	QPSK	50	25	0 mm	back	1:1	2.550	1.107	2.823	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.5	22.07	-0.04	0	05508	QPSK	50	50	0 mm	back	1:1	2.590	1.104	2.859	A46
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.10	-0.09	0	05508	QPSK	50	25	0 mm	back	1:1	2.590	1.096	2.839	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.5	22.05	-0.01	0	05508	QPSK	100	0	0 mm	back	1:1	2.500	1.109	2.773	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.26	-0.07	0	05508	QPSK	1	50	2 mm	back	1:1	2.740	1.107	3.033	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.51	-0.06	0	05508	QPSK	1	50	2 mm	back	1:1	2.810	1.045	2.936	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	-0.06	0	05508	QPSK	1	50	2 mm	back	1:1	2.880	1.042	3.001	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.33	-0.08	1	05508	QPSK	50	25	2 mm	back	1:1	2.150	1.089	2.341	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.44	-0.09	1	05508	QPSK	50	25	2 mm	back	1:1	2.220	1.062	2.358	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	-0.11	1	05508	QPSK	50	0	2 mm	back	1:1	2.310	1.033	2.386	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.52	-0.10	1	05508	QPSK	100	0	2 mm	back	1:1	2.200	1.042	2.292	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.26	0.02	0	05508	QPSK	1	50	0 mm	front	1:1	2.180	1.107	2.413	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.51	0.09	0	05508	QPSK	1	50	0 mm	front	1:1	2.200	1.045	2.299	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	0.05	0	05508	QPSK	1	50	0 mm	front	1:1	2.300	1.042	2.397	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.03	1	05508	QPSK	50	0	0 mm	front	1:1	1.800	1.033	1.859	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.52	0.02	1	05508	QPSK	100	0	0 mm	front	1:1	1.740	1.042	1.813	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	-0.02	0	05508	QPSK	1	50	0 mm	bottom	1:1	1.290	1.042	1.344	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	0.04	1	05508	QPSK	50	0	0 mm	bottom	1:1	1.000	1.033	1.033	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.26	0.01	0	05508	QPSK	1	50	0 mm	left	1:1	2.800	1.107	3.100	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.51	-0.01	0	05508	QPSK	1	50	0 mm	left	1:1	2.990	1.045	3.125	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.52	-0.03	0	05508	QPSK	1	50	0 mm	left	1:1	2.990	1.042	3.116	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.33	-0.08	1	05508	QPSK	50	25	0 mm	left	1:1	2.280	1.089	2.483	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.44	-0.02	1	05508	QPSK	50	25	0 mm	left	1:1	2.350	1.062	2.496	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.56	-0.05	1	05508	QPSK	50	0	0 mm	left	1:1	2.310	1.033	2.386	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.52	-0.02	1	05508	QPSK	100	0	0 mm	left	1:1	2.330	1.042	2.428	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.37	-0.10	0	05508	QPSK	1	50	0 mm	back	1:1	2.840	1.079	3.064	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.56	-0.13	0	05508	QPSK	1	50	0 mm	back	1:1	2.990	1.033	3.089	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.55	-0.11	0	05508	QPSK	1	50	0 mm	back	1:1	3.000	1.035	3.105	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.7	22.39	-0.09	0	05508	QPSK	50	25	0 mm	back	1:1	2.810	1.074	3.018	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.7	22.50	-0.10	0	05508	QPSK	50	25	0 mm	back	1:1	2.910	1.047	3.047	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.58	-0.11	0	05508	QPSK	50	25	0 mm	back	1:1	3.080	1.028	**3.166**	A47
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.53	-0.09	0	05508	QPSK	100	0	0 mm	back	1:1	2.930	1.040	3.047	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.7	22.58	-0.10	0	05508	QPSK	50	25	0 mm	back	1:1	3.040	1.028	3.125	
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	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	2506.00	39750	Low	LTE Band 41	20	24.7	24.45	0.09	0	05508	QPSK	1	99	2 mm	back	1:1.58	1.650	1.059	1.747	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.44	0.08	0	05508	QPSK	1	50	2 mm	back	1:1.58	1.730	1.062	1.837	
1 CC Uplink - Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.44	0.07	0	05508	QPSK	1	0	2 mm	back	1:1.58	1.540	1.062	1.635	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	-0.05	0	05508	QPSK	1	99	2 mm	back	1:1.58	1.480	1.023	1.514	
1 CC Uplink - Power Class 3	2680.00	41490	High	LTE Band 41	20	24.7	24.45	0.04	0	05508	QPSK	1	50	2 mm	back	1:1.58	1.570	1.059	1.663	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.05	1	05508	QPSK	50	0	2 mm	back	1:1.58	1.210	1.000	1.210	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.7	23.50	0.06	1	05508	QPSK	100	0	2 mm	back	1:1.58	1.200	1.047	1.256	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.02	0	05508	QPSK	1	99	0 mm	front	1:1.58	1.230	1.023	1.258	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.03	1	05508	QPSK	50	0	0 mm	front	1:1.58	1.070	1.000	1.070	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.7	24.45	-0.01	0	05508	QPSK	1	99	0 mm	bottom	1:1.58	1.770	1.059	1.874	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.44	-0.09	0	05508	QPSK	1	50	0 mm	bottom	1:1.58	1.740	1.062	1.848	
1 CC Uplink - Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.44	-0.10	0	05508	QPSK	1	0	0 mm	bottom	1:1.58	1.710	1.062	1.816	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	-0.04	0	05508	QPSK	1	99	0 mm	bottom	1:1.58	1.760	1.023	1.800	
1 CC Uplink - Power Class 3	2680.00	41490	High	LTE Band 41	20	24.7	24.45	0.02	0	05508	QPSK	1	50	0 mm	bottom	1:1.58	2.130	1.059	2.256	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.7	23.47	-0.09	1	05508	QPSK	50	25	0 mm	bottom	1:1.58	1.480	1.054	1.560	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.47	-0.11	1	05508	QPSK	50	50	0 mm	bottom	1:1.58	1.330	1.054	1.402	
1 CC Uplink - Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.45	0.14	1	05508	QPSK	50	0	0 mm	bottom	1:1.58	1.390	1.059	1.472	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	-0.08	1	05508	QPSK	50	0	0 mm	bottom	1:1.58	1.500	1.000	1.500	
1 CC Uplink - Power Class 3	2680.00	41490	High	LTE Band 41	20	23.7	23.44	0.10	1	05508	QPSK	50	0	0 mm	bottom	1:1.58	1.610	1.062	1.710	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.7	23.50	0.13	1	05508	QPSK	100	0	0 mm	bottom	1:1.58	1.420	1.047	1.487	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.18	0	05508	QPSK	1	99	0 mm	right	1:1.58	0.083	1.023	0.085	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.03	1	05508	QPSK	50	0	0 mm	right	1:1.58	0.061	1.000	0.061	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.60	0.03	0	05508	QPSK	1	99	0 mm	left	1:1.58	0.507	1.023	0.519	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.70	0.04	1	05508	QPSK	50	0	0 mm	left	1:1.58	0.437	1.000	0.437	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	22.7	22.47	0.12	0	05508	QPSK	1	50	0 mm	back	1:1.58	2.150	1.054	2.266	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	22.7	22.44	0.04	0	05508	QPSK	1	50	0 mm	back	1:1.58	2.160	1.062	2.294	
1 CC Uplink - Power Class 3	2593.00	40620	Mid	LTE Band 41	20	22.7	22.46	0.06	0	05508	QPSK	1	50	0 mm	back	1:1.58	2.230	1.057	2.357	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	22.7	22.60	0.05	0	05508	QPSK	1	50	0 mm	back	1:1.58	2.380	1.023	2.435	
1 CC Uplink - Power Class 3	2680.00	41490	High	LTE Band 41	20	22.7	22.23	-0.02	0	05508	QPSK	1	50	0 mm	back	1:1.58	2.180	1.114	2.429	
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	22.7	22.39	0.09	0	05508	QPSK	50	50	0 mm	back	1:1.58	2.210	1.074	2.374	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	22.7	22.46	0.01	0	05508	QPSK	50	25	0 mm	back	1:1.58	2.150	1.057	2.273	
1 CC Uplink - Power Class 3	2593.00	40620	Mid	LTE Band 41	20	22.7	22.43	0.06	0	05508	QPSK	50	25	0 mm	back	1:1.58	2.230	1.064	2.373	
1 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	22.7	22.53	0.05	0	05508	QPSK	50	0	0 mm	back	1:1.58	2.400	1.040	2.496	
1 CC Uplink - Power Class 3	2680.00	41490	High	LTE Band 41	20	22.7	22.47	-0.02	0	05508	QPSK	50	25	0 mm	back	1:1.58	2.180	1.054	2.298	
1 CC Uplink - Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	22.7	22.43	0.07	0	05508	QPSK	100	0	0 mm	back	1:1.58	2.290	1.064	2.437	
1 CC Uplink - Power Class 2	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.97	0.03	0	05508	QPSK	50	0	0 mm	back	1:2.31	2.920	1.054	3.078	A48
2 CC Uplink - Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	22.7	22.41	-0.01	0	05508	QPSK	50	0	0 mm	back	1:1.58	2.230	1.069	2.384	
	2616.70	40857											50							
2 CC Uplink - Power Class 2	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.68	0.05	0	05508	QPSK	50	0	0 mm	back	1:2.31	2.600	1.127	2.930	
	2616.70	40857											50							
1 CC Uplink - Power Class 3	2506.00	39750	Low	LTE Band 41	20	22.7	22.39	0.03	0	05508	QPSK	50	50	0 mm	back	1:1.58	2.020	1.074	2.169	
1 CC Uplink - Power Class 2	2636.50	41055	Mid-High	LTE Band 41	20	25.2	24.97	0.00	0	05508	QPSK	50	0	0 mm	back	1:2.31	2.910	1.054	3.067	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Phablet
Spatial Peak	4.0 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 10 grams

Note: Blue entries represent variability measurements.

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	-0.08	0 mm	05524	6	back	97.0	13.968	1.490	1.028	1.031	1.579	
5280	56	802.11a	OFDM	20	16.0	15.87	0.03	0 mm	05524	6	back	97.0	9.114	1.740	1.030	1.031	1.848	A49
5320	64	802.11a	OFDM	20	14.0	13.92	-0.17	0 mm	05524	6	back	97.0	7.447	1.100	1.019	1.031	1.156	
5260	52	802.11a	OFDM	20	16.0	15.88	-0.16	0 mm	05524	6	front	97.0	2.992	0.322	1.028	1.031	0.341	
5260	52	802.11a	OFDM	20	16.0	15.88	0.02	0 mm	05524	6	top	97.0	3.178	-	1.028	1.031	-	
5260	52	802.11a	OFDM	20	16.0	15.88	0.01	0 mm	05524	6	left	97.0	7.384	0.939	1.028	1.031	0.995	
5600	120	802.11a	OFDM	20	14.0	13.42	0.04	0 mm	05524	6	back	97.0	5.088	0.734	1.143	1.031	0.865	
5600	120	802.11a	OFDM	20	14.0	13.42	0.08	0 mm	05524	6	front	97.0	1.165	0.129	1.143	1.031	0.152	
5600	120	802.11a	OFDM	20	14.0	13.42	0.02	0 mm	05524	6	top	97.0	1.471	-	1.143	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	0.04	0 mm	05524	6	left	97.0	4.534	0.358	1.143	1.031	0.422	
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 for 1g SAR.
13. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)

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	0.349	1.055	1.404
	GSM/GPRS 1900	0.189	1.055	1.244
	UMTS 850	0.300	1.055	1.355
	UMTS 1750	0.325	1.055	1.380
	UMTS 1900	0.309	1.055	1.364
	CDMA/EVDO BC10 (§90S)	0.221	1.055	1.276
	CDMA/EVDO BC0 (§22H)	0.285	1.055	1.340
	PCS CDMA/EVDO	0.367	1.055	**1.422**
	LTE Band 71	0.258	1.055	1.313
	LTE Band 12	0.330	1.055	1.385
	LTE Band 13	0.319	1.055	1.374
	LTE Band 26 (Cell)	0.356	1.055	1.411
	LTE Band 66 (AWS)	0.306	1.055	1.361
	LTE Band 25 (PCS)	0.340	1.055	1.395
	LTE Band 41	0.203	1.055	1.258

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	0.349	0.480	0.829
	GSM/GPRS 1900	0.189	0.480	0.669
	UMTS 850	0.300	0.480	0.780
	UMTS 1750	0.325	0.480	0.805
	UMTS 1900	0.309	0.480	0.789
	CDMA/EVDO BC10 (§90S)	0.221	0.480	0.701
	CDMA/EVDO BC0 (§22H)	0.285	0.480	0.765
	PCS CDMA/EVDO	0.367	0.480	**0.847**
	LTE Band 71	0.258	0.480	0.738
	LTE Band 12	0.330	0.480	0.810
	LTE Band 13	0.319	0.480	0.799
	LTE Band 26 (Cell)	0.356	0.480	0.836
	LTE Band 66 (AWS)	0.306	0.480	0.786
	LTE Band 25 (PCS)	0.340	0.480	0.820
	LTE Band 41	0.203	0.480	0.683

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	0.349	0.284	0.633
	GSM/GPRS 1900	0.189	0.284	0.473
	UMTS 850	0.300	0.284	0.584
	UMTS 1750	0.325	0.284	0.609
	UMTS 1900	0.309	0.284	0.593
	CDMA/EVDO BC10 (§90S)	0.221	0.284	0.505
	CDMA/EVDO BC0 (§22H)	0.285	0.284	0.569
	PCS CDMA/EVDO	0.367	0.284	**0.651**
	LTE Band 71	0.258	0.284	0.542
	LTE Band 12	0.330	0.284	0.614
	LTE Band 13	0.319	0.284	0.603
	LTE Band 26 (Cell)	0.356	0.284	0.640
	LTE Band 66 (AWS)	0.306	0.284	0.590
	LTE Band 25 (PCS)	0.340	0.284	0.624
	LTE Band 41	0.203	0.284	0.487

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	0.349	0.480	0.284	1.113
	GSM/GPRS 1900	0.189	0.480	0.284	0.953
	UMTS 850	0.300	0.480	0.284	1.064
	UMTS 1750	0.325	0.480	0.284	1.089
	UMTS 1900	0.309	0.480	0.284	1.073
	CDMA/EVDO BC10 (§90S)	0.221	0.480	0.284	0.985
	CDMA/EVDO BC0 (§22H)	0.285	0.480	0.284	1.049
	PCS CDMA/EVDO	0.367	0.480	0.284	**1.131**
	LTE Band 71	0.258	0.480	0.284	1.022
	LTE Band 12	0.330	0.480	0.284	1.094
	LTE Band 13	0.319	0.480	0.284	1.083
	LTE Band 26 (Cell)	0.356	0.480	0.284	1.120
	LTE Band 66 (AWS)	0.306	0.480	0.284	1.070
	LTE Band 25 (PCS)	0.340	0.480	0.284	1.104
	LTE Band 41	0.203	0.480	0.284	0.967

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	0.632	0.440	1.072
	GSM/GPRS 1900	0.459	0.440	0.899
	UMTS 850	0.521	0.440	0.961
	UMTS 1750	0.840	0.440	1.280
	UMTS 1900	0.737	0.440	1.177
	CDMA BC10 (§90S)	0.359	0.440	0.799
	CDMA BC0 (§22H)	0.436	0.440	0.876
	PCS CDMA	0.932	0.440	**1.372**
	LTE Band 71	0.462	0.440	0.902
	LTE Band 12	0.559	0.440	0.999
	LTE Band 13	0.597	0.440	1.037
	LTE Band 26 (Cell)	0.516	0.440	0.956
	LTE Band 66 (AWS)	0.770	0.440	1.210
	LTE Band 25 (PCS)	0.861	0.440	1.301
	LTE Band 41	0.585	0.440	1.025

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	0.632	0.956	1.588	N/A
	GSM/GPRS 1900	0.459	0.956	1.415	N/A
	UMTS 850	0.521	0.956	1.477	N/A
	UMTS 1750	0.840	0.956	See Note 1	0.02
	UMTS 1900	0.737	0.956	See Note 1	0.02
	CDMA BC10 (§90S)	0.359	0.956	1.315	N/A
	CDMA BC0 (§22H)	0.436	0.956	1.392	N/A
	PCS CDMA	0.932	0.956	See Note 1	0.02
	LTE Band 71	0.462	0.956	1.418	N/A
	LTE Band 12	0.559	0.956	1.515	N/A
	LTE Band 13	0.597	0.956	1.553	N/A
	LTE Band 26 (Cell)	0.516	0.956	1.472	N/A
	LTE Band 66 (AWS)	0.770	0.956	See Note 1	0.02
	LTE Band 25 (PCS)	0.861	0.956	See Note 1	0.02
	LTE Band 41	0.585	0.956	1.541	N/A

Note 1: No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 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	0.632	0.052	0.684
	GSM/GPRS 1900	0.459	0.052	0.511
	UMTS 850	0.521	0.052	0.573
	UMTS 1750	0.840	0.052	0.892
	UMTS 1900	0.737	0.052	0.789
	CDMA BC10 (§90S)	0.359	0.052	0.411
	CDMA BC0 (§22H)	0.436	0.052	0.488
	PCS CDMA	0.932	0.052	**0.984**
	LTE Band 71	0.462	0.052	0.514
	LTE Band 12	0.559	0.052	0.611
	LTE Band 13	0.597	0.052	0.649
	LTE Band 26 (Cell)	0.516	0.052	0.568
	LTE Band 66 (AWS)	0.770	0.052	0.822
	LTE Band 25 (PCS)	0.861	0.052	0.913
	LTE Band 41	0.585	0.052	0.637

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	0.632	0.956	0.052	See Note 1
	GSM/GPRS 1900	0.459	0.956	0.052	1.467
	UMTS 850	0.521	0.956	0.052	1.529
	UMTS 1750	0.840	0.956	0.052	See Note 1
	UMTS 1900	0.737	0.956	0.052	See Note 1
	CDMA BC10 (§90S)	0.359	0.956	0.052	1.367
	CDMA BC0 (§22H)	0.436	0.956	0.052	1.444
	PCS CDMA	0.932	0.956	0.052	See Note 1
	LTE Band 71	0.462	0.956	0.052	1.470
	LTE Band 12	0.559	0.956	0.052	1.567
	LTE Band 13	0.597	0.956	0.052	See Note 1
	LTE Band 26 (Cell)	0.516	0.956	0.052	1.524
	LTE Band 66 (AWS)	0.770	0.956	0.052	See Note 1
	LTE Band 25 (PCS)	0.861	0.956	0.052	See Note 1
	LTE Band 41	0.585	0.956	0.052	**1.593**

Note 1: 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)

Exposure Condition	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	0.632	0.440	1.072
	GPRS 1900	0.459	0.440	0.899
	UMTS 850	0.521	0.440	0.961
	UMTS 1750	0.840	0.440	1.280
	UMTS 1900	0.737	0.440	1.177
	EVDO BC10 (§90S)	0.336	0.440	0.776
	EVDO BC0 (§22H)	0.372	0.440	0.812
	PCS EVDO	0.702	0.440	1.142
	LTE Band 71	0.462	0.440	0.902
	LTE Band 12	0.629	0.440	1.069
	LTE Band 13	0.597	0.440	1.037
	LTE Band 26 (Cell)	0.516	0.440	0.956
	LTE Band 66 (AWS)	0.770	0.440	1.210
	LTE Band 25 (PCS)	0.861	0.440	**1.301**
	LTE Band 41	0.681	0.440	1.121

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.632	0.875	1.507
	GPRS 1900	0.459	0.875	1.334
	UMTS 850	0.521	0.875	1.396
	UMTS 1750	0.840	0.875	See Table Below
	UMTS 1900	0.737	0.875	See Table Below
	EVDO BC10 (§90S)	0.336	0.875	1.211
	EVDO BC0 (§22H)	0.372	0.875	1.247
	PCS EVDO	0.702	0.875	**1.577**
	LTE Band 71	0.462	0.875	1.337
	LTE Band 12	0.629	0.875	1.504
	LTE Band 13	0.597	0.875	1.472
	LTE Band 26 (Cell)	0.516	0.875	1.391
	LTE Band 66 (AWS)	0.770	0.875	See Table Below
	LTE Band 25 (PCS)	0.861	0.875	See Table Below
	LTE Band 41	0.681	0.875	1.556

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
Hotspot SAR	Back	0.840	0.875	See Note 1	0.02
	Front	0.498	0.875*	**1.373**	N/A
	Top	-	0.386	0.386	N/A
	Bottom	0.403	-	0.403	N/A
	Right	-	-	0.000	N/A
	Left	0.697	0.403	1.100	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
Hotspot SAR	Back	0.737	0.875	See Note 1	0.02
	Front	0.375	0.875*	**1.250**	N/A
	Top	-	0.386	0.386	N/A
	Bottom	0.364	-	0.364	N/A
	Right	-	-	0.000	N/A
	Left	0.586	0.403	0.989	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	0.770	0.875	See Note 1	0.02
	Front	0.382	0.875*	**1.257**	N/A
	Top	-	0.386	0.386	N/A
	Bottom	0.340	-	0.340	N/A
	Right	-	-	0.000	N/A
	Left	0.560	0.403	0.963	N/A

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
Hotspot SAR	Back	0.861	0.875	See Note 1	0.02
	Front	0.480	0.875*	**1.355**	N/A
	Top	-	0.386	0.386	N/A
	Bottom	0.483	-	0.483	N/A
	Right	-	-	0.000	N/A
	Left	0.609	0.403	1.012	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)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.632	0.052	0.684
	GPRS 1900	0.459	0.052	0.511
	UMTS 850	0.521	0.052	0.573
	UMTS 1750	0.840	0.052	0.892
	UMTS 1900	0.737	0.052	0.789
	EVDO BC10 (§90S)	0.336	0.052	0.388
	EVDO BC0 (§22H)	0.372	0.052	0.424
	PCS EVDO	0.702	0.052	0.754
	LTE Band 71	0.462	0.052	0.514
	LTE Band 12	0.629	0.052	0.681
	LTE Band 13	0.597	0.052	0.649
	LTE Band 26 (Cell)	0.516	0.052	0.568
	LTE Band 66 (AWS)	0.770	0.052	0.822
	LTE Band 25 (PCS)	0.861	0.052	**0.913**
	LTE Band 41	0.681	0.052	0.733

Table 12-12
Simultaneous Transmission Scenario with 5GHz and Bluetooth (Hotspot 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
Hotspot SAR	GPRS 850	0.632	0.875	0.052	**1.559**
	GPRS 1900	0.459	0.875	0.052	1.386
	UMTS 850	0.521	0.875	0.052	1.448
	UMTS 1750	0.840	0.875	0.052	See Table Below
	UMTS 1900	0.737	0.875	0.052	See Table Below
	EVDO BC10 (§90S)	0.336	0.875	0.052	1.263
	EVDO BC0 (§22H)	0.372	0.875	0.052	1.299
	PCS EVDO	0.702	0.875	0.052	See Table Below
	LTE Band 71	0.462	0.875	0.052	1.389
	LTE Band 12	0.629	0.875	0.052	1.556
	LTE Band 13	0.597	0.875	0.052	1.524
	LTE Band 26 (Cell)	0.516	0.875	0.052	1.443
	LTE Band 66 (AWS)	0.770	0.875	0.052	See Table Below
	LTE Band 25 (PCS)	0.861	0.875	0.052	See Table Below
	LTE Band 41	0.681	0.875	0.052	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	0.840	0.875	0.052	See Note 1
	Front	0.498	0.875*	0.029	**1.402**
	Top	-	0.386	0.038	0.424
	Bottom	0.403	-	-	0.403
	Right	-	-	-	0.000
	Left	0.697	0.403	0.028	1.128

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	0.737	0.875	0.052	See Note 1
	Front	0.375	0.875*	0.029	**1.279**
	Top	-	0.386	0.038	0.424
	Bottom	0.364	-	-	0.364
	Right	-	-	-	0.000
	Left	0.586	0.403	0.028	1.017

Simult Tx	Configuration	PCS EVDO 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	0.702	0.875	0.052	See Note 1
	Front	0.403	0.875*	0.029	**1.307**
	Top	-	0.386	0.038	0.424
	Bottom	0.375	-	-	0.375
	Right	-	-	-	0.000
	Left	0.535	0.403	0.028	0.966

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	0.770	0.875	0.052	See Note 1
	Front	0.382	0.875*	0.029	**1.286**
	Top	-	0.386	0.038	0.424
	Bottom	0.340	-	-	0.340
	Right	-	-	-	0.000
	Left	0.560	0.403	0.028	0.991

Simult Tx	Configuration	LTE Band 25 (PCS) 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	0.861	0.875	0.052	See Note 1
	Front	0.480	0.875*	0.029	**1.384**
	Top	-	0.386	0.038	0.424
	Bottom	0.483	-	-	0.483
	Right	-	-	-	0.000
	Left	0.609	0.403	0.028	1.040

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	0.449	0.875	0.052	**1.376**
	Front	0.263	0.875*	0.029	1.167
	Top	-	0.386	0.038	0.424
	Bottom	0.681	-	-	0.681
	Right	0.135	-	-	0.135
	Left	0.053	0.403	0.028	0.484

Note 1: 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	3.161	1.848	See Table Below
	UMTS 1900	2.904	1.848	See Table Below
	PCS EVDO	3.005	1.848	See Table Below
	LTE Band 66 (AWS)	2.859	1.848	See Table Below
	LTE Band 25 (PCS)	3.166	1.848	See Table Below
	LTE Band 41	3.078	1.848	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	2.423	1.848	See Note 1	0.07
	Front	1.837	0.341	**2.178**	N/A
	Top	-	1.848*	1.848	N/A
	Bottom	1.241	-	1.241	N/A
	Right	-	-	0.000	N/A
	Left	3.161	0.995	See Note 1	0.07

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	2.904	1.848	See Note 1	0.08
	Front	2.160	0.341	2.501	N/A
	Top	-	1.848*	1.848	N/A
	Bottom	1.238	-	1.238	N/A
	Right	-	-	-	N/A
	Left	2.849	0.995	**3.844**	N/A

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	3.005	1.848	See Note 1	0.09
	Front	1.804	0.341	2.145	N/A
	Top	-	1.848*	1.848	N/A
	Bottom	1.162	-	1.162	N/A
	Right	-	-	0.000	N/A
	Left	2.801	0.995	**3.796**	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	2.859	1.848	See Note 1	0.08
	Front	1.591	0.341	1.932	N/A
	Top	-	1.848*	1.848	N/A
	Bottom	0.951	-	0.951	N/A
	Right	-	-	0.000	N/A
	Left	2.506	0.995	**3.501**	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	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			1	2	1+2	1+2
Phablet SAR	Back	3.166	1.848	See Note 1	0.09	Phablet SAR	Back	3.078	1.848	See Note 1	0.08
	Front	2.413	0.341	**2.754**	N/A		Front	1.258	0.341	1.599	N/A
	Top	-	1.848*	1.848	N/A		Top	-	1.848*	1.848	N/A
	Bottom	1.344	-	1.344	N/A		Bottom	2.256	-	**2.256**	N/A
	Right	-	-	-	N/A		Right	0.085	-	0.085	N/A
	Left	3.125	0.995	See Note 1	0.06		Left	0.519	0.995	1.514	N/A

Note 1: 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

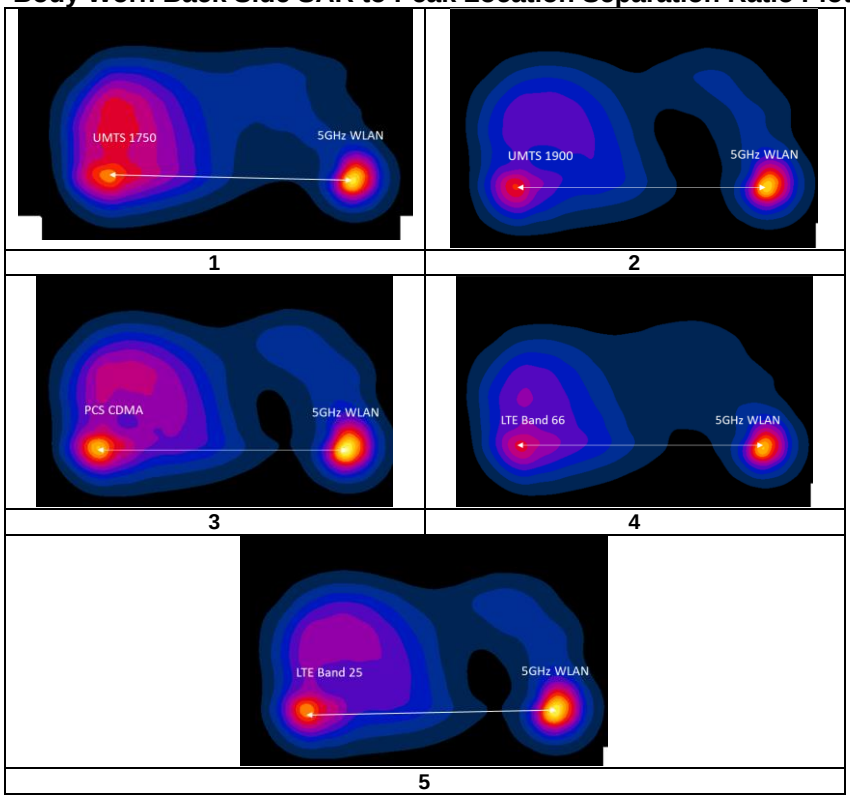
Table 12-14
Peak SAR Locations for Body- Worn Back Side

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN	3.00	69.00	0.956
UMTS 1750	0.50	-58.50	0.840
UMTS 1900	3.50	-57.00	0.737
PCS CDMA	3.50	-57.00	0.932
LTE Band 66 (AWS)	2.00	-57.00	0.770
LTE Band 25 (PCS)	3.50	-57.00	0.861

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	UMTS 1750	0.956	0.840	1.796	127.52	0.02	1
5 GHz WLAN	UMTS 1900	0.956	0.737	1.693	126.00	0.02	2
5 GHz WLAN	PCS CDMA	0.956	0.932	1.888	126.00	0.02	3
5 GHz WLAN	LTE Band 66 (AWS)	0.956	0.770	1.726	126.00	0.02	4
5 GHz WLAN	LTE Band 25 (PCS)	0.956	0.861	1.817	126.00	0.02	5

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



12.7.2 Hotspot SPLSR Evaluation and Analysis

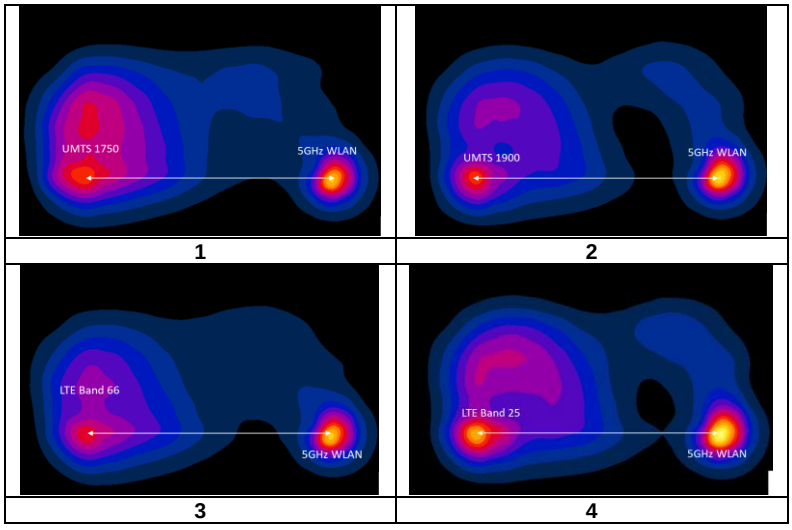
Table 12-17
Peak SAR Locations for Hotspot

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN	1.00	68.00	0.875
UMTS 1750	0.50	-58.50	0.840
UMTS 1900	3.50	-57.00	0.737
LTE Band 66 (AWS)	2.00	-57.00	0.770
LTE Band 25 (PCS)	3.50	-57.00	0.861

Table 12-18
Hotspot 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	UMTS 1750	0.875	0.840	1.715	126.50	0.02	1
5 GHz WLAN	UMTS 1900	0.875	0.737	1.612	125.02	0.02	2
5 GHz WLAN	LTE Band 66 (AWS)	0.875	0.770	1.645	125.00	0.02	3
5 GHz WLAN	LTE Band 25 (PCS)	0.875	0.861	1.736	125.02	0.02	4

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



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	1.00	66.00	1.848
UMTS 1750	2.00	-58.50	2.423
UMTS 1900	2.00	-58.50	2.904
PCS EVDO	2.00	-57.00	3.005
LTE Band 66 (AWS)	7.80	-69.00	2.859
LTE Band 25 (PCS)	0.50	-60.00	3.166
LTE Band 41	-15.40	-66.00	3.078

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	1.848	2.423	4.271	124.50	0.07	1
5 GHz WLAN Phablet	UMTS 1900	1.848	2.904	4.752	124.50	0.08	2
5 GHz WLAN Phablet	PCS EVDO	1.848	3.005	4.853	123.00	0.09	3
5 GHz WLAN Phablet	LTE Band 66 (AWS)	1.848	2.859	4.707	135.17	0.08	4
5 GHz WLAN Phablet	LTE Band 25 (PCS)	1.848	3.166	5.014	126.00	0.09	5
5 GHz WLAN Phablet	LTE Band 41	1.848	3.078	4.926	133.01	0.08	6

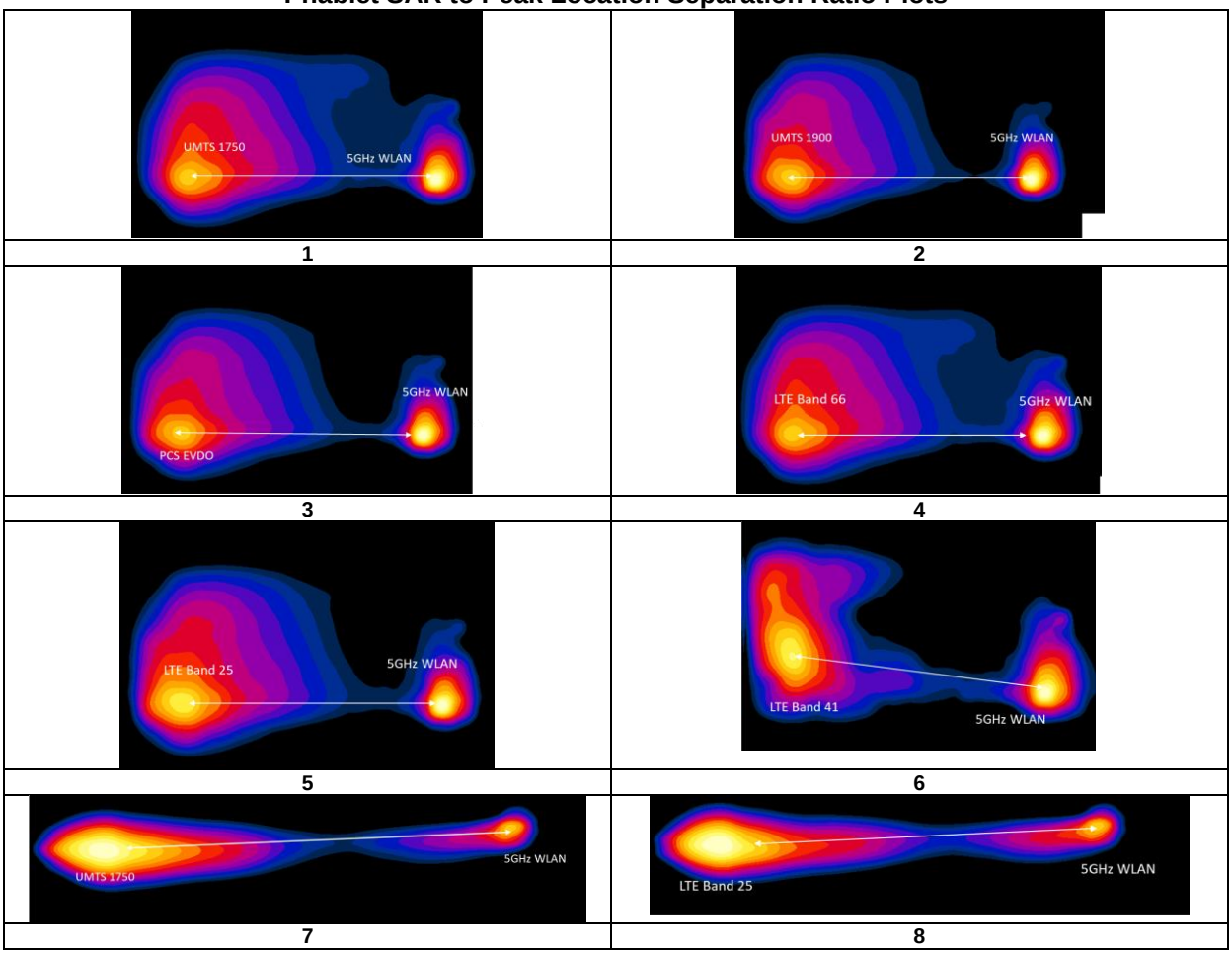
Table 12-22
Peak SAR Locations for Phablet Left Edge

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN phablet	-32.00	68.00	0.995
UMTS 1750	-25.10	-58.90	3.161
LTE Band 25 (PCS)	-27.50	-73.00	3.125

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 1750	0.995	3.161	4.156	127.09	0.07	7
5 GHz WLAN phablet	LTE Band 25 (PCS)	0.995	3.125	4.12	141.07	0.06	8

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	0.036	9	8.54	76.8	1.112	1.302	0.049	0.072	A50
5GHz WLAN Body Worn	Back side, 802.11a, 20 MHz, Ch. 56, 6 Mbps, 10 mm	5280	0.900	16	15.87	97.0	1.030	1.031	0.871	0.925	A51

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot
Bluetooth	5GHz WLAN Body Worn	0.952	A53

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

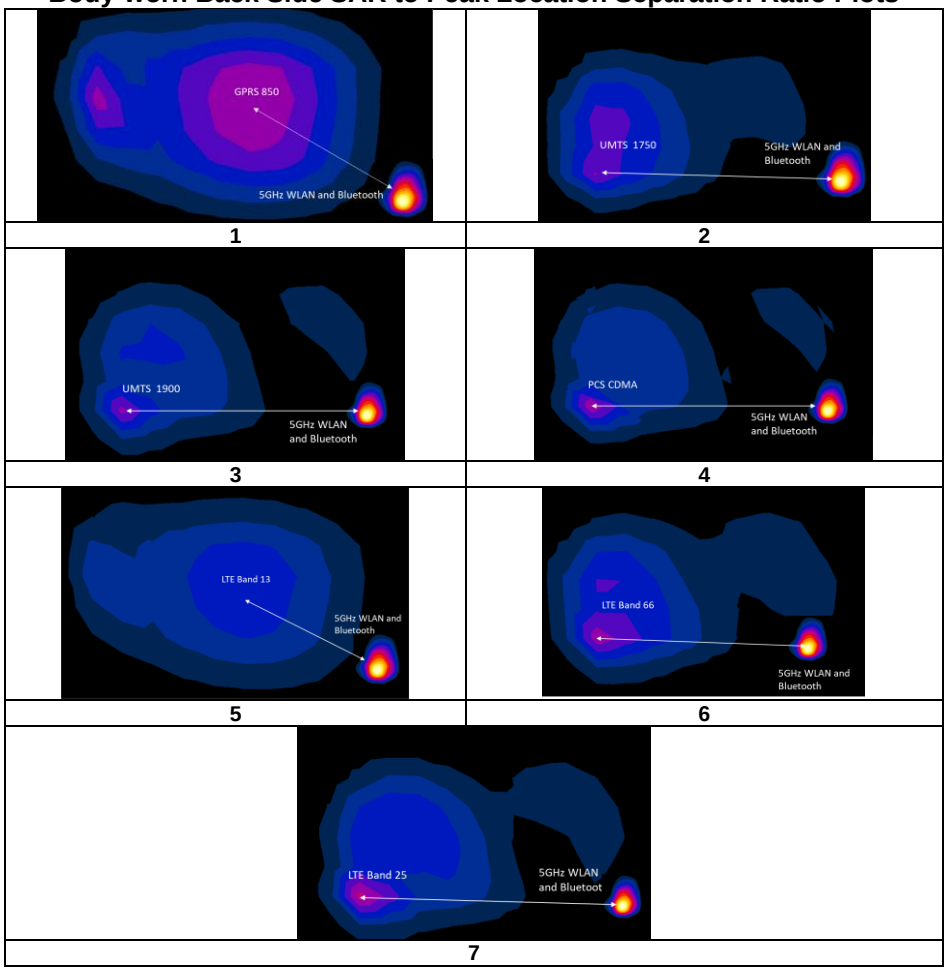
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN and Bluetooth	7.00	68.00	0.952
GPRS 850	-31.00	1.50	0.632
UMTS 1750	0.50	-58.50	0.840
UMTS 1900	3.50	-57.00	0.737
PCS CDMA	3.50	-57.00	0.932
LTE Band 13	-29.50	-5.00	0.597
LTE Band 66 (AWS)	2.00	-57.00	0.770
LTE Band 25 (PCS)	3.50	-57.00	0.861

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}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN and Bluetooth	GPRS 850	0.952	0.632	1.584	76.59	0.03	1
5 GHz WLAN and Bluetooth	UMTS 1750	0.952	0.840	1.792	126.67	0.02	2
5 GHz WLAN and Bluetooth	UMTS 1900	0.952	0.737	1.689	125.05	0.02	3
5 GHz WLAN and Bluetooth	PCS CDMA	0.952	0.932	1.884	125.05	0.02	4
5 GHz WLAN and Bluetooth	LTE Band 13	0.952	0.597	1.549	81.62	0.02	5
5 GHz WLAN and Bluetooth	LTE Band 66 (AWS)	0.952	0.770	1.722	125.10	0.02	6
5 GHz WLAN and Bluetooth	LTE Band 25 (PCS)	0.952	0.861	1.813	125.05	0.02	7

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



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	0.036	9	8.54	76.8	1.112	1.302	0.049	0.072	A50
5GHz WLAN Hotspot	Back side, 802.11a, 20 MHz, Ch. 48, 6 Mbps, 10 mm	5240	0.807	16	15.78	97.0	1.052	1.031	0.790	0.857	A52

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot
Bluetooth	5GHz WLAN Hotspot	0.891	A54

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

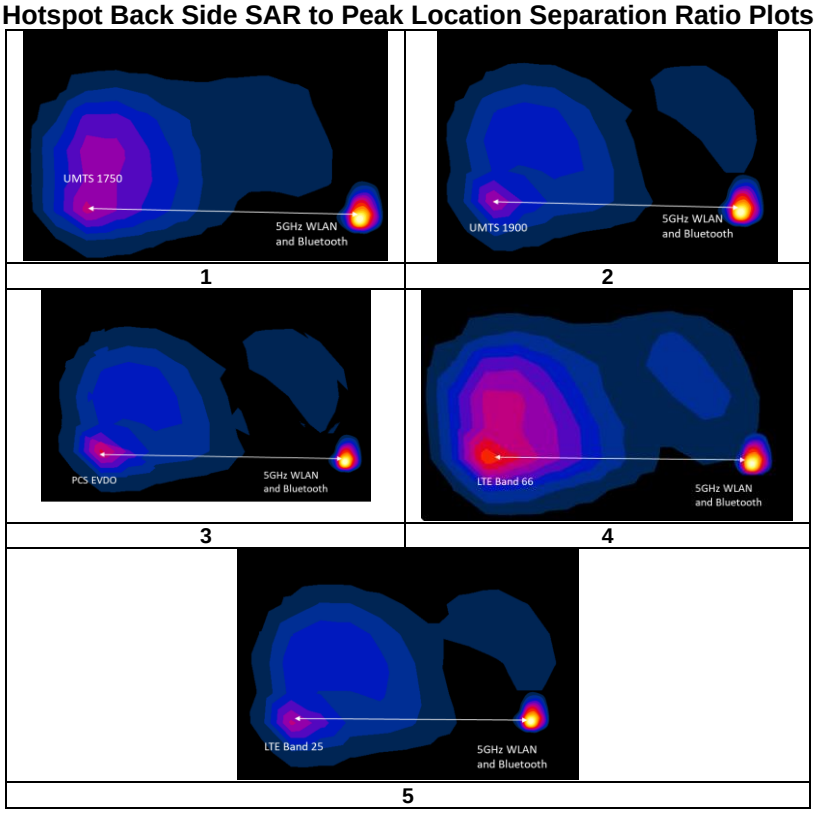
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN and Bluetooth	3.00	72.00	0.891
UMTS 1750	0.50	-58.50	0.840
UMTS 1900	3.50	-57.00	0.737
PCS EVDO	3.50	-57.00	0.702
LTE Band 66 (AWS)	2.00	-57.00	0.770
LTE Band 25 (PCS)	3.50	-57.00	0.861

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}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN and Bluetooth	UMTS 1750	0.891	0.840	1.731	130.52	0.02	1
5 GHz WLAN and Bluetooth	UMTS 1900	0.891	0.737	1.628	129.00	0.02	2
5 GHz WLAN and Bluetooth	PCS EVDO	0.891	0.702	1.593	129.00	0.02	3
5 GHz WLAN and Bluetooth	LTE Band 66 (AWS)	0.891	0.770	1.661	129.00	0.02	4
5 GHz WLAN and Bluetooth	LTE Band 25 (PCS)	0.891	0.861	1.752	129.00	0.02	5

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	0.844	0.825	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	0.819	0.793	1.03	N/A	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	TDSO / SO32	N/A	back	10 mm	0.888	0.873	1.02	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11a, 20 MHz Bandwidth	OFDM	6	back	10 mm	0.898	0.900	1.00	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	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	1752.60	1513	UMTS 1750	RMC	left	0 mm	3.060	3.000	1.02	N/A	N/A	N/A	N/A
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	back	0 mm	3.080	3.040	1.01	N/A	N/A	N/A	N/A
2450	2506.00	39750	LTE Band 41, 20 MHz Bandwidth	QPSK, 50 RB, 50 RB Offset	back	0 mm	2.210	2.020	1.09	N/A	N/A	N/A	N/A
2600	2636.50	41055	LTE Band 41, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	back	0 mm	2.920	2.910	1.00	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)	24.70	27.20
Measured Output Power (dBm)	24.60	26.80
Measured SAR (W/kg)	0.152	0.185
Measured Power (mW)	288.40	478.63
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	182.56	207.25
% deviation from expected linearity		7.21%

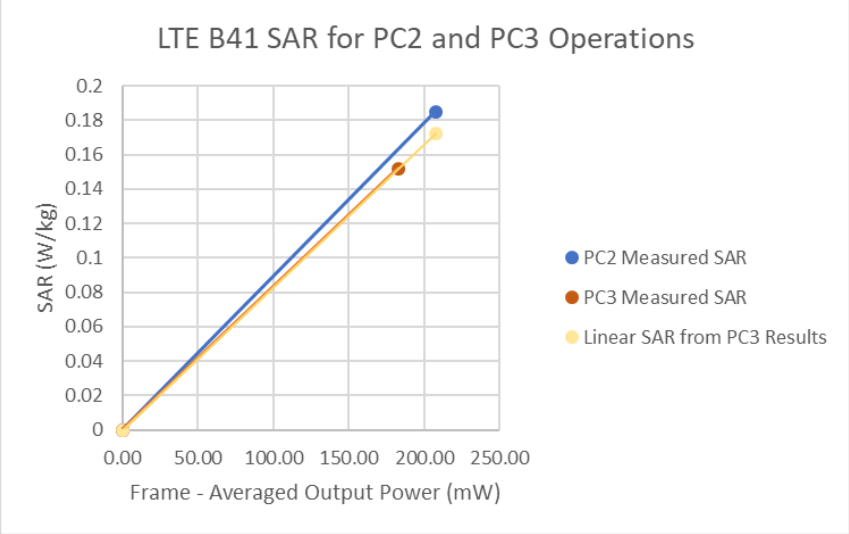


Figure 14-1
LTE Band 41 Head Linearity

Table 14-2
LTE Band 41 ULCA Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.70	27.20
Measured Output Power (dBm)	24.52	26.67
Measured SAR (W/kg)	0.143	0.170
Measured Power (mW)	283.14	464.52
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	179.23	201.14
% deviation from expected linearity		5.93%

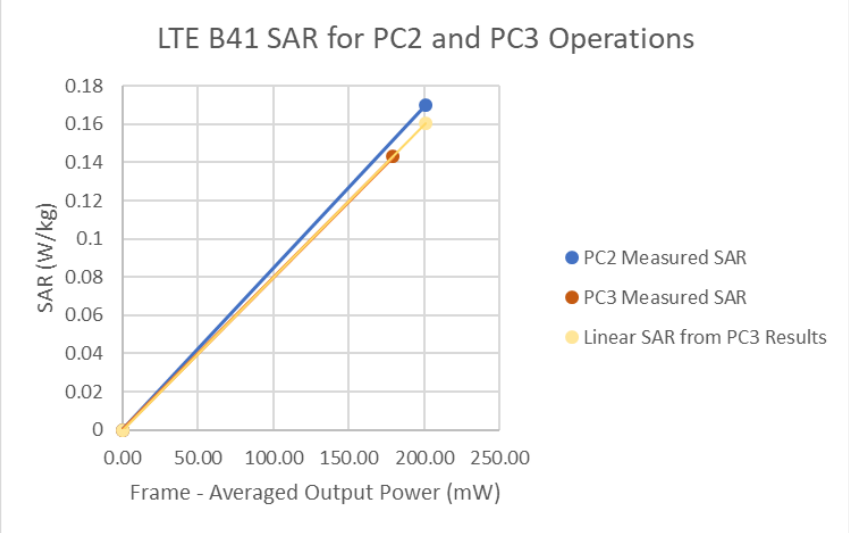


Figure 14-2
LTE Band 41 ULCA Head Linearity

Table 14-3
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.70	27.20
Measured Output Power (dBm)	24.60	26.80
Measured SAR (W/kg)	0.439	0.534
Measured Power (mW)	288.40	478.63
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	182.56	207.25
% deviation from expected linearity		7.15%

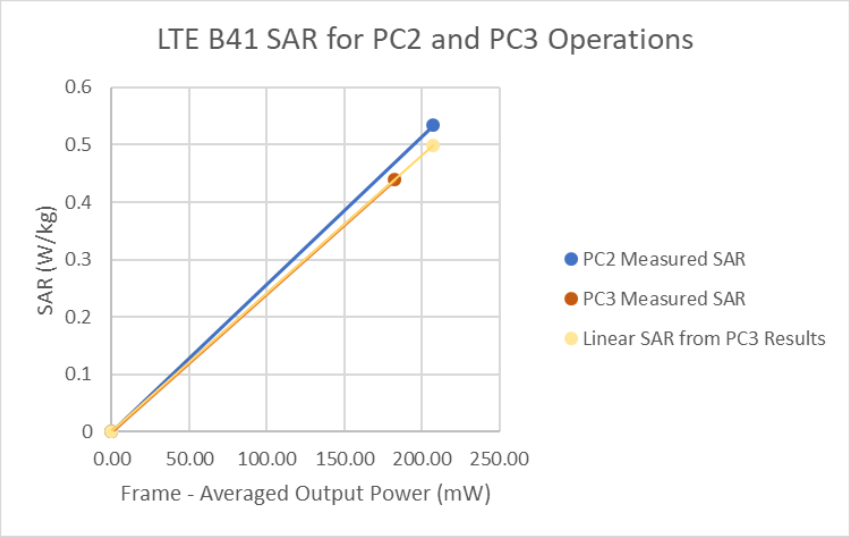


Figure 14-3
LTE Band 41 Body-Worn Linearity

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

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.70	27.20
Measured Output Power (dBm)	24.52	26.67
Measured SAR (W/kg)	0.421	0.497
Measured Power (mW)	283.14	464.52
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	179.23	201.14
% deviation from expected linearity		5.19%

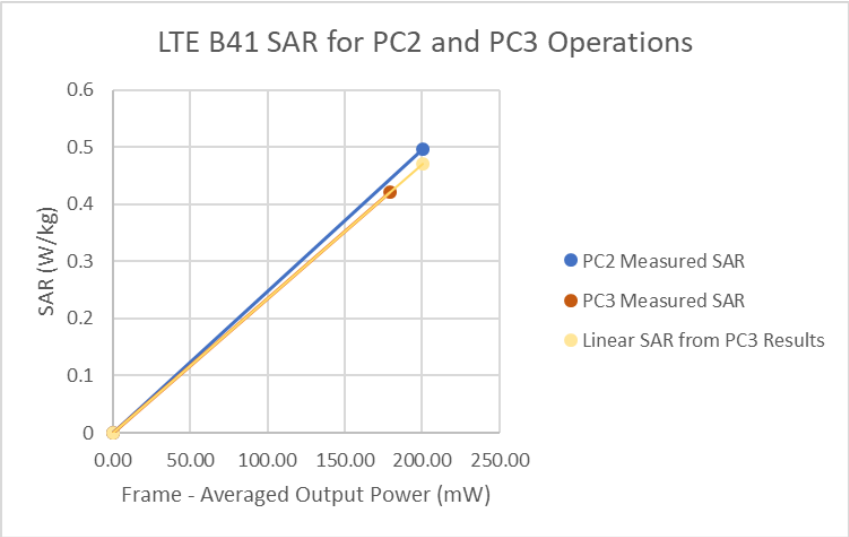


Figure 14-4
LTE Band 41 ULCA Body-Worn Linearity

Table 14-5
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.70	27.20
Measured Output Power (dBm)	24.60	26.80
Measured SAR (W/kg)	0.502	0.621
Measured Power (mW)	288.40	478.63
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	182.56	207.25
% deviation from expected linearity		8.97%

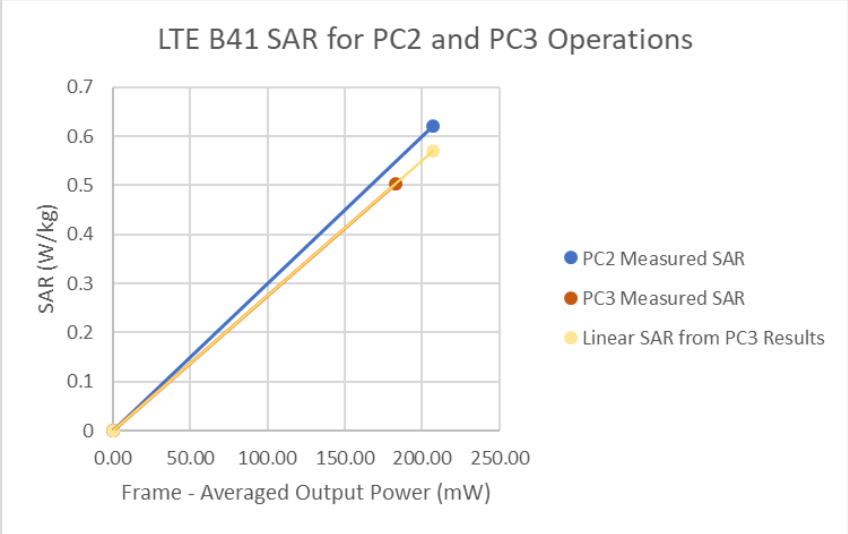


Figure 14-5
LTE Band 41 Hotspot Linearity

Table 14-6
LTE Band 41 ULCA Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.70	27.20
Measured Output Power (dBm)	24.52	26.67
Measured SAR (W/kg)	0.472	0.572
Measured Power (mW)	283.14	464.52
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	179.23	201.14
% deviation from expected linearity		7.99%

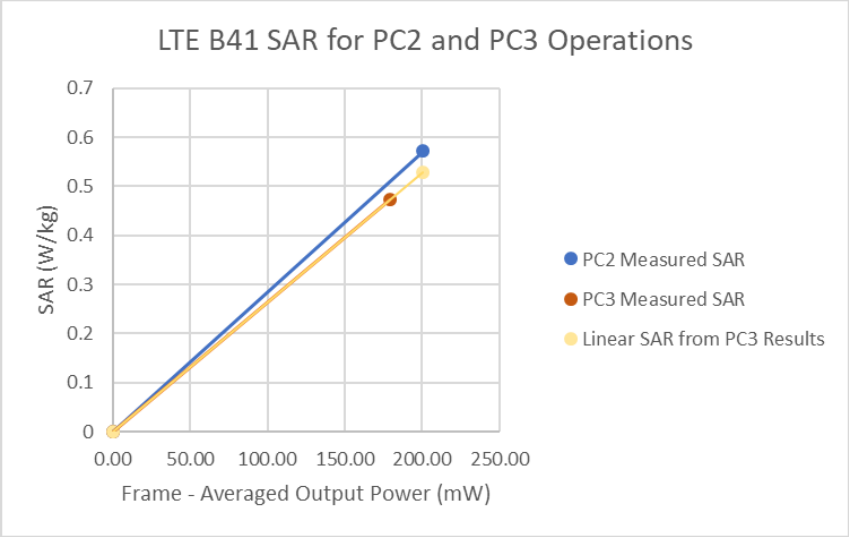


Figure 14-6
LTE Band 41 ULCA Hotspot Linearity

Table 14-7
LTE Band 41 Phablet Reduced Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.70	25.20
Measured Output Power (dBm)	22.53	24.97
Measured SAR (W/kg)	2.400	2.920
Measured Power (mW)	179.06	314.05
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	113.35	135.98
% deviation from expected linearity		1.41%

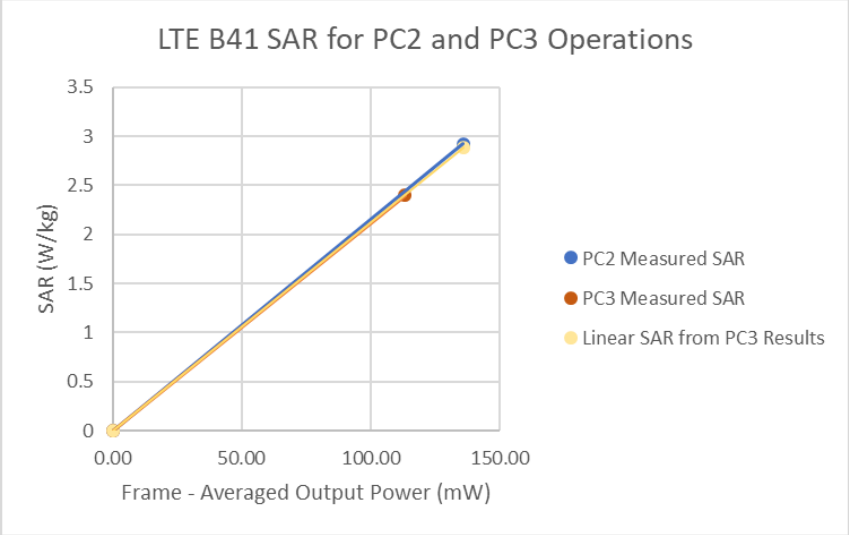


Figure 14-7
LTE Band 41 Phablet Linearity

Table 14-8
LTE Band 41 ULCA Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.70	25.20
Measured Output Power (dBm)	22.41	24.68
Measured SAR (W/kg)	2.230	2.600
Measured Power (mW)	174.18	293.76
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	110.26	127.20
% deviation from expected linearity		1.06%

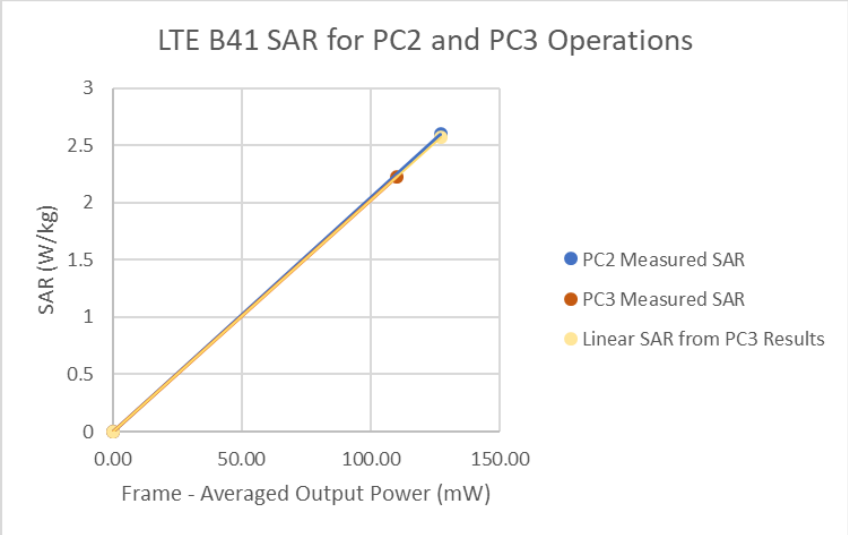


Figure 14-8
LTE Band 41 ULCA Phablet Linearity

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	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
Agilent	E5515C	Wireless Communications Test Set	2/28/2018	Biennial	2/28/2020	GB41450275
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433975
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
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2019	Annual	6/3/2020	109892
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	10/19/2018	Biennial	10/19/2020	4d133
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Annual	3/13/2020	4d047
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
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	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Biennial	8/16/2020	981
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Annual	6/14/2020	1064
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	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	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/14/2019	Annual	8/14/2020	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
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	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	8/16/2019	Annual	8/16/2020	7308
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357

Note: Equipment was solely used during its calibration period

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 DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

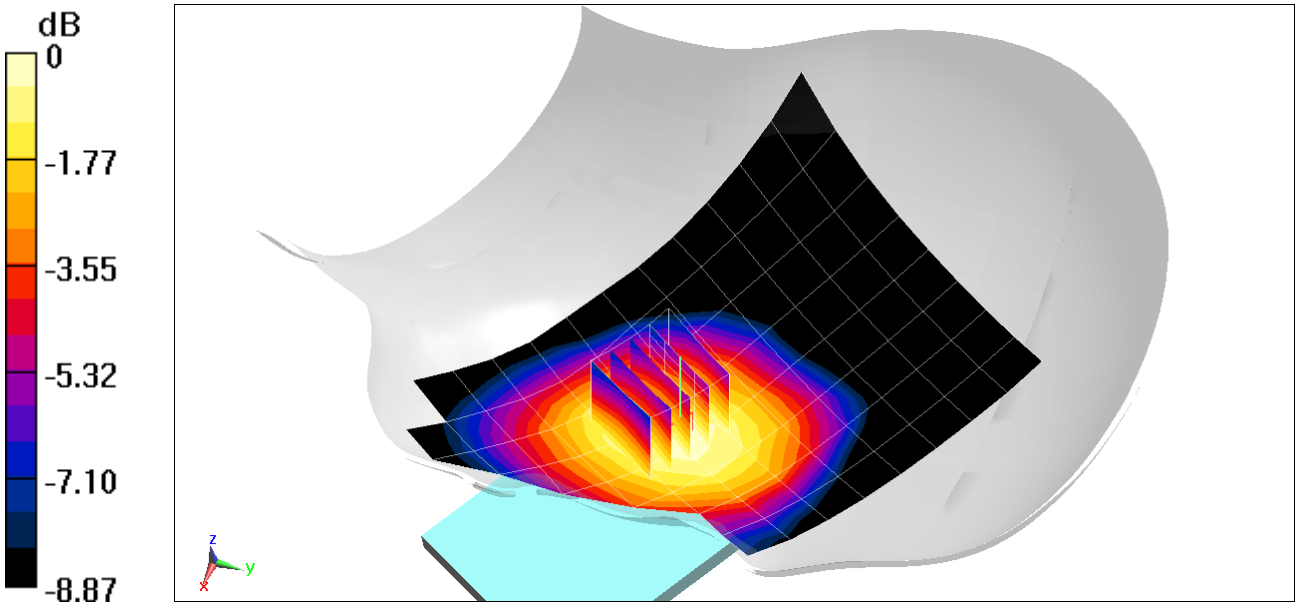
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.904 S/m; ε_r = 42.288; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-06-2020; Ambient Temp: 22.1°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(9.5, 9.5, 9.5) @ 836.6 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: GSM 850, 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 = 19.48 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.413 W/kg
SAR(1 g) = 0.327 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

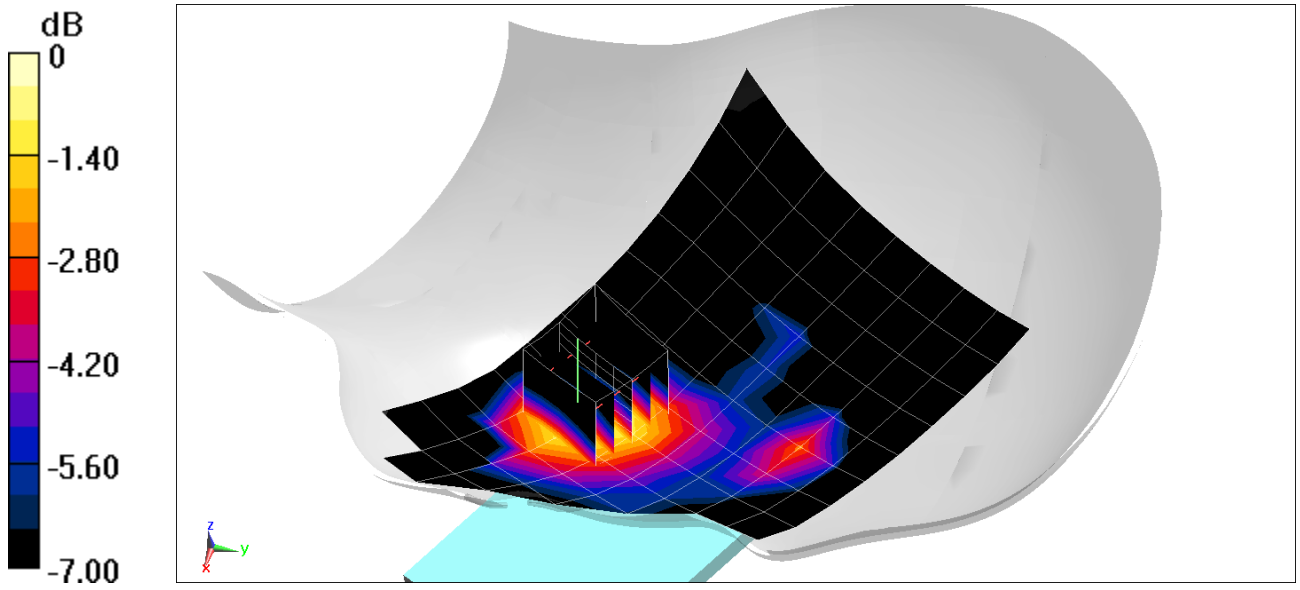
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.419 S/m; ε_r = 39.908; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7410; ConvF(8.11, 8.11, 8.11) @ 1880 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
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 = 11.83 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.180 W/kg



0 dB = 0.235 W/kg = -6.29 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

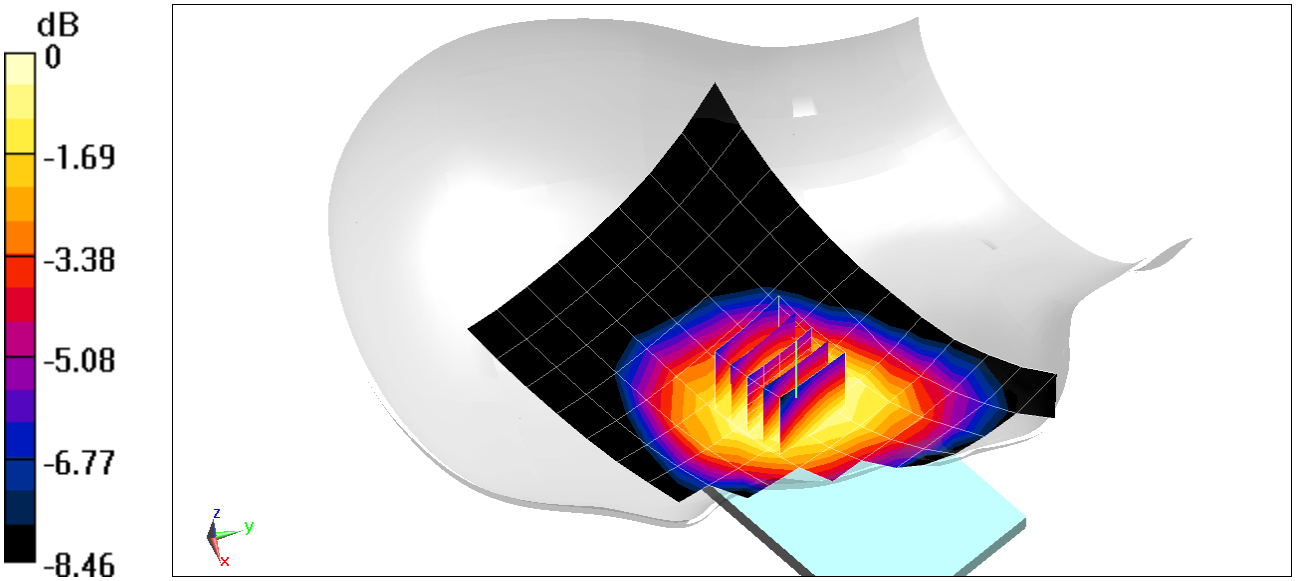
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.904 S/m; ε_r = 42.288; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-06-2020; Ambient Temp: 22.1°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(9.5, 9.5, 9.5) @ 836.6 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: UMTS 850, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.10 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.288 W/kg



0 dB = 0.336 W/kg = -4.74 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

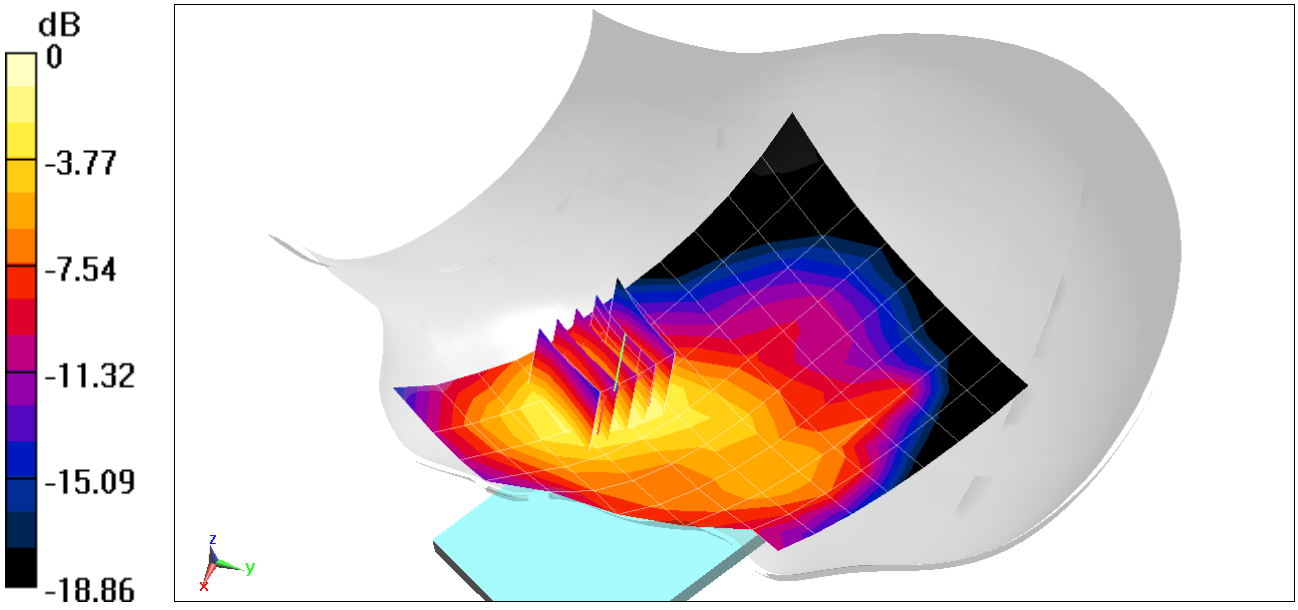
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.365 S/m; ε_r = 39.253; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-04-2020; Ambient Temp: 22.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7406; ConvF(8.57, 8.57, 8.57) @ 1732.4 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
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 = 15.52 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.532 W/kg
SAR(1 g) = 0.317 W/kg



0 dB = 0.450 W/kg = -3.47 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

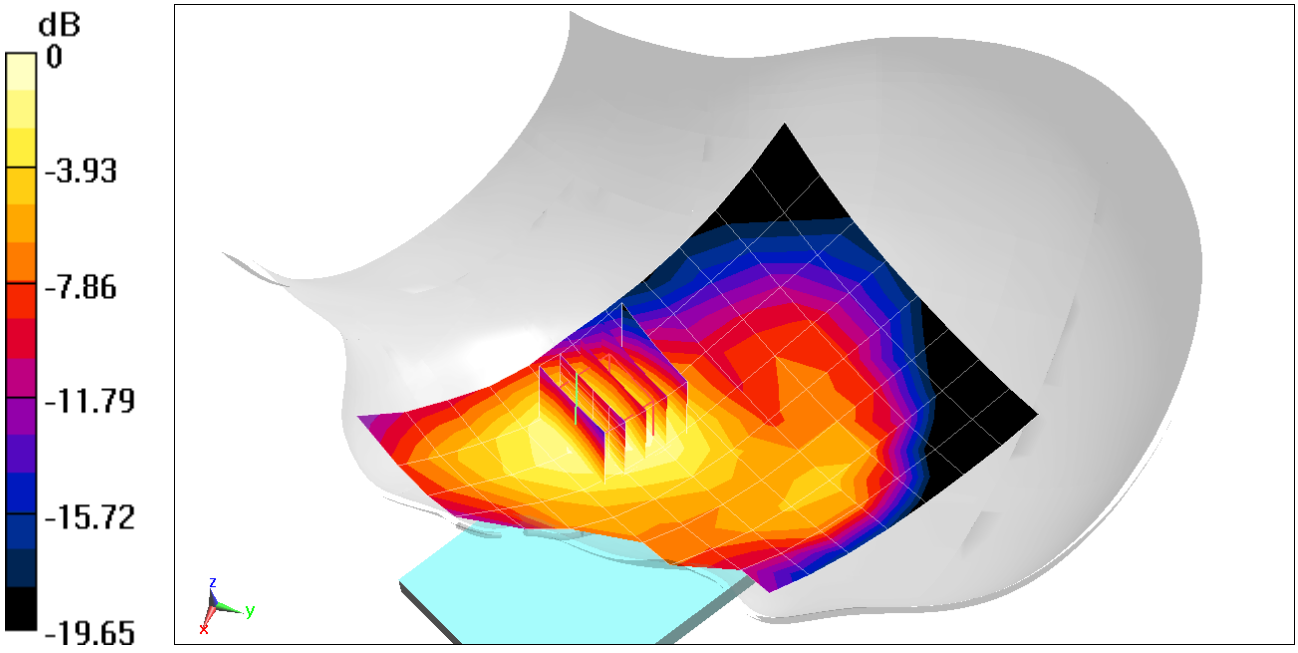
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.419 S/m; ε_r = 39.908; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7410; ConvF(8.11, 8.11, 8.11) @ 1880 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
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 = 15.13 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.471 W/kg
SAR(1 g) = 0.302 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

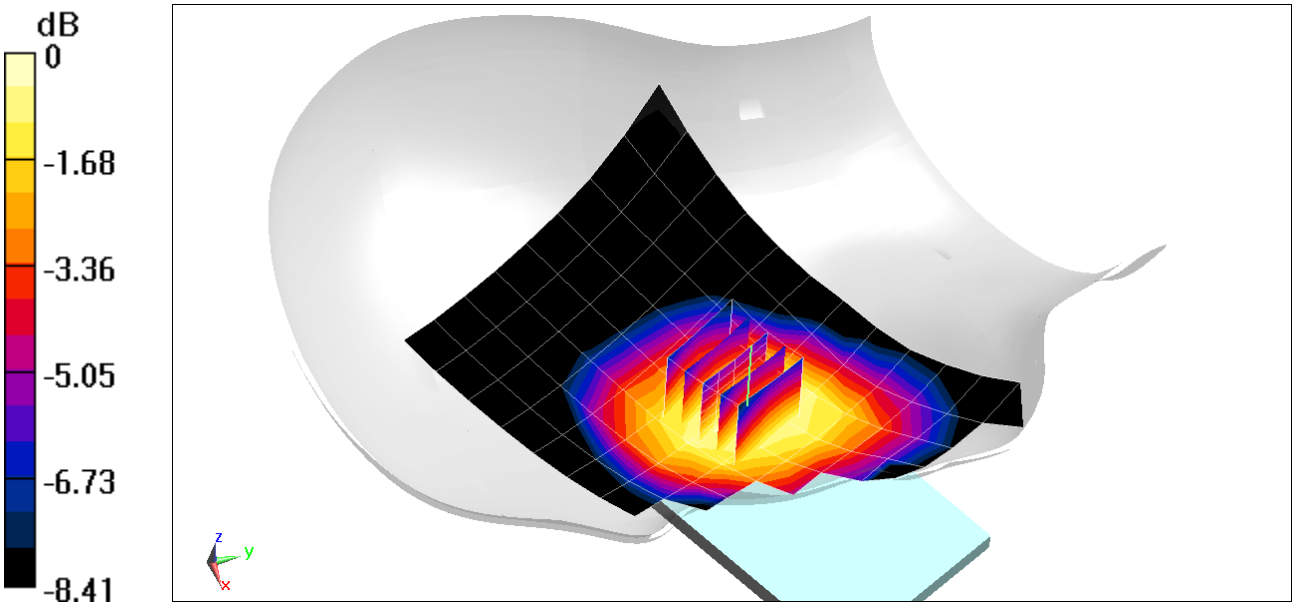
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.903 S/m; ε_r = 40.373; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-08-2020; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(9.87, 9.87, 9.87) @ 820.1 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: 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 = 15.81 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.279 W/kg
SAR(1 g) = 0.219 W/kg



0 dB = 0.257 W/kg = -5.90 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

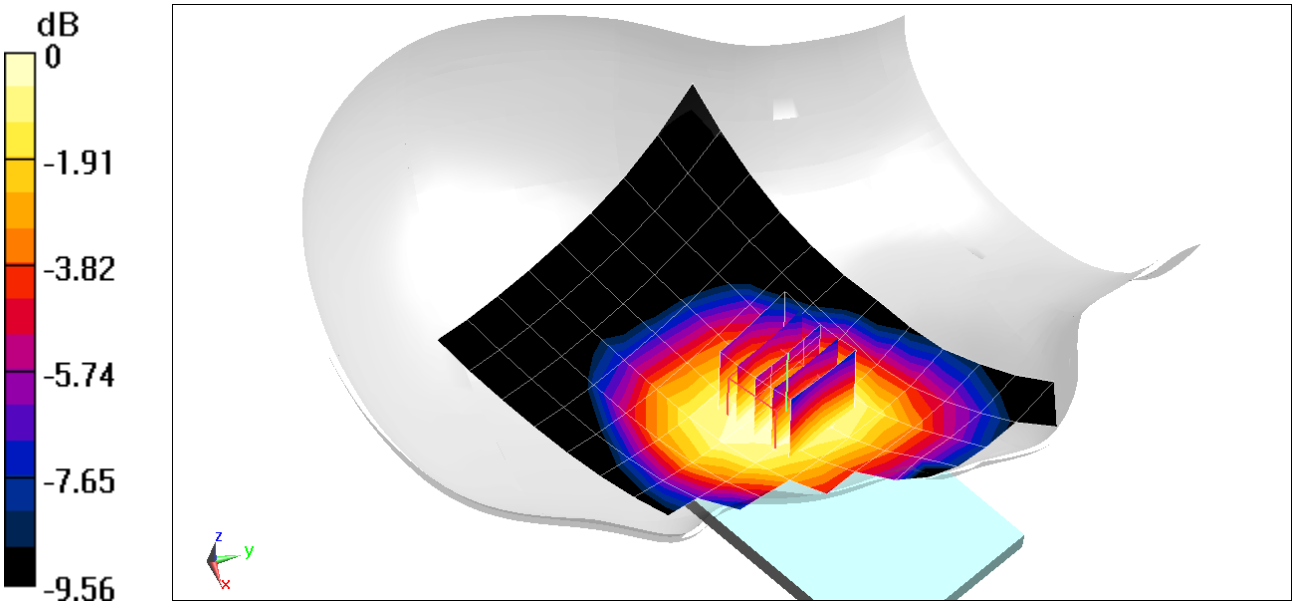
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.91 S/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-08-2020; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(9.87, 9.87, 9.87) @ 836.52 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: Cell. CDMA, BC 0, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.93 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.283 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

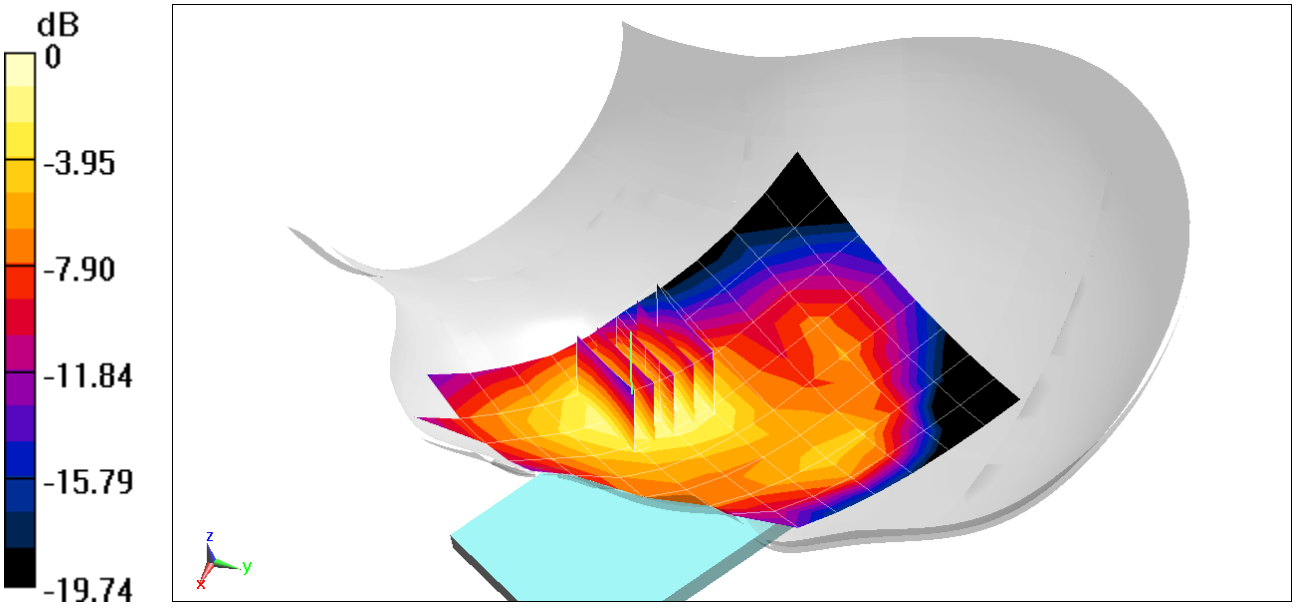
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.419 S/m; ε_r = 39.908; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7410; ConvF(8.11, 8.11, 8.11) @ 1880 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS CDMA, Left Head, Cheek, Mid.ch

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.03 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.533 W/kg
SAR(1 g) = 0.339 W/kg



0 dB = 0.454 W/kg = -3.43 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

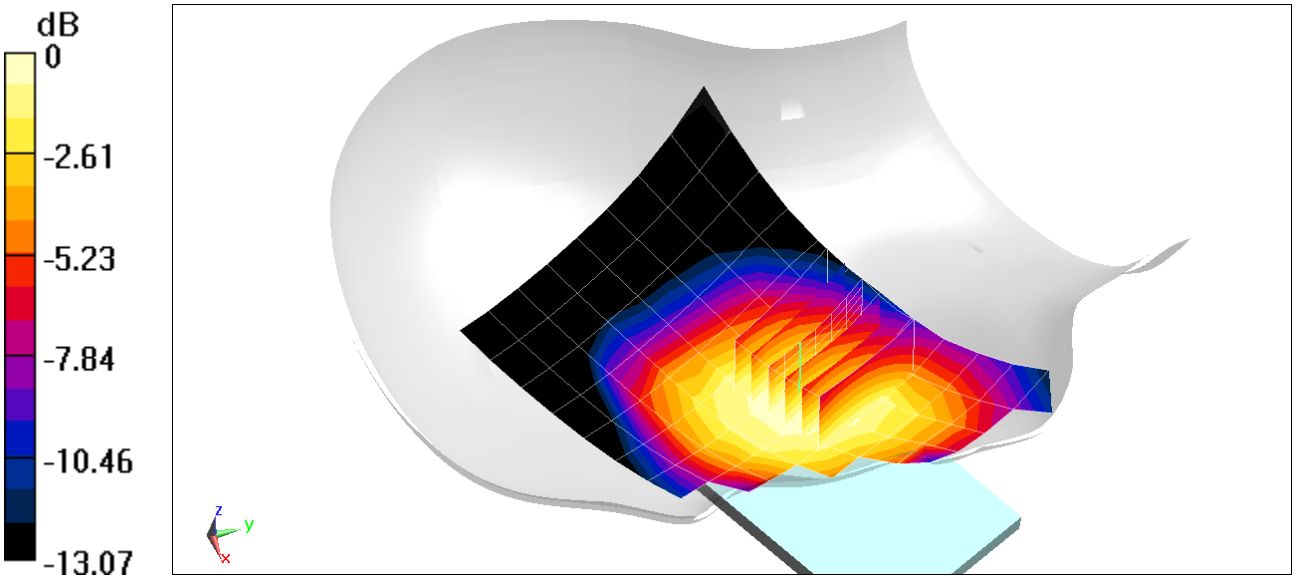
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 700 Head; Medium parameters used (interpolated):
$f = 680.5$ MHz; $\sigma = 0.844$ S/m; $\varepsilon_r = 41.64$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 01-05-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7308; ConvF(10.2, 10.2, 10.2) @ 680.5 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: 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 (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.04 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.324 W/kg
SAR(1 g) = 0.258 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

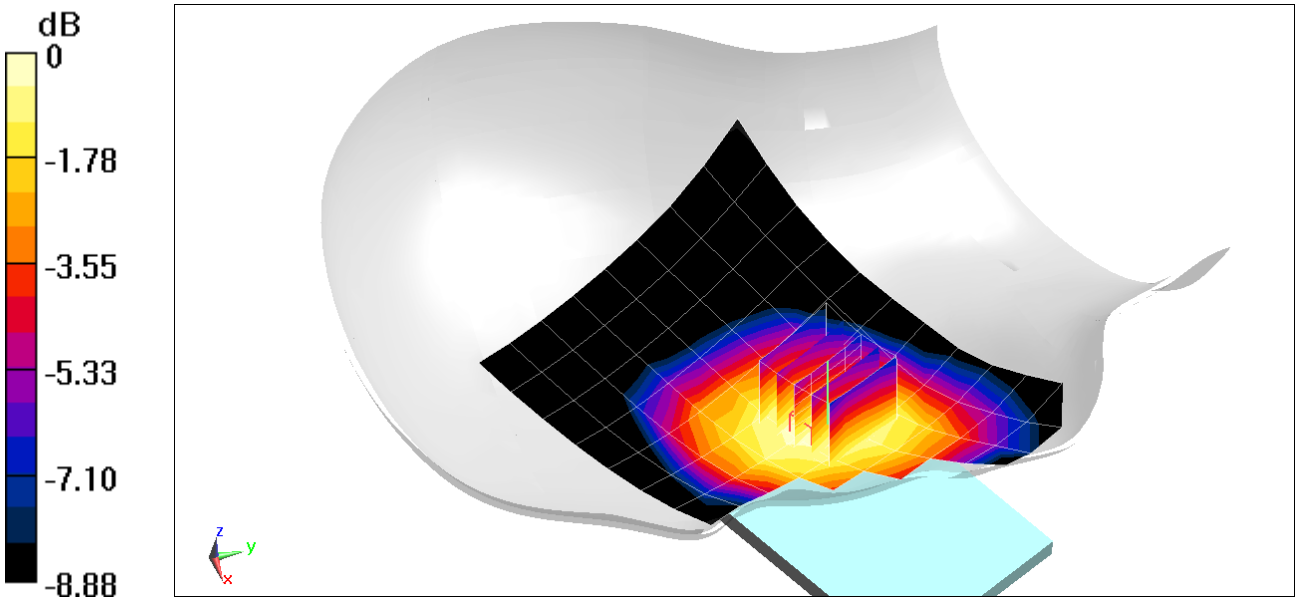
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 700 Head; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.854 S/m; ε_r = 41.551; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-05-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7308; ConvF(10.2, 10.2, 10.2) @ 707.5 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: LTE Band 12, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan(5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.47 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.328 W/kg



0 dB = 0.384 W/kg = -4.16 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

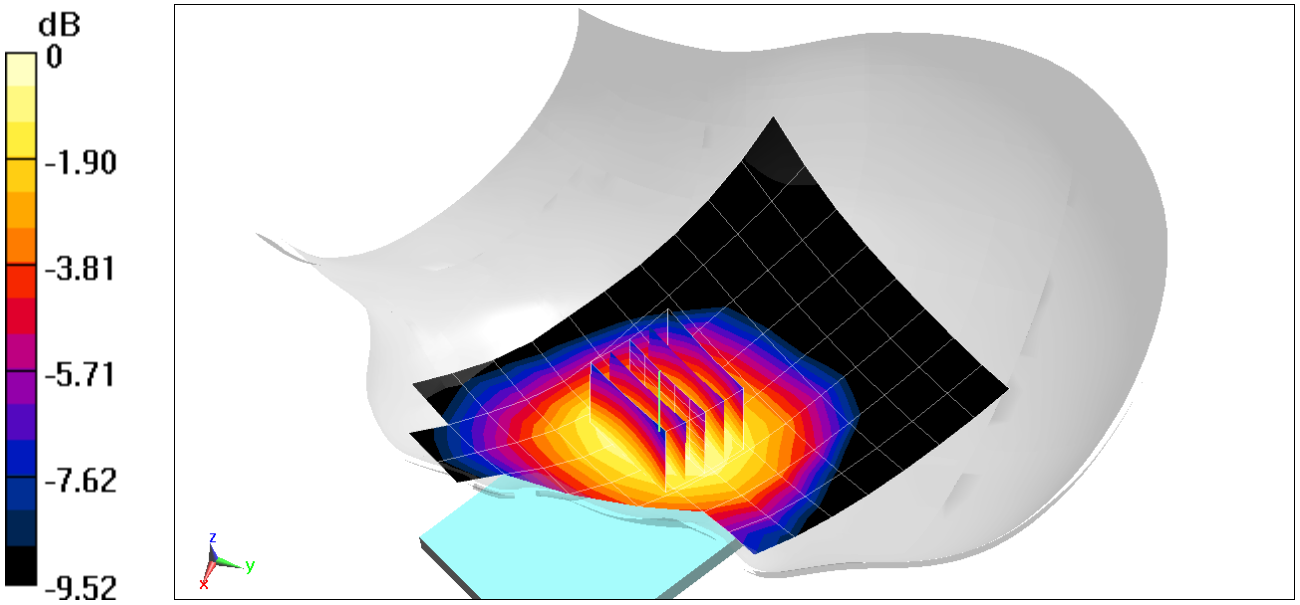
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 700 Head; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.881 S/m; ε_r = 41.307; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-05-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7308; ConvF(10.2, 10.2, 10.2) @ 782 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: LTE Band 13, Left Head, Cheek, Mid.ch, QPSK, 10 MHz Bandwidth QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.84 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.403 W/kg
SAR(1 g) = 0.319 W/kg



0 dB = 0.375 W/kg = -4.26 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

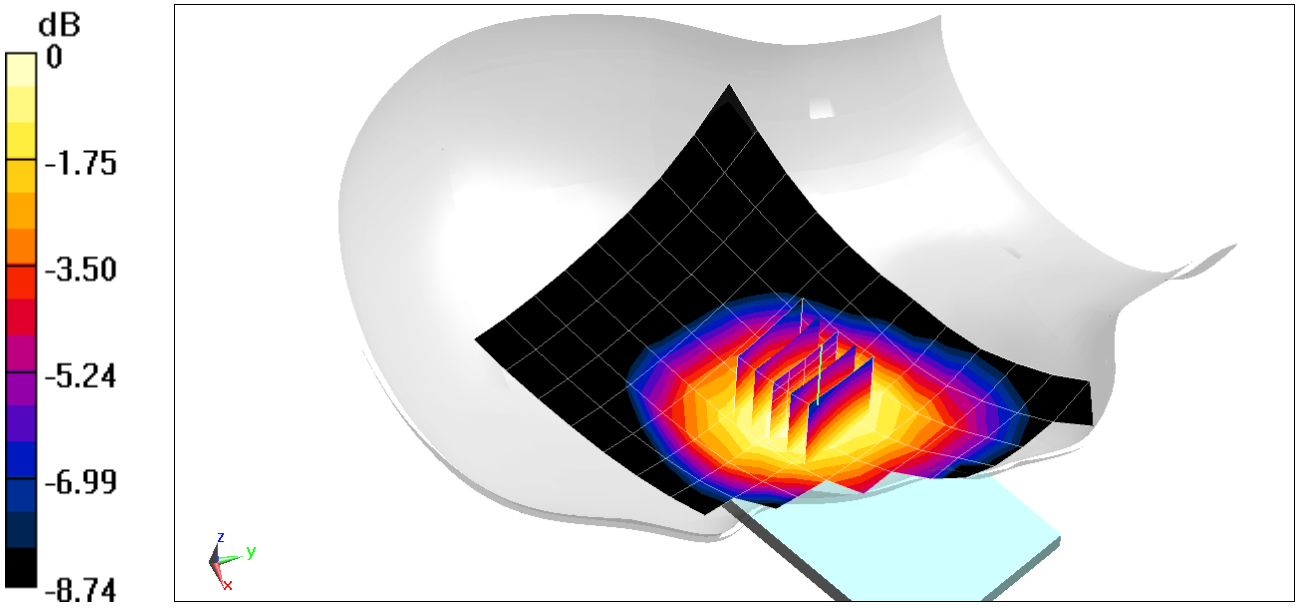
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.907 S/m; ε_r = 40.322; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-08-2020; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(9.87, 9.87, 9.87) @ 831.5 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: 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 = 20.87 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.449 W/kg
SAR(1 g) = 0.354 W/kg



0 dB = 0.415 W/kg = -3.82 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

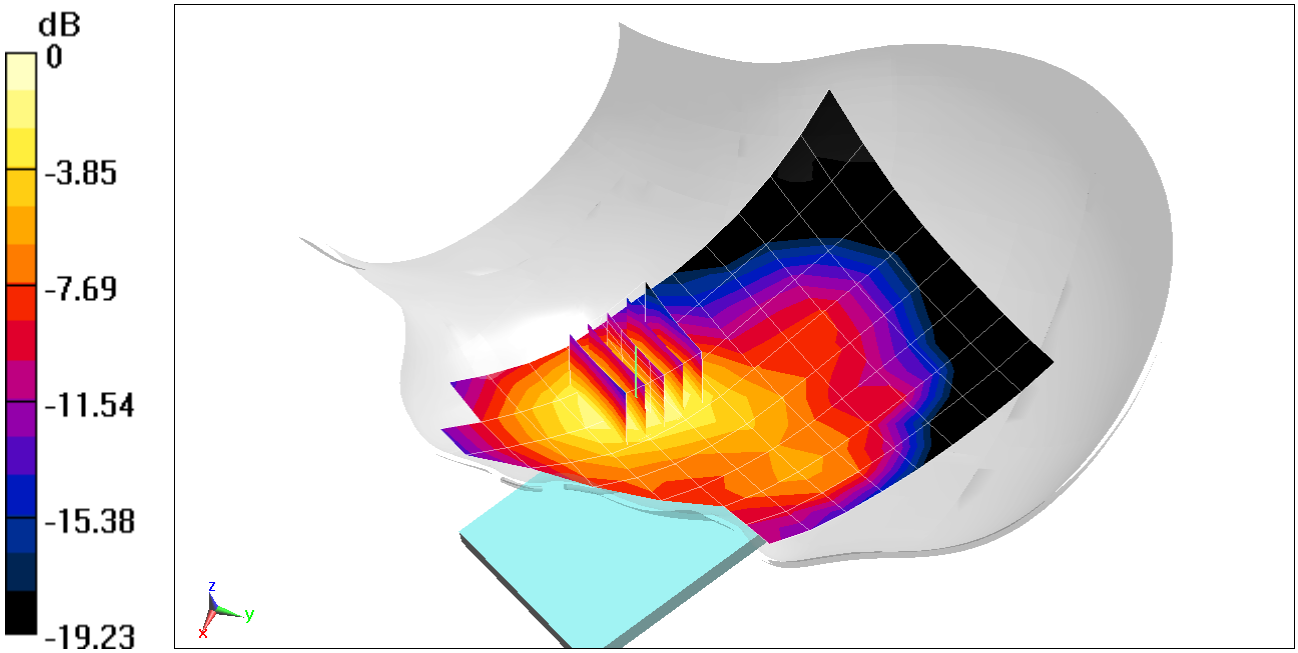
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1745 MHz; σ = 1.379 S/m; ε_r = 39.193; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-04-2020; Ambient Temp: 22.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7406; ConvF(8.57, 8.57, 8.57) @ 1745 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Left 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 = 15.95 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.496 W/kg
SAR(1 g) = 0.292 W/kg



0 dB = 0.424 W/kg = -3.73 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

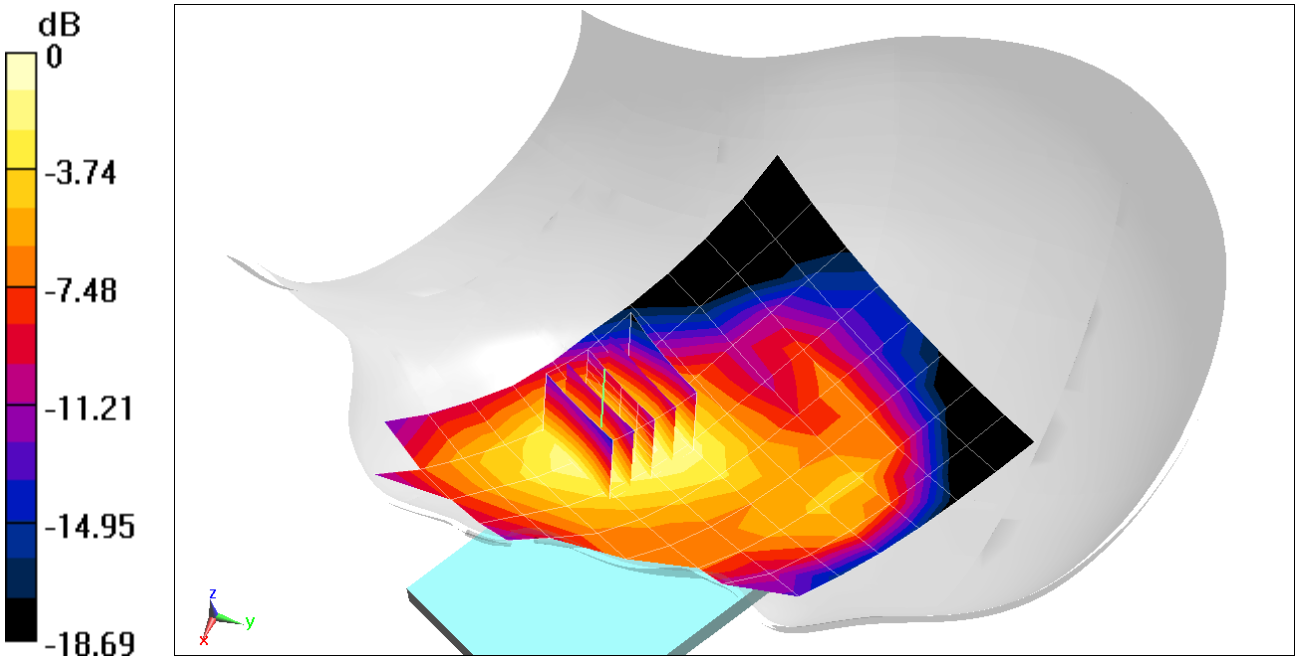
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1905 MHz; σ = 1.433 S/m; ε_r = 39.888; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7410; ConvF(8.11, 8.11, 8.11) @ 1905 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.85 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.512 W/kg
SAR(1 g) = 0.326 W/kg



0 dB = 0.430 W/kg = -3.67 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

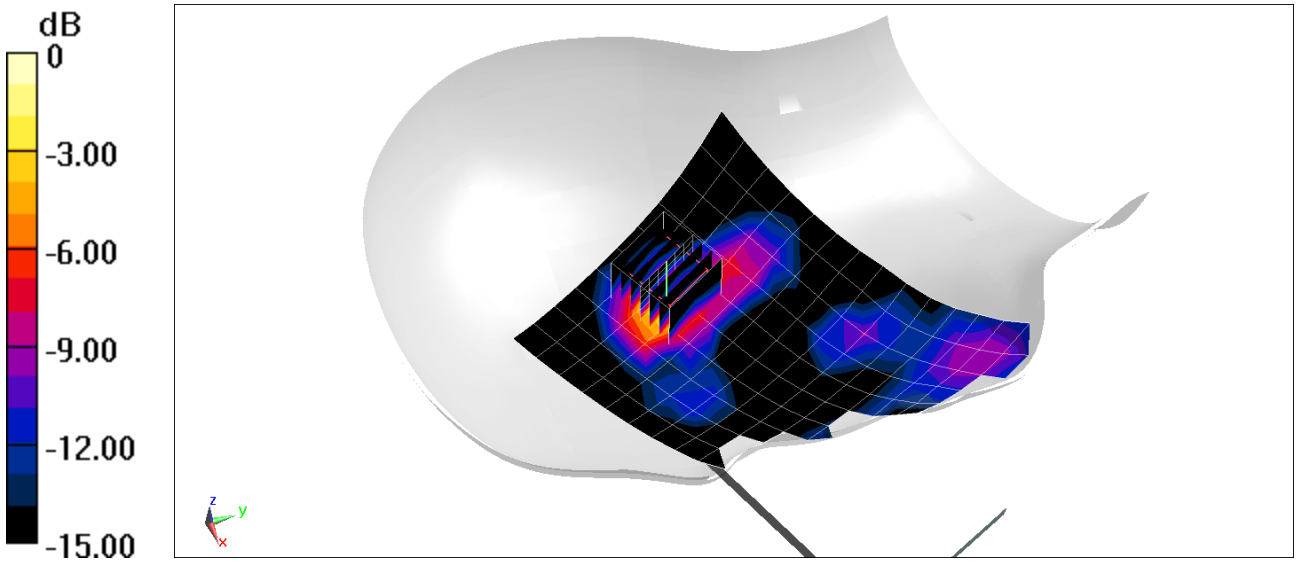
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2636.5 MHz; σ = 1.929 S/m; ε_r = 37.408; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-16-2020; Ambient Temp: 22.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7417; ConvF(7.17, 7.17, 7.17) @ 2636.5 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, Power Class 2, Right Head, Tilt, Mid-High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.53 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.409 W/kg
SAR(1 g) = 0.185 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

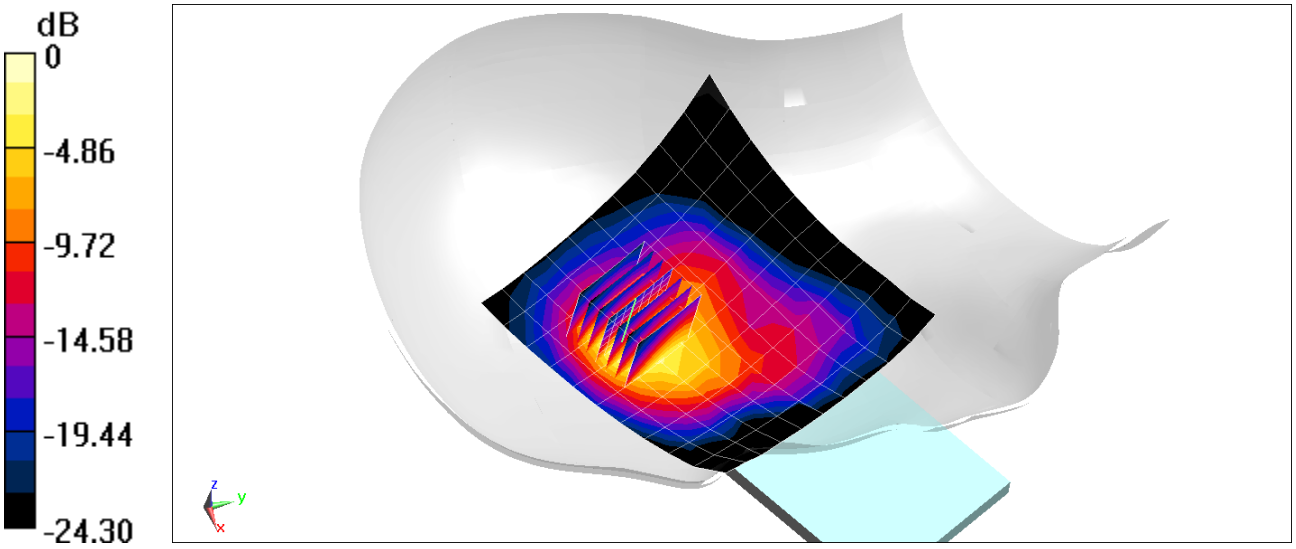
Communication System: UID 0, IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.844 S/m; ε_r = 39.027; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 12-05-2019; Ambient Temp: 22.7°C; Tissue Temp: 20.8°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 (11x11x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.263 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.844 W/kg



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

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DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

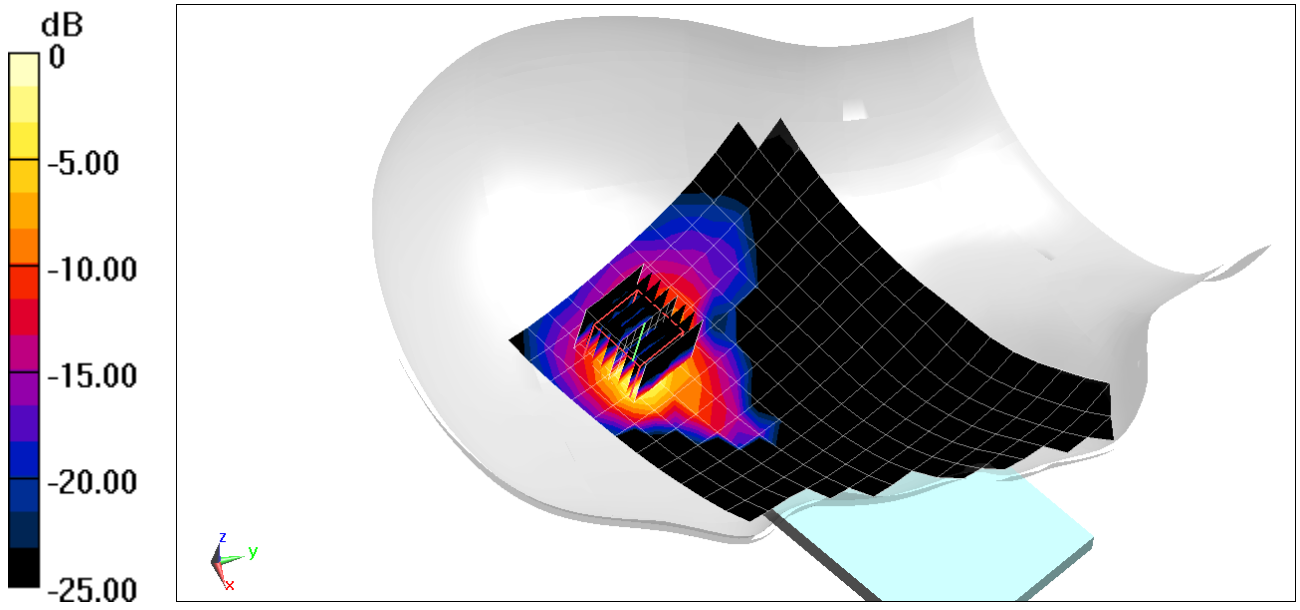
Communication System: UID 0, IEEE 802.11a; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head; Medium parameters used:
f = 5300 MHz; σ = 4.612 S/m; ε_r = 34.443; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 12-09-2019; Ambient Temp: 22.0°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(5.54, 5.54, 5.54) @ 5300 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Left 20; Type: QD 000 P40 CD; Serial: 1715
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, U-NII-2A, 20 MHz Bandwidth, Right Head, Cheek, Ch 60, 6 Mbps

Area Scan (13x10x1): 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 = 0.6800 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 0.465 W/kg



0 dB = 1.17 W/kg = 0.68 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

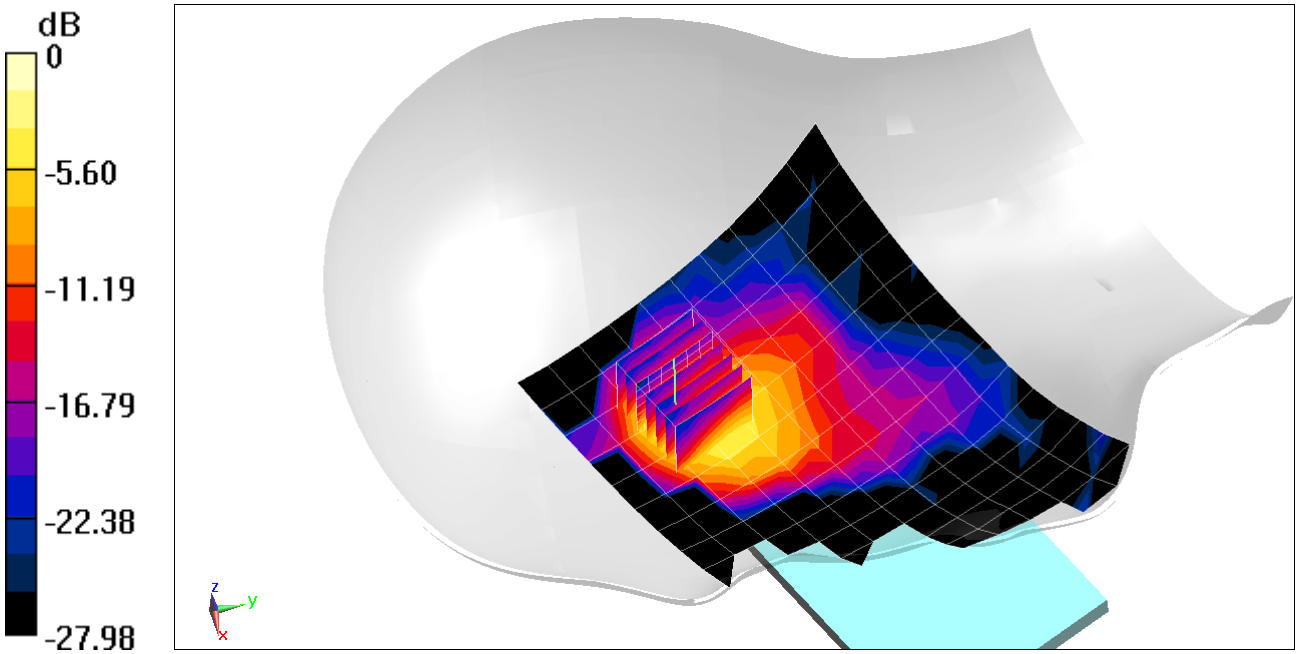
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2480 MHz; σ = 1.879 S/m; ε_r = 38.165; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-08-2020; Ambient Temp: 22.9°C; Tissue Temp: 20.7°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, Cheek, Ch 78, 1 Mbps

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.76 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.437 W/kg
SAR(1 g) = 0.196 W/kg



0 dB = 0.333 W/kg = -4.78 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

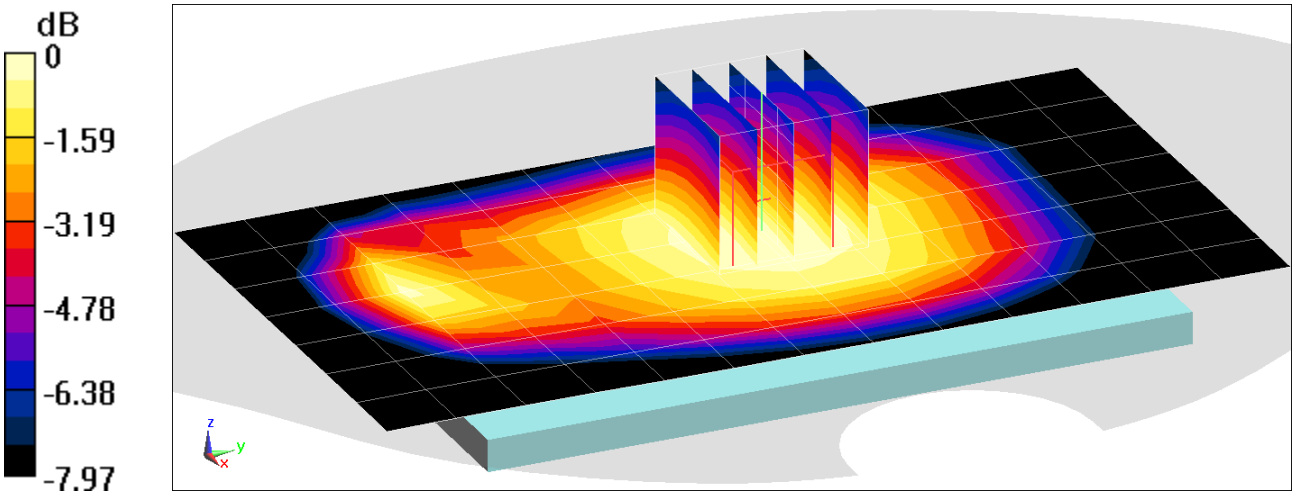
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.967 S/m; ε_r = 53.966; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 836.6 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: GPRS 850, Body SAR, Back side, Mid.ch, 4 Tx Slots

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.20 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.768 W/kg
SAR(1 g) = 0.592 W/kg



0 dB = 0.710 W/kg = -1.49 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

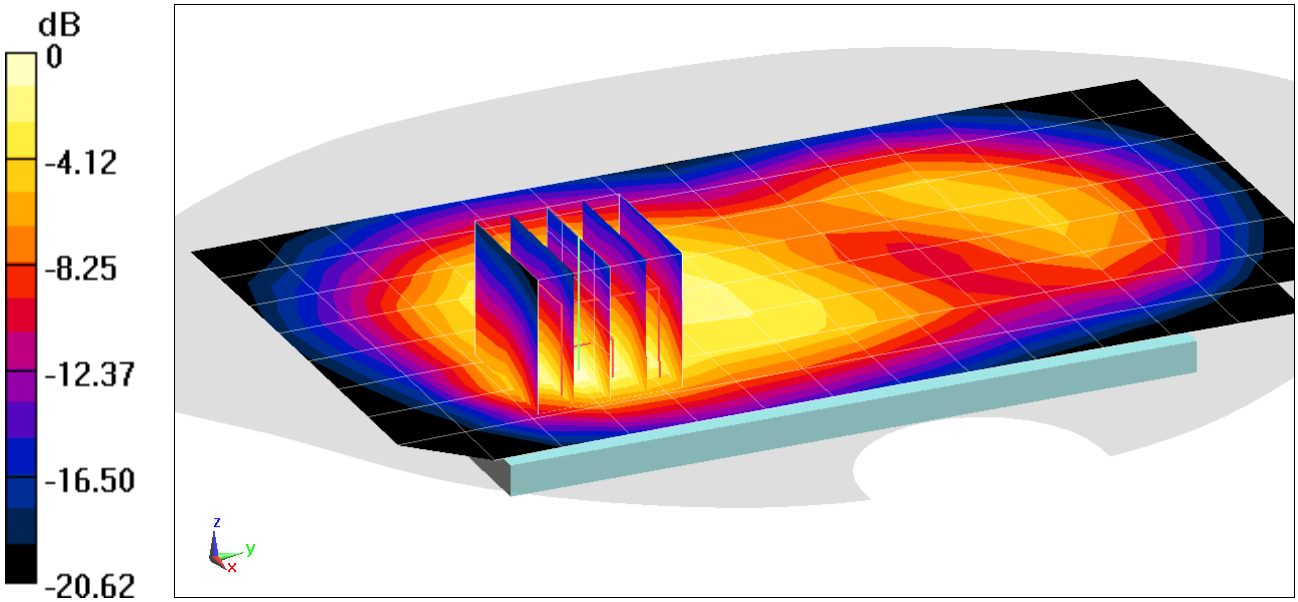
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.55 S/m; ε_r = 51.42; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 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; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: GPRS 1900, Body SAR, Back side, 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 = 17.84 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.850 W/kg
SAR(1 g) = 0.436 W/kg



0 dB = 0.698 W/kg = -1.56 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

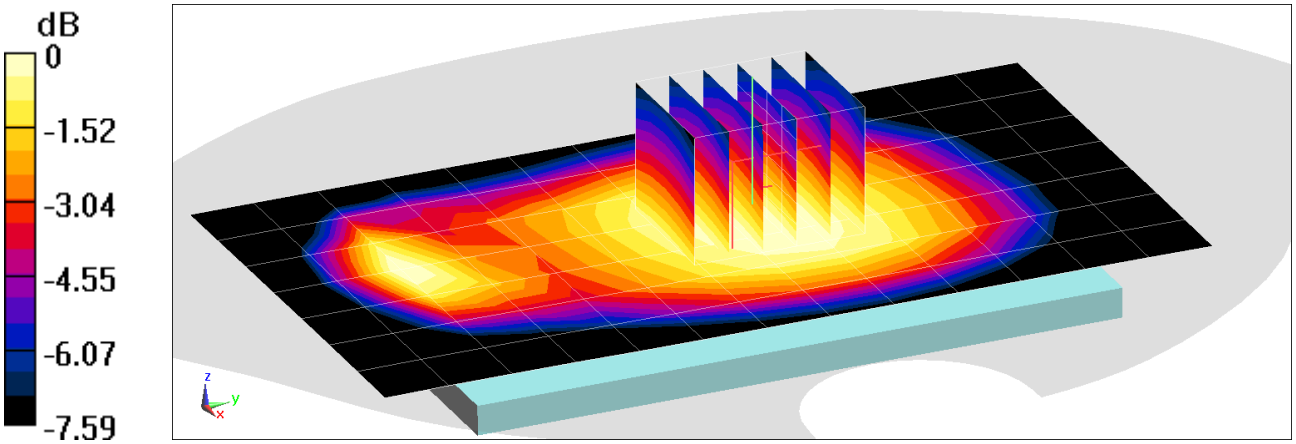
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.967 S/m; ε_r = 53.966; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 836.6 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: UMTS 850, Body SAR, Back side, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.18 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.645 W/kg
SAR(1 g) = 0.501 W/kg



0 dB = 0.595 W/kg = -2.25 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

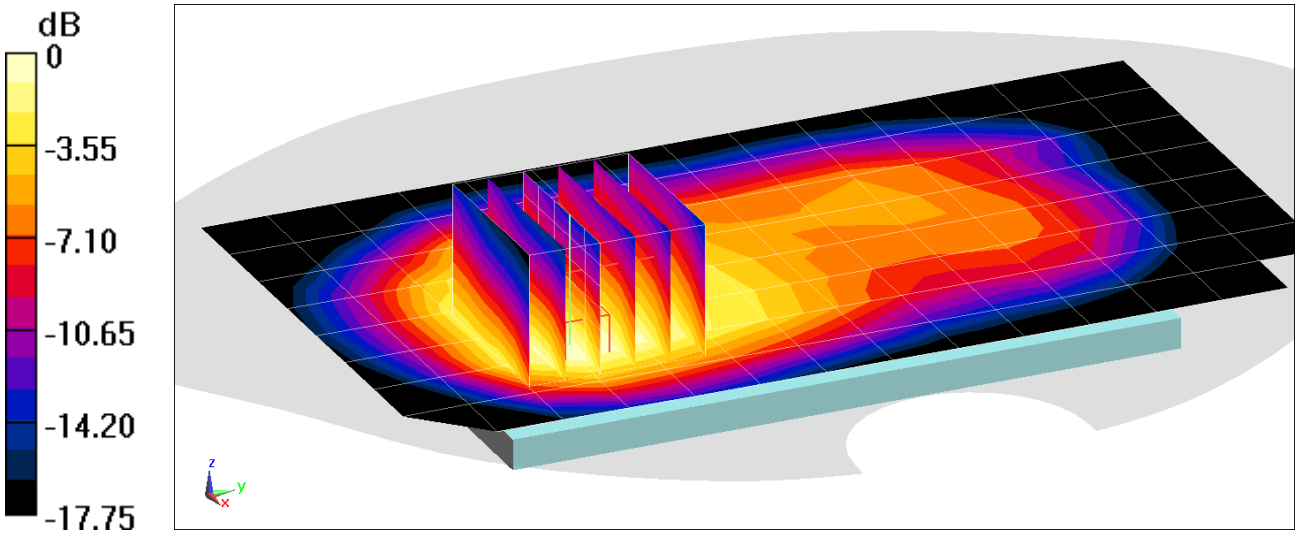
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.501 S/m; ε_r = 52.737; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-30-2019; Ambient Temp: 20.4°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1732.4 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: UMTS 1750, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (16x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.37 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.819 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

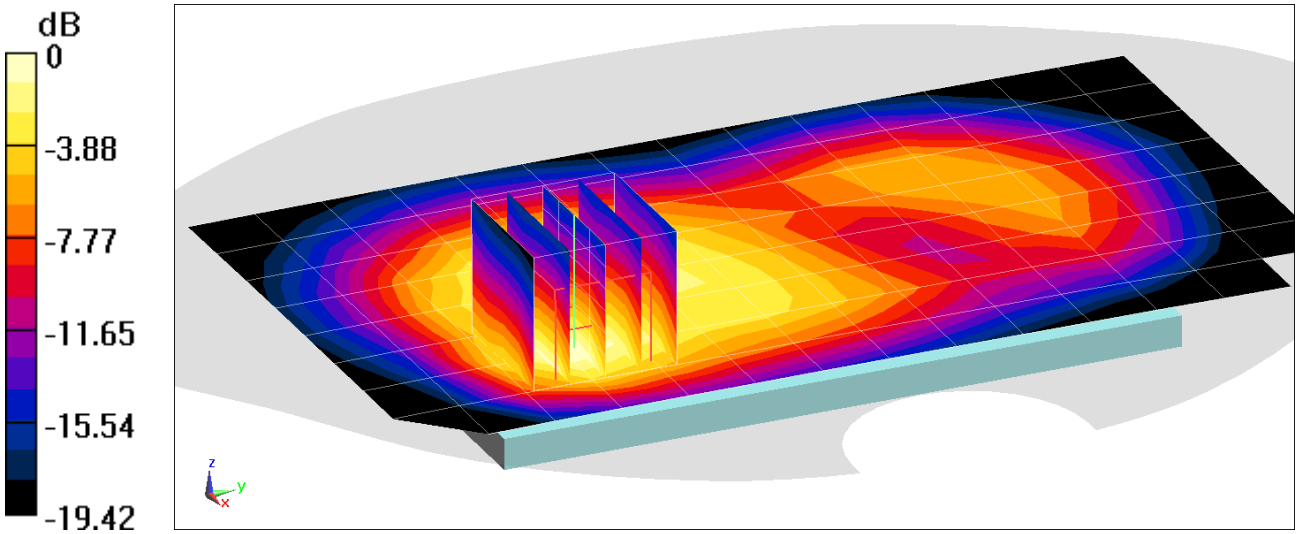
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.558 S/m; ε_r = 51.745; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-05-2020; Ambient Temp: 20.7°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 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; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.24 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.720 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

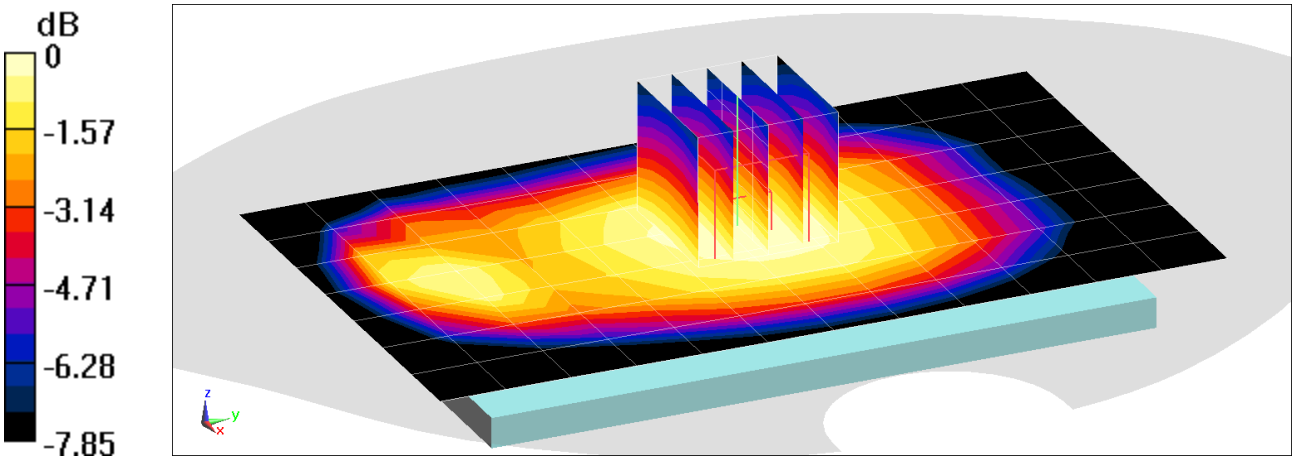
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.958 S/m; ε_r = 53.916; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 820.1 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: Cell. CDMA BC10, Body SAR, Back side, Mid.ch

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.74 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.466 W/kg
SAR(1 g) = 0.359 W/kg



0 dB = 0.429 W/kg = -3.68 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

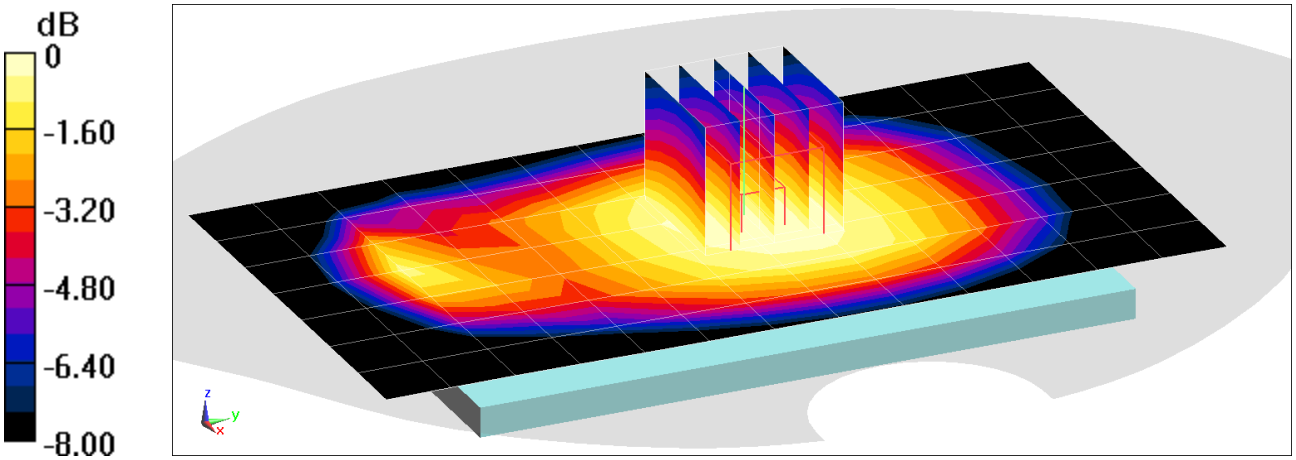
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.958 S/m; ε_r = 53.916; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 820.1 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: Cell. EVDO BC10, Body SAR, Back side, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.05 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.434 W/kg
SAR(1 g) = 0.336 W/kg



0 dB = 0.401 W/kg = -3.97 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

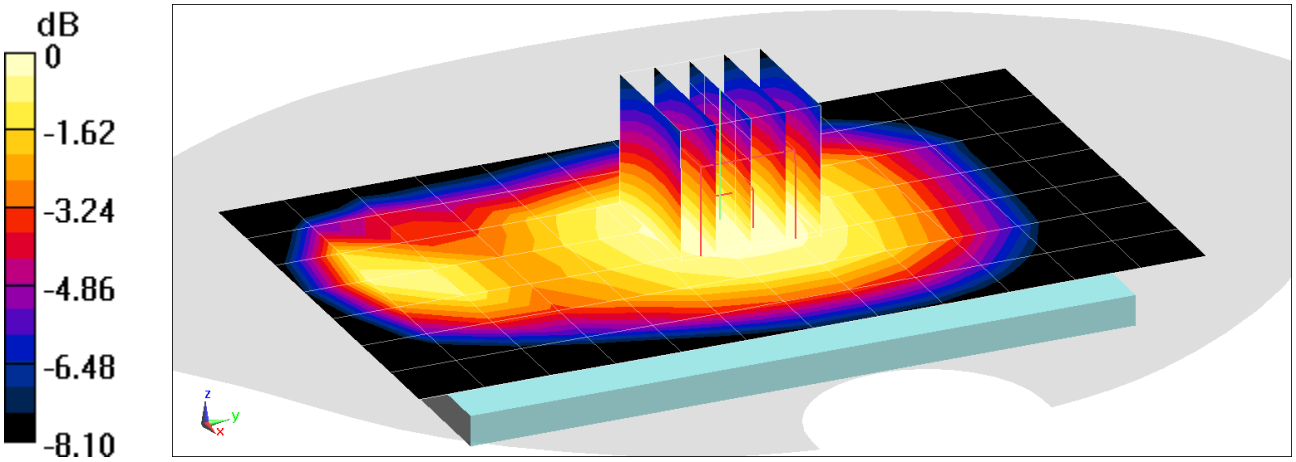
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.967 S/m; ε_r = 53.965; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 836.52 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: Cell. CDMA, BC 0, Body SAR, Back side, Mid.ch

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.54 V/m; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.559 W/kg
SAR(1 g) = 0.432 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

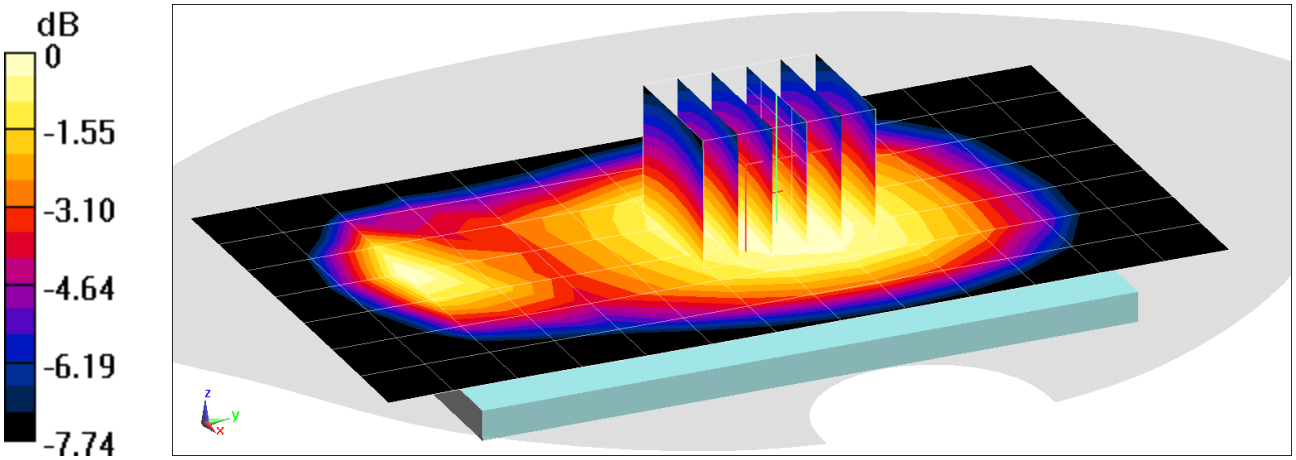
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.967 S/m; ε_r = 53.965; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 836.52 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: Cell. EVDO, BC 0, Body SAR, Back side, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.96 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.371 W/kg



0 dB = 0.443 W/kg = -3.54 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

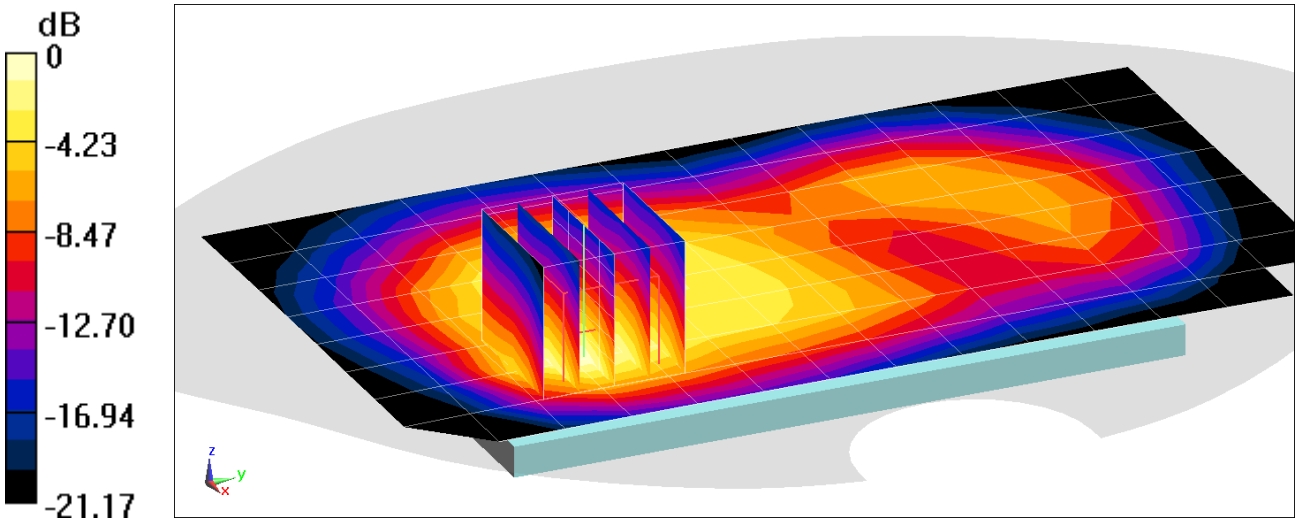
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.588 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 1908.75 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS CDMA, 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 = 25.08 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 0.888 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

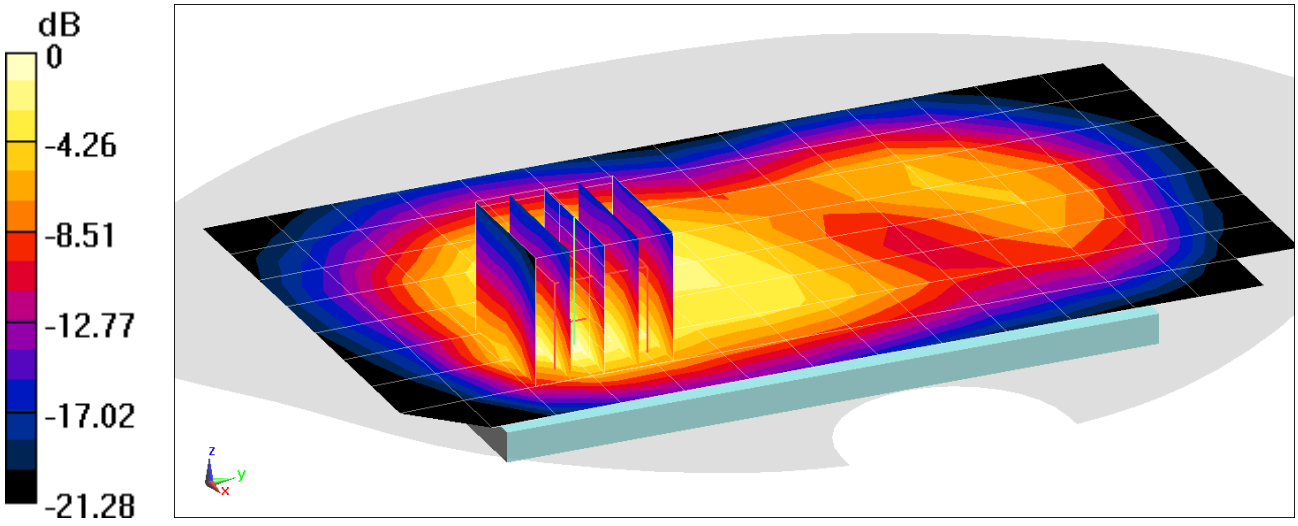
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.588 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 1908.75 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO, 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 = 21.85 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.678 W/kg



0 dB = 1.09 W/kg = 0.37 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

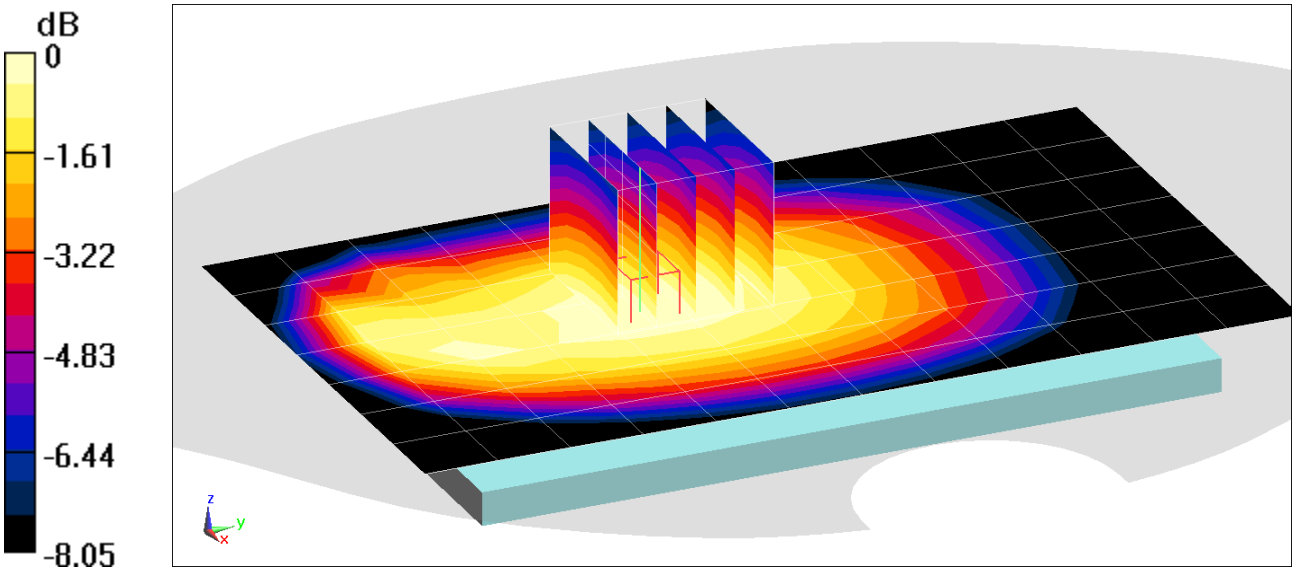
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.949 S/m; ε_r = 53.287; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.5°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 (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.97 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.584 W/kg
SAR(1 g) = 0.462 W/kg



0 dB = 0.544 W/kg = -2.64 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

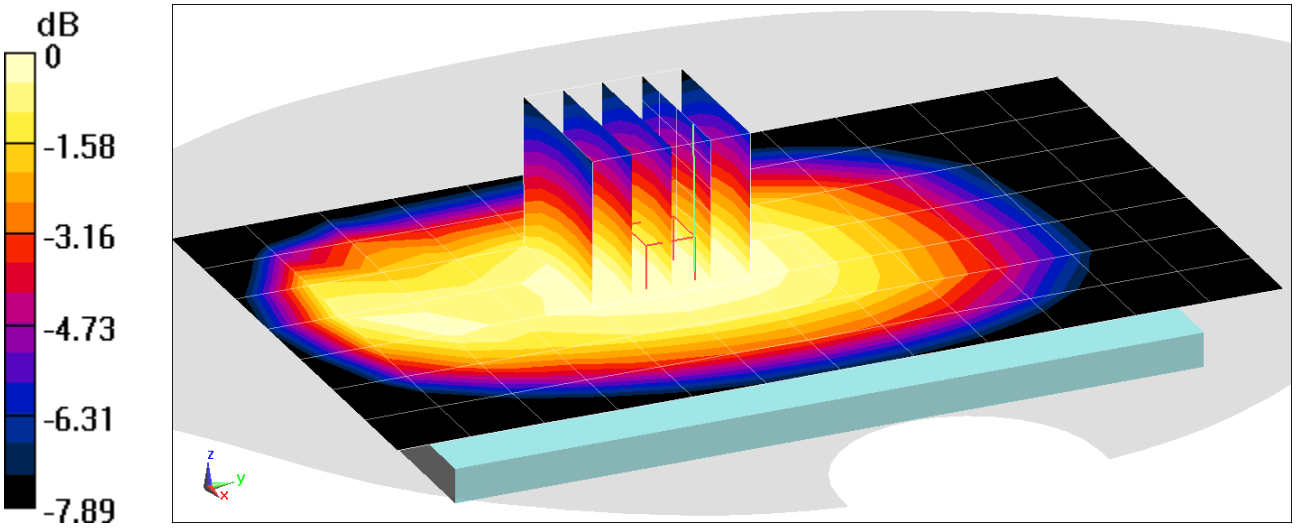
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.96 S/m; ε_r = 53.179; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.5°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 (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.48 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.698 W/kg
SAR(1 g) = 0.555 W/kg



0 dB = 0.649 W/kg = -1.88 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

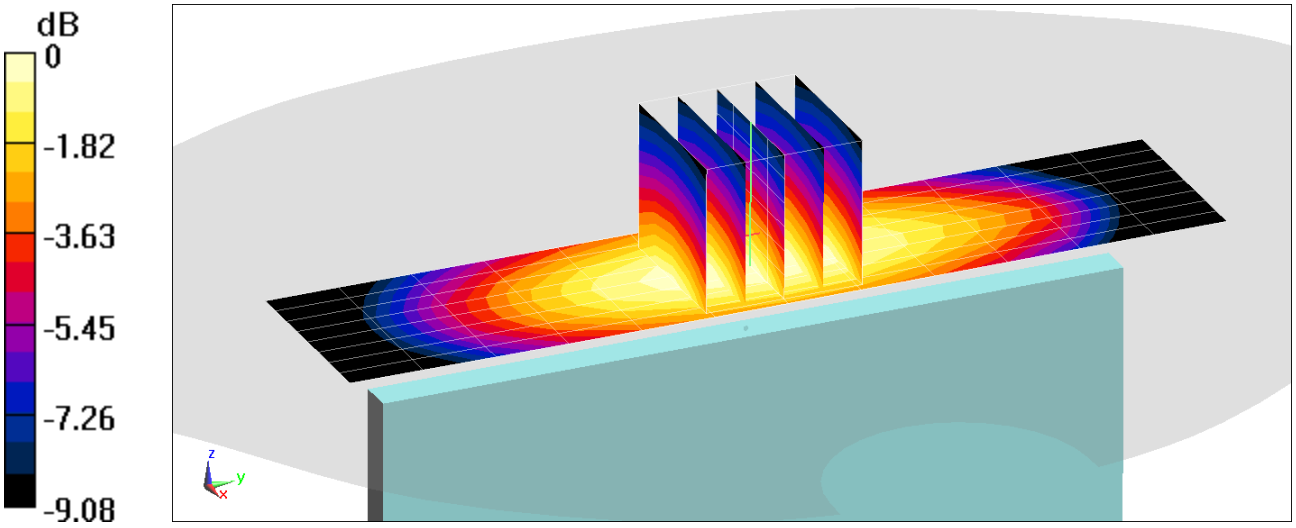
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.96 S/m; ε_r = 53.179; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.5°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, Right Edge, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.16 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.889 W/kg
SAR(1 g) = 0.625 W/kg



0 dB = 0.800 W/kg = -0.97 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

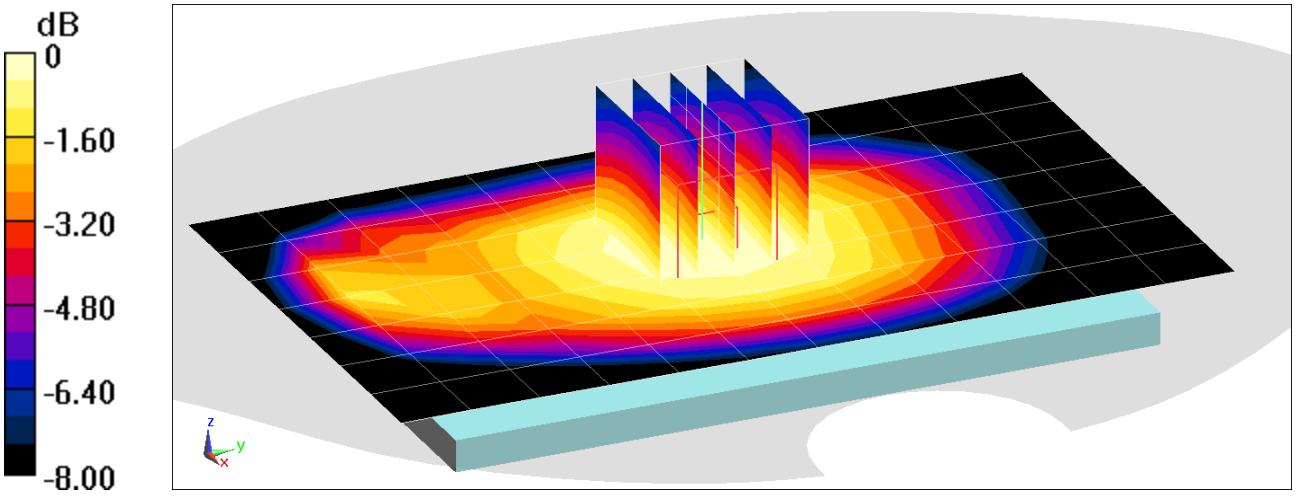
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.985 S/m; ε_r = 53.021; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.5°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 (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.19 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.761 W/kg
SAR(1 g) = 0.597 W/kg



0 dB = 0.709 W/kg = -1.49 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

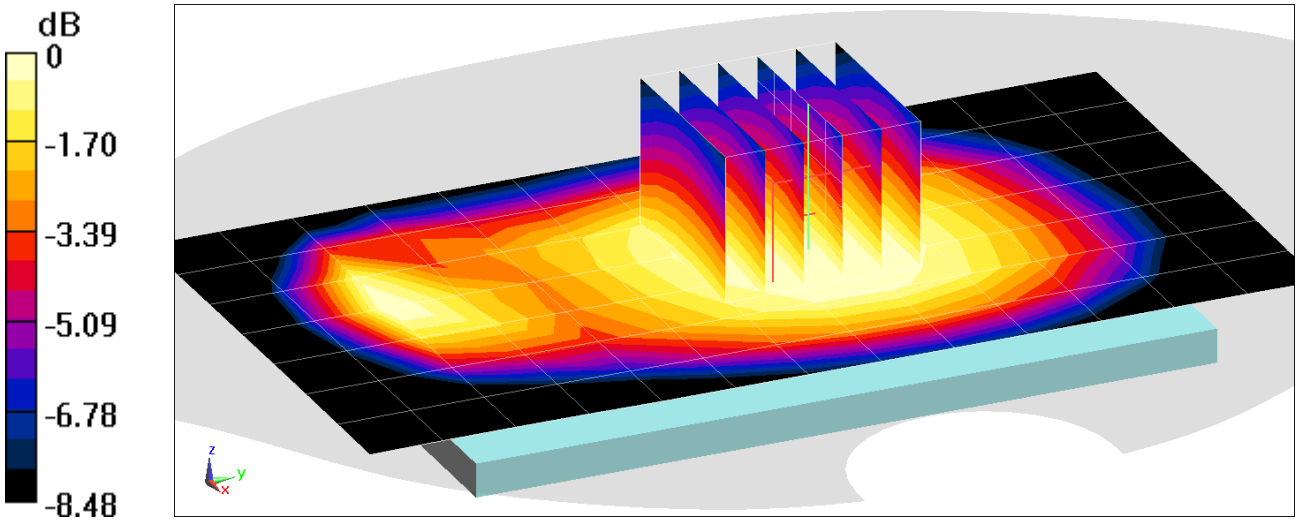
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.964 S/m; ε_r = 53.951; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-18-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7410; ConvF(9.79, 9.79, 9.79) @ 831.5 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 26 (Cell.), Body SAR, Back side, Mid.ch, 15 MHz Bandwidth QPSK, 1 RB, 36 RB Offset

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.33 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.658 W/kg
SAR(1 g) = 0.513 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

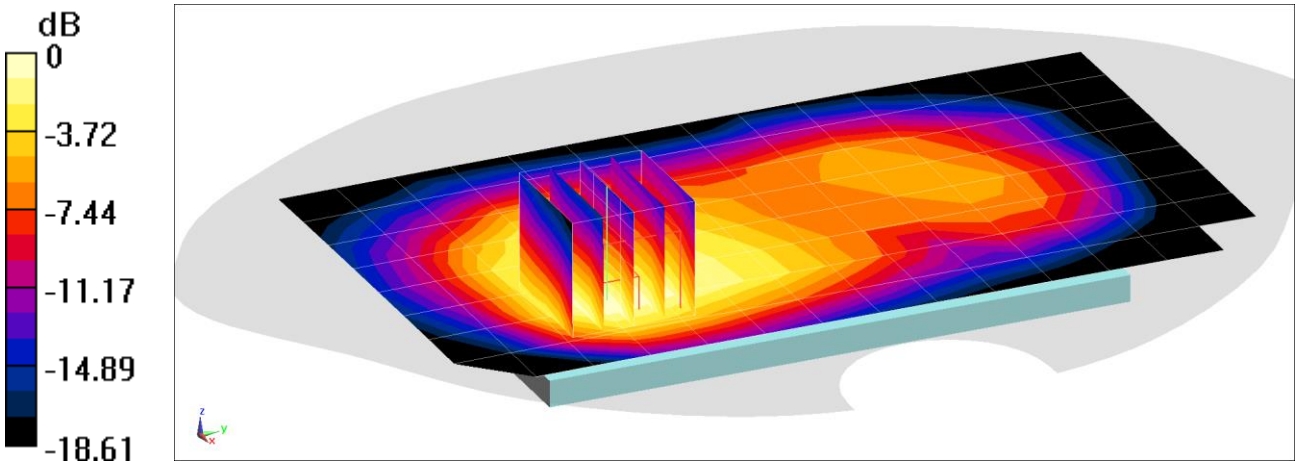
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1720 MHz; σ = 1.496 S/m; ε_r = 51.759; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-10-2020; Ambient Temp: 22.0°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7308;ConvF(8.25, 8.25, 8.25) @ 1720 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: LTE Band 66 (AWS), Body SAR, Back side, 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 = 22.52 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.714 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

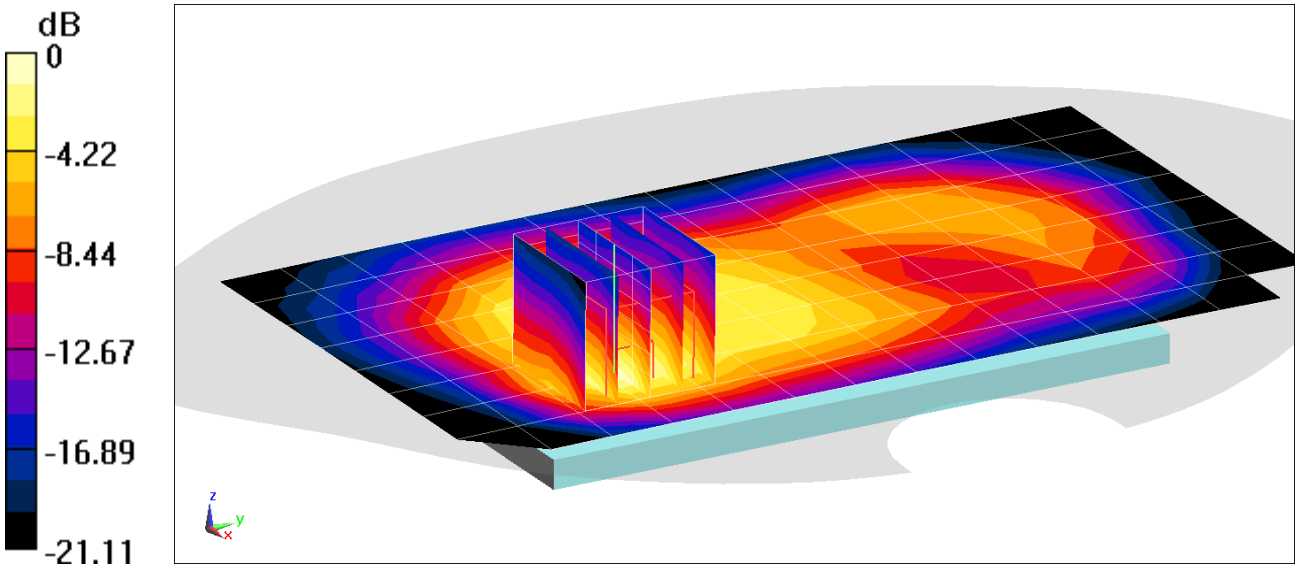
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1905 MHz; σ = 1.583 S/m; ε_r = 50.912; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 1905 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; 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), 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 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.04 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 0.826 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05516

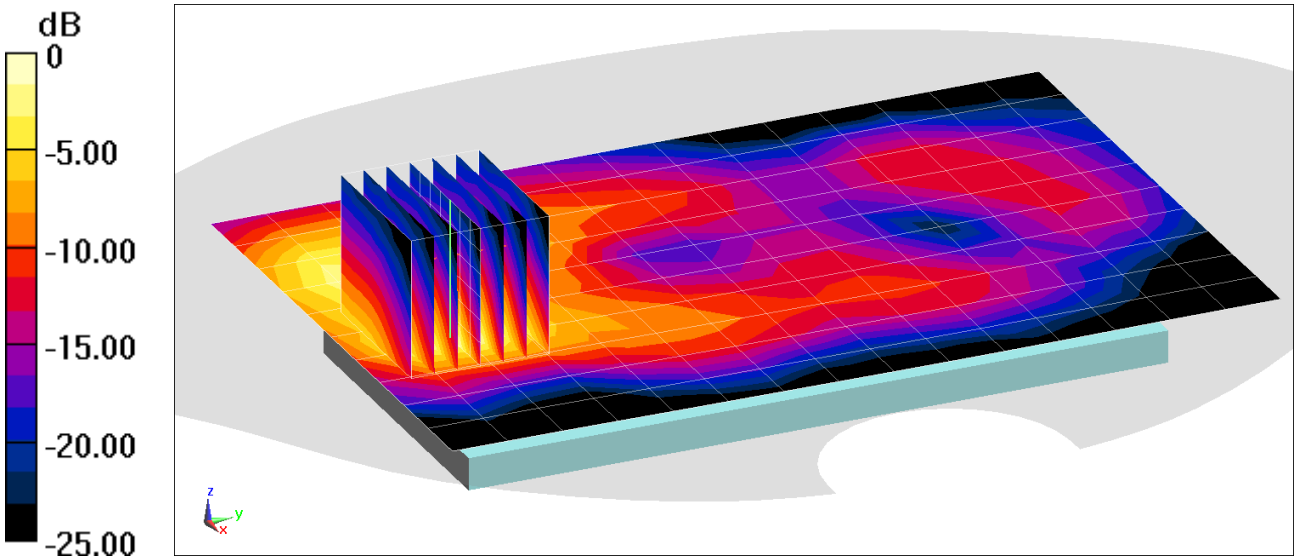
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used (interpolated):
$f = 2636.5$ MHz; $\sigma = 2.263$ S/m; $\varepsilon_r = 51.074$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2020; Ambient Temp: 24.2°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2636.5 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, Body SAR, Back side Mid-High.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.95 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.534 W/kg



0 dB = 0.897 W/kg = -0.47 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

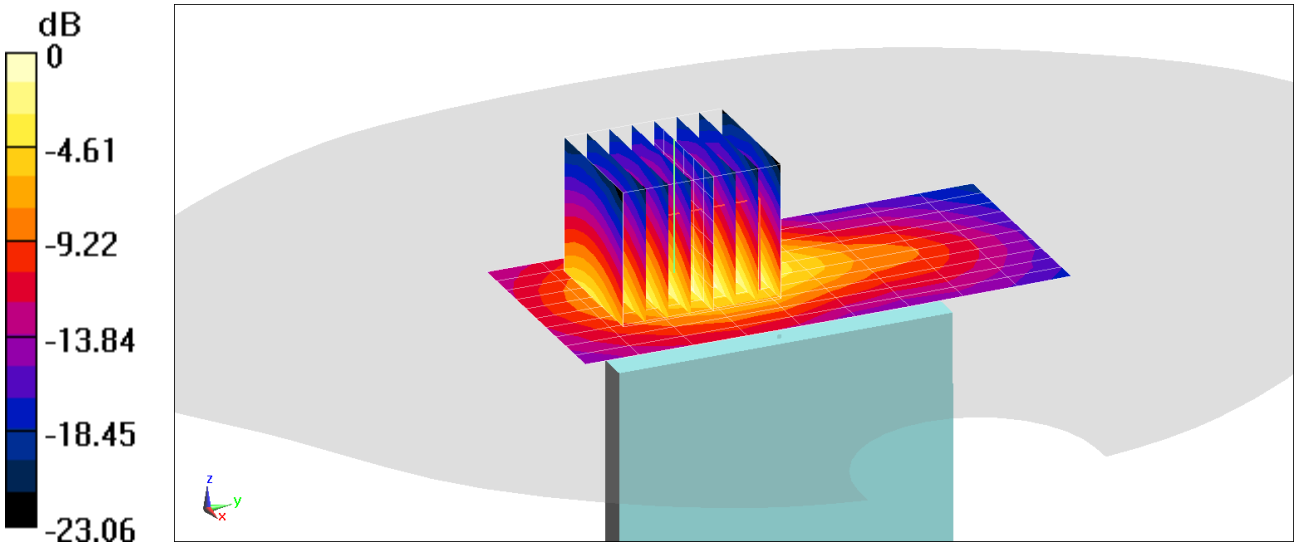
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used (interpolated):
$f = 2636.5$ MHz; $\sigma = 2.227$ S/m; $\varepsilon_r = 50.026$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-13-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2636.5 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, Body SAR, Bottom Edge, Mid-High.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.93 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.621 W/kg



0 dB = 0.981 W/kg = -0.08 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

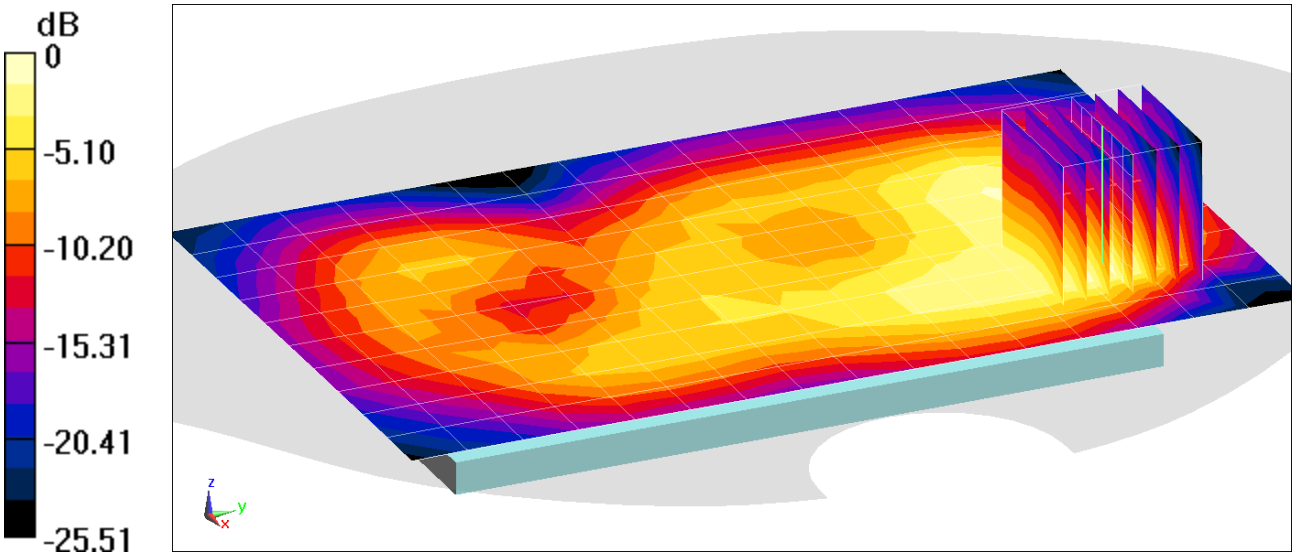
Communication System: UID 0, 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2412 MHz; σ = 1.985 S/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-06-2020; Ambient Temp: 20.6°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(7.44, 7.44, 7.44) @ 2412 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: 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 = 14.39 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.757 W/kg
SAR(1 g) = 0.358 W/kg



0 dB = 0.601 W/kg = -2.21 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

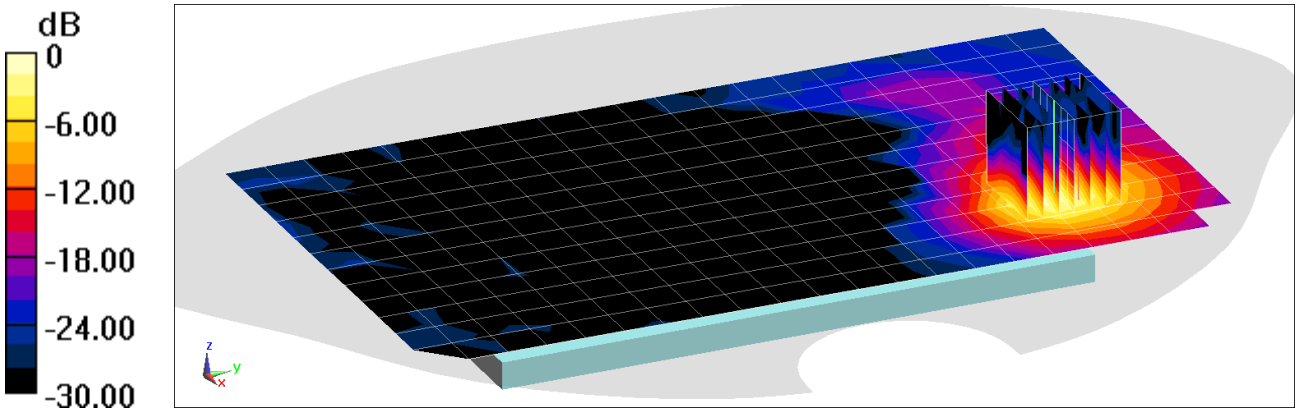
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5280 MHz; σ = 5.585 S/m; ε_r = 46.908; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-23-2019; Ambient Temp: 23.0°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

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 13.71 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.45 W/kg
SAR(1 g) = 0.900 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

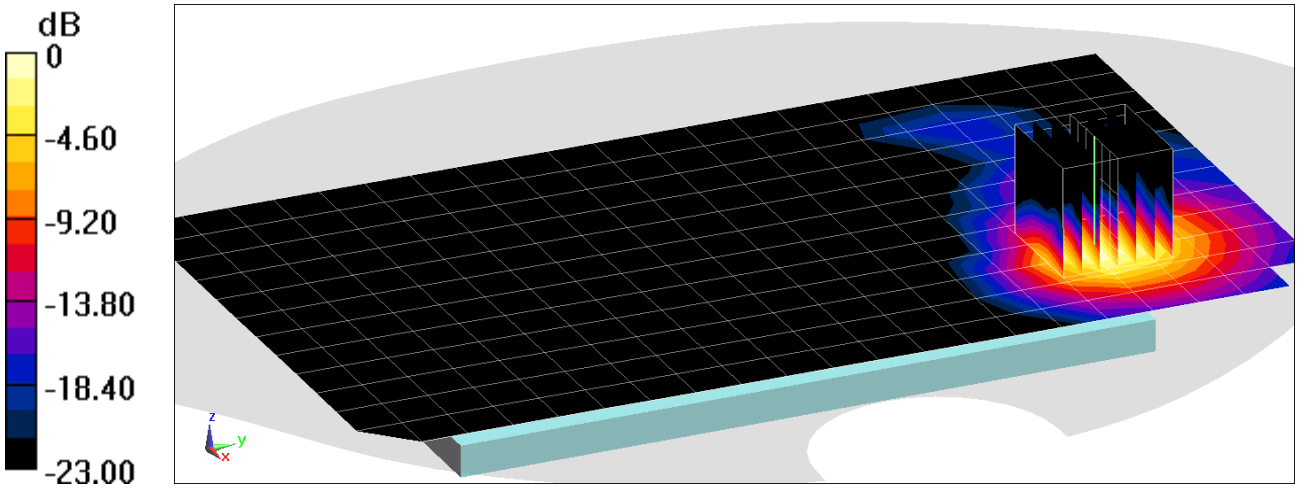
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5220 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5220 MHz; σ = 5.502 S/m; ε_r = 47.032; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-23-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7409; ConvF(4.7, 4.7, 4.7) @ 5220 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 44, 6 Mbps, Back Side

Area Scan (9x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 13.30 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 3.09 W/kg
SAR(1 g) = 0.823 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

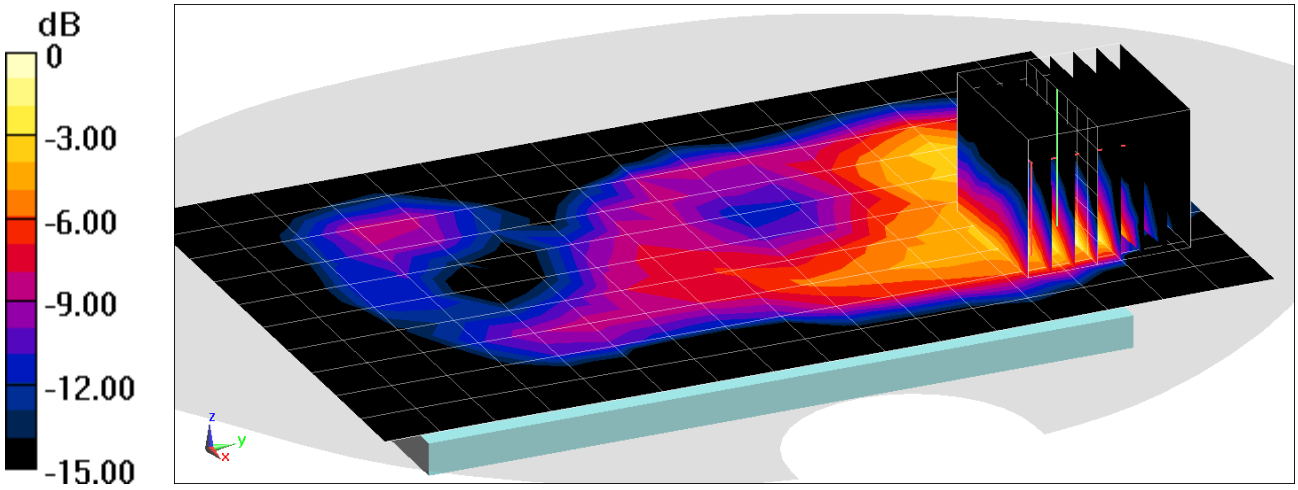
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2480 MHz; σ = 2.076 S/m; ε_r = 51.514; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-05-2020; Ambient Temp: 23.4°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7547; ConvF(7.3, 7.3, 7.3) @ 2480 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: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.993 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0790 W/kg
SAR(1 g) = 0.036 W/kg



0 dB = 0.0604 W/kg = -12.19 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05482

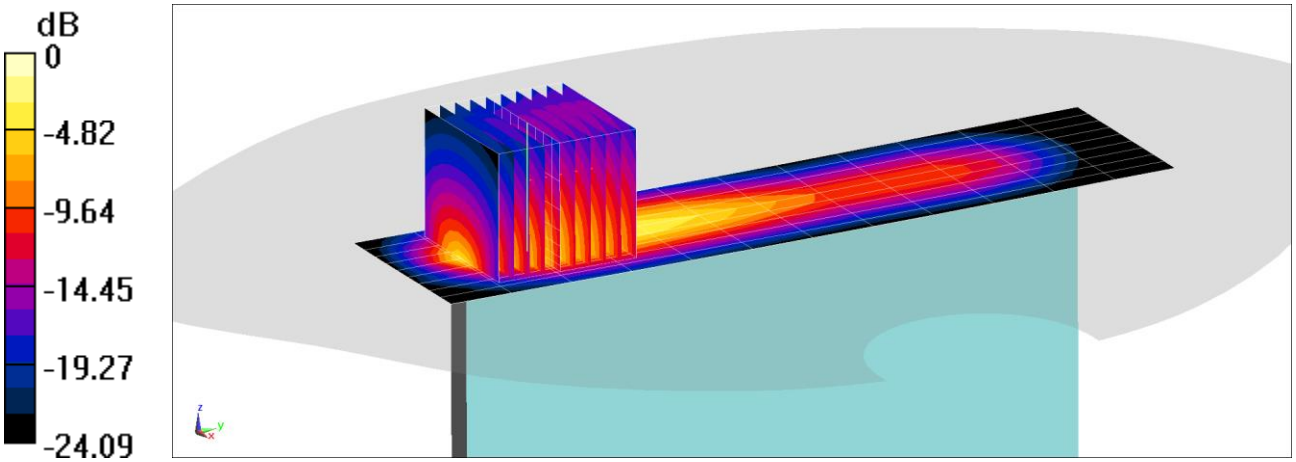
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1752.6 MHz; σ = 1.513 S/m; ε_r = 53.057; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-09-2020; Ambient Temp: 21.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1752.6 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: UMTS 1750, Phablet SAR, Left Edge, High.ch

Area Scan (10x13x1): 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 = 72.49 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 22.1 W/kg
SAR(10 g) = 3.06 W/kg



0 dB = 11.9 W/kg = 10.76 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

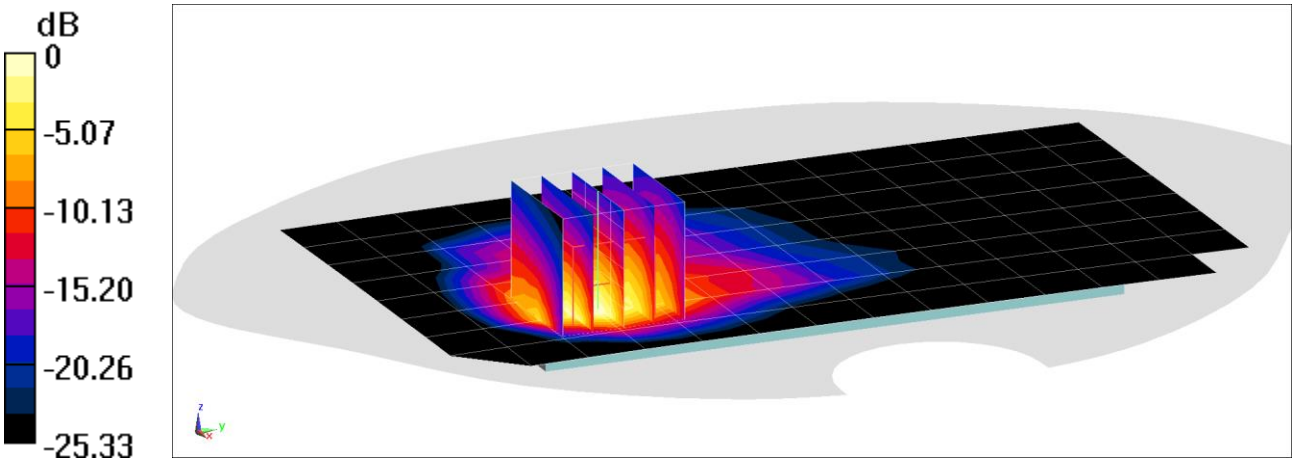
Communication System: UID 0, UMTS; 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.586 S/m; ε_r = 51.408; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551; ConvF(7.69, 7.69, 7.69) @ 1907.6 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: UMTS 1900, Phablet 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 = 69.44 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(10 g) = 2.85 W/kg



0 dB = 11.7 W/kg = 10.68 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05490

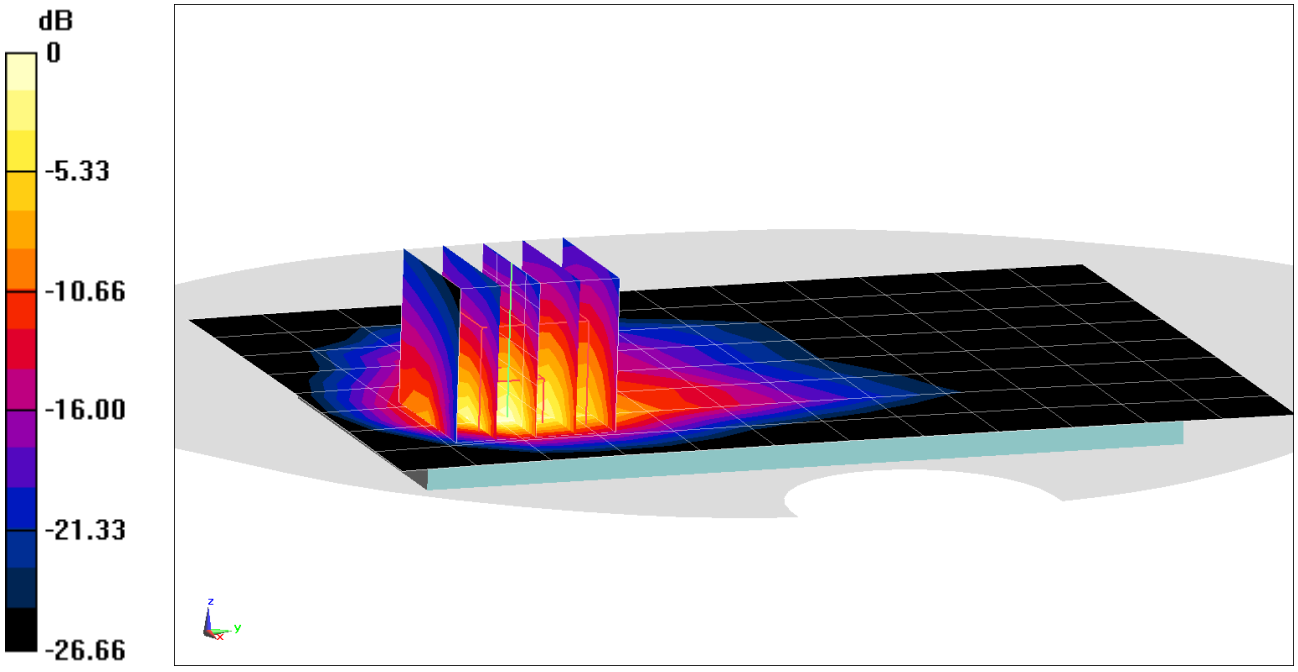
Communication System: UID 0, CDMA; 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.588 S/m; ε_r = 51.407; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-06-2020; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7551;ConvF(7.69, 7.69, 7.69) @ 1908.75 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1792
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 = 71.02 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(10 g) = 2.87 W/kg



0 dB = 10.9 W/kg = 10.37 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

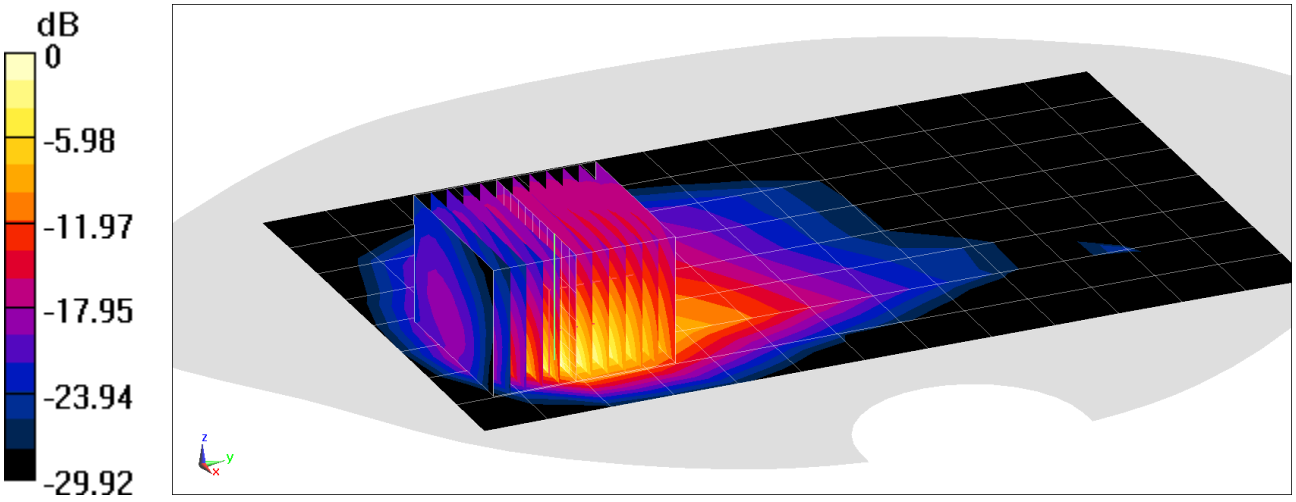
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1745 MHz; σ = 1.517 S/m; ε_r = 52.891; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-11-2020; Ambient Temp: 21.4°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(8.25, 8.25, 8.25) @ 1745 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: LTE Band 66 (AWS), Phablet SAR, Back side, Mid.ch, 20 MHz Bandwidth QPSK, 50 RB, 50 RB Offset

Area Scan(9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (12x12x8)/Cube 0: Measurement grid: dx=3.9mm, dy=3.9mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 64.49 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(10 g) = 2.59 W/kg



0 dB = 10.9 W/kg = 10.37 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

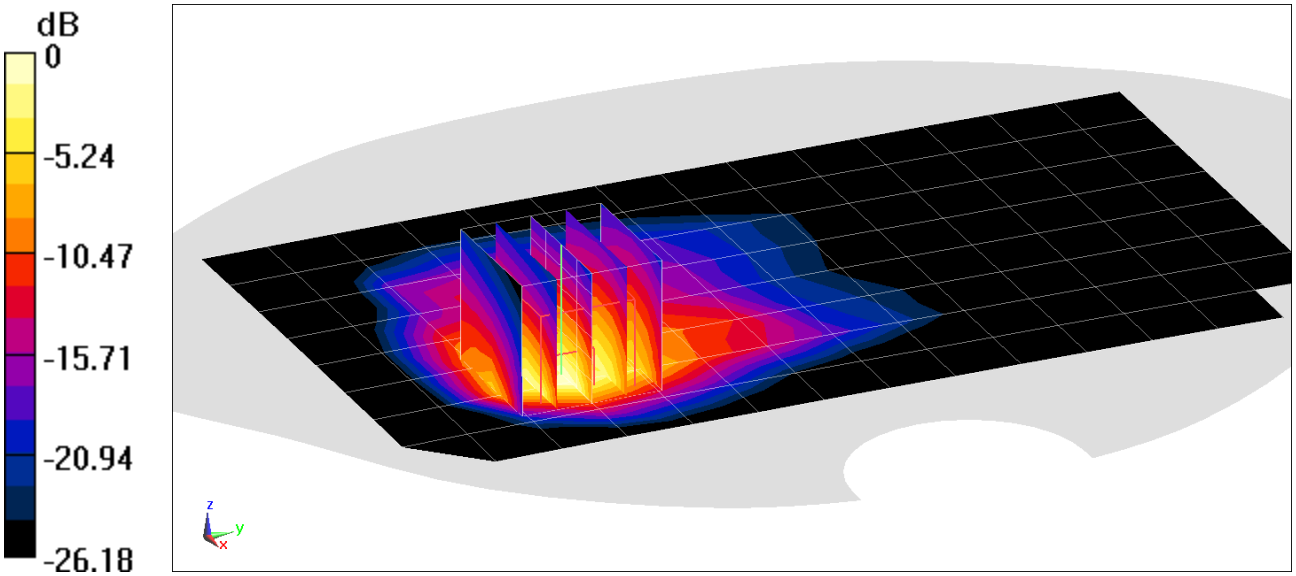
Communication System: UID 0, LTE Band 25 (PCS); 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1905 MHz; σ = 1.584 S/m; ε_r = 51.208; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-11-2020; Ambient Temp: 21.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7551;ConvF(7.69, 7.69, 7.69) @ 1905 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0; 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), Phablet SAR, Back side, High.ch, 20 MHz Bandwidth QPSK, 50 RB, 25 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 = 71.14 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 19.1 W/kg
SAR(10 g) = 3.08 W/kg



0 dB = 12.4 W/kg = 10.93 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05508

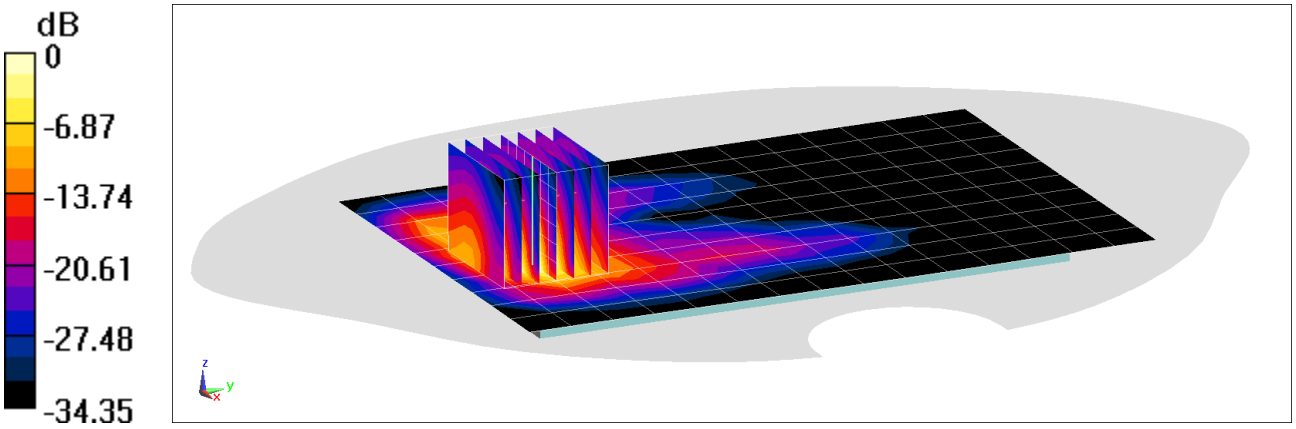
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2636.5 MHz; σ = 2.227 S/m; ε_r = 50.026; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-13-2020; Ambient Temp: 22.9°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7547;ConvF(7.18, 7.18, 7.18) @ 2636.5 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, Phablet SAR, Back side, Mid-High.ch, 20 MHz Bandwidth QPSK, 50 RB, 0 RB Offset

Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 66.81 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 25.3 W/kg
SAR(10 g) = 2.92 W/kg



0 dB = 17.2 W/kg = 12.36 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 05524

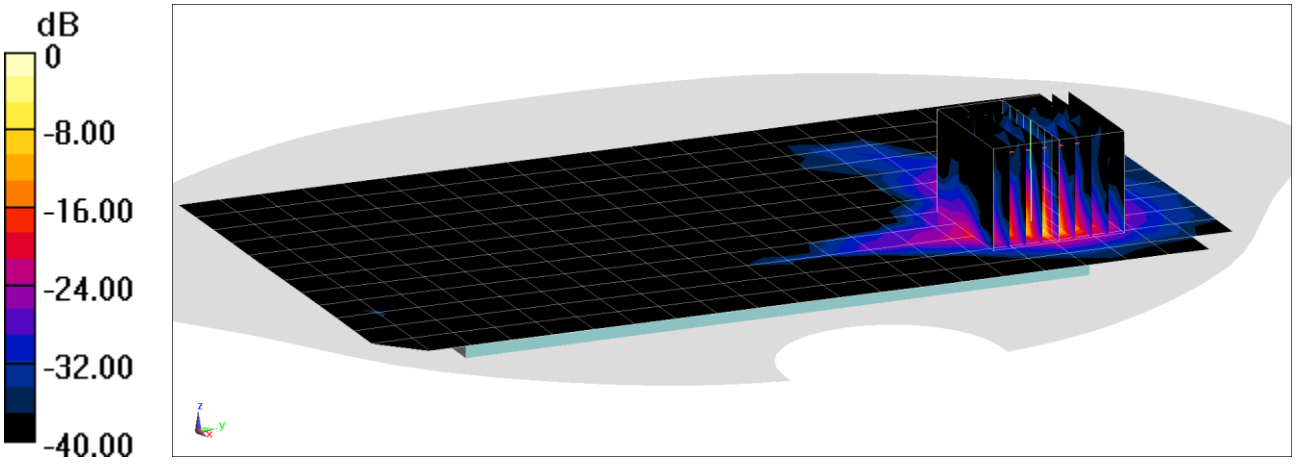
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5280 MHz; σ = 5.524 S/m; ε_r = 46.878; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-29-2019; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, U-NII-2A, 20 MHz Bandwidth, Phablet SAR
Ch 56, 6 Mbps, Back Side

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 1.100 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 70.5 W/kg
SAR(10 g) = 1.74 W/kg



0 dB = 37.4 W/kg = 15.73 dBW/kg