PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. +1.410.290.6652 / Fax +1.410.290.6654
http://www.pctest.com

SAR EVALUATION REPORT

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

Date of Testing:
04/21/19 - 05/15/19
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1904220061-01-R1.ZNF

FCC ID: **ZNFQ720PS**

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:	LM-Q720PS
Additional Model(s):	LMQ720PS, Q720PS
Permissive Change(s):	See FCC Change Document
Date of Original Certification:	05/10/2019

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	0.21	0.43	0.43	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.10	0.36	0.73	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.21	0.58	0.58	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.14	0.56	0.96	N/A
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.16	0.56	1.16	2.85
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.18	0.48	0.40	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.17	0.49	0.42	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.17	0.58	1.19	2.50
PCE	LTE Band 71	665.5 - 695.5 MHz	0.11	0.25	0.25	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.17	0.31	0.31	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.18	0.40	0.40	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.18	0.63	0.63	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	0.11	0.57	0.98	N/A
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	0.16	0.53	1.16	2.83
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	0.14	0.60	1.09	3.23
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.20	0.71	0.71	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.69	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.92	0.65	N/A	1.85
NII	U-NII-2C	5500 - 5700 MHz	0.98	0.55	N/A	1.46
NII	U-NII-3	5745 - 5825 MHz	0.85	0.59	N/A	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.11	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.42	1.33	1.46	3.80

Note: This revised Test Report (S/N: 1M1904220061-01-R1.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.7 of this report; for North American frequency bands only.

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

Randy Ortanez
President

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

REV 21.3 M
02/15/2019

TABLE OF CONTENTS

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 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 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 - 5700 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*	*1 TX Slots*	*2 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.7**	**33.7**	**32.2**	**27.7**	**27.7**
	Nominal	**33.2**	**33.2**	**31.7**	**27.2**	**27.2**
GSM/GPRS/EDGE 1900	Maximum	**30.7**	**30.7**	**29.2**	**26.2**	**26.2**
	Nominal	**30.2**	**30.2**	**28.7**	**25.7**	**25.7**

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*
UMTS Band 5 (850 MHz)	Maximum	**25.5**	**25.5**	**25.5**
	Nominal	**25.0**	**25.0**	**25.0**
UMTS Band 4 (1750 MHz)	Maximum	**24.3**	**24.3**	**24.3**
	Nominal	**23.8**	**23.8**	**23.8**
UMTS Band 2 (1900 MHz)	Maximum	**24.3**	**24.3**	**24.3**
	Nominal	**23.8**	**23.8**	**23.8**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.0**
	Nominal	**24.5**
CDMA/EVDO BC0 (§22H)	Maximum	**25.0**
	Nominal	**24.5**
PCS CDMA/EVDO	Maximum	**24.7**
	Nominal	**24.2**

Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 12	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 17	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 13	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 26 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 5 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 66 (AWS)	Maximum	**24.3**
	Nominal	**23.8**
LTE Band 4 (AWS)	Maximum	**24.3**
	Nominal	**23.8**
LTE Band 25 (PCS)	Maximum	**24.3**
	Nominal	**23.8**
LTE Band 2 (PCS)	Maximum	**24.3**
	Nominal	**23.8**
LTE Band 41 (PC3)	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 41 (PC2)	Maximum	**27.7**
	Nominal	**27.2**

Mode / Band		Modulated Average (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	**21.0**
	Nominal	**20.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.5**
	Nominal	**16.5**
IEEE 802.11n (2.4 GHz)	Maximum	**17.5**
	Nominal	**16.5**

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	**11.0**
	Nominal	**10.0**
Bluetooth LE	Maximum	**2.0**
	Nominal	**1.0**

Mode / Band		Modulated Average (dBm)														
		20 MHz Bandwidth							40 MHz Bandwidth				80 MHz Bandwidth			
		Ch. 36	Ch. 40 - 60	Ch. 64 - 100	Ch. 104 - 136	Ch. 140 - 149	Ch. 153 - 161	Ch. 165	Ch. 38	Ch. 46 - 54	Ch. 62 - 102	Ch. 110-159	Ch.42	Ch.58	Ch. 106	CH.122 - 155
IEEE 802.11a (5 GHz)	Maximum	**17.0**	**19.5**	**17.0**	**19.5**	**17.5**	**19.5**	**17.5**								
	Nominal	**16.0**	**18.5**	**16.0**	**18.5**	**16.5**	**18.5**	**16.5**								
IEEE 802.11n (5 GHz)	Maximum	**17.0**	**19.5**	**17.0**	**19.5**	**17.5**	**19.5**	**17.5**	**14.0**	**16.0**	**14.0**	**16.0**				
	Nominal	**16.0**	**18.5**	**16.0**	**18.5**	**16.5**	**18.5**	**16.5**	**13.0**	**15.0**	**13.0**	**15.0**				
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**16.5**	**14.0**	**16.5**	**14.5**	**16.5**	**14.5**	**12.0**	**14.0**	**12.0**	**14.0**	**11.0**	**12.0**	**11.0**	**13.0**
	Nominal	**13.0**	**15.5**	**13.0**	**15.5**	**13.5**	**15.5**	**13.5**	**11.0**	**13.0**	**11.0**	**13.0**	**10.0**	**11.0**	**10.0**	**12.0**

1.3.2 Reduced Output Power

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*
UMTS Band 2 (1900 MHz)	Maximum	**23.8**	**23.8**	**23.8**
	Nominal	**23.3**	**23.3**	**23.3**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**24.2**
	Nominal	**23.7**

Mode / Band		Modulated Average (dBm)
LTE Band 25 (PCS)	Maximum	**23.8**
	Nominal	**23.3**
LTE Band 2 (PCS)	Maximum	**23.8**
	Nominal	**23.3**
LTE Band 41 (PC3)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 41 (PC2)	Maximum	**25.7**
	Nominal	**25.2**

Mode / Band		Modulated Average (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	**19.0**
	Nominal	**18.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.5**
	Nominal	**16.5**
IEEE 802.11n (2.4 GHz)	Maximum	**17.5**
	Nominal	**16.5**

Mode / Band		Modulated Average (dBm)														
		20 MHz Bandwidth							40 MHz Bandwidth				80 MHz Bandwidth			
		Ch. 36	Ch. 40 - 60	Ch. 64 - 100	Ch. 104 - 136	Ch. 140 - 149	Ch. 153 - 161	Ch. 165	Ch. 38	Ch. 46 - 54	Ch. 62 - 102	Ch. 110-159	Ch.42	Ch.58	Ch. 106	CH.122 - 155
IEEE 802.11a (5 GHz)	Maximum	**16.0**	**18.5**	**16.0**	**18.5**	**16.5**	**18.5**	**17.0**								
	Nominal	**15.0**	**17.5**	**15.0**	**17.5**	**15.5**	**17.5**	**16.0**								
IEEE 802.11n (5 GHz)	Maximum	**16.0**	**18.5**	**16.0**	**18.5**	**16.5**	**18.5**	**17.0**	**14.0**	**16.0**	**14.0**	**16.0**				
	Nominal	**15.0**	**17.5**	**15.0**	**17.5**	**15.5**	**17.5**	**16.0**	**13.0**	**15.0**	**13.0**	**15.0**				
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**16.5**	**14.0**	**16.5**	**14.5**	**16.5**	**14.5**	**12.0**	**14.0**	**12.0**	**14.0**	**11.0**	**12.0**	**11.0**	**13.0**
	Nominal	**13.0**	**15.5**	**13.0**	**15.5**	**13.5**	**15.5**	**13.5**	**11.0**	**13.0**	**11.0**	**13.0**	**10.0**	**11.0**	**10.0**	**12.0**

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 F. 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	No	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	No
UMTS 850	Yes	Yes	No	Yes	No	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	No
UMTS 1900	Yes	Yes	No	Yes	Yes	No
EVDO BC0 (§22H)	Yes	Yes	No	Yes	No	Yes
EVDO BC10 (§90S)	Yes	Yes	No	Yes	No	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	No
LTE Band 71	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Yes	Yes	No	Yes	No	Yes
LTE Band 13	Yes	Yes	No	Yes	No	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	No	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	No
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	No
LTE Band 41	Yes	Yes	No	Yes	Yes	No
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 and 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 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 and VOWIFI.
7. This device supports Bluetooth Tethering.

1.6 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A & U-NII-2C WIFI, only 2.4 GHz WIFI, 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 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 WLAN, U-NII-1 WLAN, U-NII-3 WLAN, and Bluetooth 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 64QAM on the uplink for LTE Operations. Conducted powers for 64QAM configurations were measured per Section 5.1 of FCC KDB Publication 941225 D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64 QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leq$ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

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

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).

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 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 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 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 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 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 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 6, UL UE Cat 5				
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 10. It supports carrier aggregation feature as shown in Appendix H. All other uplink communications are identical to the Release 8 specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 10 Features are not supported: Wi-Fi offloading, Relay, HetNet, Enhanced eICIC, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC FDMA.				

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

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.

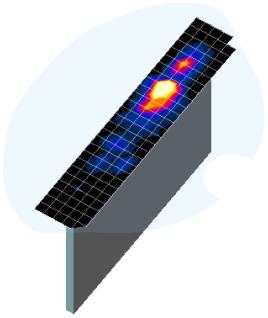


Figure 4-1
Sample SAR Area Scan

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].

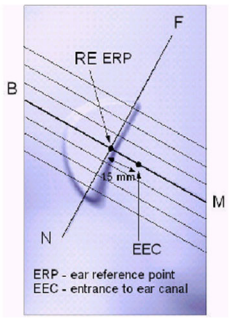


Figure 5-1
Close-Up Side view of ERP

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

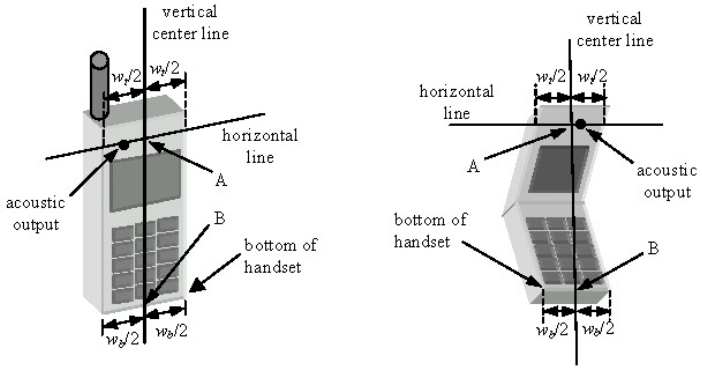


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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.

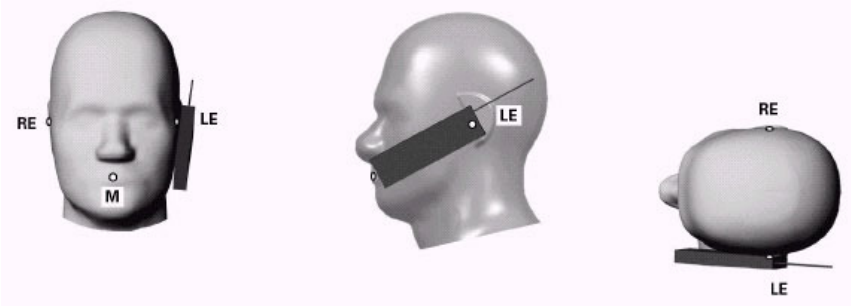


Figure 6-1 Front, Side and Top View of Cheek Position

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).

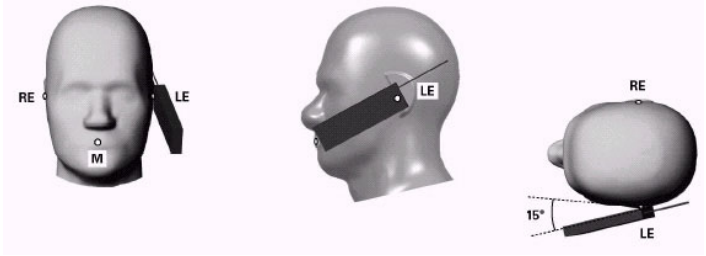


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

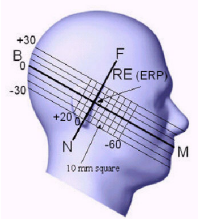


Figure 6-3
Side view w/ relevant markings

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.

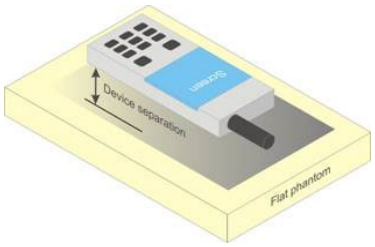


Figure 6-4
Sample Body-Worn Diagram

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 G.

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

7.2 Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 7-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

8 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

8.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in

12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
   i. The required channel and offset combination with the highest maximum output power is required for SAR.
   ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
   iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.

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

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

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

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

2.4 GHz 802.11 g/n 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. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.7.7 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.92	24.93	24.90	24.90	24.90	24.89
Cellular	1013	22H	824.7	24.85	24.93	24.91	24.92	24.87	24.88
	384	22H	836.52	25.00	24.99	24.98	24.97	24.90	24.92
	777	22H	848.31	24.86	24.86	24.94	24.87	24.79	24.82
PCS	25	24E	1851.25	24.28	24.24	24.36	24.35	24.38	24.37
	600	24E	1880	24.21	24.20	24.19	24.21	24.23	24.38
	1175	24E	1908.75	24.32	24.31	24.34	24.31	24.35	24.41

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	24.07	24.09	24.05	24.05	24.09	24.08
	600	24E	1880	24.14	24.07	24.11	24.03	24.07	24.17
	1175	24E	1908.75	24.08	24.10	24.06	24.15	24.10	24.11

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**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	33.61	33.45	**31.97**	27.60	27.65
	190	33.60	33.66	**32.06**	27.69	27.45
	251	33.62	33.70	**31.72**	27.70	27.67
GSM 1900	512	30.15	30.21	**28.65**	26.10	26.04
	661	30.22	30.19	**28.73**	26.04	26.15
	810	30.15	30.20	**28.60**	25.88	25.84

Calculated Maximum Frame-Averaged Output Power						
		Voice	*GPRS/EDGE Data (GMSK)*		*EDGE Data (8-PSK)*	
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	24.58	24.42	**25.95**	18.57	21.63
	190	24.57	24.63	**26.04**	18.66	21.43
	251	24.59	24.67	**25.70**	18.67	21.65
GSM 1900	512	21.12	21.18	**22.63**	17.07	20.02
	661	21.19	21.16	**22.71**	17.01	20.13
	810	21.12	21.17	**22.58**	16.85	19.82

GSM 850	**Frame Avg.Targets:**	24.17	24.17	**25.68**	18.17	21.18
GSM 1900		21.17	21.17	**22.68**	16.67	19.68

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: 10 (Max 2 Tx uplink slots)
EDGE Multislot class: 10 (Max 2 Tx uplink slots)
DTM Multislot Class: N/A

Figure 9-2
Power Measurement Setup

9.3 UMTS Conducted Powers

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	25.47	25.43	25.50	24.28	24.26	24.28	24.13	24.20	24.06	-
99		12.2 kbps AMR	25.49	25.41	25.50	24.24	24.21	24.25	24.12	24.16	24.14	-
6	HSDPA	Subtest 1	24.57	24.35	24.36	24.25	24.11	24.13	23.82	23.60	23.27	0
6		Subtest 2	24.43	24.25	24.35	24.13	24.12	24.14	23.80	23.60	23.59	0
6		Subtest 3	23.94	23.85	23.87	23.69	23.52	23.63	23.26	23.11	23.03	0.5
6		Subtest 4	23.90	23.76	23.75	23.61	23.56	23.64	23.32	22.94	23.09	0.5
6	HSUPA	Subtest 1	24.56	24.36	24.38	23.89	23.92	23.83	23.71	23.72	23.69	0
6		Subtest 2	22.55	22.39	22.40	22.27	22.22	22.28	21.80	21.72	21.68	2
6		Subtest 3	23.56	23.38	23.41	23.28	23.22	23.24	22.92	22.73	22.70	1
6		Subtest 4	22.55	22.40	22.40	22.29	22.24	22.26	21.80	21.73	21.69	2
6		Subtest 5	24.58	24.40	24.39	24.28	24.24	24.26	23.81	23.73	23.70	0

Table 9-5
Reduced Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	PCS Band [dBm]			3GPP MPR [dB]
			9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.63	23.40	23.42	-
99		12.2 kbps AMR	23.67	23.43	23.46	-
6	HSDPA	Subtest 1	23.64	23.44	23.40	0
6		Subtest 2	23.51	23.43	23.38	0
6		Subtest 3	23.01	22.91	22.89	0.5
6		Subtest 4	23.00	22.90	22.88	0.5
6	HSUPA	Subtest 1	23.58	23.39	23.45	0
6		Subtest 2	21.59	21.41	21.40	2
6		Subtest 3	22.58	22.40	22.38	1
6		Subtest 4	21.58	21.40	21.37	2
6		Subtest 5	23.60	23.42	23.40	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	25.16	0	0
	1	50	**25.19**		0
	1	99	25.18		0
	50	0	**24.20**	0-1	1
	50	25	24.18		1
	50	50	24.16		1
	100	0	24.19		1
16QAM	1	0	24.23	0-1	1
	1	50	24.25		1
	1	99	24.15		1
	50	0	23.28	0-2	2
	50	25	23.15		2
	50	50	23.17		2
	100	0	23.26		2
64QAM	1	0	23.29	0-2	2
	1	50	23.25		2
	1	99	23.21		2
	50	0	22.27	0-3	3
	50	25	22.17		3
	50	50	22.22		3
	100	0	22.23		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	25.03	0	0
	1	36	25.02		0
	1	74	24.96		0
	36	0	24.09	0-1	1
	36	18	24.18		1
	36	37	24.12		1
	75	0	24.08		1
16QAM	1	0	24.26	0-1	1
	1	36	24.16		1
	1	74	24.02		1
	36	0	23.15	0-2	2
	36	18	23.22		2
	36	37	23.11		2
	75	0	23.14		2
64QAM	1	0	22.99	0-2	2
	1	36	23.01		2
	1	74	23.00		2
	36	0	22.23	0-3	3
	36	18	22.22		3
	36	37	22.13		3
	75	0	22.20		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	25.30	25.30	25.14	0	0
	1	25	25.11	25.25	25.04		0
	1	49	25.15	25.22	25.00		0
	25	0	24.44	24.23	24.15	0-1	1
	25	12	24.31	24.31	24.07		1
	25	25	24.26	24.32	23.99		1
	50	0	24.37	24.27	24.11		1
16QAM	1	0	24.48	24.50	24.28	0-1	1
	1	25	24.50	24.49	24.21		1
	1	49	24.45	24.46	24.08		1
	25	0	23.48	23.21	23.17	0-2	2
	25	12	23.41	23.34	23.16		2
	25	25	23.34	23.40	23.07		2
	50	0	23.40	23.22	23.15		2
64QAM	1	0	23.48	23.18	23.05	0-2	2
	1	25	23.46	23.25	22.97		2
	1	49	23.47	23.24	22.94		2
	25	0	22.47	22.25	22.24	0-3	3
	25	12	22.34	22.34	22.20		3
	25	25	22.38	22.32	22.12		3
	50	0	22.43	22.27	22.21		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	24.82	24.56	24.60	0	0
	1	12	24.83	24.61	24.52		0
	1	24	24.61	24.74	24.54		0
	12	0	24.31	24.25	24.12	0-1	1
	12	6	24.34	24.23	24.02		1
	12	13	24.37	24.24	24.00		1
	25	0	24.22	24.25	24.04		1
16QAM	1	0	24.40	24.45	24.50	0-1	1
	1	12	24.18	24.45	24.11		1
	1	24	24.29	24.49	24.29		1
	12	0	23.28	23.25	23.36	0-2	2
	12	6	23.32	23.30	23.27		2
	12	13	23.26	23.29	23.24		2
	25	0	23.20	23.26	23.08		2
64QAM	1	0	23.48	23.24	23.14	0-2	2
	1	12	23.42	23.31	23.23		2
	1	24	23.34	23.37	23.07		2
	12	0	22.34	22.31	22.18	0-3	3
	12	6	22.46	22.36	22.04		3
	12	13	22.41	22.38	22.01		3
	25	0	22.21	22.21	22.08		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	**24.90**	0	0
	1	25	24.82		0
	1	49	24.89		0
	25	0	**24.09**	0-1	1
	25	12	24.06		1
	25	25	24.05		1
	50	0	24.03		1
16QAM	1	0	24.16	0-1	1
	1	25	24.25		1
	1	49	24.10		1
	25	0	23.07	0-2	2
	25	12	23.14		2
	25	25	23.06		2
	50	0	23.12		2
64QAM	1	0	23.23	0-2	2
	1	25	23.18		2
	1	49	23.16		2
	25	0	22.16	0-3	3
	25	12	22.13		3
	25	25	22.17		3
	50	0	22.13		3

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

Table 9-11
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.50	24.55	24.64	0	0
	1	12	24.48	24.45	24.50		0
	1	24	24.38	24.50	24.45		0
	12	0	23.98	24.15	23.95	0-1	1
	12	6	24.00	24.15	24.00		1
	12	13	23.94	24.12	24.00		1
	25	0	24.00	24.15	23.89		1
16QAM	1	0	24.12	24.45	24.21	0-1	1
	1	12	24.03	24.35	24.16		1
	1	24	24.02	24.30	24.28		1
	12	0	22.93	23.15	23.00	0-2	2
	12	6	22.96	23.16	23.08		2
	12	13	22.91	23.19	23.01		2
	25	0	22.98	23.18	23.08		2
64QAM	1	0	23.31	23.35	23.35	0-2	2
	1	12	23.15	23.30	23.12		2
	1	24	23.09	23.28	23.20		2
	12	0	22.12	22.20	22.15	0-3	3
	12	6	22.12	22.20	22.20		3
	12	13	22.00	22.17	22.18		3
	25	0	22.10	22.16	22.22		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	24.45	24.52	24.44	0	0
	1	7	24.59	24.59	24.35		0
	1	14	24.45	24.60	24.37		0
	8	0	24.03	24.13	24.10	0-1	1
	8	4	24.02	24.12	24.08		1
	8	7	23.95	24.12	24.02		1
	15	0	24.01	24.14	24.12		1
16QAM	1	0	24.40	24.13	24.20	0-1	1
	1	7	24.33	24.05	24.10		1
	1	14	24.39	24.10	24.13		1
	8	0	23.04	23.05	23.00	0-2	2
	8	4	23.07	23.03	23.04		2
	8	7	23.01	22.99	23.09		2
	15	0	23.00	22.96	23.05		2
64QAM	1	0	23.24	23.39	23.17	0-2	2
	1	7	23.21	23.32	23.19		2
	1	14	23.35	23.32	23.26		2
	8	0	22.07	22.30	22.12	0-3	3
	8	4	22.16	22.27	22.07		3
	8	7	22.12	22.24	22.10		3
	15	0	22.05	22.15	22.15		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	24.38	24.52	24.35	0	0
	1	2	24.35	24.60	24.40		0
	1	5	24.33	24.52	24.40		0
	3	0	24.44	24.55	24.33		0
	3	2	24.40	24.51	24.60		0
	3	3	24.31	24.50	24.40		0
	6	0	23.89	24.05	24.05	0-1	1
16QAM	1	0	24.28	24.38	24.10	0-1	1
	1	2	24.25	24.44	24.11		1
	1	5	24.15	24.42	24.13		1
	3	0	24.02	24.17	24.08		1
	3	2	23.93	24.12	24.15		1
	3	3	23.95	24.11	24.11		1
	6	0	22.93	23.08	23.06	0-2	2
64QAM	1	0	23.18	23.38	23.14	0-2	2
	1	2	23.25	23.48	23.22		2
	1	5	23.09	23.30	23.22		2
	3	0	23.09	23.27	23.12		2
	3	2	23.05	23.24	23.30		2
	3	3	23.02	23.20	23.12		2
	6	0	21.86	22.04	22.00	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	24.85	0	0
	1	25	24.89		0
	1	49	**24.94**		0
	25	0	**24.14**	0-1	1
	25	12	24.03		1
	25	25	24.09		1
	50	0	24.10		1
16QAM	1	0	24.28	0-1	1
	1	25	24.23		1
	1	49	24.22		1
	25	0	23.12	0-2	2
	25	12	23.06		2
	25	25	23.11		2
	50	0	23.12		2
64QAM	1	0	23.10	0-2	2
	1	25	23.18		2
	1	49	23.13		2
	25	0	22.17	0-3	3
	25	12	22.10		3
	25	25	22.01		3
	50	0	22.10		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	24.61	0	0
	1	12	24.42		0
	1	24	24.54		0
	12	0	23.90	0-1	1
	12	6	23.87		1
	12	13	23.83		1
	25	0	23.87		1
16QAM	1	0	24.40	0-1	1
	1	12	24.13		1
	1	24	24.32		1
	12	0	22.92	0-2	2
	12	6	22.94		2
	12	13	22.92		2
	25	0	22.97		2
64QAM	1	0	23.19	0-2	2
	1	12	22.93		2
	1	24	23.10		2
	12	0	21.94	0-3	3
	12	6	21.93		3
	12	13	21.97		3
	25	0	22.00		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	25.32	0	0
	1	36	25.31		0
	1	74	**25.42**		0
	36	0	24.31	0-1	1
	36	18	**24.43**		1
	36	37	24.37		1
	75	0	24.29		1
16QAM	1	0	24.38	0-1	1
	1	36	24.39		1
	1	74	24.37		1
	36	0	23.20	0-2	2
	36	18	23.27		2
	36	37	23.33		2
	75	0	23.26		2
64QAM	1	0	23.43	0-2	2
	1	36	23.41		2
	1	74	23.35		2
	36	0	22.33	0-3	3
	36	18	22.37		3
	36	37	22.32		3
	75	0	22.32		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	25.06	24.80	24.85	0	0
	1	25	24.81	24.55	24.76		0
	1	49	25.10	24.73	24.66		0
	25	0	24.47	24.11	24.15	0-1	1
	25	12	24.43	24.08	24.06		1
	25	25	24.49	24.08	24.05		1
	50	0	24.50	24.18	24.15		1
16QAM	1	0	24.45	24.40	24.40	0-1	1
	1	25	24.35	24.23	24.47		1
	1	49	24.48	24.40	24.10		1
	25	0	23.50	23.15	23.22	0-2	2
	25	12	23.48	23.07	23.12		2
	25	25	23.49	23.05	23.10		2
	50	0	23.47	23.09	23.11		2
64QAM	1	0	23.41	23.43	23.22	0-2	2
	1	25	23.10	23.23	23.31		2
	1	49	23.35	23.30	23.22		2
	25	0	22.00	22.20	22.27	0-3	3
	25	12	22.02	22.15	22.05		3
	25	25	22.05	22.16	22.13		3
	50	0	22.01	22.14	22.20		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	24.72	24.65	24.57	0	0
	1	12	24.50	24.60	24.50		0
	1	24	24.53	24.50	24.44		0
	12	0	24.01	24.10	24.07	0-1	1
	12	6	24.04	24.08	23.98		1
	12	13	23.96	24.11	23.89		1
	25	0	24.00	24.09	23.99		1
16QAM	1	0	24.38	24.47	24.42	0-1	1
	1	12	24.21	24.30	24.23		1
	1	24	24.35	24.20	24.08		1
	12	0	23.00	23.10	23.11	0-2	2
	12	6	23.10	23.13	23.06		2
	12	13	22.95	23.10	23.01		2
	25	0	22.98	23.03	23.04		2
64QAM	1	0	23.25	23.36	23.37	0-2	2
	1	12	23.11	23.25	23.22		2
	1	24	23.15	23.22	22.95		2
	12	0	22.05	22.14	22.10	0-3	3
	12	6	22.09	22.16	22.08		3
	12	13	22.04	22.10	21.98		3
	25	0	22.06	22.15	22.00		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	24.70	24.62	24.55	0	0
	1	7	24.68	24.53	24.58		0
	1	14	24.60	24.58	24.50		0
	8	0	24.02	24.01	24.00	0-1	1
	8	4	24.00	24.07	23.93		1
	8	7	23.99	24.05	23.95		1
	15	0	23.92	24.06	24.01		1
16QAM	1	0	24.50	24.48	24.49	0-1	1
	1	7	24.47	24.38	24.32		1
	1	14	24.42	24.25	24.44		1
	8	0	23.08	23.09	23.10	0-2	2
	8	4	23.09	23.16	23.02		2
	8	7	23.12	23.13	22.96		2
	15	0	23.03	23.09	22.97		2
64QAM	1	0	23.35	23.29	23.25	0-2	2
	1	7	23.28	23.30	23.18		2
	1	14	23.24	23.25	23.00		2
	8	0	22.16	22.16	22.02	0-3	3
	8	4	22.11	22.14	22.01		3
	8	7	22.12	22.17	21.97		3
	15	0	21.97	22.10	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	24.52	24.50	24.64	0	0
	1	2	24.55	24.55	24.58		0
	1	5	24.52	24.50	24.50		0
	3	0	24.45	24.43	24.42		0
	3	2	24.40	24.49	24.35		0
	3	3	24.39	24.38	24.30		0
	6	0	23.95	24.08	23.82	0-1	1
16QAM	1	0	24.35	24.20	24.30	0-1	1
	1	2	24.32	24.22	24.28		1
	1	5	24.30	24.16	24.25		1
	3	0	23.92	24.10	24.00		1
	3	2	23.90	24.05	23.84		1
	3	3	23.85	24.10	23.77		1
	6	0	22.90	23.01	22.87	0-2	2
64QAM	1	0	23.15	23.25	23.15	0-2	2
	1	2	23.08	23.30	23.12		2
	1	5	23.15	23.24	23.10		2
	3	0	23.05	23.19	22.95		2
	3	2	23.07	23.20	22.99		2
	3	3	23.00	23.10	22.96		2
	6	0	21.90	22.00	21.82	0-3	3

9.4.5 LTE Band 66 (AWS)

Table 9-21
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.86	23.75	23.96	0	0
	1	50	24.00	24.19	24.12		0
	1	99	24.21	**24.30**	24.26		0
	50	0	22.91	22.93	23.06	0-1	1
	50	25	22.98	22.95	23.10		1
	50	50	22.93	**23.14**	23.13		1
	100	0	22.99	22.99	23.13		1
16QAM	1	0	23.15	23.18	23.17	0-1	1
	1	50	23.28	23.21	23.20		1
	1	99	23.30	23.30	23.30		1
	50	0	21.89	21.95	22.20	0-2	2
	50	25	21.97	21.95	22.07		2
	50	50	21.89	22.00	22.09		2
	100	0	21.96	21.97	21.99		2
64QAM	1	0	22.18	22.02	22.06	0-2	2
	1	50	22.14	22.20	22.19		2
	1	99	22.18	22.19	22.20		2
	50	0	20.98	20.99	20.98	0-3	3
	50	25	20.99	21.00	21.06		3
	50	50	20.93	20.94	21.14		3
	100	0	21.02	21.01	20.94		3

Table 9-22
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.95	24.08	24.06	0	0
	1	36	23.60	23.73	23.75		0
	1	74	23.70	23.89	23.81		0
	36	0	22.85	22.79	22.85	0-1	1
	36	18	22.69	22.75	22.75		1
	36	37	22.70	22.70	22.67		1
	75	0	22.74	22.72	22.72		1
16QAM	1	0	23.30	23.25	23.29	0-1	1
	1	36	22.93	23.05	23.06		1
	1	74	23.00	23.12	23.02		1
	36	0	21.75	21.74	21.76	0-2	2
	36	18	21.68	21.75	21.79		2
	36	37	21.67	21.72	21.69		2
	75	0	21.66	21.72	21.73		2
64QAM	1	0	22.27	22.30	22.16	0-2	2
	1	36	22.00	22.01	21.91		2
	1	74	22.15	22.00	22.00		2
	36	0	20.79	20.77	20.80	0-3	3
	36	18	20.65	20.73	20.70		3
	36	37	20.69	20.75	20.65		3
	75	0	20.68	20.74	20.75		3

Table 9-23
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.37	23.47	23.45	0	0
	1	25	23.70	23.78	23.77		0
	1	49	23.90	24.07	24.18		0
	25	0	22.67	22.71	22.78	0-1	1
	25	12	22.84	22.77	22.78		1
	25	25	22.74	22.90	22.84		1
	50	0	22.71	22.75	22.76		1
16QAM	1	0	22.65	22.60	22.43	0-1	1
	1	25	22.90	23.01	23.05		1
	1	49	23.19	23.30	23.17		1
	25	0	21.65	21.80	21.75	0-2	2
	25	12	21.80	21.83	21.75		2
	25	25	21.68	21.84	21.90		2
	50	0	21.68	21.80	21.73		2
64QAM	1	0	21.55	21.65	21.30	0-2	2
	1	25	21.76	21.86	21.95		2
	1	49	22.20	22.20	22.16		2
	25	0	20.58	20.80	20.77	0-3	3
	25	12	20.77	20.79	20.76		3
	25	25	20.80	20.96	20.98		3
	50	0	20.67	20.80	20.74		3

Table 9-24
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.82	23.95	23.88	0	0
	1	12	23.67	23.75	24.00		0
	1	24	23.62	23.77	23.64		0
	12	0	22.80	22.87	22.87	0-1	1
	12	6	22.66	22.76	22.78		1
	12	13	22.68	22.69	22.72		1
	25	0	22.65	22.73	22.78		1
16QAM	1	0	23.10	23.20	23.25	0-1	1
	1	12	22.92	23.03	23.01		1
	1	24	22.90	22.98	23.00		1
	12	0	21.85	21.89	21.96	0-2	2
	12	6	21.75	21.77	21.90		2
	12	13	21.75	21.78	21.82		2
	25	0	21.62	21.76	21.80		2
64QAM	1	0	22.01	22.08	22.05	0-2	2
	1	12	21.82	21.84	21.85		2
	1	24	21.80	21.97	21.75		2
	12	0	20.72	20.80	20.79	0-3	3
	12	6	20.66	20.73	20.80		3
	12	13	20.65	20.63	20.71		3
	25	0	20.66	20.78	20.85		3

Table 9-25
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.77	23.86	23.80	0	0
	1	7	23.80	23.77	23.78		0
	1	14	23.65	23.76	23.70		0
	8	0	22.74	22.76	22.76	0-1	1
	8	4	22.75	22.76	22.77		1
	8	7	22.62	22.70	22.73		1
	15	0	22.70	22.72	22.80		1
16QAM	1	0	23.02	23.05	23.10	0-1	1
	1	7	23.00	23.00	23.12		1
	1	14	22.95	23.01	22.95		1
	8	0	21.80	21.85	21.90	0-2	2
	8	4	21.82	21.84	21.88		2
	8	7	21.73	21.75	21.79		2
	15	0	21.71	21.70	21.79		2
64QAM	1	0	21.90	21.90	21.97	0-2	2
	1	7	21.89	21.85	21.75		2
	1	14	21.76	21.88	21.80		2
	8	0	20.73	20.80	20.78	0-3	3
	8	4	20.77	20.75	20.85		3
	8	7	20.66	20.73	20.82		3
	15	0	20.70	20.68	20.75		3

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	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	23.68	23.73	23.71	0	0
	1	2	23.77	23.69	23.75		0
	1	5	23.66	23.70	23.65		0
	3	0	23.65	23.76	23.69		0
	3	2	23.71	23.80	23.77		0
	3	3	23.63	23.75	23.68		0
	6	0	22.68	22.70	22.72	0-1	1
16QAM	1	0	22.92	23.12	23.00	0-1	1
	1	2	23.00	23.14	23.01		1
	1	5	22.95	23.01	22.98		1
	3	0	22.78	22.91	22.82		1
	3	2	22.81	22.83	22.75		1
	3	3	22.72	22.87	22.71		1
	6	0	21.76	21.83	21.84	0-2	2
64QAM	1	0	21.80	21.94	21.88	0-2	2
	1	2	21.88	21.93	21.84		2
	1	5	21.75	21.90	21.82		2
	3	0	21.79	21.80	21.83		2
	3	2	21.87	21.85	21.94		2
	3	3	21.81	21.80	21.88		2
	6	0	20.78	20.75	20.83	0-3	3

9.4.6 LTE Band 25 (PCS)

Table 9-27
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	23.98	23.96	23.81	0	0
	1	50	**24.10**	23.98	23.88		0
	1	99	24.02	23.93	23.95		0
	50	0	22.92	22.88	22.92	0-1	1
	50	25	**22.94**	22.89	22.83		1
	50	50	22.91	22.84	22.80		1
	100	0	22.90	22.88	22.89		1
16QAM	1	0	23.12	23.10	23.05	0-1	1
	1	50	23.16	23.09	23.01		1
	1	99	23.09	22.99	22.96		1
	50	0	21.91	21.94	21.96	0-2	2
	50	25	21.89	21.97	21.86		2
	50	50	21.97	21.89	21.97		2
	100	0	21.98	21.90	21.92		2
64QAM	1	0	22.01	22.18	22.10	0-2	2
	1	50	21.95	22.13	22.18		2
	1	99	21.90	22.17	22.13		2
	50	0	20.96	20.93	20.85	0-3	3
	50	25	20.94	20.98	20.89		3
	50	50	20.90	20.86	20.92		3
	100	0	20.98	20.92	20.94		3

Table 9-28
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	23.91	23.88	24.11	0	0
	1	36	23.85	23.75	24.03		0
	1	74	23.80	23.93	24.15		0
	36	0	23.00	22.92	23.01	0-1	1
	36	18	22.98	22.80	23.10		1
	36	37	23.01	22.95	23.15		1
	75	0	22.99	22.97	23.15		1
16QAM	1	0	23.18	23.25	23.25	0-1	1
	1	36	23.17	23.11	23.20		1
	1	74	23.13	23.18	23.28		1
	36	0	22.00	21.99	22.04	0-2	2
	36	18	21.96	21.90	22.10		2
	36	37	22.03	21.95	22.18		2
	75	0	21.98	21.96	22.20		2
64QAM	1	0	22.30	22.27	22.26	0-2	2
	1	36	22.25	22.25	22.25		2
	1	74	22.24	22.28	22.30		2
	36	0	21.20	21.14	21.13	0-3	3
	36	18	21.14	21.02	21.15		3
	36	37	21.23	21.09	21.18		3
	75	0	21.18	21.16	21.22		3

Table 9-29
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	24.20	24.11	24.02	0	0
	1	25	24.02	24.00	23.94		0
	1	49	24.30	24.15	23.87		0
	25	0	23.10	23.14	23.00	0-1	1
	25	12	23.11	23.09	22.98		1
	25	25	23.14	23.08	23.04		1
	50	0	23.13	23.11	23.02		1
16QAM	1	0	23.29	23.30	23.30	0-1	1
	1	25	23.28	23.23	23.22		1
	1	49	23.25	23.25	23.28		1
	25	0	22.10	22.15	22.05	0-2	2
	25	12	22.17	22.04	22.07		2
	25	25	22.20	22.09	22.02		2
	50	0	22.13	22.05	22.00		2
64QAM	1	0	22.30	22.28	22.20	0-2	2
	1	25	22.29	22.18	22.13		2
	1	49	22.26	22.19	22.20		2
	25	0	21.02	21.12	21.00	0-3	3
	25	12	21.04	21.04	21.08		3
	25	25	21.16	21.05	21.13		3
	50	0	21.17	21.05	21.08		3

Table 9-30
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	24.22	24.25	24.10	0	0
	1	12	24.08	24.01	24.02		0
	1	24	24.10	23.97	24.03		0
	12	0	23.18	23.06	23.09	0-1	1
	12	6	23.19	23.10	23.05		1
	12	13	23.10	23.03	23.00		1
	25	0	23.14	23.06	23.04		1
16QAM	1	0	23.20	23.25	23.18	0-1	1
	1	12	23.10	23.13	23.00		1
	1	24	23.05	23.19	23.06		1
	12	0	22.24	22.20	22.05	0-2	2
	12	6	22.24	22.16	22.03		2
	12	13	22.15	22.08	22.04		2
	25	0	22.14	22.07	22.11		2
64QAM	1	0	22.30	22.30	22.28	0-2	2
	1	12	22.20	22.24	22.20		2
	1	24	22.25	22.21	22.22		2
	12	0	21.18	21.10	21.16	0-3	3
	12	6	21.20	21.09	21.12		3
	12	13	21.12	21.02	21.10		3
	25	0	21.08	21.04	21.05		3

Table 9-31
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	24.05	24.19	24.04	0	0
	1	7	24.07	24.12	24.07		0
	1	14	24.02	24.04	23.97		0
	8	0	23.07	23.00	23.06	0-1	1
	8	4	23.14	23.05	23.00		1
	8	7	23.02	22.98	23.07		1
	15	0	23.09	22.96	23.05		1
16QAM	1	0	23.29	23.25	23.26	0-1	1
	1	7	23.27	23.24	23.23		1
	1	14	23.25	23.22	23.18		1
	8	0	22.19	22.16	22.18	0-2	2
	8	4	22.25	22.12	22.09		2
	8	7	22.15	22.14	22.11		2
	15	0	22.14	22.05	22.05		2
64QAM	1	0	22.30	22.30	22.28	0-2	2
	1	7	22.23	22.26	22.30		2
	1	14	22.29	22.22	22.29		2
	8	0	21.16	21.02	21.05	0-3	3
	8	4	21.21	21.10	20.99		3
	8	7	21.08	20.97	21.00		3
	15	0	21.12	21.00	21.04		3

Table 9-32
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	24.04	24.02	24.00	0	0
	1	2	24.06	24.08	24.02		0
	1	5	24.02	23.94	23.94		0
	3	0	24.00	24.02	23.91		0
	3	2	24.08	24.07	23.95		0
	3	3	24.07	23.96	23.90		0
	6	0	23.03	23.01	22.93	0-1	1
16QAM	1	0	23.30	23.14	23.30	0-1	1
	1	2	23.27	23.05	23.21		1
	1	5	23.22	23.02	23.15		1
	3	0	23.12	23.10	23.01		1
	3	2	23.19	23.15	23.00		1
	3	3	23.13	23.08	23.04		1
	6	0	22.20	22.07	22.09	0-2	2
64QAM	1	0	22.22	22.20	22.10	0-2	2
	1	2	22.28	22.26	22.11		2
	1	5	22.21	22.09	21.98		2
	3	0	22.10	22.10	22.15		2
	3	2	22.25	22.20	22.16		2
	3	3	22.22	22.12	22.19		2
	6	0	21.18	21.02	21.08	0-3	3

Table 9-33
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	23.65	23.55	23.23	0	0
	1	50	23.70	23.68	**23.76**		0
	1	99	23.46	23.57	23.56		0
	50	0	22.90	**22.95**	22.92	0-1	0.5
	50	25	22.88	22.76	22.67		0.5
	50	50	22.87	22.77	22.65		0.5
	100	0	22.85	22.72	22.85		0.5
16QAM	1	0	23.07	23.03	23.05	0-1	0.5
	1	50	23.22	23.15	23.09		0.5
	1	99	22.86	22.86	23.12		0.5
	50	0	21.87	21.68	22.30	0-2	1.5
	50	25	21.94	21.77	21.76		1.5
	50	50	21.83	21.81	21.62		1.5
	100	0	21.89	21.86	21.83		1.5
64QAM	1	0	22.08	22.07	22.11	0-2	1.5
	1	50	22.14	22.29	22.19		1.5
	1	99	21.48	21.72	21.42		1.5
	50	0	20.84	20.85	20.77	0-3	2.5
	50	25	20.95	20.79	21.05		2.5
	50	50	20.83	20.82	20.81		2.5
	100	0	20.81	20.89	20.83		2.5

Table 9-34
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	23.65	23.47	23.64	0	0
	1	36	23.52	23.35	23.58		0
	1	74	23.53	23.42	23.71		0
	36	0	22.85	22.99	22.98	0-1	0.5
	36	18	23.11	23.01	22.96		0.5
	36	37	23.05	22.91	22.96		0.5
	75	0	22.94	22.95	22.96		0.5
16QAM	1	0	23.26	23.29	23.29	0-1	0.5
	1	36	23.24	23.24	22.89		0.5
	1	74	23.22	23.22	23.05		0.5
	36	0	21.93	22.03	22.00	0-2	1.5
	36	18	22.15	22.14	22.08		1.5
	36	37	22.07	22.01	22.04		1.5
	75	0	22.03	22.05	22.11		1.5
64QAM	1	0	22.11	22.24	22.25	0-2	1.5
	1	36	22.07	22.12	22.20		1.5
	1	74	22.13	22.20	22.25		1.5
	36	0	20.93	21.05	21.17	0-3	2.5
	36	18	20.93	21.09	21.11		2.5
	36	37	21.02	20.99	21.12		2.5
	75	0	21.00	21.08	21.13		2.5

Table 9-35
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	23.57	23.63	23.72	0	0
	1	25	23.49	23.53	23.67		0
	1	49	23.45	23.61	23.60		0
	25	0	23.11	23.02	23.10	0-1	0.5
	25	12	22.99	23.01	23.10		0.5
	25	25	23.02	23.00	23.12		0.5
	50	0	23.02	23.02	23.09		0.5
16QAM	1	0	22.87	23.29	23.08	0-1	0.5
	1	25	22.79	22.99	23.16		0.5
	1	49	22.89	23.13	23.28		0.5
	25	0	22.10	22.01	22.11	0-2	1.5
	25	12	22.00	22.03	22.12		1.5
	25	25	22.04	22.09	22.15		1.5
	50	0	21.97	21.94	22.10		1.5
64QAM	1	0	22.29	22.30	22.29	0-2	1.5
	1	25	22.30	22.29	22.26		1.5
	1	49	22.28	22.20	22.17		1.5
	25	0	21.03	20.98	21.10	0-3	2.5
	25	12	20.93	21.00	21.12		2.5
	25	25	21.02	21.08	21.19		2.5
	50	0	21.05	21.04	21.11		2.5

Table 9-36
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	23.80	23.71	23.80	0	0
	1	12	23.58	23.53	23.70		0
	1	24	23.42	23.67	23.71		0
	12	0	23.01	23.06	23.22	0-1	0.5
	12	6	23.03	23.05	23.16		0.5
	12	13	22.95	22.99	23.13		0.5
	25	0	22.96	23.06	23.16		0.5
16QAM	1	0	23.21	23.30	23.21	0-1	0.5
	1	12	23.29	23.28	23.30		0.5
	1	24	23.14	23.30	23.30		0.5
	12	0	22.08	22.12	22.23	0-2	1.5
	12	6	22.16	22.07	22.19		1.5
	12	13	22.16	22.02	22.15		1.5
	25	0	22.07	22.07	22.10		1.5
64QAM	1	0	22.16	22.21	22.24	0-2	1.5
	1	12	22.00	22.07	22.13		1.5
	1	24	21.93	22.15	22.12		1.5
	12	0	21.01	21.08	21.24	0-3	2.5
	12	6	20.96	21.01	21.07		2.5
	12	13	20.93	20.98	21.06		2.5
	25	0	21.07	20.99	21.10		2.5

Table 9-37
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	23.67	23.46	23.62	0	0
	1	7	23.72	23.52	23.56		0
	1	14	23.58	23.58	23.59		0
	8	0	22.94	22.86	23.01	0-1	0.5
	8	4	22.99	22.89	22.96		0.5
	8	7	22.90	22.82	22.97		0.5
	15	0	22.97	22.80	23.02		0.5
16QAM	1	0	23.24	23.12	23.20	0-1	0.5
	1	7	23.23	23.09	23.19		0.5
	1	14	23.20	23.11	23.17		0.5
	8	0	22.12	22.12	22.17	0-2	1.5
	8	4	22.13	22.02	22.12		1.5
	8	7	22.12	22.03	22.08		1.5
	15	0	22.12	22.07	21.97		1.5
64QAM	1	0	22.20	22.13	22.19	0-2	1.5
	1	7	22.23	22.17	22.21		1.5
	1	14	22.21	22.19	22.18		1.5
	8	0	21.10	20.91	20.90	0-3	2.5
	8	4	21.05	21.00	21.02		2.5
	8	7	21.08	21.01	21.00		2.5
	15	0	21.11	21.00	20.99		2.5

Table 9-38
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	23.60	23.45	23.41	0	0
	1	2	23.66	23.46	23.54		0
	1	5	23.60	23.50	23.55		0
	3	0	23.61	23.44	23.59		0
	3	2	23.66	23.51	23.60		0
	3	3	23.64	23.47	23.52		0
	6	0	22.95	22.89	22.90	0-1	0.5
16QAM	1	0	23.23	23.00	23.20	0-1	0.5
	1	2	23.21	23.08	23.17		0.5
	1	5	23.17	23.07	23.16		0.5
	3	0	23.11	23.12	23.18		0.5
	3	2	23.14	23.08	23.21		0.5
	3	3	23.08	23.05	23.19		0.5
	6	0	22.11	22.05	22.07	0-2	1.5
64QAM	1	0	22.25	22.12	22.22	0-2	1.5
	1	2	22.17	22.17	22.17		1.5
	1	5	22.20	22.15	22.26		1.5
	3	0	22.08	22.09	22.18		1.5
	3	2	22.14	22.10	22.08		1.5
	3	3	22.13	22.12	22.15		1.5
	6	0	21.05	20.98	20.90	0-3	2.5

9.4.7 LTE Band 41

Table 9-39
LTE Band 41 PC3 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	24.60	**25.00**	24.82	24.56	24.66	0	0
	1	50	24.59	24.62	24.65	24.40	24.59		0
	1	99	24.77	24.76	24.75	24.54	24.66		0
	50	0	23.83	**24.00**	23.99	23.85	23.86	0-1	1
	50	25	23.93	23.92	23.98	23.77	23.85		1
	50	50	23.94	23.88	23.99	23.57	23.84		1
	100	0	23.81	23.85	23.97	23.87	23.89		1
16QAM	1	0	23.80	23.94	23.84	23.71	23.91	0-1	1
	1	50	23.82	23.92	23.91	23.85	23.92		1
	1	99	23.87	23.95	23.97	23.92	23.87		1
	50	0	22.93	22.89	22.94	22.81	22.93	0-2	2
	50	25	22.89	22.81	22.97	22.84	22.89		2
	50	50	22.81	22.87	22.96	22.87	22.89		2
	100	0	22.91	22.89	22.94	22.84	22.87		2
64QAM	1	0	22.74	22.90	22.70	22.55	22.81	0-2	2
	1	50	22.76	22.87	22.97	22.63	22.76		2
	1	99	22.69	22.79	22.84	22.72	22.68		2
	50	0	21.89	21.85	21.92	21.96	21.96	0-3	3
	50	25	21.94	21.92	22.00	21.94	21.85		3
	50	50	21.92	21.91	21.91	21.73	21.96		3
	100	0	21.97	21.90	21.98	21.87	21.92		3

Table 9-40
LTE Band 41 PC3 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	24.68	24.61	24.65	24.62	24.67	0	0
	1	36	24.61	24.53	24.56	24.82	24.62		0
	1	74	24.77	24.72	24.58	24.92	24.64		0
	36	0	23.61	23.56	23.51	23.26	23.53	0-1	1
	36	18	23.64	23.63	23.55	23.34	23.63		1
	36	37	23.68	23.60	23.64	23.40	23.64		1
	75	0	23.61	23.62	23.45	23.27	23.55		1
16QAM	1	0	23.96	23.86	23.79	23.96	23.68	0-1	1
	1	36	23.87	23.76	23.69	23.86	23.74		1
	1	74	23.85	23.75	23.89	23.73	23.76		1
	36	0	22.69	22.55	22.42	22.20	22.55	0-2	2
	36	18	22.80	22.66	22.48	22.32	22.58		2
	36	37	22.81	22.62	22.64	22.38	22.55		2
	75	0	22.64	22.65	22.53	22.28	22.51		2
64QAM	1	0	22.98	22.90	22.28	22.28	22.72	0-2	2
	1	36	22.97	22.82	22.51	22.53	22.60		2
	1	74	22.95	22.78	22.71	22.59	22.48		2
	36	0	21.60	21.60	21.50	21.26	21.51	0-3	3
	36	18	21.72	21.71	21.52	21.39	21.53		3
	36	37	21.66	21.69	21.67	21.45	21.55		3
	75	0	21.59	21.70	21.48	21.45	21.57		3

Table 9-41
LTE Band 41 PC3 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	24.83	24.63	24.51	24.62	24.87	0	0
	1	25	24.72	24.63	24.64	24.46	24.80		0
	1	49	24.80	24.91	24.52	24.65	24.87		0
	25	0	23.65	23.81	23.70	23.40	23.57	0-1	1
	25	12	23.69	23.75	23.61	23.46	23.62		1
	25	25	23.78	23.80	23.67	23.49	23.68		1
	50	0	23.72	23.71	23.65	23.41	23.55		1
16QAM	1	0	23.72	23.70	23.90	23.81	23.64	0-1	1
	1	25	23.62	23.71	23.74	23.65	23.54		1
	1	49	23.71	23.93	23.94	23.84	23.64		1
	25	0	22.69	22.74	22.68	22.43	22.58	0-2	2
	25	12	22.75	22.69	22.66	22.48	22.70		2
	25	25	22.78	22.70	22.62	22.55	22.62		2
	50	0	22.79	22.72	22.65	22.41	22.61		2
64QAM	1	0	22.85	22.60	22.66	22.65	22.63	0-2	2
	1	25	22.75	22.53	22.53	22.53	22.62		2
	1	49	22.86	22.84	22.72	22.69	22.68		2
	25	0	21.61	21.73	21.62	21.41	21.52	0-3	3
	25	12	21.70	21.73	21.64	21.44	21.57		3
	25	25	21.63	21.76	21.68	21.52	21.49		3
	50	0	21.81	21.70	21.63	21.52	21.49		3

Table 9-42
LTE Band 41 PC3 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	24.61	24.71	24.75	24.49	24.71	0	0
	1	12	24.54	24.46	24.50	24.41	24.27		0
	1	24	24.53	24.41	24.53	24.32	24.59		0
	12	0	23.74	23.66	23.66	23.40	23.61	0-1	1
	12	6	23.74	23.71	23.64	23.36	23.66		1
	12	13	23.68	23.66	23.70	23.41	23.64		1
	25	0	23.67	23.73	23.71	23.45	23.66		1
16QAM	1	0	23.92	23.58	23.83	23.52	23.89	0-1	1
	1	12	23.71	23.50	23.66	23.50	23.82		1
	1	24	23.80	23.54	23.72	23.66	23.76		1
	12	0	22.71	22.72	22.75	22.48	22.81	0-2	2
	12	6	22.66	22.65	22.63	22.40	22.87		2
	12	13	22.73	22.59	22.69	22.46	22.75		2
	25	0	22.68	22.78	22.68	22.56	22.62		2
64QAM	1	0	22.72	22.96	22.62	22.76	22.85	0-2	2
	1	12	22.60	22.86	22.51	22.60	22.94		2
	1	24	22.64	22.85	22.47	22.68	22.94		2
	12	0	21.70	21.90	21.63	21.63	21.58	0-3	3
	12	6	21.66	21.84	21.61	21.56	21.69		3
	12	13	21.65	21.81	21.64	21.66	21.64		3
	25	0	21.81	21.76	21.71	21.54	21.66		3

Table 9-43
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	27.25	27.35	27.45	27.08	27.19	0	0
	1	50	27.37	27.30	27.33	27.15	27.08		0
	1	99	27.35	27.28	27.39	27.17	27.05		0
	50	0	26.65	26.64	26.69	26.56	26.44	0-1	1
	50	25	26.68	26.62	26.61	26.55	26.50		1
	50	50	26.67	26.68	26.58	26.54	26.43		1
	100	0	26.66	26.65	26.68	26.51	26.46		1
16QAM	1	0	26.63	26.62	26.64	26.54	26.62	0-1	1
	1	50	26.65	26.67	26.68	26.35	26.56		1
	1	99	26.60	26.60	26.64	26.59	26.52		1
	50	0	25.38	25.48	25.56	25.61	25.50	0-2	2
	50	25	25.32	25.59	25.68	25.58	25.53		2
	50	50	25.49	25.60	25.67	25.56	25.51		2
	100	0	25.56	25.62	25.65	25.59	25.47		2
64QAM	1	0	25.70	25.45	25.30	25.37	25.60	0-2	2
	1	50	25.68	25.48	25.36	25.53	25.57		2
	1	99	25.58	25.57	25.46	25.67	25.45		2
	50	0	24.68	24.58	24.68	24.58	24.50	0-3	3
	50	25	24.62	24.60	24.69	24.52	24.53		3
	50	50	24.32	24.62	24.62	24.66	24.50		3
	100	0	24.48	24.65	24.69	24.48	24.45		3

Table 9-44
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	27.38	27.66	27.37	27.27	27.18	0	0
	1	36	27.23	27.57	27.57	27.42	27.10		0
	1	74	27.28	27.56	27.62	27.68	27.00		0
	36	0	25.96	26.07	25.96	25.74	25.75	0-1	1
	36	18	26.00	26.16	26.02	25.79	25.79		1
	36	37	26.04	26.11	26.10	25.89	25.84		1
	75	0	25.86	26.03	25.89	25.85	25.83		1
16QAM	1	0	26.47	26.45	26.17	26.12	26.41	0-1	1
	1	36	26.14	26.70	26.42	25.74	26.13		1
	1	74	26.23	26.63	26.62	25.89	26.18		1
	36	0	24.94	25.15	24.84	24.81	24.74	0-2	2
	36	18	24.95	25.24	24.87	24.87	24.81		2
	36	37	24.95	25.21	25.06	24.92	24.82		2
	75	0	24.94	25.10	24.90	24.73	24.86		2
64QAM	1	0	25.47	25.45	25.21	24.90	25.47	0-2	2
	1	36	25.39	25.35	25.47	25.11	25.39		2
	1	74	25.47	25.31	25.66	25.21	25.30		2
	36	0	23.96	24.08	24.01	23.83	23.86	0-3	3
	36	18	24.06	24.14	24.11	23.97	23.87		3
	36	37	24.04	24.13	24.24	24.02	23.98		3
	75	0	24.00	24.06	24.05	23.91	23.97		3

Table 9-45
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	27.28	27.43	27.50	27.22	27.45	0	0
	1	25	27.22	27.42	27.31	27.07	27.36		0
	1	49	27.20	27.48	27.41	27.33	27.41		0
	25	0	26.18	26.06	25.90	25.74	26.15	0-1	1
	25	12	26.22	26.14	25.91	25.83	26.23		1
	25	25	26.27	26.13	25.89	25.85	26.19		1
	50	0	26.23	26.00	25.96	25.64	26.09		1
16QAM	1	0	26.36	26.11	26.12	25.74	26.01	0-1	1
	1	25	26.25	26.13	25.95	25.61	25.93		1
	1	49	26.63	26.36	26.05	25.81	26.02		1
	25	0	25.19	25.08	25.06	24.78	25.23	0-2	2
	25	12	25.28	25.10	25.03	24.75	25.22		2
	25	25	25.31	25.06	25.04	24.88	25.17		2
	50	0	25.25	24.97	24.78	24.74	25.09		2
64QAM	1	0	25.53	25.39	25.50	25.04	25.36	0-2	2
	1	25	25.45	25.40	25.35	24.95	25.25		2
	1	49	25.49	25.51	25.59	25.11	25.23		2
	25	0	24.13	24.16	24.04	23.71	24.12	0-3	3
	25	12	24.02	24.18	23.98	23.75	24.14		3
	25	25	24.22	24.16	24.04	23.78	24.17		3
	50	0	24.19	24.03	24.01	23.78	24.15		3

Table 9-46
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	27.38	27.48	27.47	27.20	27.24	0	0
	1	12	27.30	27.29	27.19	27.06	27.25		0
	1	24	27.35	27.30	27.24	27.16	27.08		0
	12	0	26.25	26.31	26.19	25.97	25.94	0-1	1
	12	6	26.22	26.30	26.13	25.88	25.97		1
	12	13	26.21	26.26	26.17	26.00	25.93		1
	25	0	26.21	26.22	26.21	26.00	25.95		1
16QAM	1	0	26.61	26.60	26.61	26.33	26.46	0-1	1
	1	12	26.50	26.66	26.41	26.15	26.47		1
	1	24	26.58	26.66	26.45	26.15	26.46		1
	12	0	25.35	25.43	25.42	24.97	24.99	0-2	2
	12	6	25.28	25.38	25.22	24.91	25.03		2
	12	13	25.33	25.30	25.32	24.94	24.97		2
	25	0	25.19	25.29	25.10	25.00	24.96		2
64QAM	1	0	25.64	25.66	25.63	25.52	25.22	0-2	2
	1	12	25.55	25.70	25.53	25.55	25.18		2
	1	24	25.61	25.67	25.56	25.63	25.17		2
	12	0	24.23	24.24	24.30	24.13	23.92	0-3	3
	12	6	24.19	24.21	24.32	24.14	23.97		3
	12	13	24.15	24.16	24.25	24.15	23.95		3
	25	0	24.16	24.17	24.20	24.05	24.03		3

Table 9-47
LTE Band 41 PC3 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	22.41	22.75	22.61	22.47	22.71	0	0
	1	50	22.44	22.85	22.75	22.46	22.72		0
	1	99	22.55	22.74	**22.89**	22.63	22.67		0
	50	0	22.47	22.69	22.74	22.55	22.60	0-1	0
	50	25	22.43	22.78	22.70	22.54	22.63		0
	50	50	22.42	22.74	**22.82**	22.57	22.57		0
	100	0	22.44	22.76	22.72	22.48	22.54		0
16QAM	1	0	22.55	22.72	22.63	22.37	22.57	0-1	0
	1	50	22.50	22.89	22.74	22.51	22.67		0
	1	99	22.48	22.74	22.89	22.60	22.59		0
	50	0	22.12	22.42	22.24	22.15	22.27	0-2	0
	50	25	22.14	22.43	22.34	22.16	22.25		0
	50	50	22.13	22.40	22.41	22.23	22.24		0
	100	0	21.99	22.41	22.39	22.17	22.24		0
64QAM	1	0	21.71	22.14	21.90	21.74	22.03	0-2	0
	1	50	21.67	22.22	22.04	21.89	22.11		0
	1	99	21.64	22.17	22.14	22.02	22.05		0
	50	0	21.10	21.37	21.24	21.18	21.21	0-3	1
	50	25	21.14	21.40	21.33	21.13	21.23		1
	50	50	21.10	21.37	21.46	21.20	21.22		1
	100	0	21.00	21.34	21.37	21.12	21.35		1

Table 9-48
LTE Band 41 PC3 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	22.24	22.29	22.55	22.36	22.61	0	0
	1	36	22.36	22.52	22.53	22.25	22.31		0
	1	74	22.29	22.49	22.52	22.39	22.57		0
	36	0	22.55	22.29	22.41	22.57	22.67	0-1	0
	36	18	22.24	22.35	22.52	22.70	22.25		0
	36	37	22.31	22.63	22.41	22.54	22.49		0
	75	0	22.40	22.35	22.42	22.37	22.56		0
16QAM	1	0	22.43	22.55	22.57	22.70	22.29	0-1	0
	1	36	22.31	22.61	22.62	22.37	22.54		0
	1	74	22.50	22.69	22.29	22.60	22.43		0
	36	0	21.76	21.76	22.22	21.85	21.80	0-2	0
	36	18	21.87	21.93	22.19	21.75	22.01		0
	36	37	21.88	21.88	21.78	21.91	21.82		0
	75	0	21.77	21.98	22.00	21.89	21.98		0
64QAM	1	0	21.74	21.79	22.16	22.00	22.11	0-2	0
	1	36	21.89	21.88	21.99	22.09	21.86		0
	1	74	21.89	22.20	22.06	21.84	22.08		0
	36	0	20.79	21.20	20.92	20.78	20.75	0-3	1
	36	18	20.99	20.88	21.07	20.78	21.19		1
	36	37	21.03	21.18	20.99	21.01	21.02		1
	75	0	20.76	20.73	20.83	20.79	20.94		1

Table 9-49
LTE Band 41 PC3 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	22.67	22.28	22.49	22.54	22.41	0	0
	1	25	22.43	22.60	22.45	22.61	22.59		0
	1	49	22.36	22.36	22.45	22.42	22.28		0
	25	0	22.57	22.63	22.40	22.37	22.70	0-1	0
	25	12	22.30	22.53	22.32	22.29	22.23		0
	25	25	22.48	22.39	22.45	22.60	22.35		0
	50	0	22.72	22.52	22.30	22.38	22.45		0
16QAM	1	0	22.72	22.68	22.42	22.43	22.36	0-1	0
	1	25	22.56	22.46	22.67	22.25	22.34		0
	1	49	22.59	22.34	22.47	22.40	22.28		0
	25	0	21.97	21.98	21.85	22.18	22.11	0-2	0
	25	12	22.09	21.99	22.07	22.33	22.06		0
	25	25	22.27	22.28	22.15	22.19	22.07		0
	50	0	22.02	21.92	22.29	22.08	22.08		0
64QAM	1	0	22.20	21.96	22.28	22.21	22.29	0-2	0
	1	25	21.85	21.87	22.01	22.23	22.17		0
	1	49	22.00	22.17	22.00	22.31	22.28		0
	25	0	21.21	21.28	21.03	20.86	21.14	0-3	1
	25	12	21.20	21.02	21.28	21.02	20.93		1
	25	25	21.17	21.30	21.33	21.18	21.23		1
	50	0	21.20	20.87	21.23	21.33	21.19		1

Table 9-50
LTE Band 41 PC3 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	22.45	22.34	22.35	22.42	22.56	0	0
	1	12	22.49	22.66	22.36	22.24	22.48		0
	1	24	22.59	22.29	22.45	22.43	22.65		0
	12	0	22.66	22.55	22.48	22.43	22.37	0-1	0
	12	6	22.32	22.54	22.29	22.22	22.32		0
	12	13	22.29	22.60	22.55	22.26	22.56		0
	25	0	22.34	22.36	22.48	22.19	22.59		0
16QAM	1	0	22.46	22.33	22.66	22.38	22.18	0-1	0
	1	12	22.37	22.61	22.65	22.25	22.48		0
	1	24	22.18	22.60	22.56	22.40	22.22		0
	12	0	22.33	22.39	22.35	22.34	21.98	0-2	0
	12	6	22.27	22.38	22.28	22.01	22.08		0
	12	13	22.30	22.01	22.11	22.24	22.20		0
	25	0	21.96	22.21	21.92	22.00	22.03		0
64QAM	1	0	22.36	22.38	22.25	22.21	22.23	0-2	0
	1	12	22.10	22.05	21.93	22.12	22.39		0
	1	24	22.23	22.11	22.34	22.21	22.02		0
	12	0	21.14	21.03	21.16	21.05	21.34	0-3	1
	12	6	21.30	21.33	20.98	21.32	20.99		1
	12	13	20.95	21.36	20.95	21.10	20.93		1
	25	0	21.05	21.01	21.27	21.10	21.33		1

Table 9-51
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	25.26	25.20	24.95	25.07	25.29	0	0
	1	50	25.35	25.34	25.13	25.20	25.26		0
	1	99	25.43	25.27	25.26	25.27	25.19		0
	50	0	25.36	25.17	25.14	25.23	25.35	0-1	0
	50	25	25.43	25.26	25.13	25.29	25.29		0
	50	50	25.30	25.23	25.22	25.26	25.30		0
	100	0	25.34	25.27	25.20	25.19	25.27		0
16QAM	1	0	25.59	25.40	25.11	25.36	25.54	0-1	0
	1	50	25.58	25.50	25.27	25.51	25.55		0
	1	99	25.70	25.42	25.41	25.59	25.46		0
	50	0	24.94	24.71	24.64	24.74	24.83	0-2	0
	50	25	24.97	24.85	24.74	24.77	24.81		0
	50	50	25.01	24.83	24.82	24.82	24.85		0
	100	0	24.98	24.80	24.79	24.85	24.80		0
64QAM	1	0	24.76	24.60	24.54	24.84	24.77	0-2	0
	1	50	24.87	24.67	24.70	24.74	24.83		0
	1	99	25.01	24.59	24.80	24.62	24.84		0
	50	0	23.97	23.68	23.71	23.85	23.90	0-3	1
	50	25	24.00	23.78	23.72	23.79	23.83		1
	50	50	23.98	23.74	23.84	23.85	23.84		1
	100	0	23.97	23.76	23.79	23.81	23.82		1

Table 9-52
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.19	25.28	25.26	25.00	25.22	0	0
	1	36	24.93	25.28	25.01	25.18	25.05		0
	1	74	25.11	25.36	24.95	25.26	25.11		0
	36	0	25.17	25.29	24.93	25.07	25.28	0-1	0
	36	18	25.12	25.33	25.04	25.16	25.21		0
	36	37	25.19	25.37	25.09	25.35	25.23		0
	75	0	25.23	25.37	25.20	25.12	25.07		0
16QAM	1	0	25.29	25.46	24.83	24.97	25.31	0-1	0
	1	36	25.08	25.29	25.03	25.19	25.18		0
	1	74	25.22	25.44	25.13	25.37	25.29		0
	36	0	24.58	24.75	24.59	24.51	24.70	0-2	0
	36	18	24.49	24.76	24.62	24.57	24.61		0
	36	37	24.60	24.85	24.69	24.76	24.71		0
	75	0	24.77	24.87	24.67	24.65	24.73		0
64QAM	1	0	24.60	24.73	24.51	24.39	24.64	0-2	0
	1	36	24.36	24.70	24.56	24.56	24.55		0
	1	74	24.51	24.77	24.59	24.70	24.58		0
	36	0	23.68	23.87	23.65	23.63	23.78	0-3	1
	36	18	23.75	23.89	23.75	23.77	23.72		1
	36	37	23.73	23.92	23.78	23.82	23.84		1
	75	0	23.56	23.59	23.51	23.42	23.57		1

Table 9-53
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.17	25.19	25.09	24.99	25.16	0	0
	1	25	24.99	25.29	25.23	25.14	25.25		0
	1	49	25.19	25.05	25.24	25.11	25.20		0
	25	0	25.26	25.27	25.13	25.23	24.98	0-1	0
	25	12	25.06	25.11	25.03	25.22	25.19		0
	25	25	25.20	25.19	25.29	25.21	25.09		0
	50	0	25.28	25.02	25.03	24.99	25.11		0
16QAM	1	0	24.99	25.16	25.02	25.17	25.05	0-1	0
	1	25	25.09	25.13	25.12	25.05	25.24		0
	1	49	25.26	25.11	25.28	25.29	25.02		0
	25	0	24.51	24.61	24.61	24.55	24.61	0-2	0
	25	12	24.61	24.81	24.71	24.62	24.77		0
	25	25	24.65	24.65	24.61	24.74	24.69		0
	50	0	24.63	24.72	24.60	24.54	24.56		0
64QAM	1	0	24.57	24.68	24.73	24.62	24.62	0-2	0
	1	25	24.54	24.71	24.65	24.63	24.79		0
	1	49	24.62	24.77	24.53	24.72	24.77		0
	25	0	23.52	23.55	23.60	23.76	23.54	0-3	1
	25	12	23.65	23.76	23.77	23.67	23.77		1
	25	25	23.74	23.81	23.75	23.58	23.53		1
	50	0	23.50	23.76	23.52	23.80	23.55		1

Table 9-54
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	24.97	25.28	25.07	25.20	24.99	0	0
	1	12	25.20	25.10	25.17	24.99	25.28		0
	1	24	25.09	25.22	25.01	25.21	25.06		0
	12	0	24.99	25.07	25.00	25.28	25.19	0-1	0
	12	6	25.17	25.14	25.00	25.27	25.17		0
	12	13	25.16	24.98	25.24	25.22	24.99		0
	25	0	25.28	25.07	25.14	25.17	25.02		0
16QAM	1	0	25.06	25.01	25.08	25.00	25.04	0-1	0
	1	12	25.13	25.26	25.13	25.07	25.23		0
	1	24	25.08	25.23	25.25	25.14	25.27		0
	12	0	24.61	24.62	24.57	24.59	24.64	0-2	0
	12	6	24.66	24.55	24.68	24.81	24.66		0
	12	13	24.78	24.63	24.58	24.72	24.85		0
	25	0	24.72	24.83	24.70	24.66	24.70		0
64QAM	1	0	24.67	24.72	24.59	24.80	24.67	0-2	0
	1	12	24.61	24.85	24.75	24.62	24.63		0
	1	24	24.73	24.80	24.67	24.85	24.73		0
	12	0	23.71	23.74	23.67	23.73	23.67	0-3	1
	12	6	23.80	23.84	23.57	23.80	23.54		1
	12	13	23.70	23.68	23.57	23.60	23.75		1
	25	0	23.68	23.78	23.76	23.70	23.68		1

9.5 WLAN Conducted Powers

Table 9-55
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	20.78	17.44	17.31
2437	6	20.28	17.28	17.17
2462	11	20.34	16.57	16.63

Table 9-56
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	16.53	16.76	13.60
5200	40	19.39	19.36	16.49
5220	44	19.22	19.29	16.41
5240	48	19.21	19.16	16.33
5260	52	19.06	19.05	16.24
5280	56	19.12	19.08	16.32
5300	60	19.15	19.04	16.29
5320	64	16.11	16.15	13.15
5500	100	16.07	16.17	13.10
5520	104	18.98	18.99	15.98
5600	120	18.82	18.95	15.87
5680	136	18.99	18.91	15.99
5700	140	16.93	16.91	13.99
5745	149	16.85	17.12	14.10
5765	153	18.91	18.93	15.98
5785	157	18.89	18.99	15.91
5805	161	18.95	18.90	15.98
5825	165	17.25	17.48	14.38

Table 9-57
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	18.11	17.44	17.31
2437	6	18.07	17.28	17.17
2462	11	18.01	16.57	16.63

Table 9-58
5 GHz WLAN Reduced 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	15.82	15.85	13.60
5200	40	18.48	18.49	16.49
5220	44	18.31	18.44	16.41
5240	48	18.24	18.22	16.33
5260	52	18.03	18.12	16.24
5280	56	18.09	18.11	16.32
5300	60	18.10	18.13	16.29
5320	64	15.37	15.33	13.15
5500	100	15.40	15.43	13.10
5520	104	18.22	18.18	15.98
5600	120	17.92	17.96	15.87
5680	136	18.18	18.26	15.99
5700	140	16.14	16.34	13.99
5745	149	16.20	16.23	14.10
5765	153	18.20	18.12	15.98
5785	157	18.11	18.11	15.91
5805	161	17.99	18.11	15.98
5825	165	16.68	16.61	14.38

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

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

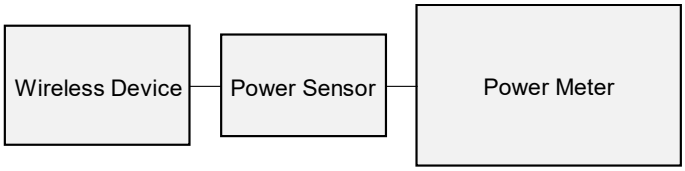


Figure 9-4
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-59
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	9.17	8.265
2441	1.0	39	10.70	11.753
2480	1.0	78	9.40	8.713
2402	2.0	0	8.49	7.066
2441	2.0	39	10.09	10.209
2480	2.0	78	8.71	7.426
2402	3.0	0	8.47	7.025
2441	3.0	39	10.09	10.205
2480	3.0	78	8.76	7.519

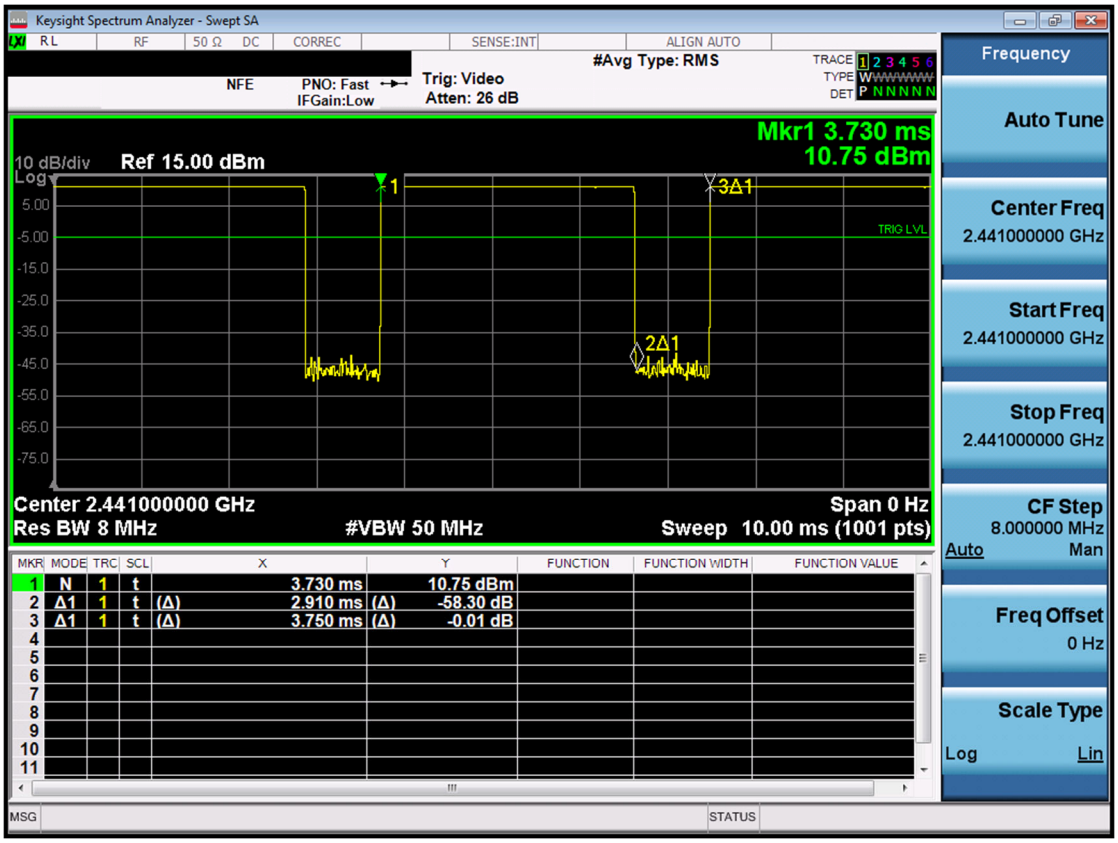


Figure 9-5
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.910ms}{3.750ms} * 100\% = 77.6\%$$

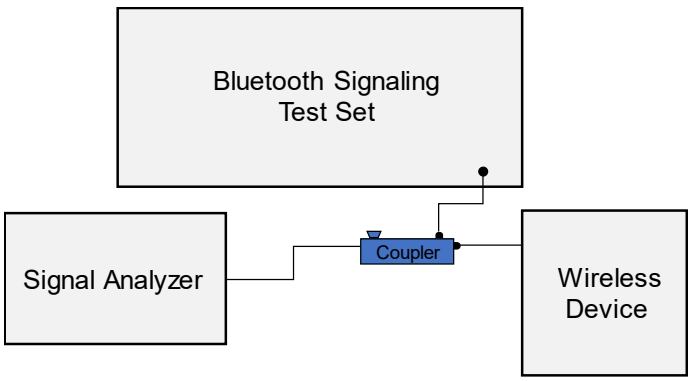


Figure 9-6
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties – Head

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
5/4/2019	750H	20.5	695	0.867	43.742	0.889	42.227	-2.47%	3.59%
			700	0.869	43.727	0.889	42.201	-2.25%	3.62%
			710	0.872	43.699	0.890	42.149	-2.02%	3.68%
			720	0.876	43.669	0.891	42.097	-1.68%	3.73%
			740	0.883	43.612	0.893	41.994	-1.12%	3.85%
			755	0.889	43.564	0.894	41.916	-0.56%	3.93%
			770	0.894	43.511	0.895	41.838	-0.11%	4.00%
			785	0.900	43.463	0.896	41.760	0.45%	4.08%
5/9/2019	750H	22.3	680	0.894	43.102	0.888	42.305	0.68%	1.88%
			695	0.899	43.046	0.889	42.227	1.12%	1.94%
			710	0.904	42.997	0.890	42.149	1.57%	2.01%
			740	0.915	42.922	0.893	41.994	2.46%	2.21%
			755	0.920	42.881	0.894	41.916	2.91%	2.30%
4/21/2019	835H	23.5	820	0.938	42.822	0.899	41.578	4.34%	2.99%
			835	0.942	42.780	0.900	41.500	4.67%	3.08%
			850	0.945	42.738	0.916	41.500	3.17%	2.98%
4/24/2019	835H	22.7	820	0.931	41.940	0.899	41.578	3.56%	0.87%
			835	0.936	41.890	0.900	41.500	4.00%	0.94%
			850	0.942	41.857	0.916	41.500	2.84%	0.86%
5/6/2019	1750H	22.4	1710	1.367	41.745	1.348	40.142	1.41%	3.99%
			1750	1.392	41.682	1.371	40.079	1.53%	4.00%
			1790	1.417	41.611	1.394	40.016	1.65%	3.99%
5/8/2019	1900H	22.8	1850	1.381	39.570	1.400	40.000	-1.36%	-1.08%
			1880	1.411	39.433	1.400	40.000	0.79%	-1.42%
			1910	1.443	39.301	1.400	40.000	3.07%	-1.75%
5/14/2019	1900H	19.5	1850	1.422	39.948	1.400	40.000	1.57%	-0.13%
			1880	1.443	39.889	1.400	40.000	3.07%	-0.28%
			1910	1.463	39.835	1.400	40.000	4.50%	-0.41%
4/29/2019	2450H	19.9	2400	1.782	37.853	1.756	39.289	1.48%	-3.65%
			2450	1.820	37.749	1.800	39.200	1.11%	-3.70%
			2500	1.861	37.672	1.855	39.136	0.32%	-3.74%
5/6/2019	2450H	21.2	2400	1.780	37.935	1.756	39.289	1.37%	-3.45%
			2450	1.819	37.837	1.800	39.200	1.06%	-3.48%
			2500	1.858	37.767	1.855	39.136	0.16%	-3.50%
			2550	1.896	37.660	1.909	39.073	-0.68%	-3.62%
			2600	1.937	37.584	1.964	39.009	-1.37%	-3.65%
			2650	1.974	37.499	2.018	38.945	-2.18%	-3.71%
			2700	2.016	37.413	2.073	38.882	-2.75%	-3.78%
05/07/2019	5200H-5800H	23.3	5180	4.569	36.167	4.635	36.009	-1.42%	0.44%
			5200	4.593	36.133	4.655	35.986	-1.33%	0.41%
			5220	4.616	36.087	4.676	35.963	-1.28%	0.34%
			5240	4.635	36.055	4.696	35.940	-1.30%	0.32%
			5260	4.655	36.023	4.717	35.917	-1.31%	0.30%
			5280	4.681	35.974	4.737	35.894	-1.18%	0.22%
			5300	4.707	35.941	4.758	35.871	-1.07%	0.20%
			5320	4.727	35.910	4.778	35.849	-1.07%	0.17%
			5500	4.928	35.586	4.963	35.643	-0.71%	-0.16%
			5520	4.952	35.552	4.983	35.620	-0.62%	-0.19%
			5540	4.982	35.512	5.004	35.597	-0.44%	-0.24%
			5560	5.007	35.485	5.024	35.574	-0.34%	-0.25%
			5580	5.028	35.454	5.045	35.551	-0.34%	-0.27%
			5600	5.048	35.409	5.065	35.529	-0.34%	-0.34%
			5620	5.074	35.367	5.086	35.506	-0.24%	-0.39%
			5640	5.100	35.324	5.106	35.483	-0.12%	-0.45%
			5660	5.124	35.284	5.127	35.460	-0.06%	-0.50%
			5680	5.147	35.269	5.147	35.437	0.00%	-0.47%
			5700	5.171	35.241	5.168	35.414	0.06%	-0.49%
			5745	5.225	35.143	5.214	35.363	0.21%	-0.62%
			5765	5.249	35.104	5.234	35.340	0.29%	-0.67%
			5785	5.273	35.079	5.255	35.317	0.34%	-0.67%
			5800	5.289	35.059	5.270	35.300	0.36%	-0.68%
			5805	5.294	35.052	5.275	35.294	0.36%	-0.69%
			5825	5.315	35.018	5.296	35.271	0.36%	-0.72%

Table 10-2
Measured Tissue Properties – Body

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
4/24/2019	750B	21.0	680	0.936	54.763	0.958	55.804	-2.30%	-1.87%
			695	0.941	54.730	0.959	55.745	-1.88%	-1.82%
			700	0.943	54.721	0.959	55.726	-1.67%	-1.80%
			710	0.947	54.697	0.960	55.687	-1.35%	-1.78%
			720	0.951	54.672	0.961	55.648	-1.04%	-1.75%
			740	0.958	54.621	0.963	55.570	-0.52%	-1.71%
			755	0.964	54.585	0.964	55.512	0.00%	-1.67%
			770	0.969	54.555	0.965	55.453	0.41%	-1.62%
			785	0.975	54.522	0.966	55.395	0.93%	-1.58%
5/1/2019	835B	22.4	820	0.995	52.856	0.969	55.258	2.68%	-4.35%
			835	1.001	52.822	0.970	55.200	3.20%	-4.31%
			850	1.006	52.791	0.988	55.154	1.82%	-4.28%
5/6/2019	835B	19.9	820	0.995	53.293	0.969	55.258	2.68%	-3.56%
			835	1.001	53.243	0.970	55.200	3.20%	-3.55%
			850	1.005	53.225	0.988	55.154	1.72%	-3.50%
5/8/2019	835B	20.0	820	0.977	54.307	0.969	55.258	0.83%	-1.72%
			835	0.983	54.284	0.970	55.200	1.34%	-1.66%
			850	0.989	54.269	0.988	55.154	0.10%	-1.60%
5/13/2019	835B	19.2	820	0.972	53.717	0.969	55.258	0.31%	-2.79%
			835	0.978	53.681	0.970	55.200	0.82%	-2.75%
			850	0.984	53.656	0.988	55.154	-0.40%	-2.72%
5/1/2019	1750B	21.9	1710	1.453	52.642	1.463	53.537	-0.68%	-1.67%
			1750	1.497	52.486	1.488	53.432	0.60%	-1.77%
			1790	1.540	52.312	1.514	53.326	1.72%	-1.90%
5/6/2019	1750B	21.7	1710	1.450	52.334	1.463	53.537	-0.89%	-2.25%
			1750	1.495	52.197	1.488	53.432	0.47%	-2.31%
			1790	1.539	52.024	1.514	53.326	1.65%	-2.44%
4/29/2019	1900B	23.1	1850	1.529	51.953	1.520	53.300	0.59%	-2.53%
			1880	1.562	51.834	1.520	53.300	2.76%	-2.75%
			1910	1.595	51.740	1.520	53.300	4.93%	-2.93%
5/2/2019	1900B	23.8	1850	1.450	51.558	1.520	53.300	-4.61%	-3.27%
			1880	1.480	51.473	1.520	53.300	-2.63%	-3.43%
			1910	1.512	51.390	1.520	53.300	-0.53%	-3.58%
5/6/2019	1900B	23.1	1850	1.526	52.712	1.520	53.300	0.39%	-1.10%
			1880	1.558	52.618	1.520	53.300	2.50%	-1.28%
			1910	1.592	52.529	1.520	53.300	4.74%	-1.45%
5/8/2019	1900B	23.4	1850	1.485	52.047	1.520	53.300	-2.30%	-2.35%
			1880	1.518	51.958	1.520	53.300	-0.13%	-2.52%
			1910	1.552	51.869	1.520	53.300	2.11%	-2.68%
5/15/2019	1900B	22.7	1850	1.521	52.154	1.520	53.300	0.07%	-2.15%
			1880	1.552	52.031	1.520	53.300	2.11%	-2.38%
			1910	1.586	51.946	1.520	53.300	4.34%	-2.54%
5/2/2019	2450B	23.3	2400	1.981	50.680	1.902	52.767	4.15%	-3.96%
			2450	2.038	50.525	1.950	52.700	4.51%	-4.13%
			2500	2.094	50.369	2.021	52.636	3.61%	-4.31%
5/6/2019	2450B	22.4	2400	1.975	51.545	1.902	52.767	3.84%	-2.32%
			2450	2.034	51.400	1.950	52.700	4.31%	-2.47%
			2500	2.090	51.249	2.021	52.636	3.41%	-2.64%
5/8/2019	2450B	22.6	2450	2.046	51.565	1.950	52.700	4.92%	-2.15%
			2500	2.107	51.421	2.021	52.636	4.26%	-2.31%
			2550	2.170	51.264	2.092	52.573	3.73%	-2.49%
			2600	2.232	51.100	2.163	52.509	3.19%	-2.68%
			2650	2.294	50.933	2.234	52.445	2.69%	-2.88%
			2700	2.356	50.769	2.305	52.382	2.21%	-3.08%
5/13/2019	2450B	22.2	2450	2.036	51.935	1.950	52.700	4.41%	-1.45%
			2500	2.093	51.785	2.021	52.636	3.56%	-1.62%
			2550	2.154	51.641	2.092	52.573	2.96%	-1.77%
			2600	2.212	51.502	2.163	52.509	2.27%	-1.92%
			2650	2.274	51.348	2.234	52.445	1.79%	-2.09%
			2700	2.336	51.202	2.305	52.382	1.34%	-2.25%
04/30/2019	5200B-5800B	21.1	5180	5.366	47.683	5.276	49.041	1.71%	-2.77%
			5200	5.401	47.642	5.299	49.014	1.92%	-2.80%
			5220	5.428	47.586	5.323	48.987	1.97%	-2.86%
			5240	5.462	47.558	5.346	48.960	2.17%	-2.86%
			5260	5.488	47.514	5.369	48.933	2.22%	-2.90%
			5280	5.512	47.489	5.393	48.906	2.21%	-2.90%
			5300	5.537	47.454	5.416	48.879	2.23%	-2.92%
			5320	5.571	47.391	5.439	48.851	2.43%	-2.99%
			5500	5.826	47.067	5.650	48.607	3.12%	-3.17%
			5520	5.857	47.030	5.673	48.580	3.24%	-3.19%
			5540	5.892	46.980	5.696	48.553	3.44%	-3.24%
			5560	5.931	46.938	5.720	48.526	3.69%	-3.27%
			5580	5.959	46.911	5.743	48.499	3.76%	-3.27%
			5600	5.984	46.873	5.766	48.471	3.78%	-3.30%
			5620	6.009	46.827	5.790	48.444	3.78%	-3.34%
			5640	6.044	46.779	5.813	48.417	3.97%	-3.38%
			5660	6.078	46.735	5.837	48.390	4.13%	-3.42%
			5680	6.112	46.706	5.860	48.363	4.30%	-3.43%
			5700	6.141	46.673	5.883	48.336	4.39%	-3.44%
			5745	6.203	46.579	5.936	48.275	4.50%	-3.51%
			5765	6.238	46.542	5.959	48.248	4.68%	-3.54%
			5785	6.271	46.503	5.982	48.220	4.83%	-3.56%
			5800	6.293	46.477	6.000	48.200	4.88%	-3.57%
			5805	6.300	46.470	6.006	48.193	4.90%	-3.58%
			5825	6.328	46.444	6.029	48.166	4.96%	-3.58%

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

10.2 Test System Verification

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

Table 10-3
System Verification Results – 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)	$Deviation_{1g}$ (%)
H	750	HEAD	05/04/2019	22.1	21.2	0.200	1161	7409	1.730	8.030	8.650	7.72%
D	750	HEAD	05/09/2019	23.1	22.3	0.200	1161	3914	1.730	8.030	8.650	7.72%
D	835	HEAD	04/21/2019	22.3	22.1	0.200	4d132	3914	2.070	9.590	10.350	7.92%
D	835	HEAD	04/24/2019	23.1	22.7	0.200	4d132	3914	1.970	9.590	9.850	2.71%
H	1750	HEAD	05/06/2019	21.9	22.4	0.100	1008	7409	3.640	36.200	36.400	0.55%
G	1900	HEAD	05/08/2019	23.8	22.8	0.100	5d149	7410	4.060	39.300	40.600	3.31%
E	1900	HEAD	05/14/2019	23.6	21.5	0.100	5d148	3589	3.970	39.100	39.700	1.53%
L	2450	HEAD	04/29/2019	20.1	19.9	0.100	719	7308	5.180	51.900	51.800	-0.19%
E	2450	HEAD	05/06/2019	22.9	21.2	0.100	981	3589	5.380	52.300	53.800	2.87%
E	2600	HEAD	05/06/2019	22.9	21.2	0.100	1064	3589	5.970	57.000	59.700	4.74%
H	5250	HEAD	05/07/2019	21.9	21.7	0.050	1237	7409	3.890	81.300	77.800	-4.31%
H	5600	HEAD	05/07/2019	21.9	21.7	0.050	1237	7409	4.110	85.700	82.200	-4.08%
H	5750	HEAD	05/07/2019	21.9	21.7	0.050	1237	7409	3.840	80.600	76.800	-4.71%
L	750	BODY	04/24/2019	21.7	20.5	0.200	1161	7308	1.730	8.430	8.650	2.61%
J	835	BODY	05/01/2019	23.3	22.4	0.200	4d132	7488	1.870	9.670	9.350	-3.31%
J	835	BODY	05/06/2019	20.0	19.5	0.200	4d132	7488	2.040	9.670	10.200	5.48%
J	835	BODY	05/08/2019	21.9	20.0	0.200	4d132	7488	1.950	9.670	9.750	0.83%
J	835	BODY	05/13/2019	19.7	19.2	0.200	4d133	7488	1.860	9.750	9.300	-4.62%
D	1750	BODY	05/01/2019	22.3	21.9	0.100	1148	3914	3.820	37.000	38.200	3.24%
D	1750	BODY	05/06/2019	22.2	21.7	0.100	1008	3914	3.850	37.400	38.500	2.94%
I	1900	BODY	04/29/2019	20.0	21.1	0.100	5d080	7357	4.070	39.200	40.700	3.83%
I	1900	BODY	05/02/2019	22.3	23.8	0.100	5d149	7357	4.150	39.400	41.500	5.33%
G	1900	BODY	05/06/2019	21.5	22.1	0.100	5d149	7410	4.140	39.400	41.400	5.08%
I	1900	BODY	05/08/2019	23.5	21.6	0.100	5d149	7357	4.200	39.400	42.000	6.60%
G	1900	BODY	05/15/2019	22.8	21.7	0.100	5d080	7410	4.180	39.200	41.800	6.63%
K	2450	BODY	05/02/2019	23.2	21.5	0.100	797	7417	5.140	51.100	51.400	0.59%
K	2450	BODY	05/06/2019	22.2	21.6	0.100	797	7417	5.040	51.100	50.400	-1.37%
K	2600	BODY	05/08/2019	23.7	21.9	0.100	1071	7417	5.240	54.200	52.400	-3.32%
L	5250	BODY	04/30/2019	22.0	21.1	0.050	1057	7308	3.670	75.900	73.400	-3.29%
L	5600	BODY	04/30/2019	22.0	21.1	0.050	1057	7308	3.890	79.900	77.800	-2.63%
L	5750	BODY	04/30/2019	22.0	21.1	0.050	1057	7308	3.570	76.700	71.400	-6.91%

Table 10-4
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
G	1900	BODY	05/06/2019	21.5	22.1	0.100	5d149	7410	2.150	20.700	21.500	3.86%
I	1900	BODY	05/08/2019	23.5	21.6	0.100	5d149	7357	2.150	20.700	21.500	3.86%
K	2450	BODY	05/13/2019	21.9	20.9	0.040	797	7417	2.270	24.200	22.700	-6.20%
K	2600	BODY	05/13/2019	21.9	20.9	0.040	1071	7417	2.300	24.500	23.000	-6.12%
L	5250	BODY	04/30/2019	22.0	21.1	0.050	1057	7308	1.010	21.100	20.200	-4.27%
L	5750	BODY	04/30/2019	22.0	21.1	0.050	1057	7308	0.990	21.200	19.800	-6.60%

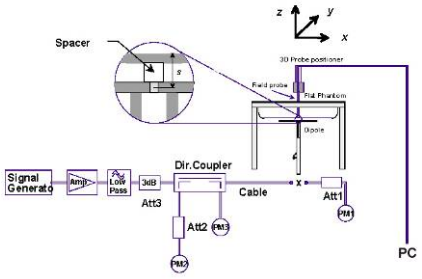


Figure 10-1
System Verification Setup Diagram

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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.60	0.08	Right	Cheek	01543	1	1:8.3	0.159	1.023	0.163	
836.60	190	GSM 850	GSM	33.7	33.60	0.00	Right	Tilt	01543	1	1:8.3	0.109	1.023	0.112	
836.60	190	GSM 850	GSM	33.7	33.60	0.13	Left	Cheek	01543	1	1:8.3	0.159	1.023	0.163	
836.60	190	GSM 850	GSM	33.7	33.60	0.07	Left	Tilt	01543	1	1:8.3	0.132	1.023	0.135	
836.60	190	GSM 850	GPRS	32.2	32.06	0.04	Right	Cheek	01543	2	1:4.15	0.190	1.033	0.196	
836.60	190	GSM 850	GPRS	32.2	32.06	0.04	Right	Tilt	01543	2	1:4.15	0.129	1.033	0.133	
836.60	190	GSM 850	GPRS	32.2	32.06	0.00	Left	Cheek	01543	2	1:4.15	0.200	1.033	0.207	A1
836.60	190	GSM 850	GPRS	32.2	32.06	0.05	Left	Tilt	01543	2	1:4.15	0.165	1.033	0.170	
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.7	30.22	0.20	Right	Cheek	01544	1	1:8.3	0.079	1.117	0.088	
1880.00	661	GSM 1900	GSM	30.7	30.22	0.16	Right	Tilt	01544	1	1:8.3	0.046	1.117	0.051	
1880.00	661	GSM 1900	GSM	30.7	30.22	0.00	Left	Cheek	01544	1	1:8.3	0.073	1.117	0.082	
1880.00	661	GSM 1900	GSM	30.7	30.22	-0.12	Left	Tilt	01544	1	1:8.3	0.026	1.117	0.029	
1880.00	661	GSM 1900	GPRS	29.2	28.73	0.10	Right	Cheek	01544	2	1:4.15	0.091	1.114	0.101	A2
1880.00	661	GSM 1900	GPRS	29.2	28.73	0.11	Right	Tilt	01544	2	1:4.15	0.056	1.114	0.062	
1880.00	661	GSM 1900	GPRS	29.2	28.73	0.16	Left	Cheek	01544	2	1:4.15	0.089	1.114	0.099	
1880.00	661	GSM 1900	GPRS	29.2	28.73	-0.08	Left	Tilt	01544	2	1:4.15	0.033	1.114	0.037	
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	25.43	0.12	Right	Cheek	01543	1:1	0.211	1.016	**0.214**	A3
836.60	4183	UMTS 850	RMC	25.5	25.43	-0.09	Right	Tilt	01543	1:1	0.146	1.016	0.148	
836.60	4183	UMTS 850	RMC	25.5	25.43	0.07	Left	Cheek	01543	1:1	0.194	1.016	0.197	
836.60	4183	UMTS 850	RMC	25.5	25.43	0.01	Left	Tilt	01543	1:1	0.190	1.016	0.193	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram							

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.03	Right	Cheek	01544	1:1	0.140	1.009	0.141	A4
1732.40	1412	UMTS 1750	RMC	24.3	24.26	-0.15	Right	Tilt	01544	1:1	0.081	1.009	0.082	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.00	Left	Cheek	01544	1:1	0.117	1.009	0.118	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.14	Left	Tilt	01544	1:1	0.053	1.009	0.053	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.06	Right	Cheek	01544	1:1	0.158	1.023	0.162	A5
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.11	Right	Tilt	01544	1:1	0.097	1.023	0.099	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.16	Left	Cheek	01544	1:1	0.132	1.023	0.135	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.07	Left	Tilt	01544	1:1	0.040	1.023	0.041	
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.93	0.03	Right	Cheek	01543	1:1	0.172	1.016	0.175	A6
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.93	0.01	Right	Tilt	01543	1:1	0.128	1.016	0.130	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.93	0.02	Left	Cheek	01543	1:1	0.166	1.016	0.169	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.93	0.03	Left	Tilt	01543	1:1	0.163	1.016	0.166	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.0	24.89	0.02	Right	Cheek	01543	1:1	0.170	1.026	0.174	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.0	24.89	0.07	Right	Tilt	01543	1:1	0.124	1.026	0.127	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.0	24.89	0.10	Left	Cheek	01543	1:1	0.159	1.026	0.163	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.0	24.89	-0.12	Left	Tilt	01543	1:1	0.164	1.026	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 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.99	0.05	Right	Cheek	01543	1:1	0.153	1.002	0.153	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.99	0.09	Right	Tilt	01543	1:1	0.124	1.002	0.124	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.99	-0.11	Left	Cheek	01543	1:1	0.165	1.002	0.165	A7
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.99	0.02	Left	Tilt	01543	1:1	0.159	1.002	0.159	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.92	0.06	Right	Cheek	01543	1:1	0.162	1.019	0.165	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.92	0.09	Right	Tilt	01543	1:1	0.128	1.019	0.130	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.92	-0.05	Left	Cheek	01543	1:1	0.146	1.019	0.149	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.92	-0.02	Left	Tilt	01543	1:1	0.146	1.019	0.149	
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/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.20	0.00	Right	Cheek	01544	1:1	0.151	1.122	0.169	A8
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.20	0.03	Right	Tilt	01544	1:1	0.093	1.122	0.104	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.20	-0.09	Left	Cheek	01544	1:1	0.142	1.122	0.159	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.20	-0.04	Left	Tilt	01544	1:1	0.045	1.122	0.050	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.38	0.05	Right	Cheek	01544	1:1	0.143	1.076	0.154	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.38	0.12	Right	Tilt	01544	1:1	0.091	1.076	0.098	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.38	0.07	Left	Cheek	01544	1:1	0.135	1.076	0.145	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.38	0.11	Left	Tilt	01544	1:1	0.053	1.076	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	-0.01	0	Right	Cheek	QPSK	1	50	01552	1:1	0.096	1.074	0.103	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.06	1	Right	Cheek	QPSK	50	0	01552	1:1	0.075	1.072	0.080	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	0.06	0	Right	Tilt	QPSK	1	50	01552	1:1	0.034	1.074	0.037	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.17	1	Right	Tilt	QPSK	50	0	01552	1:1	0.030	1.072	0.032	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	0.17	0	Left	Cheek	QPSK	1	50	01552	1:1	0.106	1.074	0.114	A9
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.04	1	Left	Cheek	QPSK	50	0	01552	1:1	0.082	1.072	0.088	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	0.01	0	Left	Tilt	QPSK	1	50	01552	1:1	0.048	1.074	0.052	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.10	1	Left	Tilt	QPSK	50	0	01552	1:1	0.042	1.072	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-10
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	25.5	24.90	-0.14	0	Right	Cheek	QPSK	1	0	01545	1:1	0.145	1.148	0.166	A10
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	0.06	1	Right	Cheek	QPSK	25	0	01545	1:1	0.097	1.099	0.107	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	0.05	0	Right	Tilt	QPSK	1	0	01545	1:1	0.085	1.148	0.098	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	0.12	1	Right	Tilt	QPSK	25	0	01545	1:1	0.053	1.099	0.058	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	0.01	0	Left	Cheek	QPSK	1	0	01545	1:1	0.139	1.148	0.160	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	0.06	1	Left	Cheek	QPSK	25	0	01545	1:1	0.096	1.099	0.106	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	-0.14	0	Left	Tilt	QPSK	1	0	01545	1:1	0.086	1.148	0.099	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	0.06	1	Left	Tilt	QPSK	25	0	01545	1:1	0.059	1.099	0.065	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-11
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	25.5	24.94	0.08	0	Right	Cheek	QPSK	1	49	01545	1:1	0.158	1.138	0.180	A11
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.01	1	Right	Cheek	QPSK	25	0	01545	1:1	0.092	1.086	0.100	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	-0.12	0	Right	Tilt	QPSK	1	49	01545	1:1	0.066	1.138	0.075	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	0.01	1	Right	Tilt	QPSK	25	0	01545	1:1	0.037	1.086	0.040	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	0.08	0	Left	Cheek	QPSK	1	49	01545	1:1	0.136	1.138	0.155	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	0.15	1	Left	Cheek	QPSK	25	0	01545	1:1	0.077	1.086	0.084	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	0.02	0	Left	Tilt	QPSK	1	49	01545	1:1	0.082	1.138	0.093	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	0.07	1	Left	Tilt	QPSK	25	0	01545	1:1	0.047	1.086	0.051	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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	25.5	25.42	-0.04	0	Right	Cheek	QPSK	1	74	01544	1:1	0.158	1.019	0.161	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	0.06	1	Right	Cheek	QPSK	36	18	01544	1:1	0.131	1.016	0.133	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	-0.18	0	Right	Tilt	QPSK	1	74	01544	1:1	0.124	1.019	0.126	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	-0.08	1	Right	Tilt	QPSK	36	18	01544	1:1	0.105	1.016	0.107	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	0.05	0	Left	Cheek	QPSK	1	74	01544	1:1	0.155	1.019	0.158	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	0.14	1	Left	Cheek	QPSK	36	18	01544	1:1	0.136	1.016	0.138	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	0.02	0	Left	Tilt	QPSK	1	74	01544	1:1	0.172	1.019	0.175	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	0.02	1	Left	Tilt	QPSK	36	18	01544	1:1	0.139	1.016	0.141	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-13
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	24.3	24.30	0.02	0	Right	Cheek	QPSK	1	99	01545	1:1	0.107	1.000	0.107	A13
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.01	1	Right	Cheek	QPSK	50	50	01545	1:1	0.093	1.038	0.097	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	-0.14	0	Right	Tilt	QPSK	1	99	01545	1:1	0.073	1.000	0.073	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	-0.10	1	Right	Tilt	QPSK	50	50	01545	1:1	0.058	1.038	0.060	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	0.01	0	Left	Cheek	QPSK	1	99	01545	1:1	0.099	1.000	0.099	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.09	1	Left	Cheek	QPSK	50	50	01545	1:1	0.091	1.038	0.094	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	0.01	0	Left	Tilt	QPSK	1	99	01545	1:1	0.056	1.000	0.056	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	-0.08	1	Left	Tilt	QPSK	50	50	01545	1:1	0.052	1.038	0.054	
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)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.01	0	Right	Cheek	QPSK	1	50	01552	1:1	0.153	1.047	0.160	A14
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.12	1	Right	Cheek	QPSK	50	25	01552	1:1	0.143	1.086	0.155	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	0.02	0	Right	Tilt	QPSK	1	50	01552	1:1	0.102	1.047	0.107	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	0.07	1	Right	Tilt	QPSK	50	25	01552	1:1	0.084	1.086	0.091	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	0.19	0	Left	Cheek	QPSK	1	50	01552	1:1	0.137	1.047	0.143	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	0.00	1	Left	Cheek	QPSK	50	25	01552	1:1	0.123	1.086	0.134	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.16	0	Left	Tilt	QPSK	1	50	01552	1:1	0.049	1.047	0.051	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	0.13	1	Left	Tilt	QPSK	50	25	01552	1:1	0.042	1.086	0.046	
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																				
Power Class	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)	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.09	0	Right	Cheek	QPSK	1	0	01545	1:1.58	0.103	1.000	0.103	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.12	1	Right	Cheek	QPSK	50	0	01545	1:1.58	0.070	1.000	0.070	
Power Class 2	2549.50	40185	Low-Mid	LTE Band 41	20	27.7	27.35	0.19	0	Right	Cheek	QPSK	1	0	01545	1:2.31	0.127	1.084	0.138	A15
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.15	0	Right	Tilt	QPSK	1	0	01545	1:1.58	0.060	1.000	0.060	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.16	1	Right	Tilt	QPSK	50	0	01545	1:1.58	0.037	1.000	0.037	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.12	0	Left	Cheek	QPSK	1	0	01545	1:1.58	0.097	1.000	0.097	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.14	1	Left	Cheek	QPSK	50	0	01545	1:1.58	0.061	1.000	0.061	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.12	0	Left	Tilt	QPSK	1	0	01545	1:1.58	0.050	1.000	0.050	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.14	1	Left	Tilt	QPSK	50	0	01545	1:1.58	0.029	1.000	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram								

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	19.0	18.11	-0.02	Right	Cheek	01540	1	99.9	1.559	0.854	1.227	1.001	1.049	
2437	6	802.11b	DSSS	22	19.0	18.07	0.14	Right	Cheek	01540	1	99.9	1.647	0.953	1.239	1.001	1.182	
2462	11	802.11b	DSSS	22	19.0	18.01	0.05	Right	Cheek	01540	1	99.9	1.523	0.958	1.256	1.001	**1.204**	A16
2412	1	802.11b	DSSS	22	19.0	18.11	0.15	Right	Tilt	01540	1	99.9	1.074	0.814	1.227	1.001	1.000	
2437	6	802.11b	DSSS	22	19.0	18.07	-0.06	Right	Tilt	01540	1	99.9	1.313	0.880	1.239	1.001	1.091	
2412	1	802.11b	DSSS	22	19.0	18.11	-0.16	Left	Cheek	01540	1	99.9	0.405	0.235	1.227	1.001	0.289	
2412	1	802.11b	DSSS	22	19.0	18.11	0.03	Left	Tilt	01540	1	99.9	0.402	-	1.227	1.001	-	
2462	11	802.11b	DSSS	22	19.0	18.01	0.13	Right	Cheek	01540	1	99.9	1.492	0.957	1.256	1.001	1.203	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram					

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)	
5280	56	802.11a	OFDM	20	18.5	18.09	0.12	Right	Cheek	01540	6	99.2	1.521	0.830	1.099	1.008	0.919	
5300	60	802.11a	OFDM	20	18.5	18.10	0.17	Right	Cheek	01540	6	99.2	1.357	0.748	1.096	1.008	0.826	
5300	60	802.11a	OFDM	20	18.5	18.10	0.13	Right	Tilt	01540	6	99.2	0.605	0.341	1.096	1.008	0.377	
5300	60	802.11a	OFDM	20	18.5	18.10	-0.18	Left	Cheek	01540	6	99.2	0.354	-	1.096	1.008	-	
5300	60	802.11a	OFDM	20	18.5	18.10	-0.03	Left	Tilt	01540	6	99.2	0.310	-	1.096	1.008	-	
5280	56	802.11a	OFDM	20	18.5	18.09	0.18	Right	Cheek	01540	6	99.2	1.482	0.701	1.099	1.008	0.777	
5520	104	802.11a	OFDM	20	18.5	18.22	0.14	Right	Cheek	01540	6	99.2	1.920	0.915	1.067	1.008	**0.984**	A17
5600	120	802.11a	OFDM	20	18.5	17.92	0.19	Right	Cheek	01540	6	99.2	1.835	0.844	1.143	1.008	0.972	
5680	136	802.11a	OFDM	20	18.5	18.18	0.10	Right	Cheek	01540	6	99.2	1.787	0.779	1.076	1.008	0.845	
5520	104	802.11a	OFDM	20	18.5	18.22	0.05	Right	Tilt	01540	6	99.2	1.227	0.394	1.067	1.008	0.424	
5520	104	802.11a	OFDM	20	18.5	18.22	0.04	Left	Cheek	01540	6	99.2	0.408	-	1.067	1.008	-	
5520	104	802.11a	OFDM	20	18.5	18.22	0.03	Left	Tilt	01540	6	99.2	0.352	-	1.067	1.008	-	
5520	104	802.11a	OFDM	20	18.5	18.22	0.16	Right	Cheek	01540	6	99.2	1.551	0.807	1.067	1.008	0.868	
5765	153	802.11a	OFDM	20	18.5	18.20	0.15	Right	Cheek	01540	6	99.2	1.825	0.787	1.072	1.008	0.850	
5785	157	802.11a	OFDM	20	18.5	18.11	0.16	Right	Cheek	01540	6	99.2	1.720	0.753	1.094	1.008	0.830	
5765	153	802.11a	OFDM	20	18.5	18.20	0.12	Right	Tilt	01540	6	99.2	1.235	0.440	1.072	1.008	0.475	
5765	153	802.11a	OFDM	20	18.5	18.20	0.04	Left	Cheek	01540	6	99.2	0.689	-	1.072	1.008	-	
5765	153	802.11a	OFDM	20	18.5	18.20	0.12	Left	Tilt	01540	6	99.2	0.618	-	1.072	1.008	-	
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 11-18
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)	
2441.00	39	Bluetooth	FHSS	11.0	10.70	0.12	Right	Cheek	01540	1	77.6	0.080	1.072	1.289	**0.111**	A18
2441.00	39	Bluetooth	FHSS	11.0	10.70	-0.10	Right	Tilt	01540	1	77.6	0.080	1.072	1.289	**0.111**	
2441.00	39	Bluetooth	FHSS	11.0	10.70	0.13	Left	Cheek	01540	1	77.6	0.026	1.072	1.289	0.036	
2441.00	39	Bluetooth	FHSS	11.0	10.70	-0.04	Left	Tilt	01540	1	77.6	0.023	1.072	1.289	0.032	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram									

11.2 Standalone Body-Worn SAR Data

Table 11-19
GSM/UMTS/CDMA Body-Worn SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.60	0.07	10 mm	01544	1	1:8.3	back	0.378	1.023	0.387	
836.60	190	GSM 850	GPRS	32.2	32.06	-0.13	10 mm	01544	2	1:4.15	back	0.420	1.033	0.434	A19
1880.00	661	GSM 1900	GSM	30.7	30.22	0.00	10 mm	01543	1	1:8.3	back	0.311	1.117	0.347	
1880.00	661	GSM 1900	GPRS	29.2	28.73	-0.04	10 mm	01543	2	1:4.15	back	0.327	1.114	0.364	A20
836.60	4183	UMTS 850	RMC	25.5	25.43	-0.08	10 mm	01543	N/A	1:1	back	0.574	1.016	0.583	A22
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.01	10 mm	01544	N/A	1:1	back	0.554	1.009	0.559	A23
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.00	10 mm	01543	N/A	1:1	back	0.548	1.023	0.561	A25
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.0	24.90	-0.05	10 mm	01544	N/A	1:1	back	0.465	1.023	0.476	A27
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.0	24.97	-0.03	10 mm	01544	N/A	1:1	back	0.491	1.007	0.494	A29
1880.00	600	PCS CDMA	TDSO / SO32	24.7	24.21	-0.10	10 mm	01543	N/A	1:1	back	0.521	1.119	0.583	A31
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-20
LTE Body-Worn SAR

MESAUREMENT RESULTS																		
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [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	25.5	25.19	-0.13	01545	QPSK	1	50	10 mm	back	1:1	0.235	1.074	0.252	A33
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	-0.01	01545	QPSK	50	0	10 mm	back	1:1	0.220	1.072	0.236	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	0.13	01545	QPSK	1	0	10 mm	back	1:1	0.270	1.148	0.310	A34
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	-0.02	01545	QPSK	25	0	10 mm	back	1:1	0.239	1.099	0.263	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	-0.13	01545	QPSK	1	49	10 mm	back	1:1	0.354	1.138	0.403	A35
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.05	01545	QPSK	25	0	10 mm	back	1:1	0.325	1.086	0.353	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	-0.07	01552	QPSK	1	74	10 mm	back	1:1	0.615	1.019	**0.627**	A36
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	-0.05	01552	QPSK	36	18	10 mm	back	1:1	0.407	1.016	0.414	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	-0.02	01552	QPSK	1	99	10 mm	back	1:1	0.565	1.000	0.565	A37
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.01	01552	QPSK	50	50	10 mm	back	1:1	0.514	1.038	0.534	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.09	01552	QPSK	1	50	10 mm	back	1:1	0.510	1.047	0.534	A39
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.07	01552	QPSK	50	25	10 mm	back	1:1	0.449	1.086	0.488	
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 Band 41 Body-Worn SAR

MEASUREMENT RESULTS																						
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
	MHz	Ch.																		
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.19	0	01545	QPSK	1	0	10 mm	back	1:1.58	0.444	1.000	0.444	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.01	1	01545	QPSK	50	0	10 mm	back	1:1.58	0.300	1.000	0.300	
Power Class 2	2549.50	40185	Low-Mid	LTE Band 41	20	27.7	27.35	-0.03	0	01545	QPSK	1	0	10 mm	back	1:2.31	0.549	1.084	0.595	A41
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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
2412	1	802.11b	DSSS	22	21.0	20.78	0.06	10 mm	01540	1	back	99.9	1.026	0.633	1.052	1.001	0.667	A43
2437	6	802.11b	DSSS	22	21.0	20.28	0.10	10 mm	01540	1	back	99.9	0.955	0.598	1.180	1.001	**0.706**	
2462	11	802.11b	DSSS	22	21.0	20.34	0.05	10 mm	01540	1	back	99.9	0.769	0.487	1.164	1.001	0.567	
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 W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																	
5260	52	802.11a	OFDM	20	19.5	19.06	0.02	10 mm	01540	6	back	99.2	1.194	0.582	1.107	1.008	0.649	
5280	56	802.11a	OFDM	20	19.5	19.12	-0.12	10 mm	01540	6	back	99.2	1.201	0.591	1.091	1.008	**0.650**	A44
5300	60	802.11a	OFDM	20	19.5	19.15	0.06	10 mm	01540	6	back	99.2	1.280	0.590	1.084	1.008	0.645	
5680	136	802.11a	OFDM	20	19.5	18.99	0.03	10 mm	01540	6	back	99.2	1.056	0.482	1.125	1.008	0.547	
5805	161	802.11a	OFDM	20	19.5	18.95	-0.03	10 mm	01540	6	back	99.2	1.128	0.516	1.135	1.008	0.590	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-24
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) (W/kg)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.															
2441	39	Bluetooth	FHSS	11.0	10.70	0.12	10 mm	01540	1	back	77.6	0.030	1.072	1.289	**0.041**	A46
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 GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	32.2	32.06	-0.13	10 mm	01544	2	1:4.15	back	0.420	1.033	0.434	A19
836.60	190	GSM 850	GPRS	32.2	32.06	0.18	10 mm	01544	2	1:4.15	front	0.385	1.033	0.398	
836.60	190	GSM 850	GPRS	32.2	32.06	0.13	10 mm	01544	2	1:4.15	bottom	0.191	1.033	0.197	
836.60	190	GSM 850	GPRS	32.2	32.06	0.04	10 mm	01544	2	1:4.15	left	0.076	1.033	0.079	
1880.00	661	GSM 1900	GPRS	29.2	28.73	-0.04	10 mm	01543	2	1:4.15	back	0.327	1.114	0.364	
1880.00	661	GSM 1900	GPRS	29.2	28.73	-0.04	10 mm	01543	2	1:4.15	front	0.432	1.114	0.481	
1850.20	512	GSM 1900	GPRS	29.2	28.65	0.03	10 mm	01543	2	1:4.15	bottom	0.639	1.135	0.725	
1880.00	661	GSM 1900	GPRS	29.2	28.73	0.00	10 mm	01543	2	1:4.15	bottom	0.645	1.114	0.719	A21
1909.80	810	GSM 1900	GPRS	29.2	28.60	0.02	10 mm	01543	2	1:4.15	bottom	0.637	1.148	0.731	
1880.00	661	GSM 1900	GPRS	29.2	28.73	0.13	10 mm	01543	2	1:4.15	right	0.098	1.114	0.109	
836.60	4183	UMTS 850	RMC	25.5	25.43	-0.08	10 mm	01543	N/A	1:1	back	0.574	1.016	0.583	A22
836.60	4183	UMTS 850	RMC	25.5	25.43	-0.01	10 mm	01543	N/A	1:1	front	0.440	1.016	0.447	
836.60	4183	UMTS 850	RMC	25.5	25.43	0.06	10 mm	01543	N/A	1:1	bottom	0.237	1.016	0.241	
836.60	4183	UMTS 850	RMC	25.5	25.43	-0.02	10 mm	01543	N/A	1:1	left	0.106	1.016	0.108	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.01	10 mm	01544	N/A	1:1	back	0.554	1.009	0.559	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	-0.07	10 mm	01544	N/A	1:1	front	0.678	1.009	0.684	
1712.40	1312	UMTS 1750	RMC	24.3	24.28	-0.03	10 mm	01544	N/A	1:1	bottom	0.886	1.005	0.890	
1732.40	1412	UMTS 1750	RMC	24.3	24.26	-0.02	10 mm	01544	N/A	1:1	bottom	0.934	1.009	0.942	
1752.60	1513	UMTS 1750	RMC	24.3	24.28	0.00	10 mm	01544	N/A	1:1	bottom	0.953	1.005	0.958	A24
1732.40	1412	UMTS 1750	RMC	24.3	24.26	0.00	10 mm	01544	N/A	1:1	right	0.225	1.009	0.227	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.00	10 mm	01543	N/A	1:1	back	0.548	1.023	0.561	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.02	10 mm	01543	N/A	1:1	front	0.711	1.023	0.727	
1852.40	9262	UMTS 1900	RMC	24.3	24.13	0.03	10 mm	01543	N/A	1:1	bottom	1.020	1.040	1.061	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.01	10 mm	01543	N/A	1:1	bottom	0.983	1.023	1.006	
1907.60	9538	UMTS 1900	RMC	24.3	24.06	0.03	10 mm	01543	N/A	1:1	bottom	1.100	1.057	1.163	A26
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.07	10 mm	01543	N/A	1:1	right	0.146	1.023	0.149	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.0	24.90	-0.09	10 mm	01544	N/A	1:1	back	0.391	1.023	0.400	A28
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.0	24.90	-0.10	10 mm	01544	N/A	1:1	front	0.324	1.023	0.331	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.0	24.90	-0.06	10 mm	01544	N/A	1:1	bottom	0.157	1.023	0.161	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.0	24.90	-0.04	10 mm	01544	N/A	1:1	left	0.085	1.023	0.087	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.90	0.02	10 mm	01544	N/A	1:1	back	0.412	1.023	0.421	A30
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.90	-0.03	10 mm	01544	N/A	1:1	front	0.325	1.023	0.332	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.90	0.00	10 mm	01544	N/A	1:1	bottom	0.162	1.023	0.166	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.90	0.02	10 mm	01544	N/A	1:1	left	0.100	1.023	0.102	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	0.03	10 mm	01543	N/A	1:1	back	0.522	1.114	0.582	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	-0.05	10 mm	01543	N/A	1:1	front	0.662	1.114	0.737	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.38	-0.11	10 mm	01543	N/A	1:1	bottom	1.110	1.076	**1.194**	A32
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	0.00	10 mm	01543	N/A	1:1	bottom	1.040	1.114	1.159	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.35	-0.13	10 mm	01543	N/A	1:1	bottom	1.090	1.084	1.182	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	0.00	10 mm	01543	N/A	1:1	right	0.164	1.114	0.183	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.38	-0.16	10 mm	01543	N/A	1:1	bottom	1.070	1.076	1.151	
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	25.5	25.19	-0.13	0	01545	QPSK	1	50	10 mm	back	1:1	0.235	1.074	0.252	A33
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	-0.01	1	01545	QPSK	50	0	10 mm	back	1:1	0.220	1.072	0.236	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	0.00	0	01545	QPSK	1	50	10 mm	front	1:1	0.183	1.074	0.197	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.04	1	01545	QPSK	50	0	10 mm	front	1:1	0.173	1.072	0.185	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	0.05	0	01545	QPSK	1	50	10 mm	bottom	1:1	0.056	1.074	0.060	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.03	1	01545	QPSK	50	0	10 mm	bottom	1:1	0.053	1.072	0.057	
680.50	133297	Mid	LTE Band 71	20	25.5	25.19	-0.14	0	01545	QPSK	1	50	10 mm	left	1:1	0.218	1.074	0.234	
680.50	133297	Mid	LTE Band 71	20	24.5	24.20	0.02	1	01545	QPSK	50	0	10 mm	left	1:1	0.210	1.072	0.225	
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	25.5	24.90	0.13	0	01545	QPSK	1	0	10 mm	back	1:1	0.270	1.148	0.310	A34
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	-0.02	1	01545	QPSK	25	0	10 mm	back	1:1	0.239	1.099	0.263	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	0.02	0	01545	QPSK	1	0	10 mm	front	1:1	0.215	1.148	0.247	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	-0.04	1	01545	QPSK	25	0	10 mm	front	1:1	0.192	1.099	0.211	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	-0.09	0	01545	QPSK	1	0	10 mm	bottom	1:1	0.073	1.148	0.084	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	-0.09	1	01545	QPSK	25	0	10 mm	bottom	1:1	0.065	1.099	0.071	
707.50	23095	Mid	LTE Band 12	10	25.5	24.90	-0.13	0	01545	QPSK	1	0	10 mm	left	1:1	0.220	1.148	0.253	
707.50	23095	Mid	LTE Band 12	10	24.5	24.09	-0.02	1	01545	QPSK	25	0	10 mm	left	1:1	0.194	1.099	0.213	
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	25.5	24.94	-0.13	0	01545	QPSK	1	49	10 mm	back	1:1	0.354	1.138	0.403	A35
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.05	1	01545	QPSK	25	0	10 mm	back	1:1	0.325	1.086	0.353	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	0.00	0	01545	QPSK	1	49	10 mm	front	1:1	0.277	1.138	0.315	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.02	1	01545	QPSK	25	0	10 mm	front	1:1	0.247	1.086	0.268	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	-0.12	0	01545	QPSK	1	49	10 mm	bottom	1:1	0.106	1.138	0.121	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.08	1	01545	QPSK	25	0	10 mm	bottom	1:1	0.102	1.086	0.111	
782.00	23230	Mid	LTE Band 13	10	25.5	24.94	0.03	0	01545	QPSK	1	49	10 mm	left	1:1	0.109	1.138	0.124	
782.00	23230	Mid	LTE Band 13	10	24.5	24.14	-0.04	1	01545	QPSK	25	0	10 mm	left	1:1	0.098	1.086	0.106	
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	25.5	25.42	-0.07	0	01552	QPSK	1	74	10 mm	back	1:1	0.615	1.019	0.627	A36
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	-0.05	1	01552	QPSK	36	18	10 mm	back	1:1	0.407	1.016	0.414	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	-0.08	0	01552	QPSK	1	74	10 mm	front	1:1	0.480	1.019	0.489	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	-0.07	1	01552	QPSK	36	18	10 mm	front	1:1	0.327	1.016	0.332	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	-0.08	0	01552	QPSK	1	74	10 mm	bottom	1:1	0.237	1.019	0.242	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	0.05	1	01552	QPSK	36	18	10 mm	bottom	1:1	0.151	1.016	0.153	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.42	-0.01	0	01552	QPSK	1	74	10 mm	left	1:1	0.099	1.019	0.101	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.43	-0.08	1	01552	QPSK	36	18	10 mm	left	1:1	0.061	1.016	0.062	
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)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	-0.02	0	01552	QPSK	1	99	10 mm	back	1:1	0.565	1.000	0.565	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.01	1	01552	QPSK	50	50	10 mm	back	1:1	0.514	1.038	0.534	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	0.06	0	01552	QPSK	1	99	10 mm	front	1:1	0.650	1.000	0.650	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.06	1	01552	QPSK	50	50	10 mm	front	1:1	0.594	1.038	0.617	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.3	24.21	-0.03	0	01552	QPSK	1	99	10 mm	bottom	1:1	0.864	1.021	0.882	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	-0.01	0	01552	QPSK	1	99	10 mm	bottom	1:1	0.874	1.000	0.874	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.3	24.26	-0.06	0	01552	QPSK	1	99	10 mm	bottom	1:1	0.973	1.009	0.982	A38
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.00	1	01552	QPSK	50	50	10 mm	bottom	1:1	0.760	1.038	0.789	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.3	23.13	0.02	1	01552	QPSK	100	0	10 mm	bottom	1:1	0.803	1.040	0.835	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.3	24.30	0.00	0	01552	QPSK	1	99	10 mm	right	1:1	0.168	1.000	0.168	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.3	23.14	0.02	1	01552	QPSK	50	50	10 mm	right	1:1	0.160	1.038	0.166	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.3	24.26	-0.07	0	01552	QPSK	1	99	10 mm	bottom	1:1	0.961	1.009	0.970	
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 11-31
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	24.3	24.10	-0.09	0	01552	QPSK	1	50	10 mm	back	1:1	0.510	1.047	0.534	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.07	1	01552	QPSK	50	25	10 mm	back	1:1	0.449	1.086	0.488	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	0.01	0	01552	QPSK	1	50	10 mm	front	1:1	0.664	1.047	0.695	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	0.01	1	01552	QPSK	50	25	10 mm	front	1:1	0.590	1.086	0.641	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.09	0	01552	QPSK	1	50	10 mm	bottom	1:1	1.110	1.047	1.162	A40
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.3	23.98	0.14	0	01552	QPSK	1	50	10 mm	bottom	1:1	1.030	1.076	1.108	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.3	23.95	-0.01	0	01552	QPSK	1	99	10 mm	bottom	1:1	1.030	1.084	1.117	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.12	1	01552	QPSK	50	25	10 mm	bottom	1:1	0.977	1.086	1.061	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.3	22.89	-0.08	1	01552	QPSK	50	25	10 mm	bottom	1:1	0.934	1.099	1.026	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.3	22.92	-0.13	1	01552	QPSK	50	0	10 mm	bottom	1:1	0.938	1.091	1.023	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.90	-0.12	1	01552	QPSK	100	0	10 mm	bottom	1:1	0.945	1.096	1.036	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	0.18	0	01552	QPSK	1	50	10 mm	right	1:1	0.178	1.047	0.186	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.07	1	01552	QPSK	50	25	10 mm	right	1:1	0.163	1.086	0.177	
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																					
Power Class	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)	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.19	0	01545	QPSK	1	0	10 mm	back	1:1.58	0.444	1.000	0.444	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.01	1	01545	QPSK	50	0	10 mm	back	1:1.58	0.300	1.000	0.300	
Power Class 2	2549.50	40185	Low-Mid	LTE Band 41	20	27.7	27.35	-0.03	0	01545	QPSK	1	0	10 mm	back	1:2.31	0.549	1.084	0.595	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.02	0	01545	QPSK	1	0	10 mm	front	1:1.58	0.421	1.000	0.421	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.10	1	01545	QPSK	50	0	10 mm	front	1:1.58	0.289	1.000	0.289	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.77	-0.11	0	01545	QPSK	1	99	10 mm	bottom	1:1.58	0.705	1.054	0.743	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.10	0	01545	QPSK	1	0	10 mm	bottom	1:1.58	0.788	1.000	0.788	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.82	-0.10	0	01545	QPSK	1	0	10 mm	bottom	1:1.58	0.759	1.042	0.791	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	24.56	-0.15	0	01545	QPSK	1	0	10 mm	bottom	1:1.58	0.593	1.107	0.656	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.66	-0.12	0	01545	QPSK	1	0	10 mm	bottom	1:1.58	0.682	1.081	0.737	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.15	1	01545	QPSK	50	0	10 mm	bottom	1:1.58	0.541	1.000	0.541	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.0	23.97	0.03	1	01545	QPSK	100	0	10 mm	bottom	1:1.58	0.536	1.007	0.540	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	27.7	27.45	-0.13	0	01545	QPSK	1	0	10 mm	bottom	1:2.31	1.030	1.059	1.091	A42
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.05	0	01545	QPSK	1	0	10 mm	right	1:1.58	0.157	1.000	0.157	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.12	1	01545	QPSK	50	0	10 mm	right	1:1.58	0.108	1.000	0.108	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	27.7	27.45	0.03	0	01545	QPSK	1	0	10 mm	bottom	1:2.31	0.965	1.059	1.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Blue entry represents variability measurement.

Table 11-33
WLAN Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.78	0.06	10 mm	01540	1	back	99.9	1.026	0.633	1.052	1.001	0.667	A43
2437	6	802.11b	DSSS	22	21.0	20.28	0.10	10 mm	01540	1	back	99.9	0.955	0.598	1.180	1.001	**0.706**	
2462	11	802.11b	DSSS	22	21.0	20.34	0.05	10 mm	01540	1	back	99.9	0.769	0.487	1.164	1.001	0.567	
2412	1	802.11b	DSSS	22	21.0	20.78	0.03	10 mm	01540	1	front	99.9	0.480	-	1.052	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.78	-0.01	10 mm	01540	1	top	99.9	0.427	-	1.052	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.78	-0.01	10 mm	01540	1	left	99.9	0.807	0.488	1.052	1.001	0.514	
5200	40	802.11a	OFDM	20	19.5	19.39	-0.02	10 mm	01540	6	back	99.2	1.269	0.667	1.026	1.008	**0.690**	A45
5220	44	802.11a	OFDM	20	19.5	19.22	-0.04	10 mm	01540	6	back	99.2	1.252	0.620	1.067	1.008	0.667	
5240	48	802.11a	OFDM	20	19.5	19.21	0.02	10 mm	01540	6	back	99.2	1.215	0.603	1.069	1.008	0.650	
5200	40	802.11a	OFDM	20	19.5	19.39	-0.07	10 mm	01540	6	front	99.2	0.242	-	1.026	1.008	-	
5200	40	802.11a	OFDM	20	19.5	19.39	-0.05	10 mm	01540	6	top	99.2	0.149	-	1.026	1.008	-	
5200	40	802.11a	OFDM	20	19.5	19.39	-0.03	10 mm	01540	6	left	99.2	0.921	0.416	1.026	1.008	0.430	
5805	161	802.11a	OFDM	20	19.5	18.95	-0.03	10 mm	01540	6	back	99.2	1.128	0.516	1.135	1.008	0.590	
5805	161	802.11a	OFDM	20	19.5	18.95	0.12	10 mm	01540	6	front	99.2	0.350	-	1.135	1.008	-	
5805	161	802.11a	OFDM	20	19.5	18.95	-0.15	10 mm	01540	6	top	99.2	0.102	-	1.135	1.008	-	
5805	161	802.11a	OFDM	20	19.5	18.95	0.10	10 mm	01540	6	left	99.2	0.759	0.338	1.135	1.008	0.387	

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

Table 11-34
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	11.0	10.70	0.12	10 mm	01540	1	back	77.6	0.030	1.072	1.289	**0.041**	A46
2441	39	Bluetooth	FHSS	11.0	10.70	0.19	10 mm	01540	1	front	77.6	0.015	1.072	1.289	0.021	
2441	39	Bluetooth	FHSS	11.0	10.70	0.16	10 mm	01540	1	top	77.6	0.020	1.072	1.289	0.028	
2441	39	Bluetooth	FHSS	11.0	10.70	0.06	10 mm	01540	1	left	77.6	0.029	1.072	1.289	0.040	

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

11.4 Standalone Phablet SAR Data

Table 11-35
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)	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	-0.11	1 mm	01543	1:1	back	1.460	1.023	1.494	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	0.04	1 mm	01543	1:1	front	1.820	1.023	1.862	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	-0.07	3 mm	01543	1:1	bottom	1.320	1.023	1.350	
1880.00	9400	UMTS 1900	RMC	24.3	24.20	-0.03	0 mm	01543	1:1	right	0.537	1.023	0.549	
1880.00	9400	UMTS 1900	RMC	23.8	23.40	-0.04	0 mm	01543	1:1	back	1.710	1.096	1.874	
1852.40	9262	UMTS 1900	RMC	23.8	23.63	0.10	0 mm	01543	1:1	front	2.560	1.040	2.662	
1880.00	9400	UMTS 1900	RMC	23.8	23.40	0.03	0 mm	01543	1:1	front	2.570	1.096	2.817	
1907.60	9538	UMTS 1900	RMC	23.8	23.42	0.02	0 mm	01543	1:1	front	2.570	1.091	2.804	
1852.40	9262	UMTS 1900	RMC	23.8	23.63	-0.10	0 mm	01543	1:1	bottom	2.310	1.040	2.402	
1880.00	9400	UMTS 1900	RMC	23.8	23.40	-0.08	0 mm	01543	1:1	bottom	2.460	1.096	2.696	
1907.60	9538	UMTS 1900	RMC	23.8	23.42	-0.11	0 mm	01543	1:1	bottom	2.610	1.091	2.848	A47
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	-0.09	1 mm	01543	1:1	back	1.610	1.114	1.794	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.38	-0.10	1 mm	01543	1:1	front	2.000	1.076	2.152	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	-0.06	1 mm	01543	1:1	front	1.960	1.114	2.183	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.35	-0.09	1 mm	01543	1:1	front	2.110	1.084	2.287	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	-0.10	3 mm	01543	1:1	bottom	1.350	1.114	1.504	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.23	0.07	0 mm	01543	1:1	right	0.548	1.114	0.610	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.2	24.07	0.02	0 mm	01543	1:1	back	1.510	1.030	1.555	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.2	24.09	0.03	0 mm	01543	1:1	front	2.440	1.026	2.503	A48
1880.00	600	PCS CDMA	EVDO Rev. 0	24.2	24.07	0.00	0 mm	01543	1:1	front	2.400	1.030	2.472	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.2	24.10	0.01	0 mm	01543	1:1	front	2.330	1.023	2.384	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.2	24.09	-0.09	0 mm	01543	1:1	bottom	2.180	1.026	2.237	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.2	24.07	-0.08	0 mm	01543	1:1	bottom	2.310	1.030	2.379	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.2	24.10	-0.20	0 mm	01543	1:1	bottom	2.420	1.023	2.476	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Table 11-36
LTE Phablet 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 (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.06	0	01552	QPSK	1	50	1 mm	back	1:1	1.370	1.047	1.434	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.06	1	01552	QPSK	50	25	1 mm	back	1:1	1.230	1.086	1.336	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.08	0	01552	QPSK	1	50	1 mm	front	1:1	1.900	1.047	1.989	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.12	1	01552	QPSK	50	25	1 mm	front	1:1	1.740	1.086	1.890	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.12	0	01552	QPSK	1	50	3 mm	bottom	1:1	1.380	1.047	1.445	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.08	1	01552	QPSK	50	25	3 mm	bottom	1:1	1.240	1.086	1.347	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.3	24.10	-0.03	0	01552	QPSK	1	50	0 mm	right	1:1	0.570	1.047	0.597	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.94	-0.01	1	01552	QPSK	50	25	0 mm	right	1:1	0.517	1.086	0.561	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.8	23.76	-0.02	0	01552	QPSK	1	50	0 mm	back	1:1	1.850	1.009	1.867	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.3	22.95	-0.08	0.5	01552	QPSK	50	0	0 mm	back	1:1	1.800	1.084	1.951	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.8	23.70	0.03	0	01552	QPSK	1	50	0 mm	front	1:1	2.490	1.023	2.547	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.8	23.68	0.10	0	01552	QPSK	1	50	0 mm	front	1:1	2.630	1.028	2.704	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.8	23.76	0.09	0	01552	QPSK	1	50	0 mm	front	1:1	2.800	1.009	2.825	A49
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.90	0.12	0.5	01552	QPSK	50	0	0 mm	front	1:1	2.470	1.096	2.707	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.3	22.95	0.05	0.5	01552	QPSK	50	0	0 mm	front	1:1	2.520	1.084	2.732	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.3	22.92	0.04	0.5	01552	QPSK	50	0	0 mm	front	1:1	2.320	1.091	2.531	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.85	0.05	0.5	01552	QPSK	100	0	0 mm	front	1:1	2.320	1.109	2.573	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.8	23.70	-0.05	0	01552	QPSK	1	50	0 mm	bottom	1:1	2.410	1.023	2.465	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.8	23.68	0.04	0	01552	QPSK	1	50	0 mm	bottom	1:1	2.410	1.028	2.477	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.8	23.76	-0.18	0	01552	QPSK	1	50	0 mm	bottom	1:1	2.590	1.009	2.613	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.90	-0.04	0.5	01552	QPSK	50	0	0 mm	bottom	1:1	2.220	1.096	2.433	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.3	22.95	-0.13	0.5	01552	QPSK	50	0	0 mm	bottom	1:1	2.330	1.084	2.526	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.3	22.92	-0.14	0.5	01552	QPSK	50	0	0 mm	bottom	1:1	2.360	1.091	2.575	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.3	22.85	-0.13	0.5	01552	QPSK	100	0	0 mm	bottom	1:1	2.240	1.109	2.484	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.8	23.76	0.03	0	01552	QPSK	1	50	0 mm	front	1:1	2.580	1.009	2.603	
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 Band 41 Phablet SAR

MEASUREMENT RESULTS																					
Power Class	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 (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
	MHz	Ch.																			
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.00	0	01552	QPSK	1	0	1 mm	back	1:1.58	1.200	1.000	1.200	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.20	1	01552	QPSK	50	0	1 mm	back	1:1.58	1.020	1.000	1.020	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.77	-0.10	0	01552	QPSK	1	99	1 mm	front	1:1.58	1.580	1.054	1.665	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	0.05	0	01552	QPSK	1	0	1 mm	front	1:1.58	1.650	1.000	1.650	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.82	-0.05	0	01552	QPSK	1	0	1 mm	front	1:1.58	1.520	1.042	1.584	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	24.56	-0.17	0	01552	QPSK	1	0	1 mm	front	1:1.58	1.320	1.107	1.461	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.66	-0.07	0	01552	QPSK	1	0	1 mm	front	1:1.58	1.250	1.081	1.351	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.18	1	01552	QPSK	50	0	1 mm	front	1:1.58	1.160	1.000	1.160	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.0	23.97	0.12	1	01552	QPSK	100	0	1 mm	front	1:1.58	1.080	1.007	1.088	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.77	-0.11	0	01552	QPSK	1	99	3 mm	bottom	1:1.58	1.510	1.054	1.592	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.10	0	01552	QPSK	1	0	3 mm	bottom	1:1.58	1.570	1.000	1.570	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.82	0.15	0	01552	QPSK	1	0	3 mm	bottom	1:1.58	1.420	1.042	1.480	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	24.56	-0.11	0	01552	QPSK	1	0	3 mm	bottom	1:1.58	1.300	1.107	1.439	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	24.66	-0.06	0	01552	QPSK	1	0	3 mm	bottom	1:1.58	1.380	1.081	1.492	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	-0.06	1	01552	QPSK	50	0	3 mm	bottom	1:1.58	1.090	1.000	1.090	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.0	23.97	-0.17	1	01552	QPSK	100	0	3 mm	bottom	1:1.58	0.959	1.007	0.966	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	25.00	-0.08	0	01552	QPSK	1	0	0 mm	right	1:1.58	0.493	1.000	0.493	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	24.00	0.05	1	01552	QPSK	50	0	0 mm	right	1:1.58	0.350	1.000	0.350	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.55	0.11	0	01552	QPSK	1	99	0 mm	back	1:1.58	1.580	1.109	1.752	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.85	0.10	0	01552	QPSK	1	50	0 mm	back	1:1.58	1.470	1.035	1.521	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.89	0.13	0	01552	QPSK	1	99	0 mm	back	1:1.58	1.550	1.026	1.590	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.63	0.16	0	01552	QPSK	1	99	0 mm	back	1:1.58	1.480	1.089	1.612	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.72	0.17	0	01552	QPSK	1	50	0 mm	back	1:1.58	1.360	1.067	1.451	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.47	0.06	0	01552	QPSK	50	0	0 mm	back	1:1.58	1.500	1.130	1.695	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.78	0.16	0	01552	QPSK	50	25	0 mm	back	1:1.58	1.540	1.052	1.620	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.82	0.18	0	01552	QPSK	50	50	0 mm	back	1:1.58	1.550	1.042	1.615	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.57	0.15	0	01552	QPSK	50	50	0 mm	back	1:1.58	1.460	1.104	1.612	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.63	0.15	0	01552	QPSK	50	25	0 mm	back	1:1.58	1.410	1.089	1.535	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.76	0.11	0	01552	QPSK	100	0	0 mm	back	1:1.58	1.560	1.057	1.649	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.55	0.02	0	01552	QPSK	1	99	0 mm	front	1:1.58	1.620	1.109	1.797	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.85	-0.18	0	01552	QPSK	1	50	0 mm	front	1:1.58	1.150	1.035	1.190	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.89	-0.12	0	01552	QPSK	1	99	0 mm	front	1:1.58	1.480	1.026	1.518	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.63	0.02	0	01552	QPSK	1	99	0 mm	front	1:1.58	1.040	1.089	1.133	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.72	-0.01	0	01552	QPSK	1	50	0 mm	front	1:1.58	0.938	1.067	1.001	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.47	0.02	0	01552	QPSK	50	0	0 mm	front	1:1.58	1.560	1.130	1.763	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.78	-0.02	0	01552	QPSK	50	25	0 mm	front	1:1.58	1.170	1.052	1.231	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.82	0.03	0	01552	QPSK	50	50	0 mm	front	1:1.58	1.460	1.042	1.521	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.57	0.00	0	01552	QPSK	50	50	0 mm	front	1:1.58	1.030	1.104	1.137	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.63	0.03	0	01552	QPSK	50	25	0 mm	front	1:1.58	0.974	1.089	1.061	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.76	0.02	0	01552	QPSK	100	0	0 mm	front	1:1.58	1.210	1.057	1.279	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.55	-0.15	0	01552	QPSK	1	99	0 mm	bottom	1:1.58	2.460	1.109	2.728	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.85	-0.20	0	01552	QPSK	1	50	0 mm	bottom	1:1.58	2.260	1.035	2.339	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.89	-0.18	0	01552	QPSK	1	99	0 mm	bottom	1:1.58	2.290	1.026	2.350	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.63	-0.12	0	01552	QPSK	1	99	0 mm	bottom	1:1.58	2.210	1.089	2.407	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.72	-0.12	0	01552	QPSK	1	50	0 mm	bottom	1:1.58	2.140	1.067	2.283	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	23.0	22.47	-0.13	0	01552	QPSK	50	0	0 mm	bottom	1:1.58	2.430	1.130	2.746	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.78	-0.12	0	01552	QPSK	50	25	0 mm	bottom	1:1.58	2.360	1.052	2.483	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.0	22.82	-0.13	0	01552	QPSK	50	50	0 mm	bottom	1:1.58	2.300	1.042	2.397	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.57	-0.12	0	01552	QPSK	50	50	0 mm	bottom	1:1.58	2.150	1.104	2.374	
Power Class 3	2680.00	41490	High	LTE Band 41	20	23.0	22.63	-0.12	0	01552	QPSK	50	25	0 mm	bottom	1:1.58	2.230	1.089	2.428	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.76	-0.13	0	01552	QPSK	100	0	0 mm	bottom	1:1.58	2.260	1.057	2.389	
Power Class 2	2506.00	39750	Low	LTE Band 41	20	25.7	25.36	0.10	0	01552	QPSK	50	0	0 mm	bottom	1:2.31	2.990	1.081	**3.232**	A50
Power Class 2	2506.00	39750	Low	LTE Band 41	20	25.7	25.36	0.10	0	01552	QPSK	50	0	0 mm	bottom	1:2.31	2.940	1.081	3.178	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	23	22.78	0.03	0	01552	QPSK	50	25	0 mm	bottom	1:1.58	2.330	1.052	2.451	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entry represents variability measurement.

Table 11-38
WLAN Phablet SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	19.5	19.06	-0.04	0 mm	01540	6	back	99.2	10.276	1.590	1.107	1.008	1.774	
5280	56	802.11a	OFDM	20	19.5	19.12	0.02	0 mm	01540	6	back	99.2	10.118	1.520	1.091	1.008	1.672	
5300	60	802.11a	OFDM	20	19.5	19.15	-0.03	0 mm	01540	6	back	99.2	12.448	1.690	1.084	1.008	**1.847**	A51
5300	60	802.11a	OFDM	20	19.5	19.15	-0.19	0 mm	01540	6	front	99.2	4.197	0.522	1.084	1.008	0.570	
5300	60	802.11a	OFDM	20	19.5	19.15	-0.12	0 mm	01540	6	top	99.2	4.957	-	1.084	1.008	-	
5300	60	802.11a	OFDM	20	19.5	19.15	-0.14	0 mm	01540	6	left	99.2	12.658	1.260	1.084	1.008	1.377	
5680	136	802.11a	OFDM	20	19.5	18.99	0.02	0 mm	01540	6	back	99.2	10.369	1.210	1.125	1.008	1.372	
5680	136	802.11a	OFDM	20	19.5	18.99	-0.11	0 mm	01540	6	front	99.2	3.737	0.556	1.125	1.008	0.631	
5680	136	802.11a	OFDM	20	19.5	18.99	0.00	0 mm	01540	6	top	99.2	3.813	-	1.125	1.008	-	
5680	136	802.11a	OFDM	20	19.5	18.99	-0.12	0 mm	01540	6	left	99.2	15.585	1.290	1.125	1.008	1.463	
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. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg for 1g SAR and 2.0 W/kg for 10g SAR. 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. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
12. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.2. 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.
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 in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg 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 Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported 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.

WLAN Notes:

1. For held-to-ear, 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 operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg 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.
6. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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	0.207	1.204	1.411
	GSM/GPRS 1900	0.101	1.204	1.305
	UMTS 850	0.214	1.204	1.418
	UMTS 1750	0.141	1.204	1.345
	UMTS 1900	0.162	1.204	1.366
	CDMA/EVDO BC10 (§90S)	0.175	1.204	1.379
	CDMA/EVDO BC0 (§22H)	0.165	1.204	1.369
	PCS CDMA/EVDO	0.169	1.204	1.373
	LTE Band 71	0.114	1.204	1.318
	LTE Band 12	0.166	1.204	1.370
	LTE Band 13	0.180	1.204	1.384
	LTE Band 26 (Cell)	0.175	1.204	1.379
	LTE Band 66 (AWS)	0.107	1.204	1.311
	LTE Band 25 (PCS)	0.160	1.204	1.364
	LTE Band 41	0.138	1.204	1.342

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	0.207	0.984	1.191
	GSM/GPRS 1900	0.101	0.984	1.085
	UMTS 850	0.214	0.984	1.198
	UMTS 1750	0.141	0.984	1.125
	UMTS 1900	0.162	0.984	1.146
	CDMA/EVDO BC10 (§90S)	0.175	0.984	1.159
	CDMA/EVDO BC0 (§22H)	0.165	0.984	1.149
	PCS CDMA/EVDO	0.169	0.984	1.153
	LTE Band 71	0.114	0.984	1.098
	LTE Band 12	0.166	0.984	1.150
	LTE Band 13	0.180	0.984	1.164
	LTE Band 26 (Cell)	0.175	0.984	1.159
	LTE Band 66 (AWS)	0.107	0.984	1.091
	LTE Band 25 (PCS)	0.160	0.984	1.144
	LTE Band 41	0.138	0.984	1.122

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	0.207	0.111	0.318
	GSM/GPRS 1900	0.101	0.111	0.212
	UMTS 850	0.214	0.111	0.325
	UMTS 1750	0.141	0.111	0.252
	UMTS 1900	0.162	0.111	0.273
	CDMA/EVDO BC10 (§90S)	0.175	0.111	0.286
	CDMA/EVDO BC0 (§22H)	0.165	0.111	0.276
	PCS CDMA/EVDO	0.169	0.111	0.280
	LTE Band 71	0.114	0.111	0.225
	LTE Band 12	0.166	0.111	0.277
	LTE Band 13	0.180	0.111	0.291
	LTE Band 26 (Cell)	0.175	0.111	0.286
	LTE Band 66 (AWS)	0.107	0.111	0.218
	LTE Band 25 (PCS)	0.160	0.111	0.271
	LTE Band 41	0.138	0.111	0.249

Table 12-4
Simultaneous Transmission Scenario with 5 GHz 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	0.207	0.984	0.111	1.302
	GSM/GPRS 1900	0.101	0.984	0.111	1.196
	UMTS 850	0.214	0.984	0.111	**1.309**
	UMTS 1750	0.141	0.984	0.111	1.236
	UMTS 1900	0.162	0.984	0.111	1.257
	CDMA/EVDO BC10 (§90S)	0.175	0.984	0.111	1.270
	CDMA/EVDO BC0 (§22H)	0.165	0.984	0.111	1.260
	PCS CDMA/EVDO	0.169	0.984	0.111	1.264
	LTE Band 71	0.114	0.984	0.111	1.209
	LTE Band 12	0.166	0.984	0.111	1.261
	LTE Band 13	0.180	0.984	0.111	1.275
	LTE Band 26 (Cell)	0.175	0.984	0.111	1.270
	LTE Band 66 (AWS)	0.107	0.984	0.111	1.202
	LTE Band 25 (PCS)	0.160	0.984	0.111	1.255
	LTE Band 41	0.138	0.984	0.111	1.233

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	0.434	0.706	1.140
	GSM/GPRS 1900	0.364	0.706	1.070
	UMTS 850	0.583	0.706	1.289
	UMTS 1750	0.559	0.706	1.265
	UMTS 1900	0.561	0.706	1.267
	CDMA BC10 (§90S)	0.476	0.706	1.182
	CDMA BC0 (§22H)	0.494	0.706	1.200
	PCS CDMA	0.583	0.706	1.289
	LTE Band 71	0.252	0.706	0.958
	LTE Band 12	0.310	0.706	1.016
	LTE Band 13	0.403	0.706	1.109
	LTE Band 26 (Cell)	0.627	0.706	1.333
	LTE Band 66 (AWS)	0.565	0.706	1.271
	LTE Band 25 (PCS)	0.534	0.706	1.240
	LTE Band 41	0.595	0.706	1.301

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)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.434	0.650	1.084
	GSM/GPRS 1900	0.364	0.650	1.014
	UMTS 850	0.583	0.650	1.233
	UMTS 1750	0.559	0.650	1.209
	UMTS 1900	0.561	0.650	1.211
	CDMA BC10 (§90S)	0.476	0.650	1.126
	CDMA BC0 (§22H)	0.494	0.650	1.144
	PCS CDMA	0.583	0.650	1.233
	LTE Band 71	0.252	0.650	0.902
	LTE Band 12	0.310	0.650	0.960
	LTE Band 13	0.403	0.650	1.053
	LTE Band 26 (Cell)	0.627	0.650	1.277
	LTE Band 66 (AWS)	0.565	0.650	1.215
	LTE Band 25 (PCS)	0.534	0.650	1.184
	LTE Band 41	0.595	0.650	1.245

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	0.434	0.041	0.475
	GSM/GPRS 1900	0.364	0.041	0.405
	UMTS 850	0.583	0.041	0.624
	UMTS 1750	0.559	0.041	0.600
	UMTS 1900	0.561	0.041	0.602
	CDMA BC10 (§90S)	0.476	0.041	0.517
	CDMA BC0 (§22H)	0.494	0.041	0.535
	PCS CDMA	0.583	0.041	0.624
	LTE Band 71	0.252	0.041	0.293
	LTE Band 12	0.310	0.041	0.351
	LTE Band 13	0.403	0.041	0.444
	LTE Band 26 (Cell)	0.627	0.041	0.668
	LTE Band 66 (AWS)	0.565	0.041	0.606
	LTE Band 25 (PCS)	0.534	0.041	0.575
	LTE Band 41	0.595	0.041	0.636

Table 12-8
Simultaneous Transmission Scenario with 5 GHz 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	0.434	0.650	0.041	1.125
	GSM/GPRS 1900	0.364	0.650	0.041	1.055
	UMTS 850	0.583	0.650	0.041	1.274
	UMTS 1750	0.559	0.650	0.041	1.250
	UMTS 1900	0.561	0.650	0.041	1.252
	CDMA BC10 (§90S)	0.476	0.650	0.041	1.167
	CDMA BC0 (§22H)	0.494	0.650	0.041	1.185
	PCS CDMA	0.583	0.650	0.041	1.274
	LTE Band 71	0.252	0.650	0.041	0.943
	LTE Band 12	0.310	0.650	0.041	1.001
	LTE Band 13	0.403	0.650	0.041	1.094
	LTE Band 26 (Cell)	0.627	0.650	0.041	**1.318**
	LTE Band 66 (AWS)	0.565	0.650	0.041	1.256
	LTE Band 25 (PCS)	0.534	0.650	0.041	1.225
	LTE Band 41	0.595	0.650	0.041	1.286

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	0.434	0.706	1.140
	GPRS 1900	0.731	0.706	1.437
	UMTS 850	0.583	0.706	1.289
	UMTS 1750	0.958	0.706	See Table Below
	UMTS 1900	1.163	0.706	See Table Below
	EVDO BC10 (§90S)	0.400	0.706	1.106
	EVDO BC0 (§22H)	0.421	0.706	1.127
	PCS EVDO	1.194	0.706	See Table Below
	LTE Band 71	0.252	0.706	0.958
	LTE Band 12	0.310	0.706	1.016
	LTE Band 13	0.403	0.706	1.109
	LTE Band 26 (Cell)	0.627	0.706	1.333
	LTE Band 66 (AWS)	0.982	0.706	See Table Below
	LTE Band 25 (PCS)	1.162	0.706	See Table Below
	LTE Band 41	1.091	0.706	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.559	0.706	1.265	Hotspot SAR	Back	0.561	0.706	1.267
	Front	0.684	0.706*	1.390		Front	0.727	0.706*	1.433
	Top	-	0.706*	0.706		Top	-	0.706*	0.706
	Bottom	0.958	-	0.958		Bottom	1.163	-	1.163
	Right	0.227	-	0.227		Right	0.149	-	0.149
	Left	-	0.514	0.514		Left	-	0.514	0.514

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.582	0.706	1.288	Hotspot SAR	Back	0.565	0.706	1.271
	Front	0.737	0.706*	1.443		Front	0.650	0.706*	1.356
	Top	-	0.706*	0.706		Top	-	0.706*	0.706
	Bottom	1.194	-	1.194		Bottom	0.982	-	0.982
	Right	0.183	-	0.183		Right	0.168	-	0.168
	Left	-	0.514	0.514		Left	-	0.514	0.514

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.534	0.706	1.240	Hotspot SAR	Back	0.444	0.706	1.150
	Front	0.695	0.706*	1.401		Front	0.421	0.706*	1.127
	Top	-	0.706*	0.706		Top	-	0.706*	0.706
	Bottom	1.162	-	1.162		Bottom	1.091	-	1.091
	Right	0.186	-	0.186		Right	0.157	-	0.157
	Left	-	0.514	0.514		Left	-	0.514	0.514

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	0.434	0.690	1.124
	GPRS 1900	0.731	0.690	1.421
	UMTS 850	0.583	0.690	1.273
	UMTS 1750	0.958	0.690	See Table Below
	UMTS 1900	1.163	0.690	See Table Below
	EVDO BC10 (§90S)	0.400	0.690	1.090
	EVDO BC0 (§22H)	0.421	0.690	1.111
	PCS EVDO	1.194	0.690	See Table Below
	LTE Band 71	0.252	0.690	0.942
	LTE Band 12	0.310	0.690	1.000
	LTE Band 13	0.403	0.690	1.093
	LTE Band 26 (Cell)	0.627	0.690	1.317
	LTE Band 66 (AWS)	0.982	0.690	See Table Below
	LTE Band 25 (PCS)	1.162	0.690	See Table Below
	LTE Band 41	1.091	0.690	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.559	0.690	1.249	Hotspot SAR	Back	0.561	0.690	1.251
	Front	0.684	0.690*	1.374		Front	0.727	0.690*	1.417
	Top	-	0.690*	0.690		Top	-	0.690*	0.690
	Bottom	0.958	-	0.958		Bottom	1.163	-	1.163
	Right	0.227	-	0.227		Right	0.149	-	0.149
	Left	-	0.430	0.430		Left	-	0.430	0.430
Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.582	0.690	1.272	Hotspot SAR	Back	0.565	0.690	1.255
	Front	0.737	0.690*	1.427		Front	0.650	0.690*	1.340
	Top	-	0.690*	0.690		Top	-	0.690*	0.690
	Bottom	1.194	-	1.194		Bottom	0.982	-	0.982
	Right	0.183	-	0.183		Right	0.168	-	0.168
	Left	-	0.430	0.430		Left	-	0.430	0.430

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.534	0.690	1.224	Hotspot SAR	Back	0.444	0.690	1.134
	Front	0.695	0.690*	1.385		Front	0.421	0.690*	1.111
	Top	-	0.690*	0.690		Top	-	0.690*	0.690
	Bottom	1.162	-	1.162		Bottom	1.091	-	1.091
	Right	0.186	-	0.186		Right	0.157	-	0.157
	Left	-	0.430	0.430		Left	-	0.430	0.430

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	0.434	0.041	0.475
	GPRS 1900	0.731	0.041	0.772
	UMTS 850	0.583	0.041	0.624
	UMTS 1750	0.958	0.041	0.999
	UMTS 1900	1.163	0.041	1.204
	EVDO BC10 (§90S)	0.400	0.041	0.441
	EVDO BC0 (§22H)	0.421	0.041	0.462
	PCS EVDO	1.194	0.041	1.235
	LTE Band 71	0.252	0.041	0.293
	LTE Band 12	0.310	0.041	0.351
	LTE Band 13	0.403	0.041	0.444
	LTE Band 26 (Cell)	0.627	0.041	0.668
	LTE Band 66 (AWS)	0.982	0.041	1.023
	LTE Band 25 (PCS)	1.162	0.041	1.203
	LTE Band 41	1.091	0.041	1.132

Table 12-12
Simultaneous Transmission Scenario with 5 GHz WLAN 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	0.434	0.690	0.041	1.165
	GPRS 1900	0.731	0.690	0.041	**1.462**
	UMTS 850	0.583	0.690	0.041	1.314
	UMTS 1750	0.958	0.690	0.041	See Table Below
	UMTS 1900	1.163	0.690	0.041	See Table Below
	EVDO BC10 (§90S)	0.400	0.690	0.041	1.131
	EVDO BC0 (§22H)	0.421	0.690	0.041	1.152
	PCS EVDO	1.194	0.690	0.041	See Table Below
	LTE Band 71	0.252	0.690	0.041	0.983
	LTE Band 12	0.310	0.690	0.041	1.041
	LTE Band 13	0.403	0.690	0.041	1.134
	LTE Band 26 (Cell)	0.627	0.690	0.041	1.358
	LTE Band 66 (AWS)	0.982	0.690	0.041	See Table Below
	LTE Band 25 (PCS)	1.162	0.690	0.041	See Table Below
	LTE Band 41	1.091	0.690	0.041	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	0.559	0.690	0.041	1.290
	Front	0.684	0.690*	0.021	**1.395**
	Top	-	0.690*	0.028	0.718
	Bottom	0.958	-	-	0.958
	Right	0.227	-	-	0.227
	Left	-	0.430	0.040	0.470

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	0.561	0.690	0.041	1.292
	Front	0.727	0.690*	0.021	**1.438**
	Top	-	0.690*	0.028	0.718
	Bottom	1.163	-	-	1.163
	Right	0.149	-	-	0.149
	Left	-	0.430	0.040	0.470

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	0.582	0.690	0.041	1.313
	Front	0.737	0.690*	0.021	**1.448**
	Top	-	0.690*	0.028	0.718
	Bottom	1.194	-	-	1.194
	Right	0.183	-	-	0.183
	Left	-	0.430	0.040	0.470

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	0.565	0.690	0.041	1.296
	Front	0.650	0.690*	0.021	**1.361**
	Top	-	0.690*	0.028	0.718
	Bottom	0.982	-	-	0.982
	Right	0.168	-	-	0.168
	Left	-	0.430	0.040	0.470

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	0.534	0.690	0.041	1.265
	Front	0.695	0.690*	0.021	**1.406**
	Top	-	0.690*	0.028	0.718
	Bottom	1.162	-	-	1.162
	Right	0.186	-	-	0.186
	Left	-	0.430	0.040	0.470

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	0.444	0.690	0.041	**1.175**
	Front	0.421	0.690*	0.021	1.132
	Top	-	0.690*	0.028	0.718
	Bottom	1.091	-	-	1.091
	Right	0.157	-	-	0.157
	Left	-	0.430	0.040	0.470

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)

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Phablet SAR	Back	1.874	1.847	3.721	Phablet SAR	Back	1.794	1.847	3.641
	Front	2.817	0.631	3.448		Front	2.503	0.631	3.134
	Top	-	1.847*	1.847		Top	-	1.847*	1.847
	Bottom	2.848	-	2.848		Bottom	2.476	-	2.476
	Right	0.549	-	0.549		Right	0.610	-	0.610
	Left	-	1.463	1.463		Left	-	1.463	1.463
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Phablet SAR	Back	1.951	1.847	**3.798**	Phablet SAR	Back	1.752	1.847	3.599
	Front	2.825	0.631	3.456		Front	1.797	0.631	2.428
	Top	-	1.847*	1.847		Top	-	1.847*	1.847
	Bottom	2.613	-	2.613		Bottom	3.232	-	3.232
	Right	0.597	-	0.597		Right	0.493	-	0.493
	Left	-	1.463	1.463		Left	-	1.463	1.463

12.7 Simultaneous Transmission Conclusion

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

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was 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/Band	Service	Side	Test Position	Data Rate (Mbps)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2462.00	11	802.11b, 22 MHz Bandwidth	DSSS	Right	Cheek	1	0.958	0.957	1.00	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11a, 20 MHz Bandwidth	OFDM	Right	Cheek	6	0.830	0.701	1.18	N/A	N/A	N/A	N/A
5600	5520.00	104	802.11a, 20 MHz Bandwidth	OFDM	Right	Cheek	6	0.915	0.807	1.13	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 13-2
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1900	1851.25	25	PCS CDMA	EVDO Rev. 0	bottom	10 mm	1.110	1.070	1.04	N/A	N/A	N/A	N/A
1750	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 99 RB Offset	bottom	10 mm	0.973	0.961	1.01	N/A	N/A	N/A	N/A
2600	2593.00	40620	LTE Band 41 PC2, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	1.030	0.965	1.07	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)	
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 50 RB Offset	front	0 mm	2.800	2.580	1.09	N/A	N/A	N/A	N/A
2450	2506.00	39750	LTE Band 41 PC2, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	0 mm	2.990	2.940	1.02	N/A	N/A	N/A	N/A
2600	2549.50	40185	LTE Band 41 PC3, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	bottom	0 mm	2.360	2.330	1.01	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. 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)	25	27.7
Measured Output Power (dBm)	25	27.35
Measured SAR (W/kg)	0.103	0.127
Measured Power (mW)	316.23	543.25
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	200.17	235.23
% deviation from expected linearity		4.93%

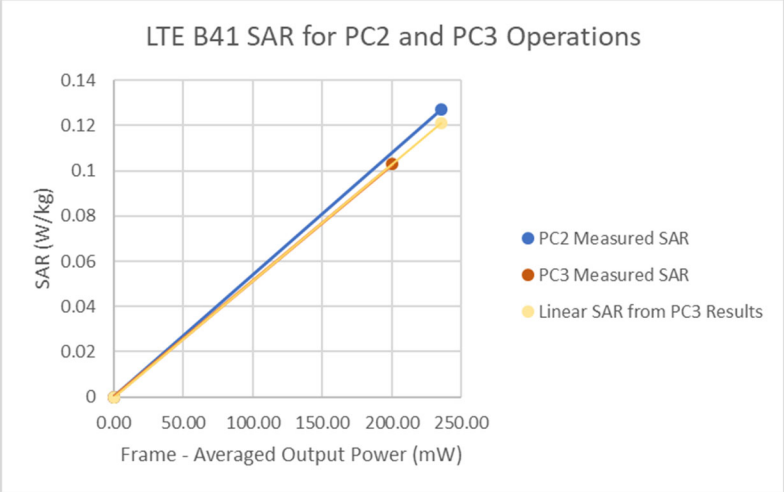


Figure 14-1
LTE Band 41 Head Linearity

Table 14-2
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	27.7
Measured Output Power (dBm)	25	27.35
Measured SAR (W/kg)	0.444	0.549
Measured Power (mW)	316.23	543.25
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	200.17	235.23
% deviation from expected linearity		5.22%

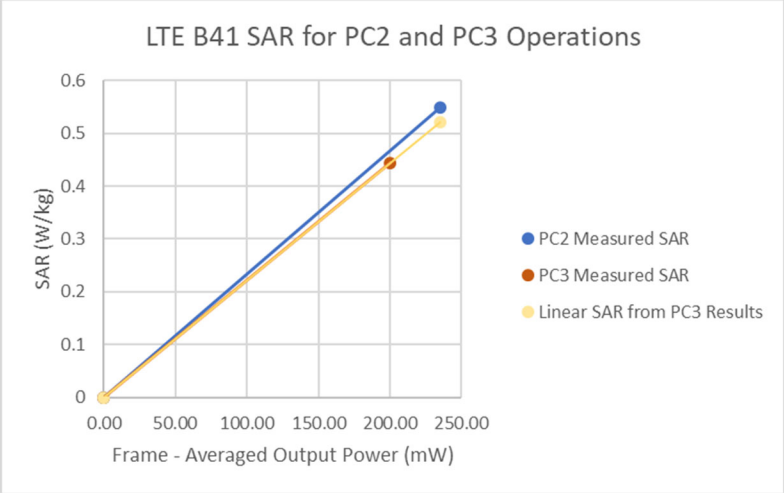


Figure 14-2
LTE Band 41 Body-Worn Linearity

Table 14-3
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	27.7
Measured Output Power (dBm)	24.82	27.45
Measured SAR (W/kg)	0.759	1.03
Measured Power (mW)	303.39	555.90
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	192.05	240.71
% deviation from expected linearity		8.27%

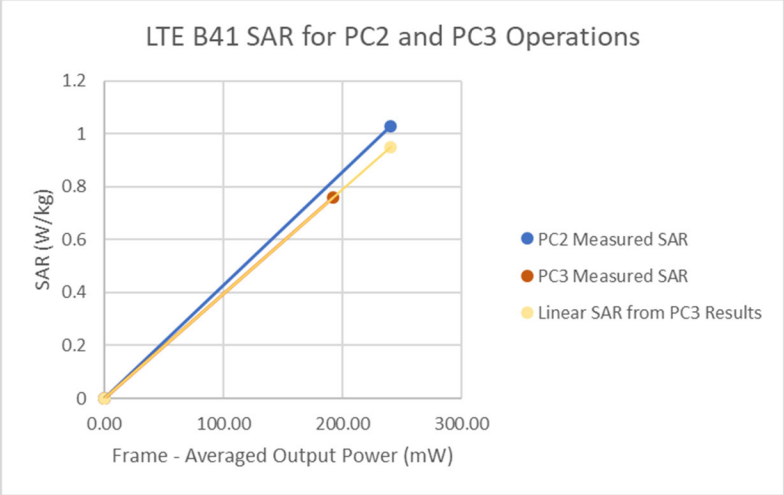


Figure 14-3
LTE Band 41 Hotspot Linearity

Table 14-4
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23	25.7
Measured Output Power (dBm)	22.47	25.36
Measured SAR (W/kg)	2.43	2.99
Measured Power (mW)	176.60	343.56
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	111.79	148.76
% deviation from expected linearity		-7.53%

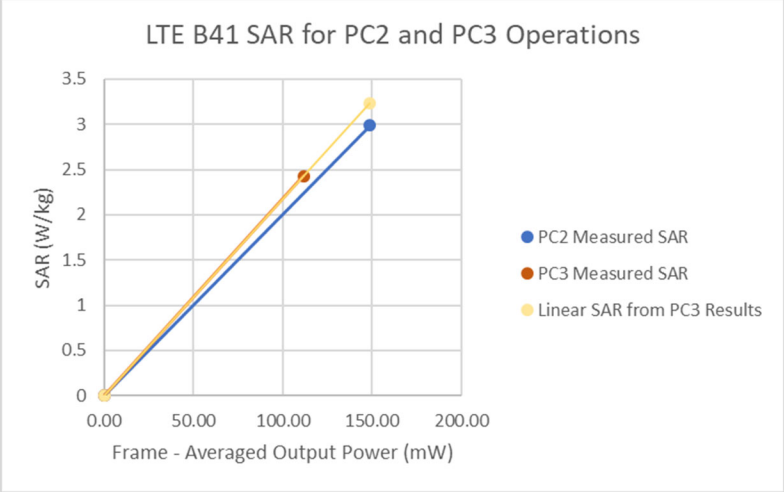


Figure 14-4
LTE Band 41 Phablet Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	12/18/2018	Annual	12/18/2019	GB42230325
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	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N5182A-506	MXG Vector Signal Generator	6/19/2018	Annual	6/19/2019	MY48180366
Agilent	N5182A	MXG Vector Signal Generator	11/28/2018	Annual	11/28/2019	MY47420603
Agilent	8753ES	S-Parameter Network Analyzer	3/11/2019	Annual	3/11/2020	US39170122
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/30/2018	Annual	8/30/2019	MY40003841
Agilent	E5515C	Wireless Communications Test Set	5/22/2018	Biennial	5/22/2020	GB43193563
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	ML2496A	Power Meter	5/21/2018	Annual	5/21/2019	1351001
Anritsu	ML2496A	Power Meter	6/19/2018	Annual	6/19/2019	1306009
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339008
Anritsu	MA2411B	Pulse Power Sensor	3/6/2019	Annual	3/6/2020	1339018
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	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MA24106A	USB Power Sensor	4/17/2019	Annual	4/17/2020	1344556
Anritsu	MA24106A	USB Power Sensor	4/17/2019	Annual	4/17/2020	1349514
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766816
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766817
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
Keysight Technologies	U3401A	Digital Multimeter	5/17/2018	Annual	5/17/2019	MY57201470
MCL	BW-N6W5+	6dB Attenuator	N/A	N/A	N/A	1139
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	B/A	CBT	N/A
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	11/7/2017	Biennial	11/7/2019	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	5/18/2018	Annual	5/18/2019	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	4/15/2019	Annual	4/15/2020	167284
Rohde & Schwarz	CMW500	Radio Communication Tester	4/17/2019	Annual	4/17/2020	167285
Rohde & Schwarz	CMW500	Radio Communication Tester	4/19/2019	Annual	4/19/2020	128633
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	1/30/2019	Annual	1/30/2020	162125
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Annual	10/19/2019	1161
SPEAG	D835V2	835 MHz SAR Dipole	1/22/2019	Annual	1/22/2020	4d132
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Annual	10/19/2019	4d133
SPEAG	D1750V2	1750 MHz SAR Dipole	5/9/2017	Biennial	5/9/2019	1148
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Annual	5/23/2019	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d080
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Annual	2/21/2020	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Annual	8/16/2019	981
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Biennial	8/17/2019	719
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Biennial	9/11/2019	797
SPEAG	D2600V2	2600 MHz SAR Dipole	6/7/2017	Biennial	6/7/2019	1064
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Triennial	9/13/2019	1071
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/10/2018	Annual	8/10/2019	1237
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/16/2018	Biennial	1/16/2020	1057
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2018	Annual	7/11/2019	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/22/2018	Annual	8/22/2019	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	1530
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	4/18/2019	Annual	4/18/2020	1407
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7410
SPEAG	EX3DV4	SAR Probe	8/23/2018	Annual	8/23/2019	7308
SPEAG	EX3DV4	SAR Probe	1/24/2019	Annual	1/24/2020	7488
SPEAG	EX3DV4	SAR Probe	1/25/2019	Annual	1/25/2020	3589
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357

Each equipment was used solely within 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]

18 REFERENCES

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.

[2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.

[3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.

[4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.

[5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

[6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.

[7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.

[8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 1 -124.

[9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.

[10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.

[11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.

[12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[13] G. Hartsgrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.

[14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.

[15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.

[16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hoschschule Zürich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz), July 2016.

[21] Innovation, Science, Economic Development Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 5, March 2015.

[22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2015

[23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07

[24] SAR Measurement Guidance for IEEE 802.11 Transmitters, KDB Publication 248227 D01

[25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D03-D04

[26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04

[27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02

[28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02

[29] Anexo à Resolução No. 533, de 10 de Septembro de 2009.

[30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

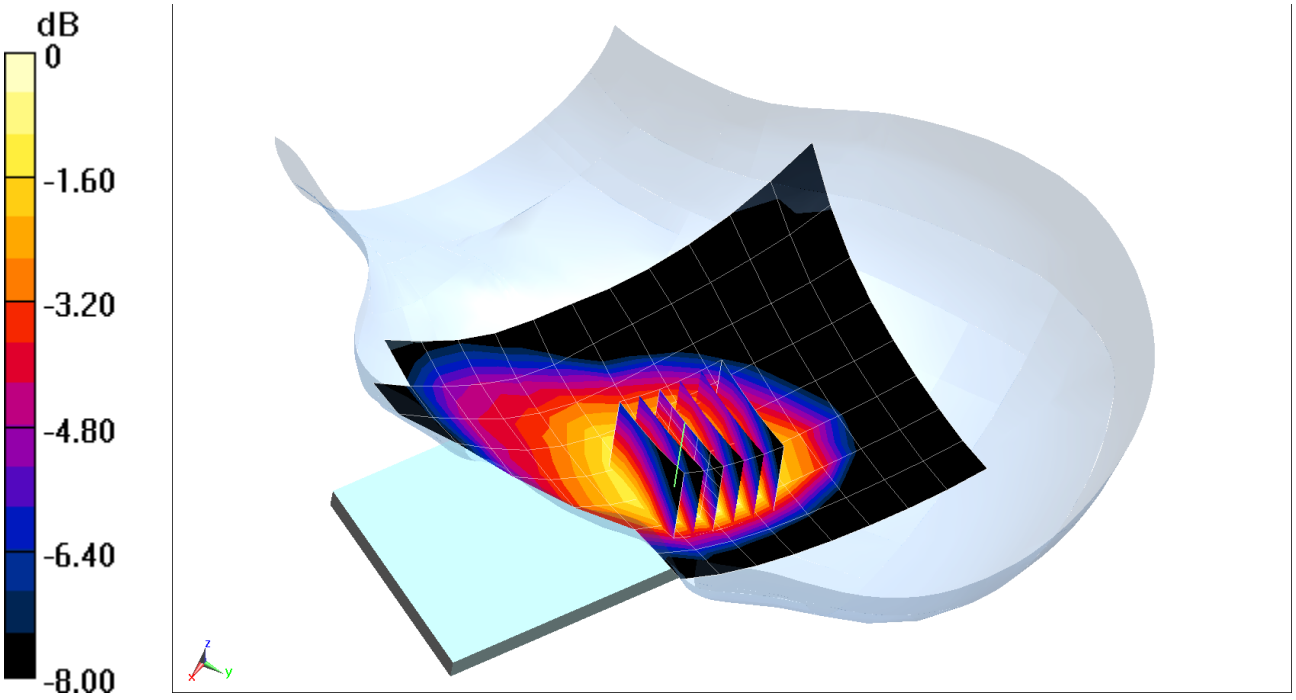
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.942 S/m; ε_r = 42.776; ρ = 1000 kg/m^3
Phantom section: Left Section;

Test Date: 04-21-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.1°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: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 850, Left Head, Cheek, Mid.ch, 2 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.40 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.200 W/kg



0 dB = 0.230 W/kg = -6.38 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

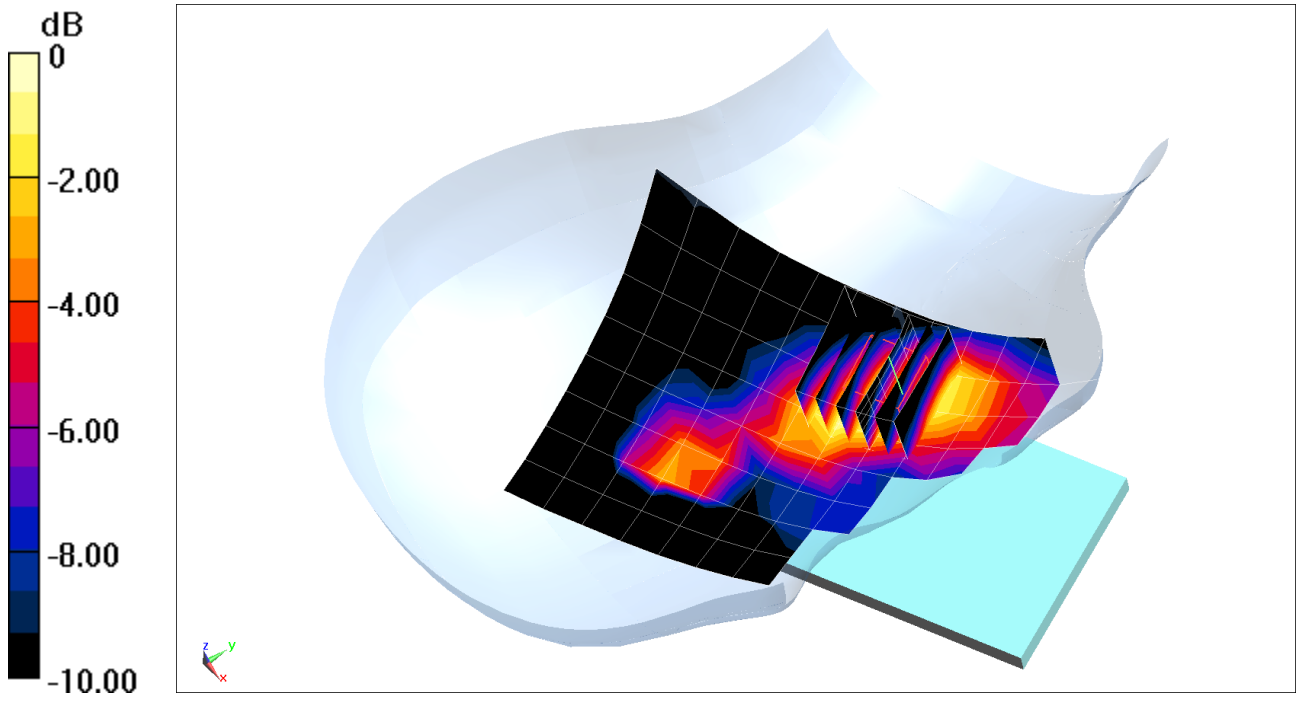
Communication System: UID 0, _GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 39.433; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 05-08-2019; Ambient Temp: 23.8°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7410; ConvF(8.16, 8.16, 8.16) @ 1880 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.221 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.141 W/kg
SAR(1 g) = 0.091 W/kg



0 dB = 0.116 W/kg = -9.36 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

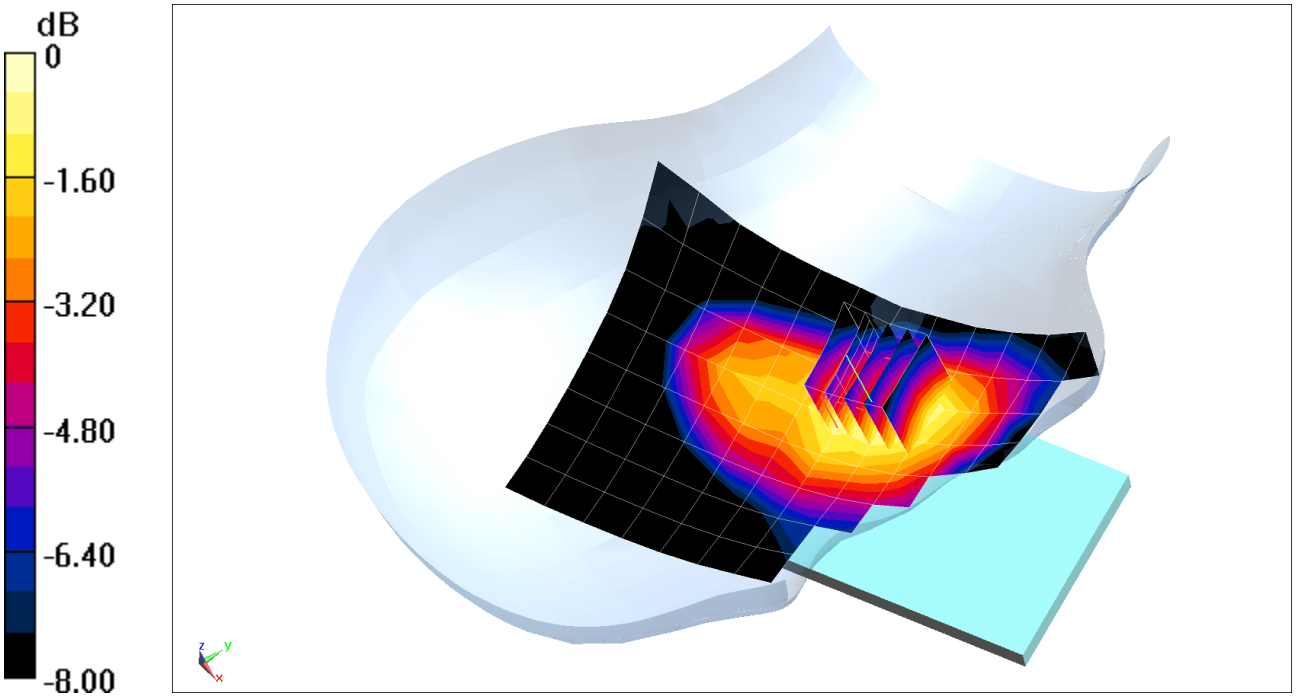
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.942 S/m; ε_r = 42.776; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 04-21-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.1°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: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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 = 15.08 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.286 W/kg
SAR(1 g) = 0.211 W/kg



0 dB = 0.247 W/kg = -6.07 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

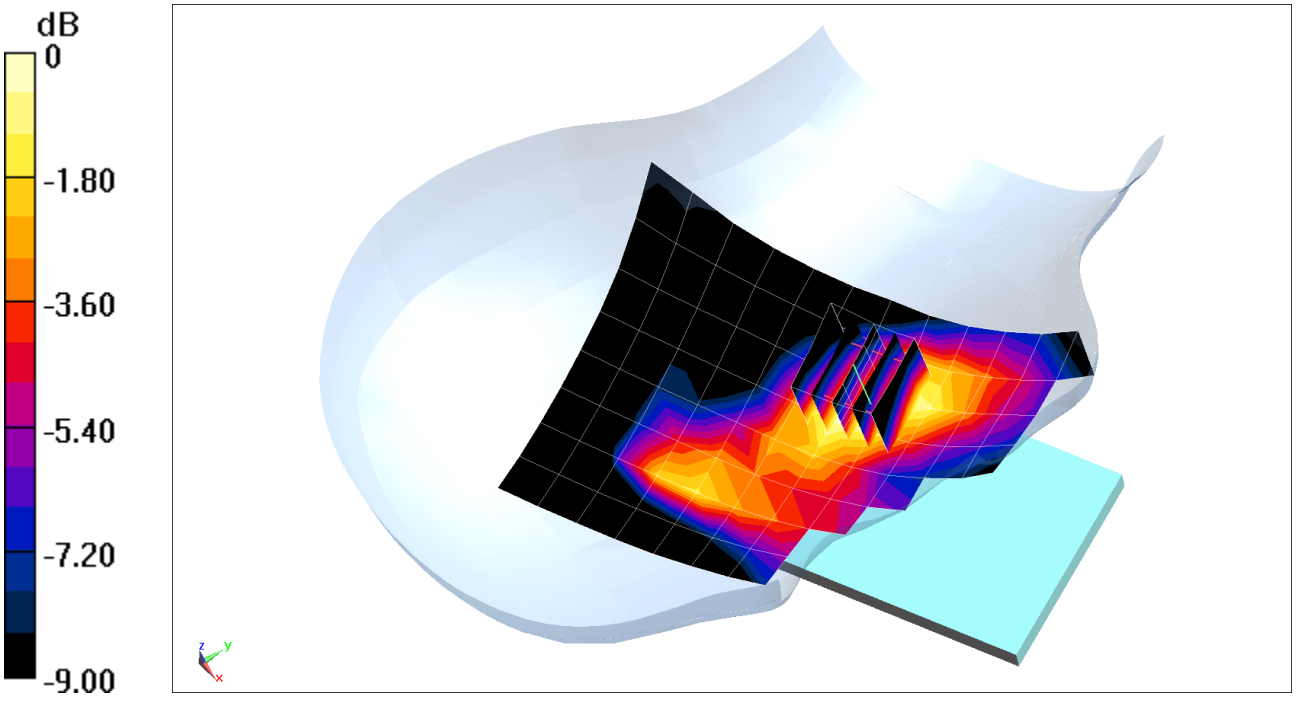
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.381 S/m; ε_r = 41.71; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN7409; ConvF(8.43, 8.43, 8.43) @ 1732.4 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, 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 = 10.47 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.208 W/kg
SAR(1 g) = 0.140 W/kg



0 dB = 0.180 W/kg = -7.45 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

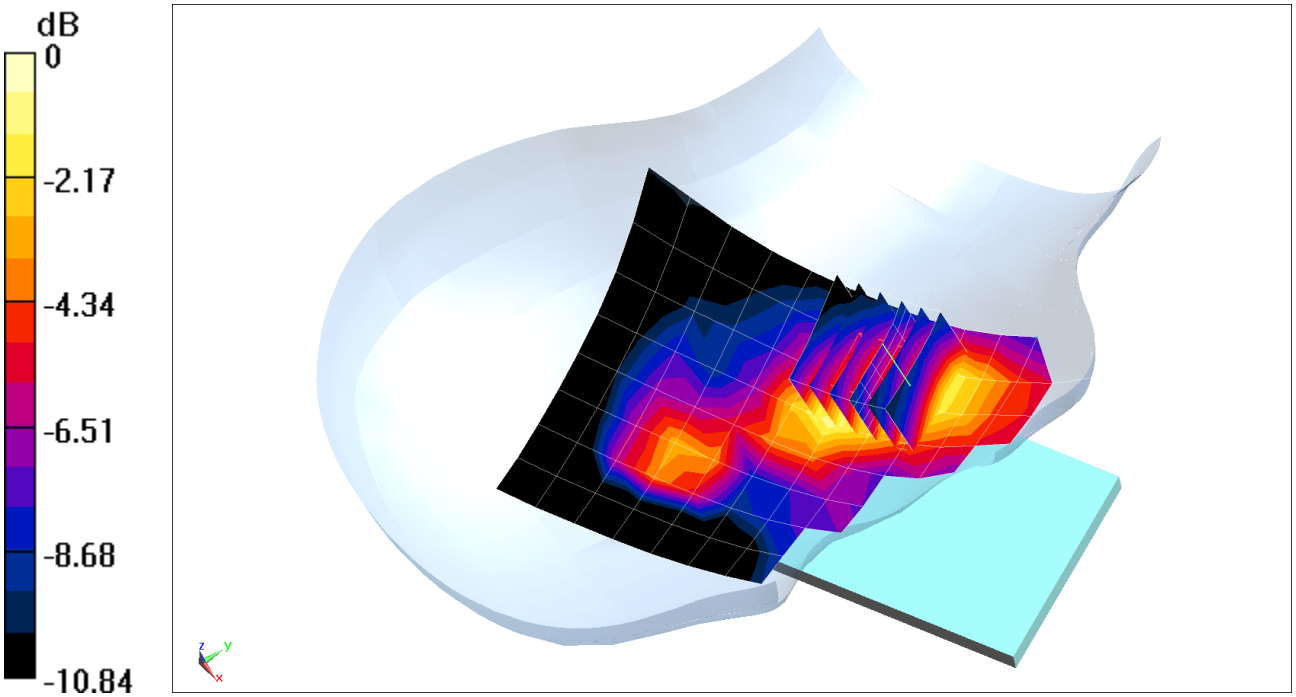
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 39.433; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 05-08-2019; Ambient Temp: 23.8°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7410; ConvF(8.16, 8.16, 8.16) @ 1880 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.85 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.232 W/kg
SAR(1 g) = 0.158 W/kg



0 dB = 0.202 W/kg = -6.95 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

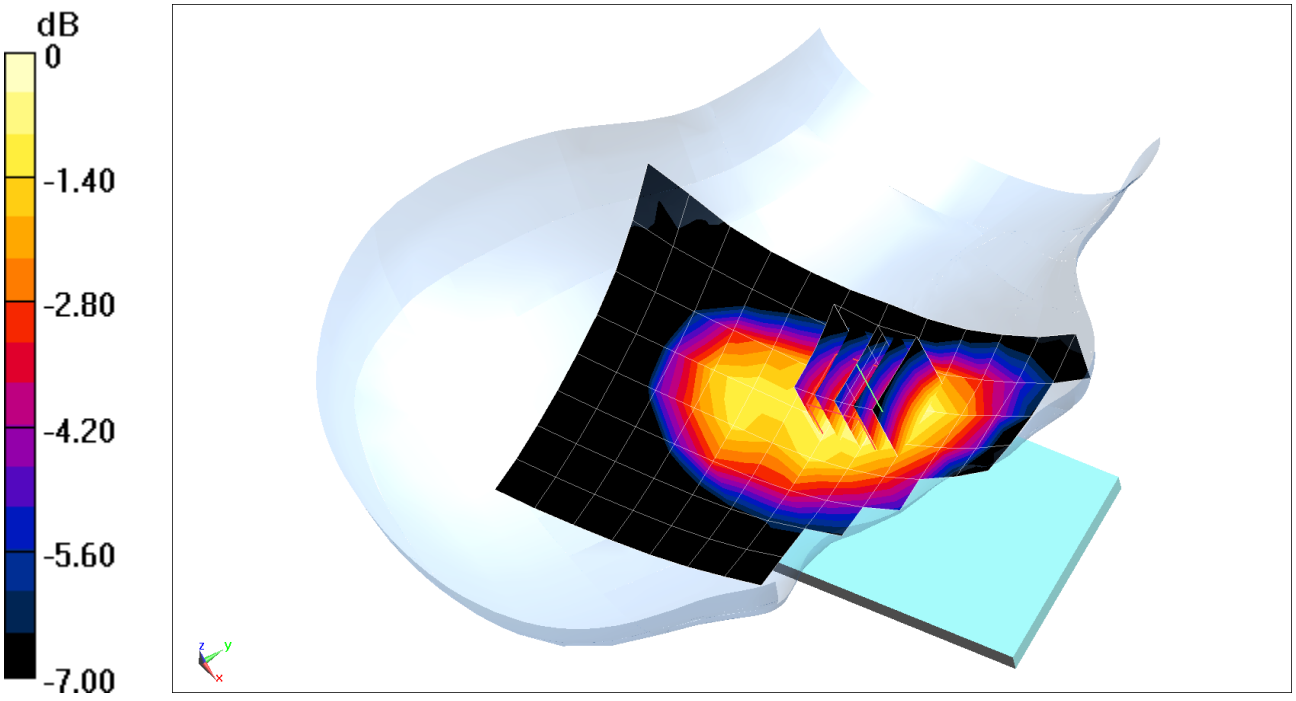
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 820.1$ MHz; $\sigma = 0.931$ S/m; $\varepsilon_r = 41.94$; $\rho = 1000$ kg/m^3
Phantom section: Right Section;

Test Date: 04-24-2019; Ambient Temp: 23.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3914; ConvF(9.5, 9.5, 9.5) @ 820.1 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC10, Rule Part 90S, 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 = 13.95 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.221 W/kg
SAR(1 g) = 0.172 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

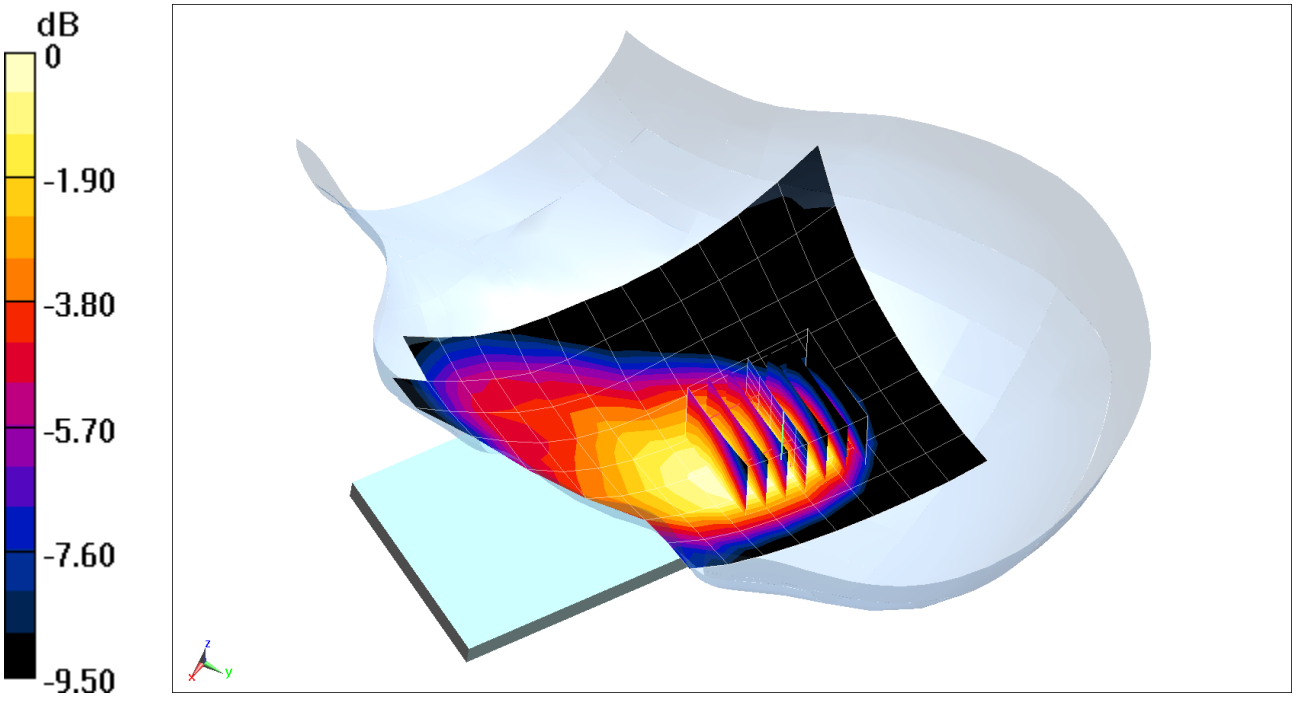
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.937 S/m; ε_r = 41.887; ρ = 1000 kg/m^3
Phantom section: Left Section;

Test Date: 04-24-2019; Ambient Temp: 23.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3914; ConvF(9.5, 9.5, 9.5) @ 836.52 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC0, Rule Part 22H, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.37 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.165 W/kg



0 dB = 0.197 W/kg = -7.06 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

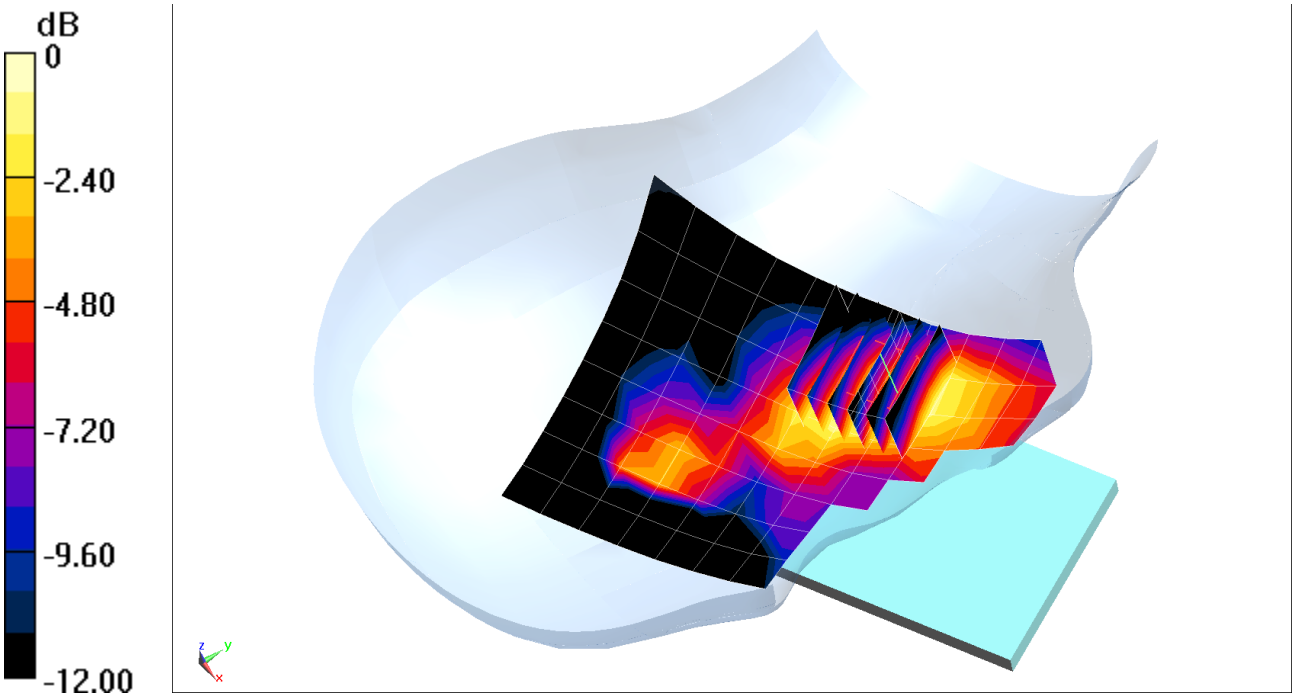
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 39.433; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 05-08-2019; Ambient Temp: 23.8°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7410; ConvF(8.16, 8.16, 8.16) @ 1880 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.61 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.220 W/kg
SAR(1 g) = 0.151 W/kg



0 dB = 0.193 W/kg = -7.14 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01552

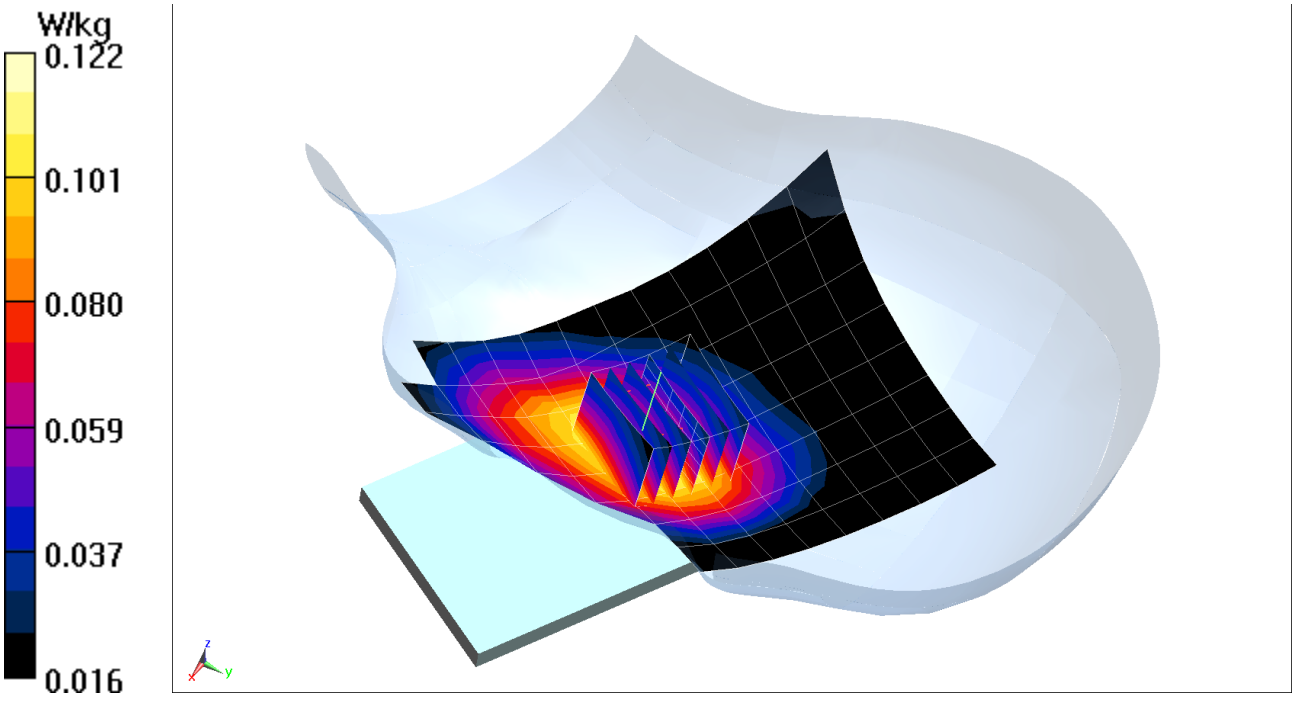
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.894 S/m; ε_r = 43.1; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 05-09-2019; Ambient Temp: 23.1°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3914; ConvF(10, 10, 10) @ 680.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 71, 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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.18 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.134 W/kg
SAR(1 g) = 0.106 W/kg;



DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01545

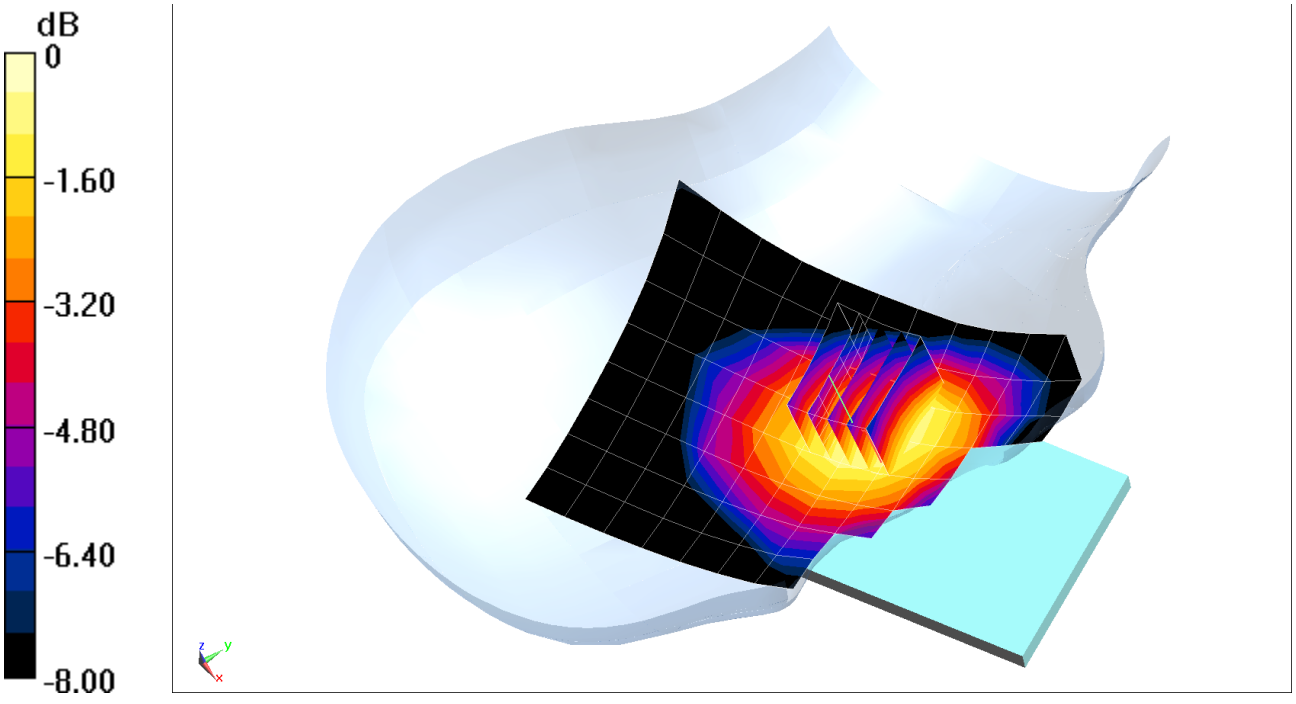
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 MHz Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.871 S/m; ε_r = 43.706; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-04-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7409; ConvF(9.91, 9.91, 9.91) @ 707.5 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 12, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.36 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.185 W/kg
SAR(1 g) = 0.145 W/kg



0 dB = 0.169 W/kg = -7.72 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01545

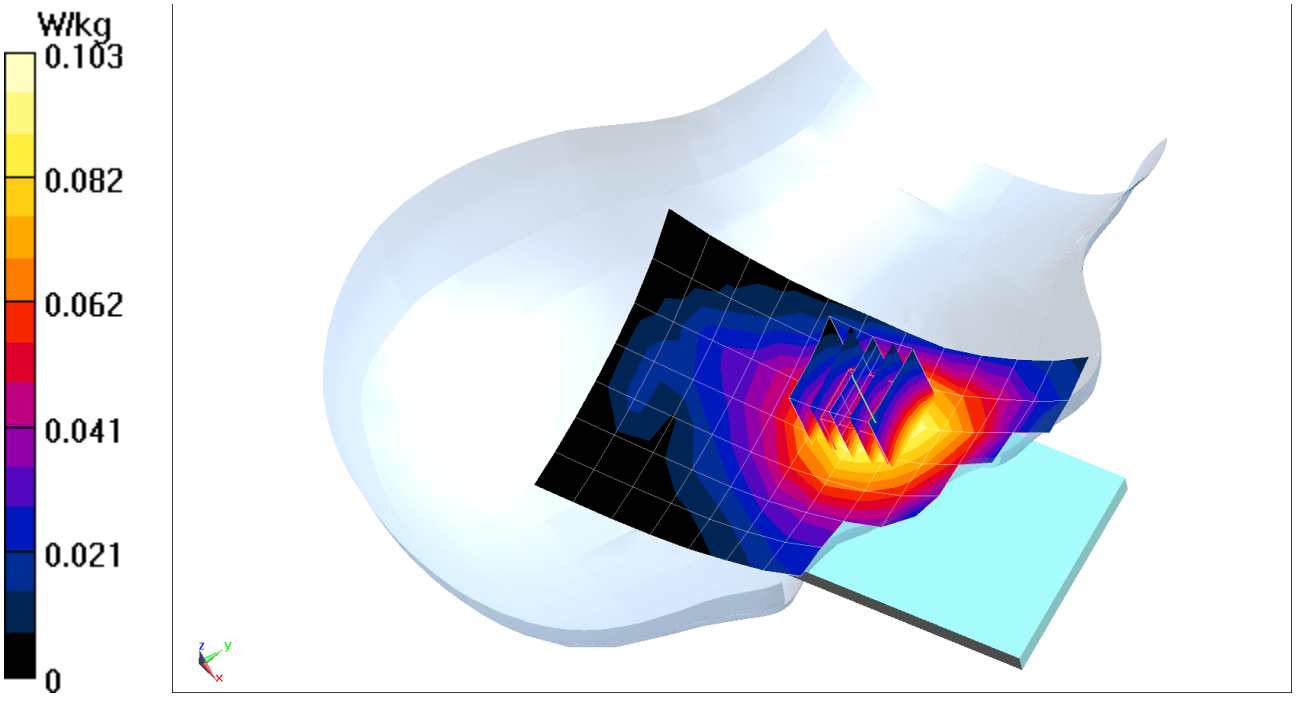
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 MHz Head Medium parameters used (interpolated):
$f = 782$ MHz; $\sigma = 0.899$ S/m; $\varepsilon_r = 43.473$; $\rho = 1000$ kg/m^3
Phantom section: Right Section;

Test Date: 05-04-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7409; ConvF(9.91, 9.91, 9.91) @ 782 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 13, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 49 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 = 13.90 V/m; Power Drift = 0.08dB
Peak SAR (extrapolated) = 0.201 W/kg
SAR(1 g) = 0.158 W/kg



DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

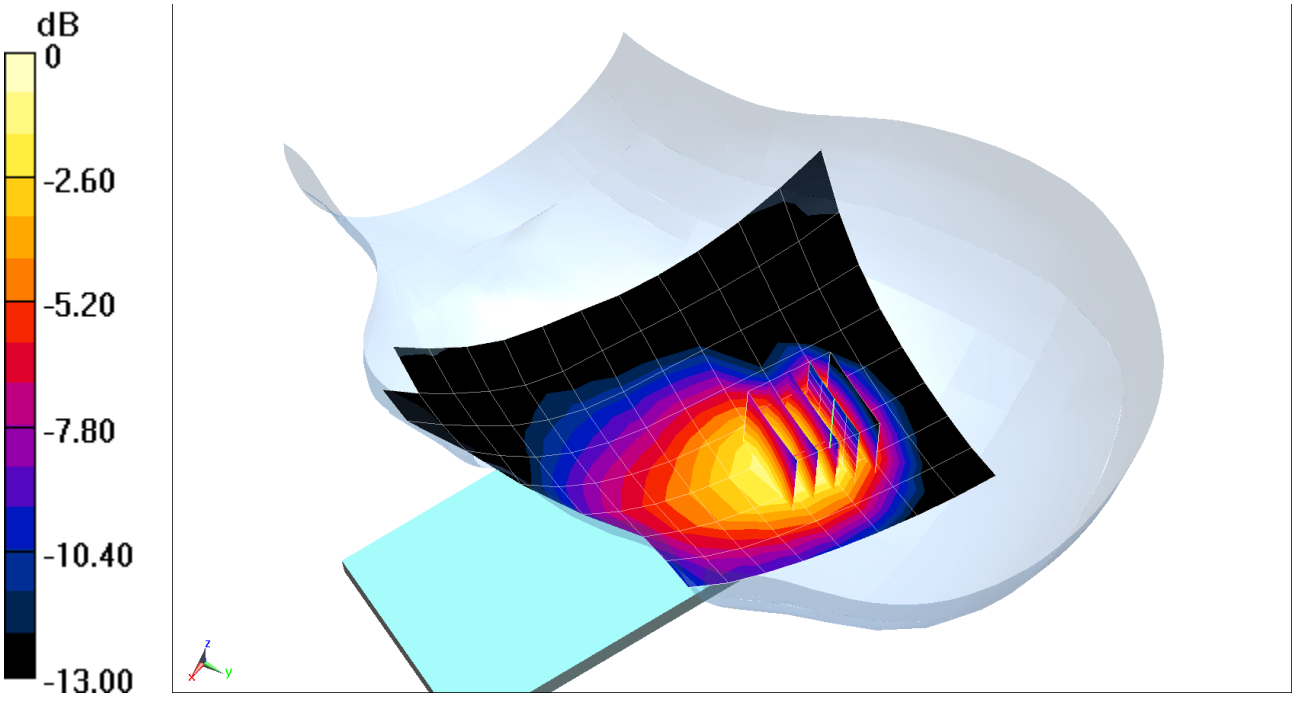
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.935 S/m; ε_r = 41.902; ρ = 1000 kg/m^3
Phantom section: Left Section;

Test Date: 04-24-2019; Ambient Temp: 23.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3914; ConvF(9.5, 9.5, 9.5) @ 831.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM Left with CRP v5.0; Type: QD000P40CD; Serial: TP:1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 26 (Cell.), Left Head, Tilt, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 74 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 = 14.49 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(1 g) = 0.172 W/kg



0 dB = 0.219 W/kg = -6.60 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01545

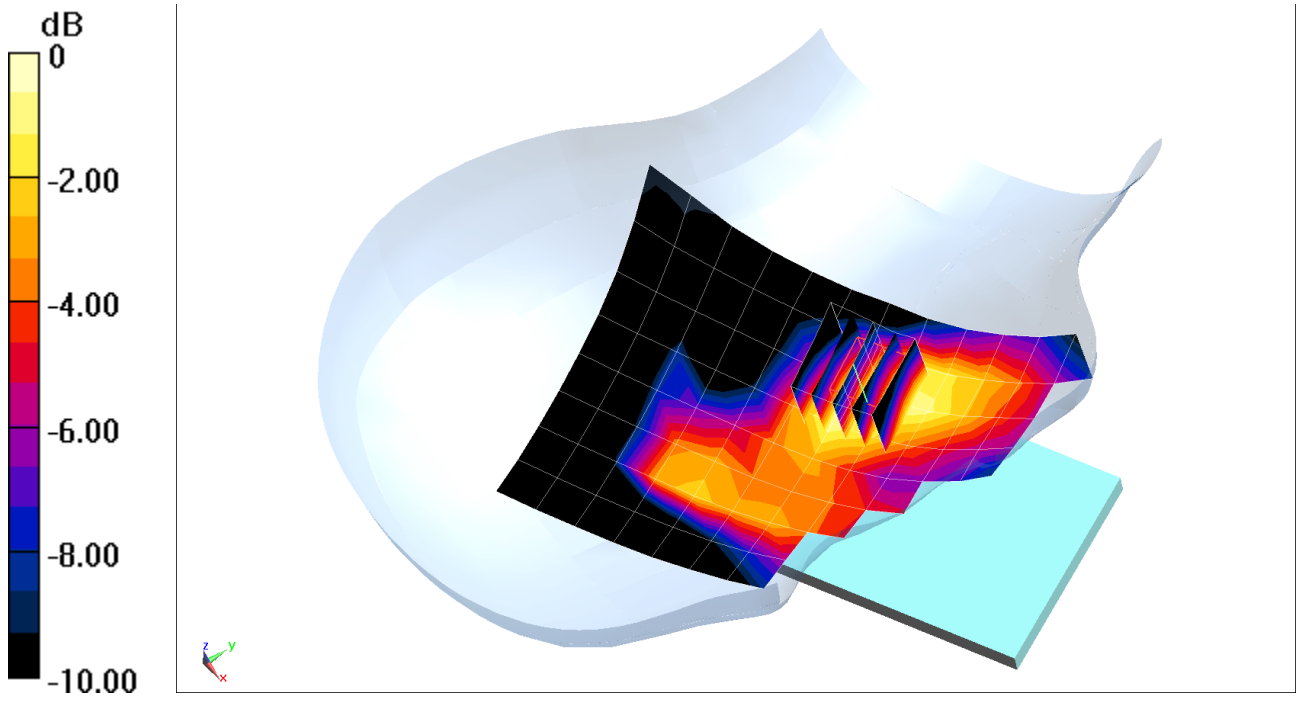
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1745 MHz; σ = 1.389 S/m; ε_r = 41.69; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN7409; ConvF(8.43, 8.43, 8.43) @ 1745 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 66 (AWS), Right Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 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 = 9.463 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.159 W/kg
SAR(1 g) = 0.107 W/kg



0 dB = 0.138 W/kg = -8.60 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01552

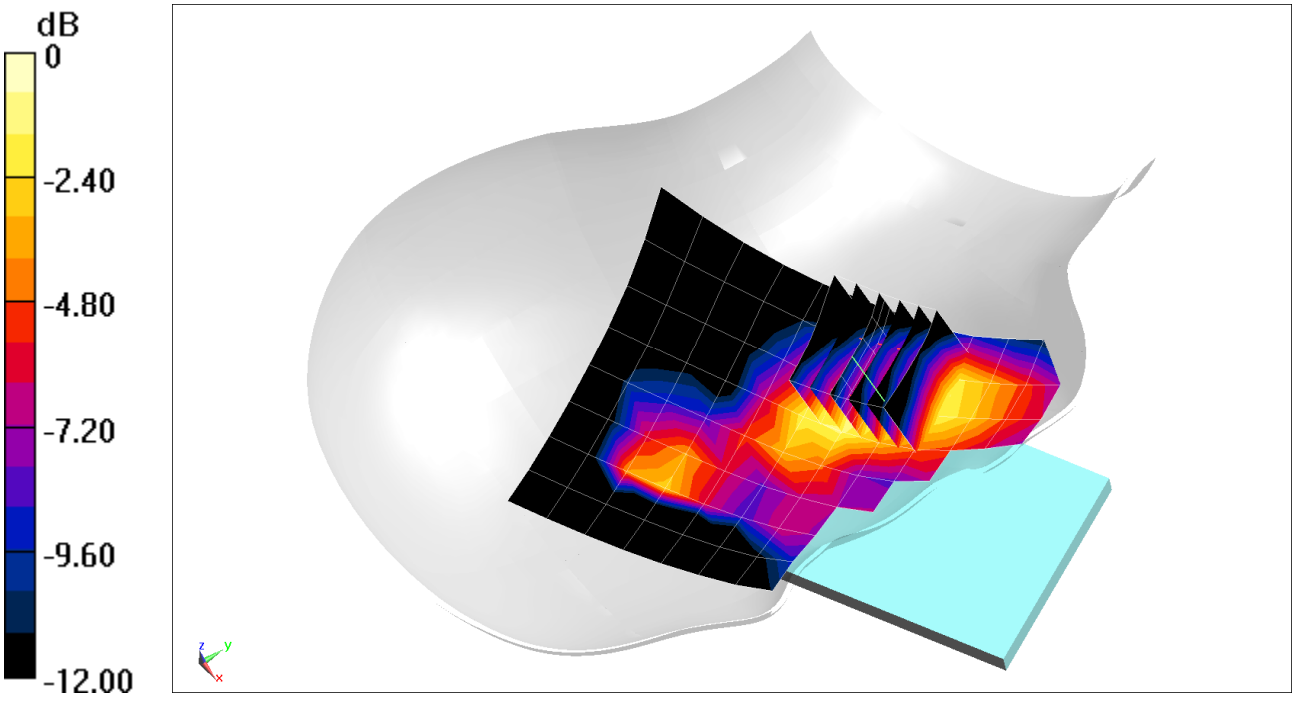
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.429 S/m; ε_r = 39.928; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-14-2019; Ambient Temp: 23.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN3589; ConvF(7.08, 7.08, 7.08) @ 1860 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
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 (7450)

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

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.73 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.251 W/kg
SAR(1 g) = 0.153 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01545

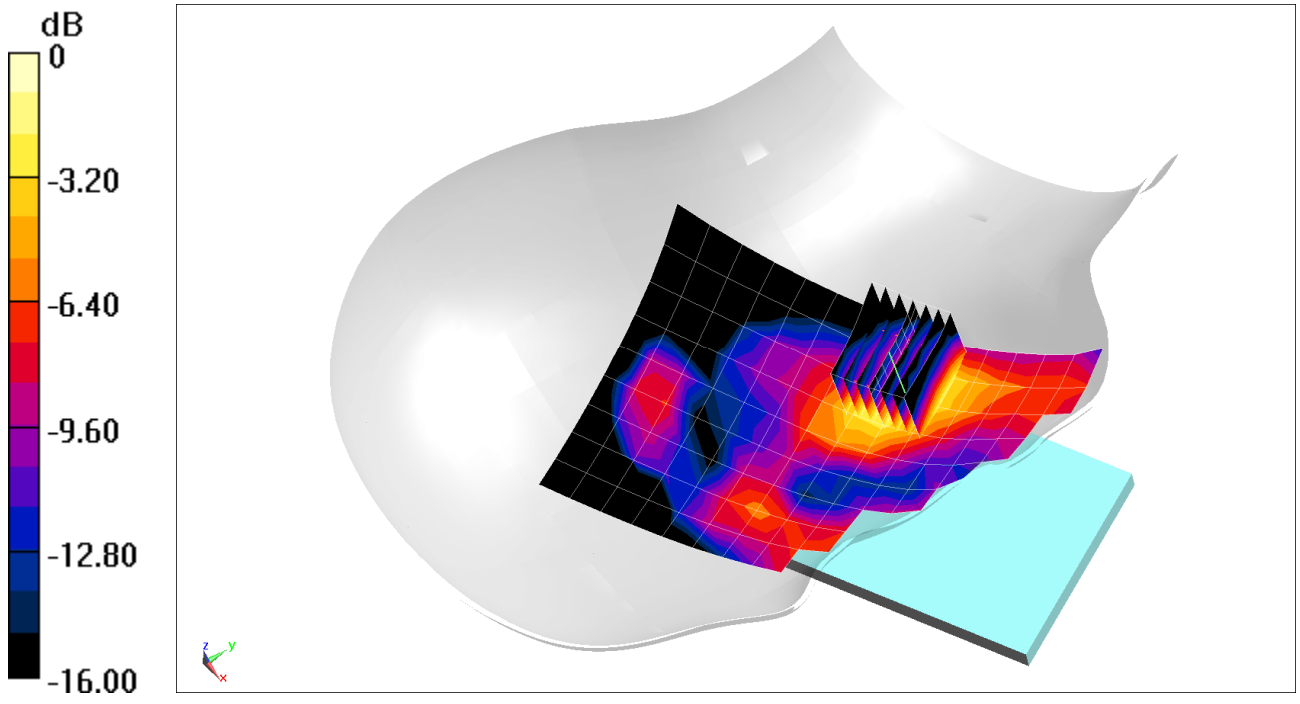
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head Medium parameters used:
f = 2550 MHz; σ = 1.896 S/m; ε_r = 37.66; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-06-2019; Ambient Temp: 22.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2549.5 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
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 (7450)

Mode: LTE Band 41 HPUE, Right Head, Cheek, Low-Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.405 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.228 W/kg
SAR(1 g) = 0.127 W/kg



0 dB = 0.188 W/kg = -7.26 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01540

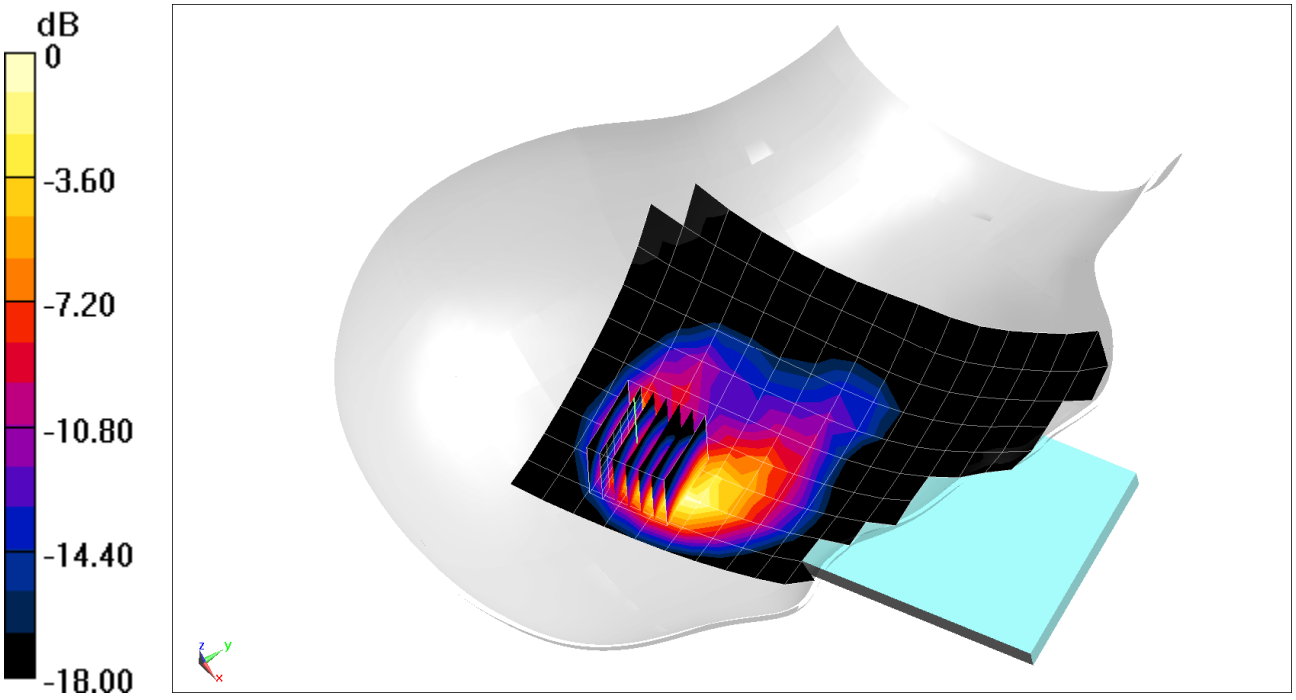
Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.83 S/m; ε_r = 37.731; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 04-29-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7308; ConvF(7.45, 7.45, 7.45) @ 2462 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
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 (7450)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Cheek, Ch 11, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.30 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.15 W/kg
SAR(1 g) = 0.958 W/kg



0 dB = 1.64 W/kg = 2.15 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01540

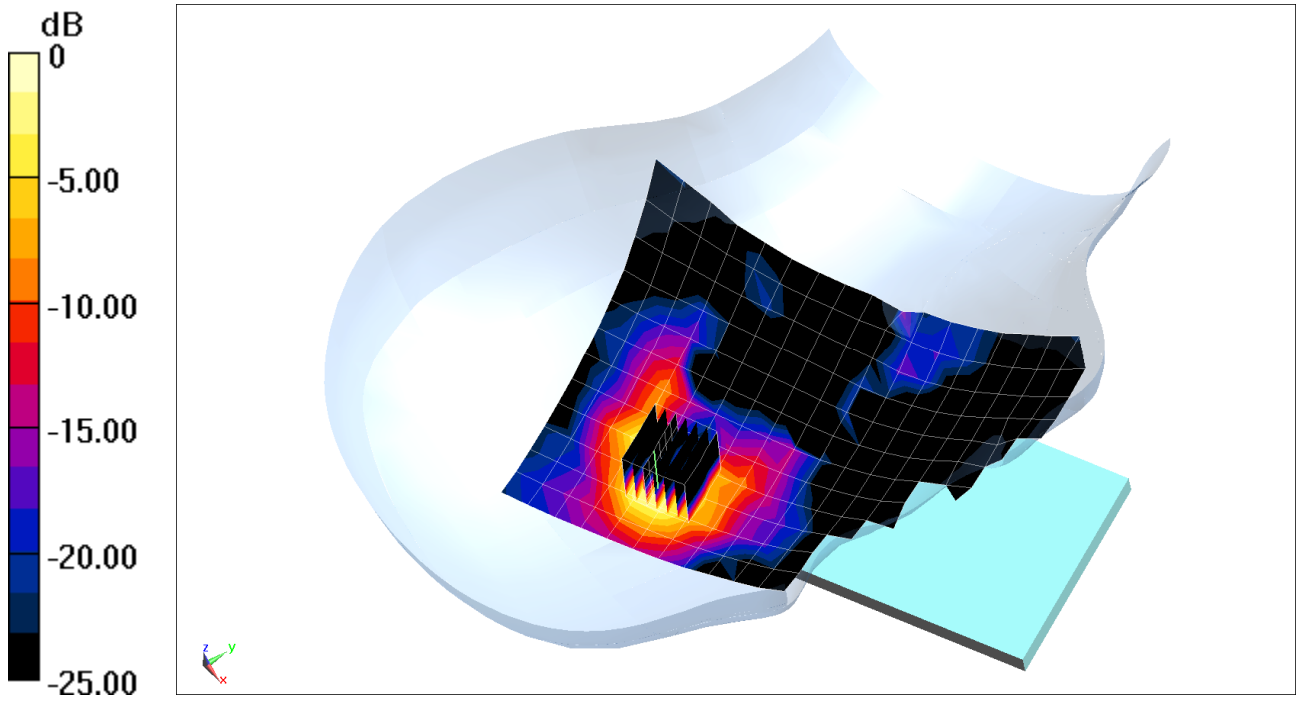
Communication System: UID 0, _IEEE 802.11a; Frequency: 5520 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used:
f = 5520 MHz; σ = 4.952 S/m; ε_r = 35.552; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 05-07-2019; Ambient Temp: 21.9°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7409; ConvF(4.77, 4.77, 4.77) @ 5520 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Right Head, Cheek, Ch 104, 6 Mbps

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 3.406 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 4.45 W/kg
SAR(1 g) = 0.915 W/kg



0 dB = 2.36 W/kg = 3.73 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01540

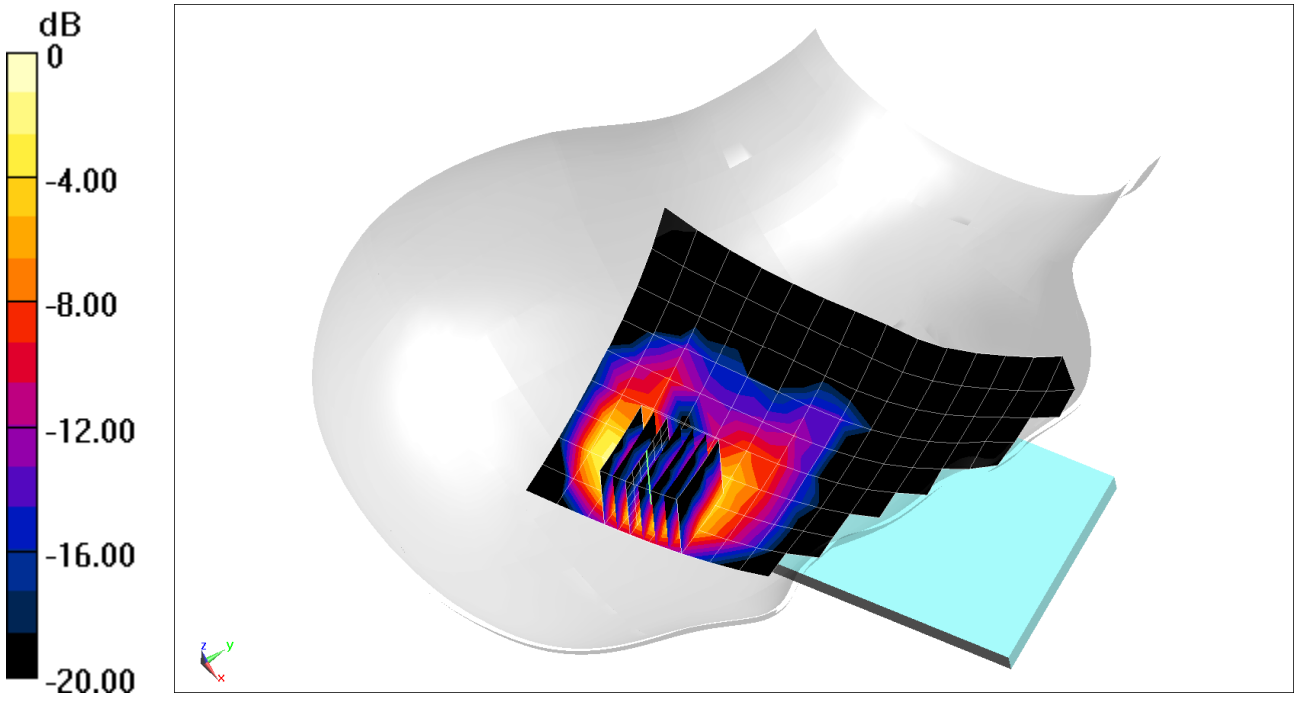
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.289
Medium: 2450 Head Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.813 S/m; ε_r = 37.768; ρ = 1000 kg/m^3
Phantom section: Right Section;

Test Date: 04-29-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7308; ConvF(7.45, 7.45, 7.45) @ 2441 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
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 (7450)

Mode: Bluetooth, Right Head, Cheek, Ch 39, 1Mbps

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.773 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.080 W/kg



0 dB = 0.156 W/kg = -8.07 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01514

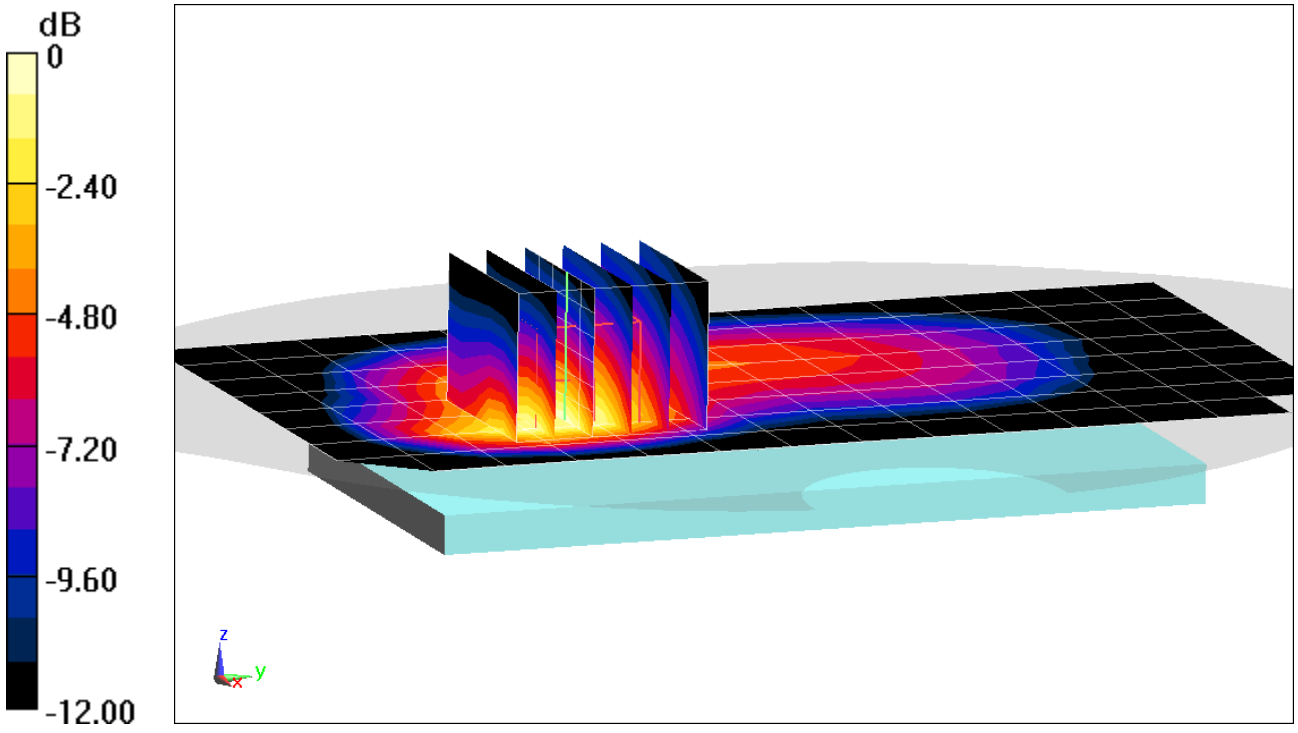
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.678; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-13-2019; Ambient Temp: 19.7°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.58 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.722 W/kg
SAR(1 g) = 0.420 W/kg



0 dB = 0.606 W/kg = -2.18 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

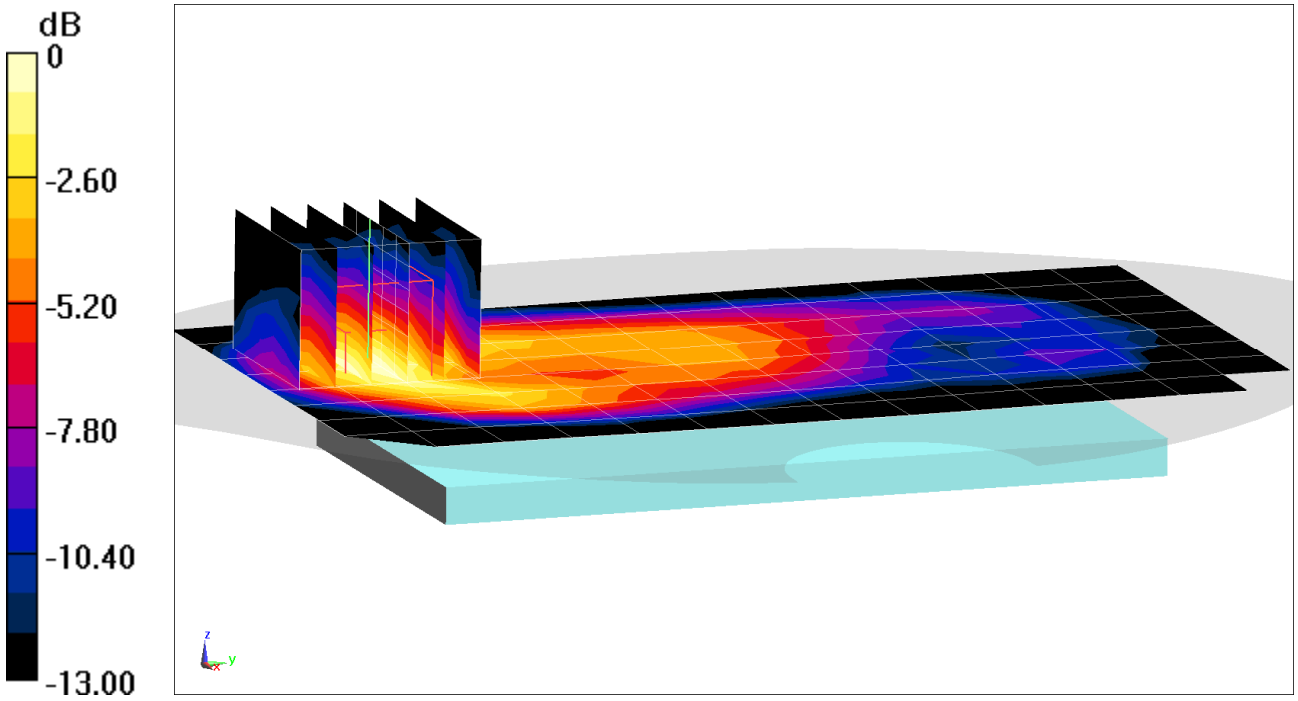
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.562 S/m; ε_r = 51.834; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-29-2019; Ambient Temp: 20.0°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(7.93, 7.93, 7.93) @ 1880 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 1900, Body SAR, Back side, Mid.ch, 2 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.72 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.586 W/kg
SAR(1 g) = 0.327 W/kg;



0 dB = 0.451 W/kg = -3.46 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

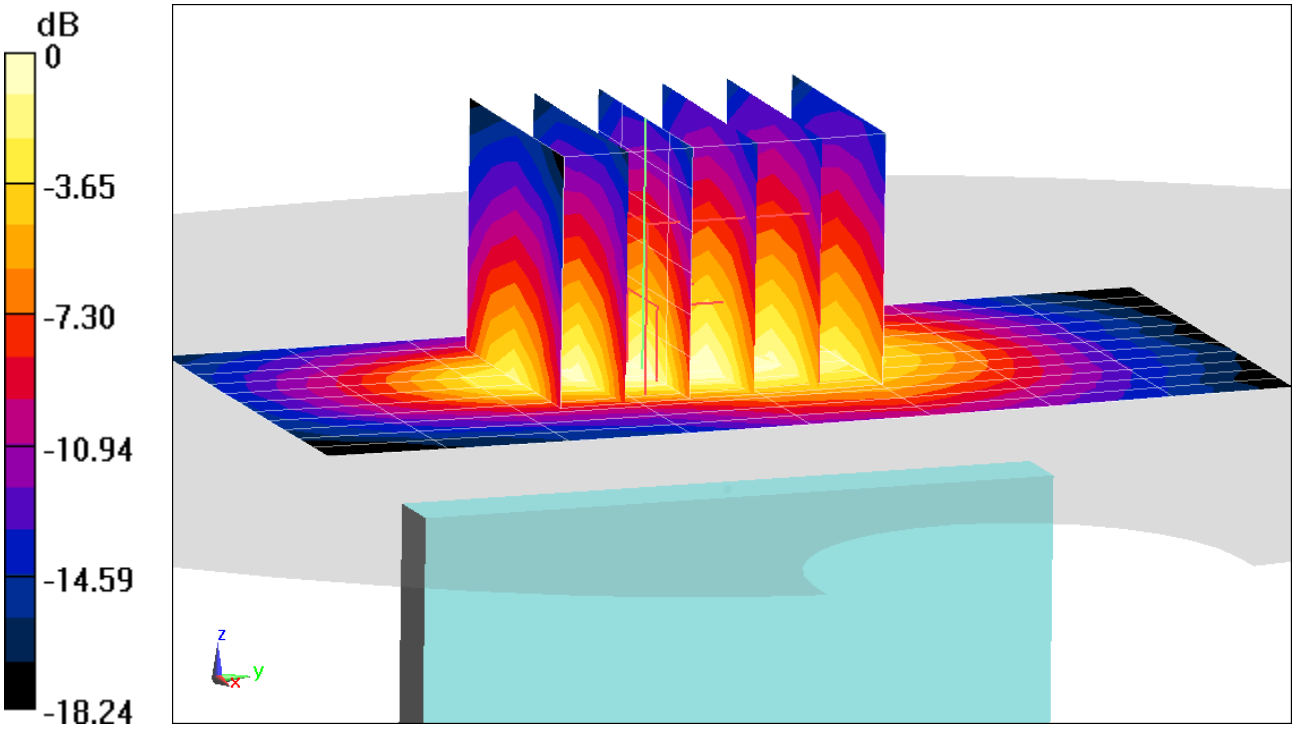
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.518 S/m; ε_r = 51.958; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-08-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(7.93, 7.93, 7.93) @ 1880 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 1900, Body SAR, Bottom Edge, Mid.ch, 2 Tx Slots

Area Scan (12x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.55 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.645 W/kg



0 dB = 0.969 W/kg = -0.14 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

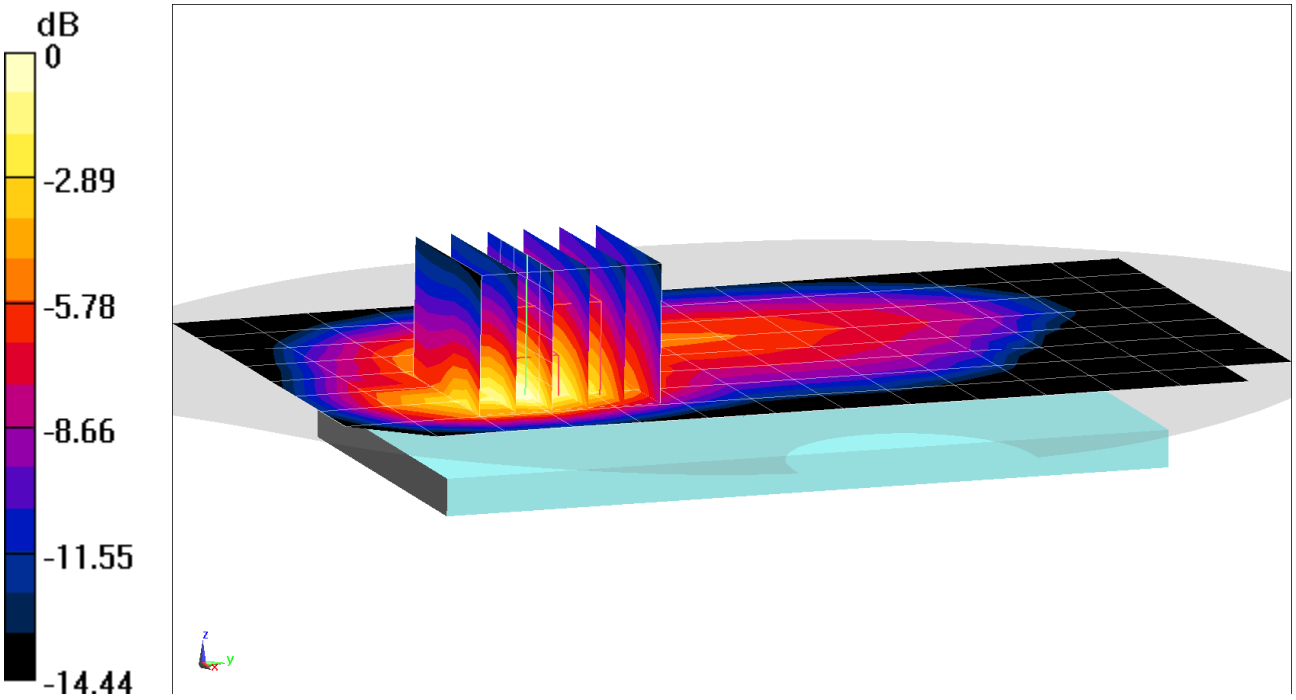
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.002 S/m; ε_r = 52.819; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-01-2019; Ambient Temp: 23.3°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.93 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.993 W/kg
SAR(1 g) = 0.574 W/kg



0 dB = 0.835 W/kg = -0.78 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

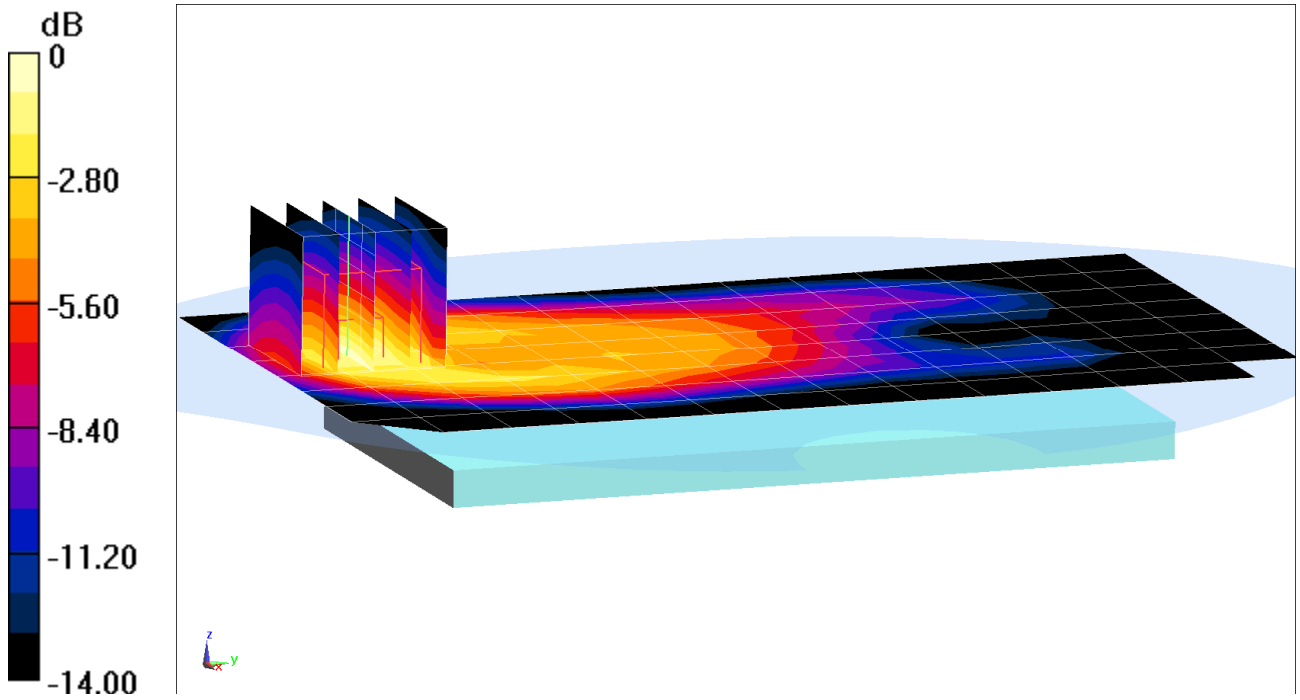
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.475 S/m; ε_r = 52.257; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN3914; ConvF(7.89, 7.89, 7.89) @ 1732.4 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, 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 = 20.30 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.962 W/kg
SAR(1 g) = 0.554 W/kg



0 dB = 0.805 W/kg = -0.94 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

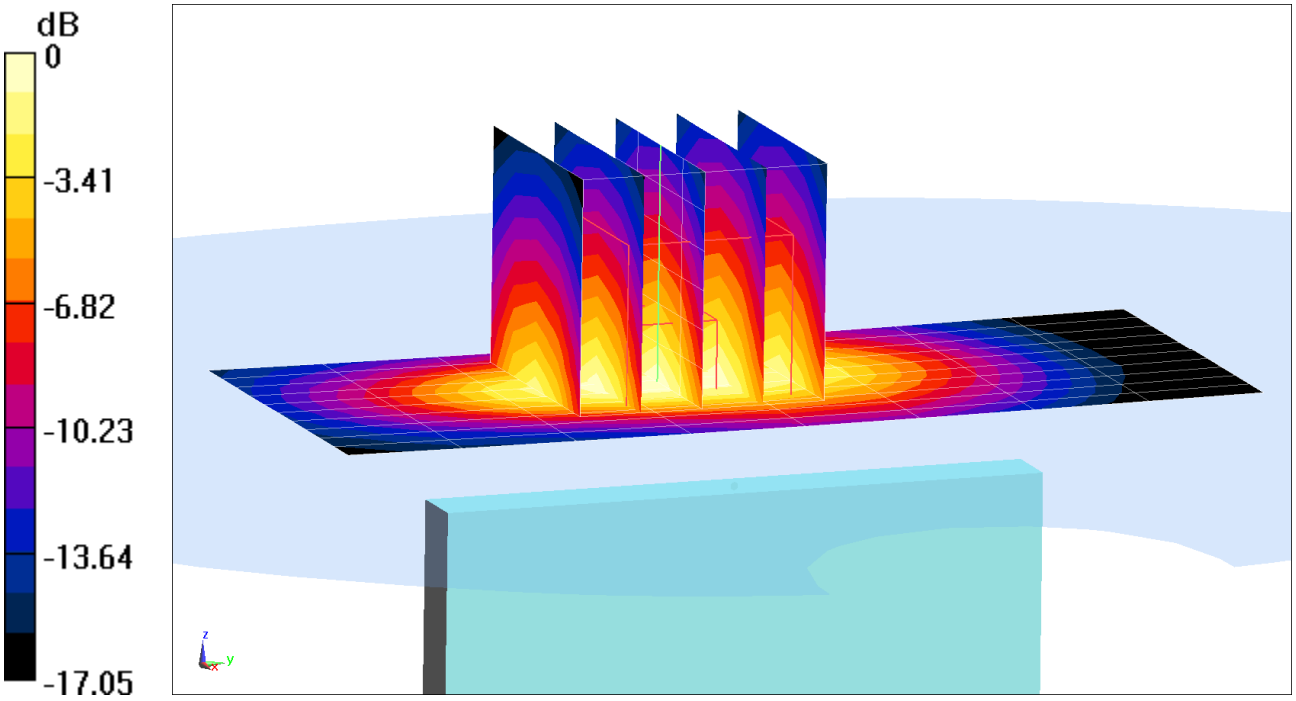
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1752.6 MHz; σ = 1.498 S/m; ε_r = 52.186; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN3914; ConvF(7.89, 7.89, 7.89) @ 1752.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (11x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.43 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.953 W/kg



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

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

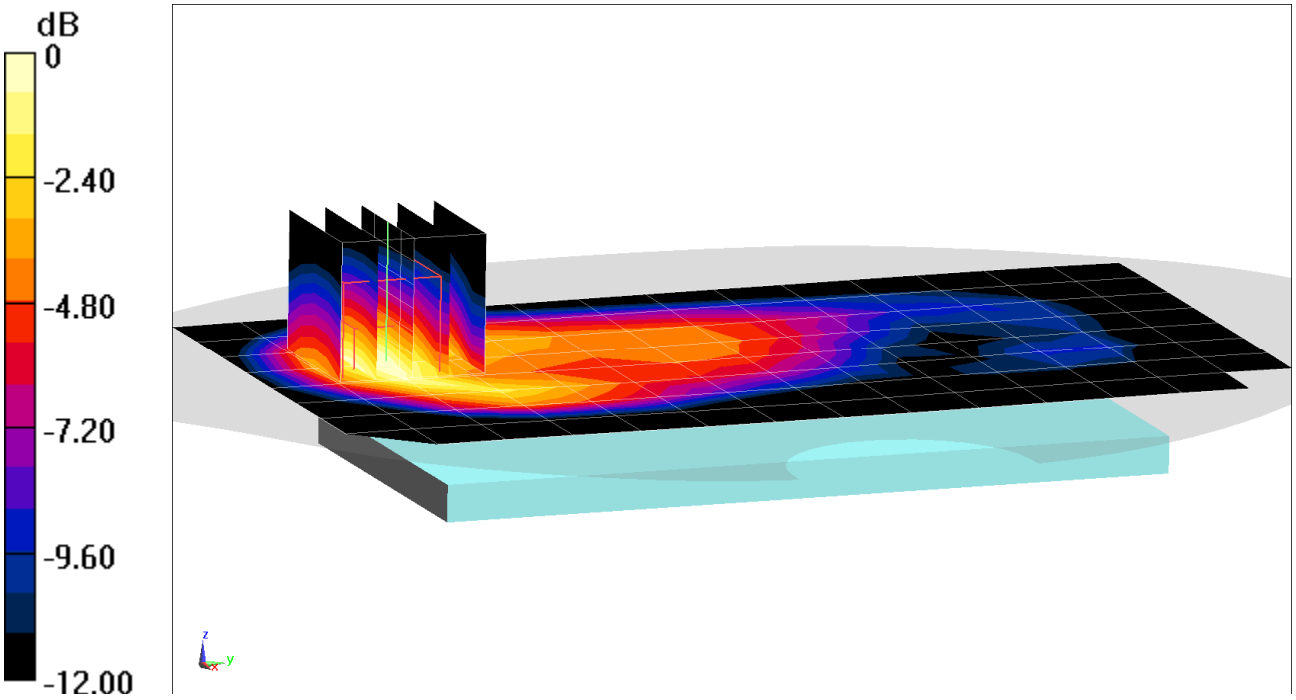
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.48 S/m; ε_r = 51.473; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-02-2019; Ambient Temp: 22.3°C; Tissue Temp: 23.8°C

Probe: EX3DV4 - SN7357; ConvF(7.93, 7.93, 7.93) @ 1880 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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 = 19.42 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.991 W/kg
SAR(1 g) = 0.548 W/kg



0 dB = 0.771 W/kg = -1.13 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01543

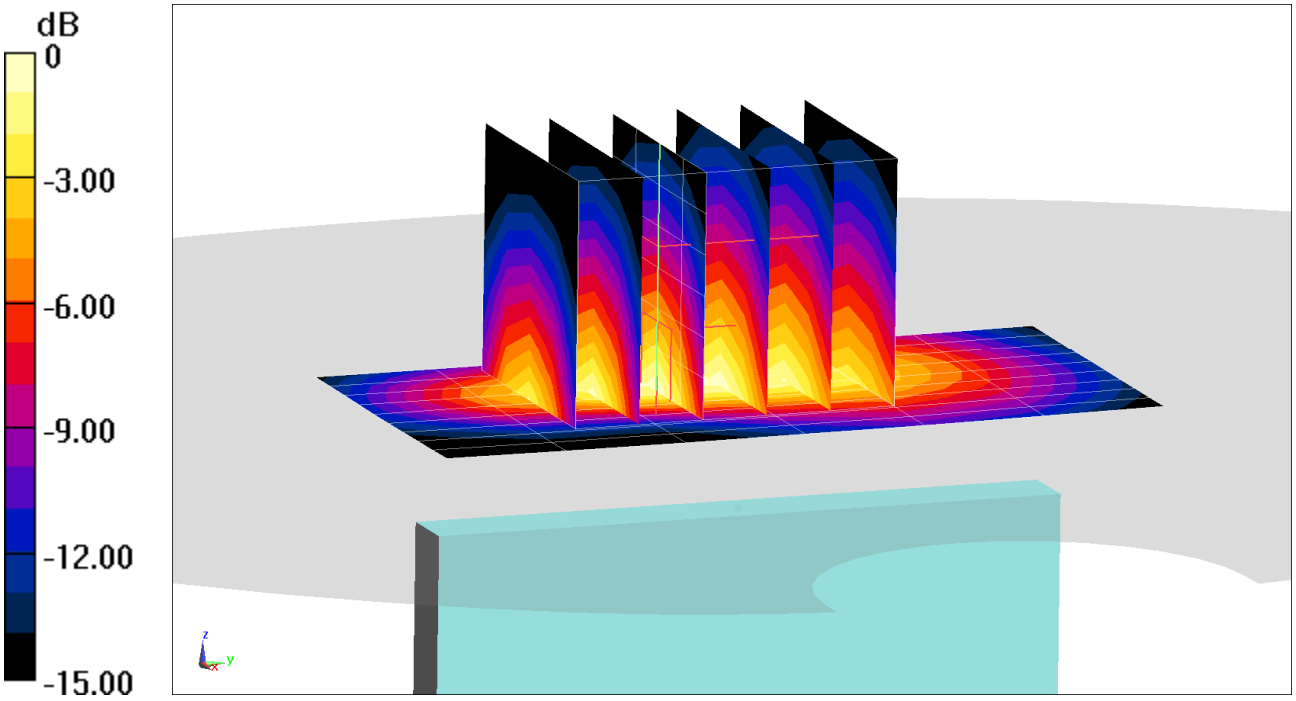
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.509 S/m; ε_r = 51.397; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-02-2019; Ambient Temp: 22.3°C; Tissue Temp: 23.8°C

Probe: EX3DV4 - SN7357; ConvF(7.93, 7.93, 7.93) @ 1907.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.16 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.1 W/kg



0 dB = 1.66 W/kg = 2.20 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

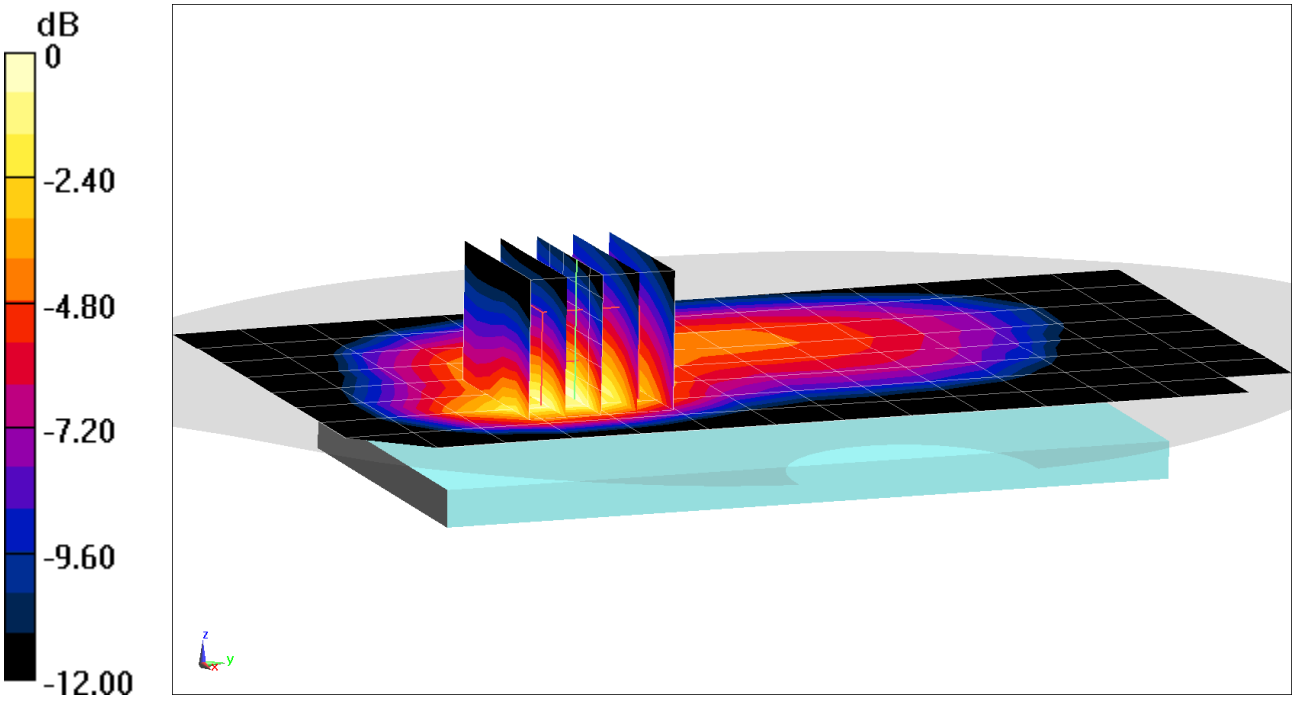
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.977 S/m; ε_r = 54.307; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-08-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 820.1 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC10, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.13 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.798 W/kg
SAR(1 g) = 0.465 W/kg



0 dB = 0.656 W/kg = -1.83 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

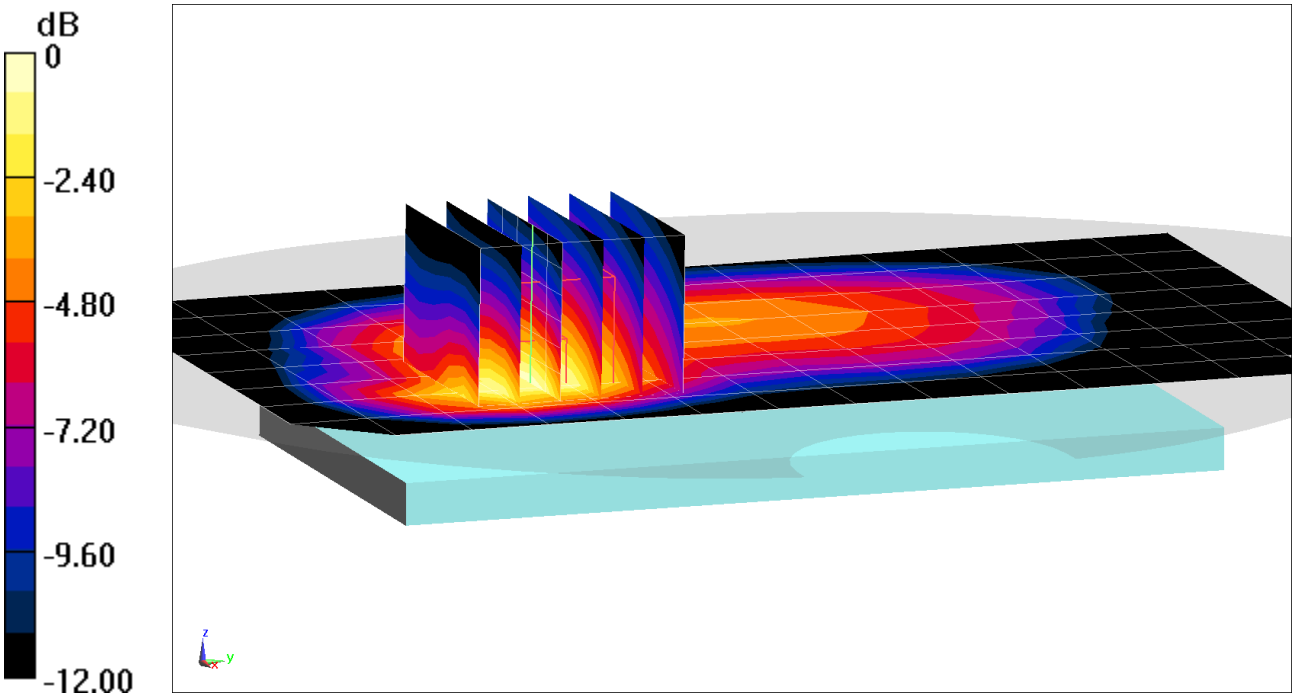
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.977 S/m; ε_r = 54.307; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-08-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 820.1 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. 0 BC10, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.88 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.661 W/kg
SAR(1 g) = 0.391 W/kg



0 dB = 0.559 W/kg = -2.53 dBW/kg

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

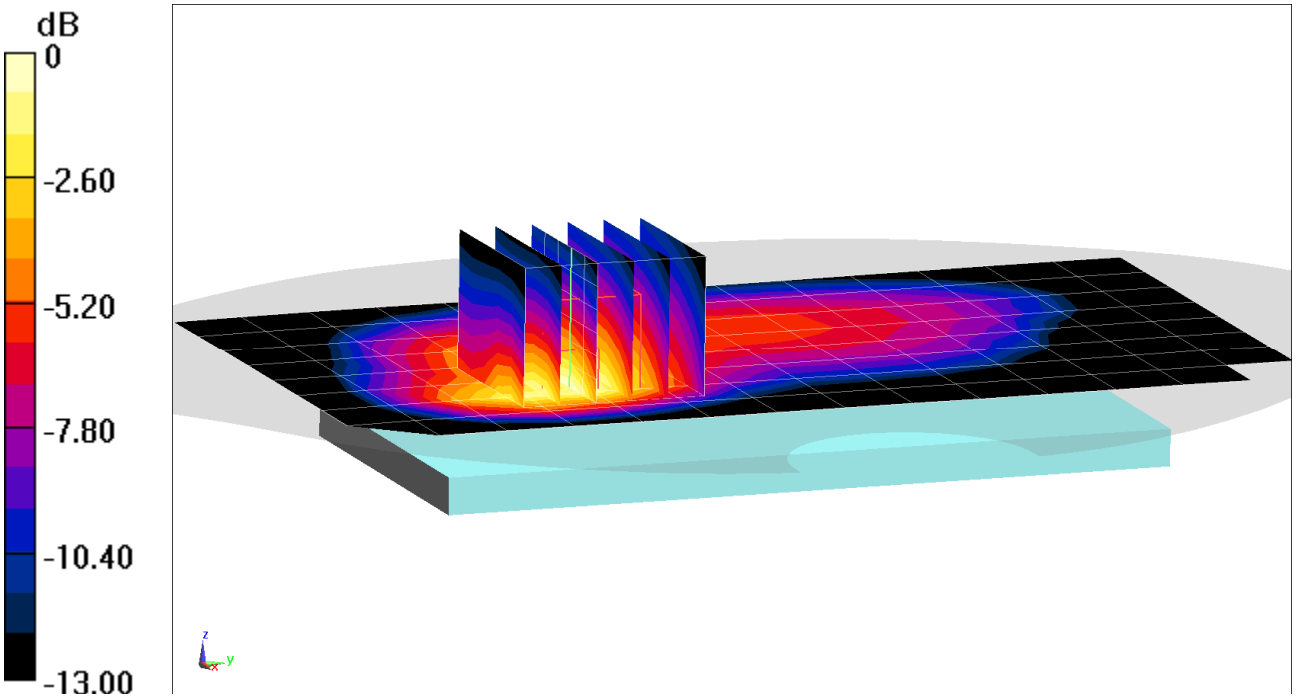
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.984 S/m; ε_r = 54.282; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-08-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.52 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC0, Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.05 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.852 W/kg
SAR(1 g) = 0.491 W/kg



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

DUT: ZNFQ720PS; Type: Portable Handset; Serial: 01544

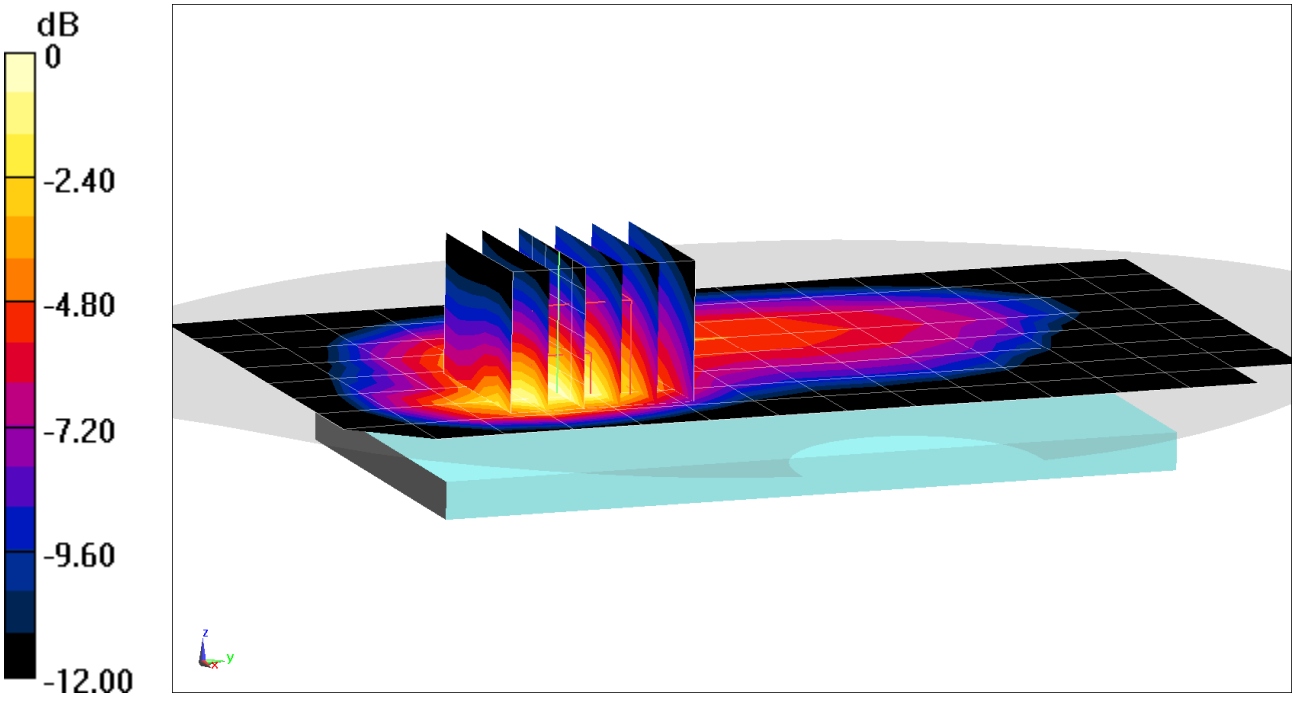
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.984 S/m; ε_r = 54.282; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-08-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.52 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. 0, BC0 Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.23 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.701 W/kg
SAR(1 g) = 0.412 W/kg



0 dB = 0.594 W/kg = -2.26 dBW/kg