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:
07/08/18 - 07/23/18
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1806290137-01-R3.ZNF

FCC ID: **ZNFQ910QM**

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-Q910QM
Additional Model(s) LMQ910QM, Q910QM, LM-Q910UM, LMQ910UM, Q910UM

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	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.20	0.46	0.55	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.13	0.36	0.42	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.13	0.53	0.92	2.94
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.21	0.37	0.37	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.34	0.70	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.18	0.39	0.39	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.13	0.48	0.88	3.19
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.12	0.57	1.10	2.51
PCE	LTE Band 12	699.7 - 715.3 MHz	0.11	0.43	0.43	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	0.17	0.44	0.44	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.12	0.36	0.36	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.12	0.43	0.43	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.10	0.46	0.70	2.98
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	0.13	0.60	0.93	2.68
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.51	0.64	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	< 0.1	1.19	1.20	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.51	0.51	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.49	0.34	0.34	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.82	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.59	1.06	N/A	2.54
NII	U-NII-2C	5500 - 5720 MHz	0.53	0.70	N/A	1.47
NII	U-NII-3	5745 - 5825 MHz	0.50	0.73	0.73	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.12	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			0.90	1.59	1.59	3.89

Note: This revised Test Report (S/N: 1M1806290137-01-R3.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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

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.

TABLE OF CONTENTS

1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

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 PCE Output Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.7**	**33.7**	**32.7**	**30.7**	**28.7**	**27.7**	**27.7**	**26.7**	**26.7**
	Nominal	**33.2**	**33.2**	**32.2**	**30.2**	**28.2**	**27.2**	**27.2**	**26.2**	**26.2**
GSM/GPRS/EDGE 1900	Maximum	**30.7**	**30.7**	**29.7**	**27.7**	**25.7**	**26.7**	**26.7**	**25.7**	**25.7**
	Nominal	**30.2**	**30.2**	**29.2**	**27.2**	**25.2**	**26.2**	**26.2**	**25.2**	**25.2**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 5 (850 MHz)	Maximum	**25.5**	**25.5**	**25.5**	**25.5**
	Nominal	**25.0**	**25.0**	**25.0**	**25.0**
UMTS Band 4 (1750 MHz)	Maximum	**24.7**	**24.7**	**24.7**	**24.7**
	Nominal	**24.2**	**24.2**	**24.2**	**24.2**
UMTS Band 2 (1900 MHz)	Maximum	**24.4**	**24.4**	**24.4**	**24.4**
	Nominal	**23.9**	**23.9**	**23.9**	**23.9**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.5**
	Nominal	**25.0**
CDMA/EVDO BC0 (§22H)	Maximum	**25.5**
	Nominal	**25.0**
PCS CDMA/EVDO	Maximum	**24.4**
	Nominal	**23.9**

Mode / Band		Modulated Average (dBm)
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 5 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 26 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 66 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 4 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 25 (PCS)	Maximum	**24.4**
	Nominal	**23.9**
LTE Band 2 (PCS)	Maximum	**24.4**
	Nominal	**23.9**
LTE Band 30	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 7	Maximum	**23.7**
	Nominal	**23.2**
LTE Band 41	Maximum	**24.9**
	Nominal	**24.4**

1.3.2 Reduced PCE Output Power

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 4 (1750 MHz)	Maximum	**23.2**	**23.2**	**23.2**	**23.2**
	Nominal	**22.7**	**22.7**	**22.7**	**22.7**
UMTS Band 2 (1900 MHz)	Maximum	**22.2**	**22.2**	**22.2**	**22.2**
	Nominal	**21.7**	**21.7**	**21.7**	**21.7**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**22.2**
	Nominal	**21.7**

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**23.2**
	Nominal	**22.7**
LTE Band 4 (AWS)	Maximum	**23.2**
	Nominal	**22.7**
LTE Band 25 (PCS)	Maximum	**22.2**
	Nominal	**21.7**
LTE Band 2 (PCS)	Maximum	**22.2**
	Nominal	**21.7**

1.3.3 Maximum WLAN and Bluetooth Output Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**20.5**	**20.5**	**20.5**
	Nominal	**19.5**	**19.5**	**19.5**
IEEE 802.11g (2.4 GHz)	Maximum	**18.0**	**19.5**	**17.0**
	Nominal	**17.0**	**18.5**	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**	**18.5**	**16.0**
	Nominal	**16.0**	**17.5**	**15.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**17.0**	**18.5**	**16.0**
	Nominal	**16.0**	**17.5**	**15.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**23.5**	**23.5**	**23.5**
	Nominal	**22.5**	**22.5**	**22.5**
IEEE 802.11g (2.4 GHz)	Maximum	**21.0**	**22.5**	**20.0**
	Nominal	**20.0**	**21.5**	**19.0**
IEEE 802.11n (2.4 GHz)	Maximum	**20.0**	**21.5**	**19.0**
	Nominal	**19.0**	**20.5**	**18.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**20.0**	**21.5**	**19.0**
	Nominal	**19.0**	**20.5**	**18.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)						
		20 MHz Bandwidth		40 MHz Bandwidth			80 MHz Bandwidth	
		Ch. 40, 56, 157, 161	Ch. 36, 44-52, 60-153, 165	Ch. 62-102	Ch. 38	Ch. 46-54, 110-159	Ch. 58	Ch. 42, 106-155
IEEE 802.11a (5 GHz)	Maximum	**18.0**	**17.0**					
	Nominal	**17.0**	**16.0**					
IEEE 802.11n (5 GHz)	Maximum	**18.0**	**17.0**	**12.5**	**13.0**	**16.0**		
	Nominal	**17.0**	**16.0**	**11.5**	**12.0**	**15.0**		
IEEE 802.11ac (5 GHz)	Maximum	**18.0**	**17.0**	**12.5**	**13.0**	**16.0**	**10.5**	**13.5**
	Nominal	**17.0**	**16.0**	**11.5**	**12.0**	**15.0**	**9.5**	**12.5**

Mode / Band		Modulated Average - MIMO (dBm)						
		20 MHz Bandwidth		40 MHz Bandwidth			80 MHz Bandwidth	
		Ch. 40, 56, 157, 161	Ch. 36, 44-52, 60-153, 165	Ch. 62-102	Ch. 38	Ch. 46-54, 110-159	Ch. 58	Ch. 42, 106-155
IEEE 802.11a (5 GHz)	Maximum	21.0	20.0					
	Nominal	20.0	19.0					
IEEE 802.11n (5 GHz)	Maximum	21.0	20.0	15.5	16.0	19.0		
	Nominal	20.0	19.0	14.5	15.0	18.0		
IEEE 802.11ac (5 GHz)	Maximum	21.0	20.0	15.5	16.0	19.0	13.5	16.5
	Nominal	20.0	19.0	14.5	15.0	18.0	12.5	15.5

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	12.0
	Nominal	11.0
Bluetooth LE	Maximum	5.0
	Nominal	4.0

1.3.4 Reduced WLAN Output Power (Held-to-Ear)

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**18.0**	**18.0**	**18.0**
	Nominal	**17.0**	**17.0**	**17.0**
IEEE 802.11g (2.4 GHz)	Maximum	**18.0**	**18.0**	**17.0**
	Nominal	**17.0**	**17.0**	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**	**18.0**	**16.0**
	Nominal	**16.0**	**17.0**	**15.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**17.0**	**18.0**	**16.0**
	Nominal	**16.0**	**17.0**	**15.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**21.0**	**21.0**	**21.0**
	Nominal	**20.0**	**20.0**	**20.0**
IEEE 802.11g (2.4 GHz)	Maximum	**21.0**	**21.0**	**20.0**
	Nominal	**20.0**	**20.0**	**19.0**
IEEE 802.11n (2.4 GHz)	Maximum	**20.0**	**21.0**	**19.0**
	Nominal	**19.0**	**20.0**	**18.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**20.0**	**21.0**	**19.0**
	Nominal	**19.0**	**20.0**	**18.0**

1.3.5 Output Power during Scenarios with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		Ch. 1-2	Ch. 3-9	Ch. 10-11
IEEE 802.11b (2.4 GHz)	Maximum	**18.0**	**18.0**	**18.0**
	Nominal	**17.0**	**17.0**	**17.0**
IEEE 802.11g (2.4 GHz)	Maximum	**18.0**	**18.0**	**17.0**
	Nominal	**17.0**	**17.0**	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**	**18.0**	**16.0**
	Nominal	**16.0**	**17.0**	**15.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**17.0**	**18.0**	**16.0**
	Nominal	**16.0**	**17.0**	**15.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)					
		20 MHz Bandwidth	40 MHz Bandwidth			80 MHz Bandwidth	
		Ch. 36-165	Ch. 62-102	Ch. 38	Ch. 46-54, 110-159	Ch. 58	Ch. 42, 106-155
IEEE 802.11a (5 GHz)	Maximum	**15.0**					
	Nominal	**14.0**					
IEEE 802.11n (5 GHz)	Maximum	**15.0**	**12.5**	**13.0**	**15.0**		
	Nominal	**14.0**	**11.5**	**12.0**	**14.0**		
IEEE 802.11ac (5 GHz)	Maximum	**15.0**	**12.5**	**13.0**	**15.0**	**10.5**	**13.5**
	Nominal	**14.0**	**11.5**	**12.0**	**14.0**	**9.5**	**12.5**

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
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	No	Yes
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	No	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 30	Yes	Yes	No	Yes	Yes	Yes
LTE Band 7	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 41	Yes	Yes	No	Yes	Yes	Yes
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN MIMO	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 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in Appendix F.

1.6 Simultaneous Transmission Capabilities

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

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 WI-FI MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	N/A	Yes	
7	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
8	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
9	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered
10	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
11	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
12	GSM voice + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	N/A	Yes	
13	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
14	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
15	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
16	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
17	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
18	UMTS + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
19	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
20	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
21	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
22	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
23	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
24	LTE + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
25	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
26	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
27	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^Bluetooth Tethering is considered
28	CDMA/EVDO data + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
29	CDMA/EVDO data + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
30	CDMA/EVDO data + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
31	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
32	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
33	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^Bluetooth Tethering is considered
34	GPRS/EDGE + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
35	GPRS/EDGE + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
36	GPRS/EDGE + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered

1. Bluetooth cannot transmit simultaneously with WLAN.
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, the simultaneous transmission scenarios involving WIFI are 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-NII2A, and U-NII2C were not evaluated for wireless router conditions.
6. This device supports 2x2 MIMO Tx for WLAN. 802.11a/g/n/ac modes support CDD, 802.11b mode supports TDD operations only, and 802.11n/ac modes additionally support SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports VOLTE.
8. This device supports VoWIFI.
9. This device supports BT Tethering.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

This device supports IEEE 802.11ac with the following features:

a) Up to 80 MHz Bandwidth only
b) No aggregate channel configurations
c) 2 Tx antenna output
d) 256 QAM is supported
e) TDWR and Band gap channels are supported

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

(B) Licensed Transmitter(s)

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

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

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

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

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. Downlink LTE CA conducted powers are included 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.

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.

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

1.8 Guidance Applied

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

1.9 Device Serial Numbers

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

2 LTE INFORMATION

LTE Information					
FCC ID	**ZNFQ910QM**				
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 7: 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 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)	N/A	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
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 12 (QPSK, 16QAM, 64QAM, 256QAM), UL UE Cat 13 (QPSK, 16QAM, 64QAM)				
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 features on 3GPP Release 12. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 12 Features are not supported: Relay, HetNet, Enhanced MIMO, 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:

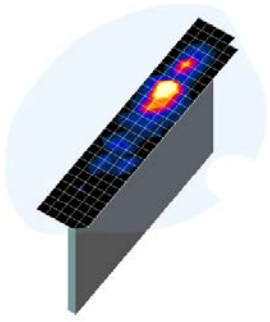


Figure 4-1
Sample SAR Area Scan

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

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

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

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

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

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

*Also compliant to IEEE 1528-2013 Table 6

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

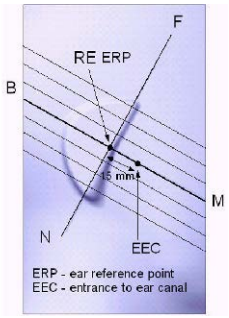


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

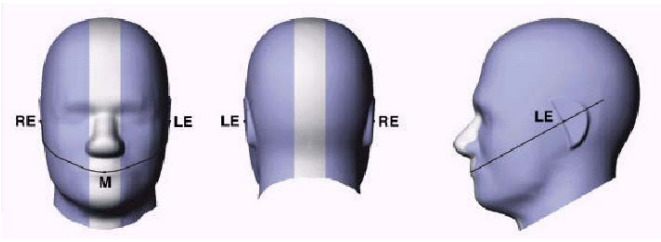


Figure 5-2
Front, back and side view of SAM Twin Phantom

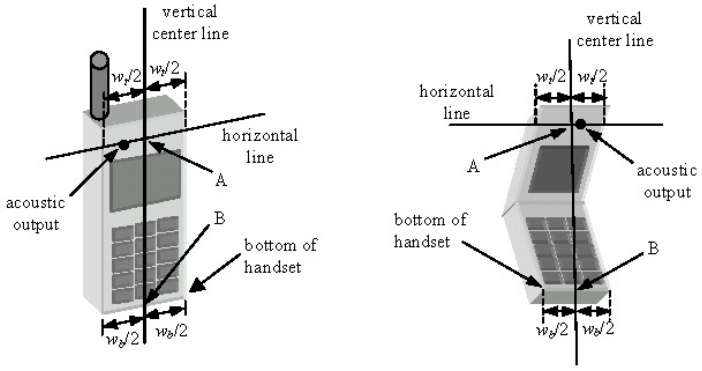


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

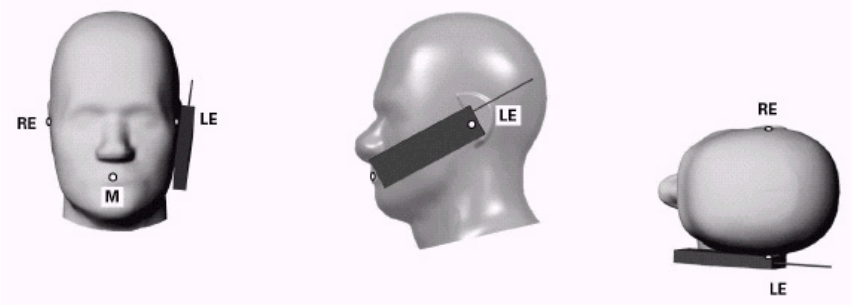


Figure 6-1 Front, Side and Top View of Cheek Position

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

6.3 Positioning for Ear / 15º Tilt

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

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

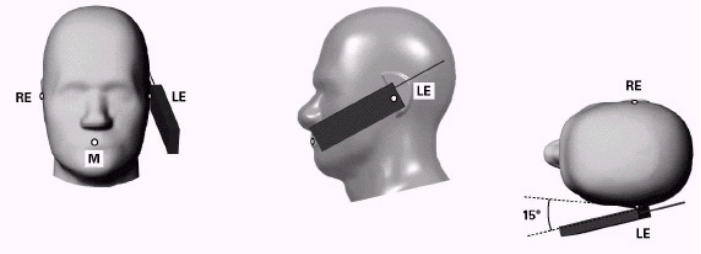


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

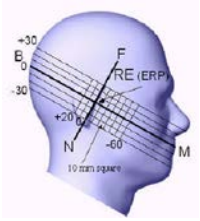


Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

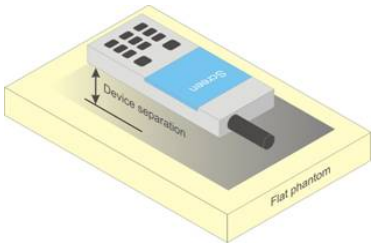


Figure 6-4
Sample Body-Worn Diagram

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

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

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

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

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

6.8 Phablet Configurations

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

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

6.9 Additional Test Positions due to Proximity Conditions

This device uses a sensor to reduce voice and data powers in extremity (hand-held) use conditions.

When the sensor detects a user is touching the device on or near to the antenna the device reduces the maximum allowed output power However, the proximity sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, an additional exposure condition 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.

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

For handsets with 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.

8.4.6 CDMA2000 1x Advanced

This device additionally supports 1x Advanced. Conducted powers are measured using SO75 with RC8 on the uplink and RC11 on the downlink per FCC KDB Publication 941225 D01v03r01. Smart blanking is disabled for all measurements. The EUT is configured with forward power control Mode 000 and reverse power control at 400 bps. Conducted powers are measured on an Agilent 8960 Series 10 Wireless Communications Test Set, Model E5515C using the CDMA2000 1x Advanced application, Option E1962B-410.

The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the

primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
    i. The required channel and offset combination with the highest maximum output power is required for SAR.
    ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
    iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. 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.

8.7.9 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. 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]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.27	25.21	25.26	25.30	25.26	25.20	25.31
Cellular	1013	22H	824.7	24.23	24.26	24.15	24.18	24.25	24.17	24.32
	384	22H	836.52	25.32	25.21	25.24	25.17	25.30	25.18	25.22
	777	22H	848.31	24.91	24.87	24.80	24.80	24.82	24.95	24.88
PCS	25	24E	1851.25	24.30	24.40	24.34	24.29	24.30	24.40	24.38
	600	24E	1880	24.11	24.09	24.10	24.08	24.14	24.26	24.04
	1175	24E	1908.75	24.10	24.22	24.14	24.19	24.11	24.09	24.12

Table 9-2
Reduced Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	21.88	22.06	22.04	21.94	21.99	21.95	22.00
	600	24E	1880	21.96	22.03	22.00	21.89	21.97	21.98	22.03
	1175	24E	1908.75	21.93	21.89	21.99	21.80	21.76	21.96	21.96

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

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

Table 9-3
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	33.52	33.20	32.57	**30.31**	28.50	27.06	27.02	26.37	26.10
	190	33.66	33.39	32.69	**30.44**	28.56	26.92	26.91	26.22	26.04
	251	33.65	33.31	32.67	**30.40**	28.39	27.01	27.01	26.30	26.13
GSM 1900	512	30.28	30.32	29.70	**27.42**	25.47	26.70	26.41	25.25	24.91
	661	30.46	30.59	29.67	**27.42**	25.43	26.66	26.30	25.09	24.80
	810	30.44	30.51	29.58	**27.39**	25.36	26.59	26.22	25.01	24.67

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	24.49	24.17	26.55	**26.05**	25.49	18.03	21.00	22.11	23.09
	190	24.63	24.36	26.67	**26.18**	25.55	17.89	20.89	21.96	23.03
	251	24.62	24.28	26.65	**26.14**	25.38	17.98	20.99	22.04	23.12
GSM 1900	512	21.25	21.29	23.68	**23.16**	22.46	17.67	20.39	20.99	21.90
	661	21.43	21.56	23.65	**23.16**	22.42	17.63	20.28	20.83	21.79
	810	21.41	21.48	23.56	**23.13**	22.35	17.56	20.20	20.75	21.66

GSM 850	**Frame Avg.Targets:**	24.17	24.17	26.18	**25.94**	25.19	18.17	21.18	21.94	23.19
GSM 1900		21.17	21.17	23.18	**22.94**	22.19	17.17	20.18	20.94	22.19

Note:

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

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

Figure 9-2
Power Measurement Setup

9.3 UMTS Conducted Powers

Table 9-4
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	25.35	25.22	25.32	24.58	24.31	24.62	24.34	24.23	24.31	-
99		12.2 kbps AMR	25.36	25.23	25.34	24.63	24.33	24.63	24.32	24.21	24.34	-
6	HSDPA	Subtest 1	25.14	25.04	25.05	24.45	24.15	24.41	24.21	24.03	24.23	0
6		Subtest 2	25.10	24.98	25.07	24.44	24.18	24.44	24.15	24.07	24.18	0
6		Subtest 3	24.71	24.56	24.57	24.01	23.70	23.92	23.75	23.58	23.87	0.5
6		Subtest 4	24.71	24.53	24.56	23.91	23.81	24.02	23.75	23.56	23.81	0.5
6	HSUPA	Subtest 1	24.06	24.08	24.11	23.59	23.32	23.55	23.27	23.12	23.35	0
6		Subtest 2	22.19	22.03	22.09	21.53	21.23	21.30	21.23	21.03	21.28	2
6		Subtest 3	23.09	23.05	23.03	22.50	22.26	22.47	22.28	22.00	22.23	1
6		Subtest 4	22.10	22.08	22.04	21.44	21.26	21.47	21.18	20.95	21.21	2
6		Subtest 5	24.67	24.59	24.70	23.99	23.84	24.00	23.79	23.67	23.77	0
8	DC-HSDPA	Subtest 1	25.06	25.02	24.98	24.46	24.09	24.26	24.20	23.99	24.21	0
8		Subtest 2	25.12	24.94	24.92	24.28	24.19	24.32	24.09	24.20	24.20	0
8		Subtest 3	24.76	24.45	24.61	24.12	23.71	23.81	23.64	23.59	23.89	0.5
8		Subtest 4	24.78	24.54	24.41	23.78	23.86	23.96	23.74	23.51	23.86	0.5

Table 9-5
Reduced Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.06	23.00	23.12	21.90	22.01	22.04	-
99		12.2 kbps AMR	23.06	22.76	22.96	22.12	22.01	21.92	-
6	HSDPA	Subtest 1	23.01	22.74	22.98	22.20	22.03	22.17	0
6		Subtest 2	23.02	22.71	23.05	21.95	21.88	21.97	0
6		Subtest 3	22.66	22.26	22.40	21.67	21.45	21.60	0.5
6		Subtest 4	22.43	22.36	22.64	21.57	21.53	21.63	0.5
6	HSUPA	Subtest 1	22.26	21.83	22.14	21.09	21.07	21.32	0
6		Subtest 2	20.07	19.83	19.92	19.09	18.88	19.21	2
6		Subtest 3	21.19	20.75	21.15	20.05	19.94	20.08	1
6		Subtest 4	20.02	19.71	20.00	19.11	18.83	19.09	2
6		Subtest 5	22.44	22.46	22.58	21.76	21.62	21.54	0
8	DC-HSDPA	Subtest 1	22.93	22.70	22.86	22.06	21.78	21.99	0
8		Subtest 2	22.91	22.69	23.01	22.03	22.01	22.11	0
8		Subtest 3	22.60	22.19	22.47	21.49	21.49	21.66	0.5
8		Subtest 4	22.25	22.45	22.61	21.61	21.36	21.64	0.5

DC-HSDPA considerations

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

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

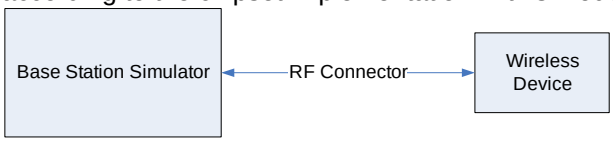


Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 12

Table 9-6
LTE Band 12 Conducted Powers - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.20	0	0
	1	25	25.20		0
	1	49	**25.25**		0
	25	0	24.37	0-1	1
	25	12	24.36		1
	25	25	**24.39**		1
	50	0	24.31		1
16QAM	1	0	24.37	0-1	1
	1	25	24.46		1
	1	49	24.38		1
	25	0	23.37	0-2	2
	25	12	23.34		2
	25	25	23.38		2
	50	0	23.36		2
64QAM	1	0	23.35	0-2	2
	1	25	23.39		2
	1	49	23.25		2
	25	0	22.34	0-3	3
	25	12	22.34		3
	25	25	22.35		3
	50	0	22.30		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 9-7
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.31	25.30	25.33	0	0
	1	12	25.28	25.32	25.27		0
	1	24	25.36	25.18	25.22		0
	12	0	24.32	24.24	24.25	0-1	1
	12	6	24.35	24.25	24.31		1
	12	13	24.27	24.25	24.25		1
	25	0	24.33	24.22	24.29		1
16QAM	1	0	24.33	24.38	24.44	0-1	1
	1	12	24.39	24.48	24.43		1
	1	24	24.43	24.46	24.38		1
	12	0	23.37	23.20	23.33	0-2	2
	12	6	23.37	23.22	23.31		2
	12	13	23.36	23.16	23.31		2
	25	0	23.36	23.25	23.31		2
64QAM	1	0	23.31	23.33	23.42	0-2	2
	1	12	23.34	23.34	23.43		2
	1	24	23.33	23.36	23.30		2
	12	0	22.28	22.10	22.20	0-3	3
	12	6	22.32	22.14	22.17		3
	12	13	22.31	22.11	22.19		3
	25	0	22.31	22.22	22.21		3

Table 9-8
LTE Band 12 Conducted Powers - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.21	25.33	25.30	0	0
	1	7	25.29	25.36	25.32		0
	1	14	25.18	25.27	25.18		0
	8	0	24.30	24.33	24.24	0-1	1
	8	4	24.35	24.33	24.25		1
	8	7	24.30	24.28	24.25		1
	15	0	24.29	24.29	24.22		1
16QAM	1	0	24.50	24.43	24.48	0-1	1
	1	7	24.35	24.36	24.41		1
	1	14	24.45	24.42	24.46		1
	8	0	23.36	23.32	23.20	0-2	2
	8	4	23.40	23.31	23.22		2
	8	7	23.37	23.29	23.16		2
	15	0	23.31	23.32	23.25		2
64QAM	1	0	23.39	23.37	23.39	0-2	2
	1	7	23.30	23.35	23.37		2
	1	14	23.40	23.42	23.44		2
	8	0	22.28	22.27	22.07	0-3	3
	8	4	22.27	22.26	22.12		3
	8	7	22.31	22.28	22.05		3
	15	0	22.22	22.25	22.23		3

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.21	25.23	25.12	0	0
	1	2	25.25	25.27	25.20		0
	1	5	25.16	25.23	25.11		0
	3	0	25.22	25.25	25.12		0
	3	2	25.27	25.32	25.17		0
	3	3	25.22	25.24	25.12		0
	6	0	24.23	24.21	24.15	0-1	1
16QAM	1	0	24.44	24.37	24.45	0-1	1
	1	2	24.42	24.43	24.49		1
	1	5	24.43	24.48	24.39		1
	3	0	24.40	24.27	24.22		1
	3	2	24.43	24.30	24.27		1
	3	3	24.38	24.25	24.25		1
	6	0	23.20	23.17	23.27	0-2	2
64QAM	1	0	23.35	23.31	23.39	0-2	2
	1	2	23.35	23.34	23.44		2
	1	5	23.43	23.46	23.31		2
	3	0	23.30	23.18	23.08		2
	3	2	23.33	23.23	23.16		2
	3	3	23.29	23.22	23.11		2
	6	0	22.10	22.13	22.18	0-3	3

9.4.2 LTE Band 13

Table 9-10
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	**25.22**	0	0
	1	25	25.16		0
	1	49	25.09		0
	25	0	24.32	0-1	1
	25	12	**24.33**		1
	25	25	24.28		1
	50	0	24.28		1
16QAM	1	0	24.48	0-1	1
	1	25	24.44		1
	1	49	24.41		1
	25	0	23.34	0-2	2
	25	12	23.34		2
	25	25	23.30		2
	50	0	23.29		2
64QAM	1	0	23.13	0-2	2
	1	25	23.03		2
	1	49	23.16		2
	25	0	22.20	0-3	3
	25	12	22.02		3
	25	25	22.12		3
	50	0	22.06		3

Table 9-11
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	25.29	0	0
	1	12	25.22		0
	1	24	25.16		0
	12	0	24.28	0-1	1
	12	6	24.28		1
	12	13	24.27		1
	25	0	24.24		1
16QAM	1	0	24.43	0-1	1
	1	12	24.48		1
	1	24	24.49		1
	12	0	23.34	0-2	2
	12	6	23.32		2
	12	13	23.27		2
	25	0	23.25		2
64QAM	1	0	23.30	0-2	2
	1	12	23.15		2
	1	24	23.21		2
	12	0	22.21	0-3	3
	12	6	22.26		3
	12	13	22.35		3
	25	0	22.31		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.

9.4.1 LTE Band 5 (Cell)

Table 9-12
LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.35	0	0
	1	25	**25.37**		0
	1	49	25.27		0
	25	0	24.36	0-1	1
	25	12	24.29		1
	25	25	**24.40**		1
	50	0	24.38		1
16QAM	1	0	24.47	0-1	1
	1	25	24.43		1
	1	49	24.41		1
	25	0	23.36	0-2	2
	25	12	23.35		2
	25	25	23.36		2
	50	0	23.45		2
64QAM	1	0	23.44	0-2	2
	1	25	23.35		2
	1	49	23.34		2
	25	0	22.34	0-3	3
	25	12	22.27		3
	25	25	22.22		3
	50	0	22.40		3

Note: LTE Band 5 (Cell) 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 9-13
LTE Band 5 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.34	25.33	25.26	0	0
	1	12	25.30	25.41	25.13		0
	1	24	25.39	25.34	25.08		0
	12	0	24.43	24.30	24.22	0-1	1
	12	6	24.39	24.40	24.25		1
	12	13	24.35	24.32	24.20		1
	25	0	24.46	24.37	24.26		1
16QAM	1	0	24.39	24.41	24.41	0-1	1
	1	12	24.42	24.43	24.49		1
	1	24	24.37	24.37	24.50		1
	12	0	23.46	23.34	23.35	0-2	2
	12	6	23.41	23.43	23.38		2
	12	13	23.38	23.37	23.36		2
	25	0	23.44	23.43	23.25		2
64QAM	1	0	23.29	23.37	23.40	0-2	2
	1	12	23.36	23.29	23.37		2
	1	24	23.30	23.27	23.37		2
	12	0	22.33	22.27	22.29	0-3	3
	12	6	22.40	22.39	22.30		3
	12	13	22.28	22.36	22.22		3
	25	0	22.31	22.34	22.24		3

Table 9-14
LTE Band 5 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.40	25.29	25.11	0	0
	1	7	25.47	25.46	25.21		0
	1	14	25.39	25.33	25.09		0
	8	0	24.42	24.30	24.22	0-1	1
	8	4	24.42	24.42	24.18		1
	8	7	24.39	24.35	24.19		1
	15	0	24.42	24.38	24.17		1
16QAM	1	0	24.48	24.36	24.42	0-1	1
	1	7	24.44	24.31	24.45		1
	1	14	24.49	24.42	24.40		1
	8	0	23.47	23.27	23.30	0-2	2
	8	4	23.46	23.33	23.29		2
	8	7	23.45	23.34	23.26		2
	15	0	23.43	23.38	23.19		2
64QAM	1	0	23.43	23.24	23.36	0-2	2
	1	7	23.42	23.20	23.38		2
	1	14	23.42	23.32	23.38		2
	8	0	22.34	22.18	22.18	0-3	3
	8	4	22.32	22.24	22.20		3
	8	7	22.38	22.32	22.21		3
	15	0	22.33	22.33	22.05		3

Table 9-15
LTE Band 5 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.35	25.21	25.10	0	0
	1	2	25.38	25.24	25.16		0
	1	5	25.31	25.27	25.09		0
	3	0	25.36	25.22	25.15		0
	3	2	25.39	25.39	25.16		0
	3	3	25.32	25.30	25.10		0
	6	0	24.34	24.27	24.09	0-1	1
16QAM	1	0	24.46	24.49	24.34	0-1	1
	1	2	24.48	24.35	24.44		1
	1	5	24.43	24.38	24.33		1
	3	0	24.49	24.25	24.29		1
	3	2	24.41	24.40	24.31		1
	3	3	24.47	24.39	24.26		1
	6	0	23.32	23.27	23.12	0-2	2
64QAM	1	0	23.39	23.40	23.20	0-2	2
	1	2	23.46	23.32	23.36		2
	1	5	23.41	23.30	23.24		2
	3	0	23.44	23.22	23.25		2
	3	2	23.30	23.29	23.31		2
	3	3	23.33	23.31	23.15		2
	6	0	22.25	22.23	22.04	0-3	3

9.4.2 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	25.09	0	0
	1	36	**25.29**		0
	1	74	25.18		0
	36	0	**24.42**	0-1	1
	36	18	24.40		1
	36	37	24.24		1
	75	0	24.33		1
16QAM	1	0	24.31	0-1	1
	1	36	24.48		1
	1	74	24.48		1
	36	0	23.43	0-2	2
	36	18	23.42		2
	36	37	23.28		2
	75	0	23.38		2
64QAM	1	0	23.26	0-2	2
	1	36	23.47		2
	1	74	23.38		2
	36	0	22.31	0-3	3
	36	18	22.31		3
	36	37	22.26		3
	75	0	22.27		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	25.32	25.32	25.33	0	0
	1	25	25.35	25.26	25.33		0
	1	49	25.26	25.17	25.32		0
	25	0	24.34	24.37	24.41	0-1	1
	25	12	24.44	24.34	24.41		1
	25	25	24.38	24.27	24.41		1
	50	0	24.41	24.30	24.37		1
16QAM	1	0	24.49	24.41	24.42	0-1	1
	1	25	24.48	24.43	24.41		1
	1	49	24.43	24.44	24.41		1
	25	0	23.42	23.38	23.42	0-2	2
	25	12	23.46	23.39	23.27		2
	25	25	23.43	23.33	23.37		2
	50	0	23.44	23.35	23.25		2
64QAM	1	0	23.38	23.37	23.30	0-2	2
	1	25	23.35	23.40	23.29		2
	1	49	23.38	23.33	23.28		2
	25	0	22.30	22.28	22.33	0-3	3
	25	12	22.38	22.39	22.20		3
	25	25	22.39	22.24	22.26		3
	50	0	22.44	22.27	22.22		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	25.36	25.42	25.17	0	0
	1	12	25.33	25.35	25.21		0
	1	24	25.39	25.30	25.18		0
	12	0	24.37	24.33	24.38	0-1	1
	12	6	24.35	24.33	24.32		1
	12	13	24.32	24.32	24.27		1
	25	0	24.33	24.33	24.34		1
16QAM	1	0	24.44	24.43	24.50	0-1	1
	1	12	24.42	24.40	24.49		1
	1	24	24.48	24.47	24.46		1
	12	0	23.38	23.36	23.45	0-2	2
	12	6	23.40	23.38	23.47		2
	12	13	23.37	23.29	23.42		2
	25	0	23.36	23.38	23.36		2
64QAM	1	0	23.31	23.29	23.37	0-2	2
	1	12	23.38	23.39	23.42		2
	1	24	23.47	23.47	23.34		2
	12	0	22.36	22.22	22.36	0-3	3
	12	6	22.39	22.32	22.34		3
	12	13	22.29	22.24	22.42		3
	25	0	22.35	22.30	22.34		3

Table 9-19
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.24	25.37	25.26	0	0
	1	7	25.34	25.43	25.36		0
	1	14	25.20	25.29	25.23		0
	8	0	24.34	24.34	24.31	0-1	1
	8	4	24.40	24.33	24.30		1
	8	7	24.31	24.31	24.27		1
	15	0	24.36	24.31	24.27		1
16QAM	1	0	24.48	24.40	24.42	0-1	1
	1	7	24.38	24.49	24.44		1
	1	14	24.41	24.45	24.49		1
	8	0	23.43	23.30	23.28	0-2	2
	8	4	23.42	23.31	23.33		2
	8	7	23.37	23.24	23.26		2
	15	0	23.33	23.31	23.32		2
64QAM	1	0	23.42	23.26	23.34	0-2	2
	1	7	23.38	23.38	23.42		2
	1	14	23.34	23.34	23.46		2
	8	0	22.40	22.22	22.21	0-3	3
	8	4	22.34	22.28	22.27		3
	8	7	22.23	22.10	22.26		3
	15	0	22.22	22.18	22.18		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	25.22	25.24	25.15	0	0
	1	2	25.27	25.30	25.20		0
	1	5	25.22	25.23	25.15		0
	3	0	25.26	25.28	25.20		0
	3	2	25.31	25.26	25.22		0
	3	3	25.26	25.20	25.20		0
	6	0	24.24	24.25	24.20	0-1	1
16QAM	1	0	24.49	24.41	24.48	0-1	1
	1	2	24.49	24.47	24.32		1
	1	5	24.50	24.48	24.38		1
	3	0	24.42	24.31	24.21		1
	3	2	24.43	24.38	24.28		1
	3	3	24.40	24.33	24.23		1
	6	0	23.26	23.41	23.14	0-2	2
64QAM	1	0	23.44	23.35	23.41	0-2	2
	1	2	23.39	23.44	23.27		2
	1	5	23.48	23.39	23.35		2
	3	0	23.28	23.21	23.19		2
	3	2	23.35	23.26	23.21		2
	3	3	23.33	23.25	23.22		2
	6	0	22.16	22.40	22.01	0-3	3

9.4.3 LTE Band 66 (AWS)

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

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.04	**24.18**	23.99	0	0
	1	50	23.90	23.92	24.03		0
	1	99	23.98	23.96	24.04		0
	50	0	23.01	23.00	22.93	0-1	1
	50	25	22.91	22.87	**23.08**		1
	50	50	22.85	22.90	22.95		1
	100	0	22.87	22.85	23.03		1
16QAM	1	0	23.10	23.00	23.09	0-1	1
	1	50	23.13	22.82	22.78		1
	1	99	23.06	22.79	22.86		1
	50	0	22.02	21.99	22.07	0-2	2
	50	25	21.94	21.98	22.08		2
	50	50	21.93	21.89	21.97		2
	100	0	21.95	21.87	22.04		2
64QAM	1	0	22.04	21.82	22.02	0-2	2
	1	50	22.04	21.63	21.80		2
	1	99	21.99	21.81	21.86		2
	50	0	20.92	20.82	21.03	0-3	3
	50	25	20.89	20.87	20.94		3
	50	50	20.85	20.95	20.78		3
	100	0	20.87	20.88	20.93		3

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

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.96	23.78	23.83	0	0
	1	36	23.94	23.78	23.91		0
	1	74	23.87	23.73	23.86		0
	36	0	22.95	22.98	22.97	0-1	1
	36	18	23.03	23.04	23.02		1
	36	37	22.88	22.96	22.95		1
	75	0	22.95	22.98	23.02		1
16QAM	1	0	22.73	23.03	23.10	0-1	1
	1	36	22.62	23.10	23.08		1
	1	74	22.62	23.06	23.15		1
	36	0	22.04	21.99	21.95	0-2	2
	36	18	21.96	21.88	22.03		2
	36	37	21.92	21.86	21.90		2
	75	0	21.95	21.92	21.90		2
64QAM	1	0	21.63	21.97	22.06	0-2	2
	1	36	21.55	21.94	22.05		2
	1	74	21.51	21.92	21.99		2
	36	0	20.99	20.87	20.77	0-3	3
	36	18	20.86	20.86	20.84		3
	36	37	20.94	20.84	20.86		3
	75	0	20.79	20.73	20.90		3

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

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.93	23.90	23.85	0	0
	1	25	23.84	23.95	23.89		0
	1	49	23.97	23.82	23.83		0
	25	0	22.95	22.83	23.05	0-1	1
	25	12	22.89	22.94	22.93		1
	25	25	22.82	22.88	22.98		1
	50	0	22.89	23.06	23.01		1
16QAM	1	0	22.68	23.13	23.11	0-1	1
	1	25	22.73	23.17	23.20		1
	1	49	22.60	23.15	23.16		1
	25	0	22.02	22.01	21.94	0-2	2
	25	12	22.01	21.91	21.89		2
	25	25	22.05	21.90	21.99		2
	50	0	21.93	21.84	21.87		2
64QAM	1	0	21.72	22.09	22.08	0-2	2
	1	25	21.54	22.13	22.13		2
	1	49	21.62	22.09	22.09		2
	25	0	21.09	20.87	20.97	0-3	3
	25	12	20.99	20.97	20.98		3
	25	25	20.89	20.89	20.89		3
	50	0	20.99	20.88	20.85		3

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

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.07	23.78	23.77	0	0
	1	12	23.91	23.78	23.80		0
	1	24	23.98	23.89	23.83		0
	12	0	22.98	22.93	22.83	0-1	1
	12	6	22.97	22.82	22.86		1
	12	13	22.82	22.84	22.89		1
	25	0	22.94	22.93	22.89		1
16QAM	1	0	22.95	23.15	23.14	0-1	1
	1	12	23.00	23.13	23.11		1
	1	24	22.91	23.08	23.20		1
	12	0	21.98	21.96	22.11	0-2	2
	12	6	21.92	22.04	21.99		2
	12	13	21.87	22.05	21.97		2
	25	0	21.95	21.87	21.81		2
64QAM	1	0	21.97	22.16	22.03	0-2	2
	1	12	21.81	22.05	22.16		2
	1	24	21.80	22.06	22.04		2
	12	0	20.88	20.91	20.96	0-3	3
	12	6	20.90	20.89	20.97		3
	12	13	20.87	20.86	21.07		3
	25	0	20.91	20.70	20.83		3

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

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.88	23.90	23.93	0	0
	1	7	23.87	23.94	23.88		0
	1	14	23.89	23.94	23.95		0
	8	0	23.14	23.16	23.10	0-1	1
	8	4	23.14	23.14	23.18		1
	8	7	23.04	23.12	23.11		1
	15	0	22.85	22.90	22.83		1
16QAM	1	0	23.18	23.14	23.13	0-1	1
	1	7	23.03	23.13	23.06		1
	1	14	23.16	23.16	23.13		1
	8	0	22.08	22.06	22.16	0-2	2
	8	4	22.18	22.00	22.12		2
	8	7	22.13	22.14	22.14		2
	15	0	22.02	22.00	22.00		2
64QAM	1	0	22.12	22.03	22.16	0-2	2
	1	7	21.96	22.10	22.01		2
	1	14	22.01	22.07	22.13		2
	8	0	20.97	20.96	20.95	0-3	3
	8	4	21.18	21.08	20.96		3
	8	7	20.88	20.99	20.98		3
	15	0	20.86	20.90	20.79		3

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.90	23.98	23.85	0	0
	1	2	23.86	23.88	23.89		0
	1	5	23.97	23.83	23.84		0
	3	0	23.90	23.90	23.84		0
	3	2	23.89	23.94	23.91		0
	3	3	23.88	23.96	23.89		0
	6	0	23.12	23.05	22.90	0-1	1
16QAM	1	0	23.02	23.06	22.87	0-1	1
	1	2	23.20	22.90	22.87		1
	1	5	23.16	23.12	23.02		1
	3	0	23.18	23.08	23.16		1
	3	2	23.13	23.10	23.09		1
	3	3	23.11	23.00	23.20		1
	6	0	22.01	22.07	22.12	0-2	2
64QAM	1	0	22.17	21.91	21.93	0-2	2
	1	2	22.19	21.93	21.83		2
	1	5	22.11	21.88	21.86		2
	3	0	22.07	22.04	22.05		2
	3	2	22.01	22.00	22.02		2
	3	3	22.01	21.91	22.02		2
	6	0	20.95	20.99	20.95	0-3	3

Table 9-27
LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.74	22.94	22.94	0	0
	1	50	22.99	22.74	**23.02**		0
	1	99	22.99	22.97	22.84		0
	50	0	22.71	22.85	22.75	0-1	0
	50	25	**22.95**	22.89	22.72		0
	50	50	22.91	22.86	22.73		0
	100	0	22.82	22.79	22.80		0
16QAM	1	0	22.78	22.76	22.94	0-1	0
	1	50	22.77	22.71	22.80		0
	1	99	22.74	23.00	22.82		0
	50	0	21.87	21.90	22.19	0-2	1
	50	25	21.98	21.86	21.94		1
	50	50	21.95	21.79	21.73		1
	100	0	21.92	21.86	22.04		1
64QAM	1	0	21.95	21.93	21.99	0-2	1
	1	50	21.87	22.16	22.16		1
	1	99	22.13	22.00	21.93		1
	50	0	21.05	21.11	20.77	0-3	2
	50	25	20.98	20.91	21.05		2
	50	50	20.85	20.97	21.16		2
	100	0	21.07	21.12	21.10		2

Table 9-28
LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.97	23.00	22.95	0	0
	1	36	22.96	22.95	22.95		0
	1	74	22.96	22.73	23.01		0
	36	0	22.96	23.01	22.76	0-1	0
	36	18	22.80	23.00	22.77		0
	36	37	22.97	22.87	22.71		0
	75	0	22.79	23.02	22.79		0
16QAM	1	0	22.88	22.71	22.94	0-1	0
	1	36	22.84	22.86	22.71		0
	1	74	22.95	22.82	22.71		0
	36	0	21.77	21.92	22.15	0-2	1
	36	18	21.96	21.94	22.11		1
	36	37	21.87	21.83	21.84		1
	75	0	21.95	22.02	22.05		1
64QAM	1	0	22.17	22.11	22.06	0-2	1
	1	36	21.96	22.10	21.84		1
	1	74	21.98	22.07	22.16		1
	36	0	20.95	21.00	21.06	0-3	2
	36	18	21.12	21.18	21.11		2
	36	37	21.05	20.79	20.97		2
	75	0	20.85	21.02	20.86		2

Table 9-29
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.79	22.89	22.79	0	0
	1	25	22.77	23.02	22.75		0
	1	49	23.02	22.82	22.84		0
	25	0	22.75	22.77	22.93	0-1	0
	25	12	22.73	22.82	23.02		0
	25	25	22.92	22.81	22.81		0
	50	0	22.87	22.87	22.71		0
16QAM	1	0	22.84	22.72	22.88	0-1	0
	1	25	23.02	22.96	22.90		0
	1	49	23.03	22.83	22.94		0
	25	0	21.84	21.72	22.19	0-2	1
	25	12	21.79	22.00	21.96		1
	25	25	21.88	21.97	22.18		1
	50	0	22.14	22.12	21.84		1
64QAM	1	0	22.13	21.90	22.04	0-2	1
	1	25	21.78	21.74	22.10		1
	1	49	21.89	22.06	22.17		1
	25	0	20.97	21.11	21.10	0-3	2
	25	12	20.98	20.80	20.91		2
	25	25	20.81	20.93	21.16		2
	50	0	21.14	21.08	20.86		2

Table 9-30
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.75	22.83	22.75	0	0
	1	12	22.96	22.71	22.96		0
	1	24	22.85	22.79	22.94		0
	12	0	22.97	22.78	22.76	0-1	0
	12	6	22.82	23.00	22.90		0
	12	13	22.80	22.72	22.86		0
	25	0	22.72	22.81	22.99		0
16QAM	1	0	22.85	22.81	23.03	0-1	0
	1	12	22.78	22.91	22.87		0
	1	24	22.92	22.72	23.02		0
	12	0	21.81	22.02	21.98	0-2	1
	12	6	21.75	21.93	21.82		1
	12	13	21.96	21.90	21.91		1
	25	0	22.06	22.13	21.91		1
64QAM	1	0	22.13	22.07	22.02	0-2	1
	1	12	22.01	21.86	21.82		1
	1	24	22.04	22.08	21.80		1
	12	0	21.11	20.84	21.05	0-3	2
	12	6	21.03	21.17	21.03		2
	12	13	20.97	21.04	20.77		2
	25	0	21.06	20.91	20.89		2

Table 9-31
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.76	22.83	22.74	0	0
	1	7	23.00	22.78	22.83		0
	1	14	22.91	22.82	23.02		0
	8	0	22.99	22.72	22.76	0-1	0
	8	4	22.91	22.91	22.78		0
	8	7	22.88	22.91	22.81		0
	15	0	22.71	22.93	22.93		0
16QAM	1	0	22.89	22.88	22.79	0-1	0
	1	7	22.94	22.71	22.83		0
	1	14	22.87	22.93	23.02		0
	8	0	22.07	22.09	22.06	0-2	1
	8	4	21.84	21.97	21.89		1
	8	7	21.82	22.00	22.04		1
	15	0	21.84	21.98	22.17		1
64QAM	1	0	21.90	21.83	22.10	0-2	1
	1	7	22.14	22.12	22.09		1
	1	14	21.96	22.20	22.03		1
	8	0	21.01	20.72	20.95	0-3	2
	8	4	21.00	21.02	21.04		2
	8	7	20.97	21.12	21.08		2
	15	0	20.87	21.01	21.07		2

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.02	22.99	22.94	0	0
	1	2	22.99	22.87	23.01		0
	1	5	22.99	22.81	22.98		0
	3	0	22.99	22.97	22.71		0
	3	2	22.98	23.00	22.83		0
	3	3	22.99	23.03	22.79		0
	6	0	22.78	22.93	23.02	0-1	0
16QAM	1	0	22.72	22.91	22.85	0-1	0
	1	2	22.81	22.87	22.99		0
	1	5	22.79	22.79	22.80		0
	3	0	22.94	22.71	22.82		0
	3	2	23.01	22.92	22.88		0
	3	3	22.74	22.94	22.82		0
	6	0	22.10	22.12	21.95	0-2	1
64QAM	1	0	22.01	22.01	21.78	0-2	1
	1	2	21.77	21.89	22.03		1
	1	5	21.94	22.17	22.01		1
	3	0	21.74	22.10	21.86		1
	3	2	22.10	21.80	22.05		1
	3	3	22.01	22.00	21.92		1
	6	0	21.01	20.85	21.14	0-3	2

9.4.4 LTE Band 25 (PCS)

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

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.32	**24.35**	24.22	0	0
	1	50	24.23	24.06	24.31		0
	1	99	24.29	24.14	24.20		0
	50	0	23.05	**23.37**	23.36	0-1	1
	50	25	23.08	23.10	23.31		1
	50	50	23.06	23.02	23.21		1
	100	0	23.07	23.17	23.29		1
16QAM	1	0	23.22	23.26	23.38	0-1	1
	1	50	23.15	23.32	23.39		1
	1	99	23.27	23.38	23.32		1
	50	0	22.19	22.13	22.37	0-2	2
	50	25	22.11	22.13	22.35		2
	50	50	22.11	22.03	22.25		2
	100	0	22.09	22.15	22.31		2
64QAM	1	0	22.12	22.21	22.35	0-2	2
	1	50	22.11	22.28	22.36		2
	1	99	22.22	22.32	22.27		2
	50	0	21.19	21.09	21.28	0-3	3
	50	25	21.10	21.00	21.27		3
	50	50	21.09	20.98	21.19		3
	100	0	21.03	21.05	21.17		3

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

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.10	24.17	24.38	0	0
	1	36	23.82	24.04	24.28		0
	1	74	23.92	24.05	24.18		0
	36	0	23.11	23.11	23.35	0-1	1
	36	18	23.01	23.11	23.35		1
	36	37	23.09	23.08	23.27		1
	75	0	23.10	23.07	23.31		1
16QAM	1	0	23.40	23.37	23.27	0-1	1
	1	36	23.19	23.30	23.29		1
	1	74	23.27	23.30	23.34		1
	36	0	22.13	22.11	22.40	0-2	2
	36	18	22.03	22.08	22.36		2
	36	37	22.09	22.10	22.31		2
	75	0	22.14	22.13	22.31		2
64QAM	1	0	22.33	22.24	22.14	0-2	2
	1	36	22.12	22.21	22.25		2
	1	74	22.17	22.21	22.31		2
	36	0	21.08	21.05	21.34	0-3	3
	36	18	20.90	21.03	21.35		3
	36	37	20.96	21.03	21.30		3
	75	0	21.02	21.04	21.20		3

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

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.21	24.27	24.29	0	0
	1	25	23.87	24.03	24.21		0
	1	49	24.11	24.19	24.11		0
	25	0	23.08	23.04	23.31	0-1	1
	25	12	23.01	23.06	23.22		1
	25	25	22.94	23.10	23.21		1
	50	0	23.03	23.11	23.20		1
16QAM	1	0	23.35	23.29	23.35	0-1	1
	1	25	23.21	23.35	23.33		1
	1	49	23.38	23.31	23.29		1
	25	0	22.11	22.12	22.34	0-2	2
	25	12	22.10	22.08	22.23		2
	25	25	22.01	22.12	22.28		2
	50	0	22.06	22.11	22.27		2
64QAM	1	0	22.31	22.20	22.30	0-2	2
	1	25	22.13	22.31	22.31		2
	1	49	22.30	22.28	22.18		2
	25	0	21.01	21.01	21.24	0-3	3
	25	12	21.00	20.98	21.10		3
	25	25	20.96	21.01	21.25		3
	50	0	20.93	21.09	21.23		3

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

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.15	24.09	24.14	0	0
	1	12	24.02	24.05	24.07		0
	1	24	23.99	24.07	24.00		0
	12	0	23.10	23.02	23.22	0-1	1
	12	6	23.10	23.02	23.21		1
	12	13	23.05	23.03	23.13		1
	25	0	23.06	23.06	23.17		1
16QAM	1	0	23.38	23.31	23.26	0-1	1
	1	12	23.31	23.29	23.27		1
	1	24	23.33	23.37	23.31		1
	12	0	22.16	22.10	22.34	0-2	2
	12	6	22.15	22.12	22.29		2
	12	13	22.11	22.07	22.27		2
	25	0	22.08	22.10	22.23		2
64QAM	1	0	22.28	22.17	22.25	0-2	2
	1	12	22.31	22.24	22.17		2
	1	24	22.21	22.28	22.28		2
	12	0	21.14	21.04	21.20	0-3	3
	12	6	21.02	21.07	21.28		3
	12	13	21.05	21.02	21.23		3
	25	0	21.05	21.06	21.12		3

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

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.93	24.00	24.13	0	0
	1	7	24.03	24.10	24.16		0
	1	14	23.90	24.01	24.09		0
	8	0	23.06	23.03	23.20	0-1	1
	8	4	23.08	23.04	23.20		1
	8	7	23.00	23.04	23.17		1
	15	0	23.07	23.01	23.18		1
16QAM	1	0	23.25	23.30	23.28	0-1	1
	1	7	23.36	23.40	23.26		1
	1	14	23.24	23.30	23.12		1
	8	0	22.16	22.01	22.18	0-2	2
	8	4	22.17	22.05	22.16		2
	8	7	22.12	22.01	22.15		2
	15	0	22.08	22.05	22.17		2
64QAM	1	0	22.17	22.27	22.20	0-2	2
	1	7	22.26	22.35	22.23		2
	1	14	22.21	22.22	22.01		2
	8	0	21.12	20.94	21.11	0-3	3
	8	4	21.08	20.92	21.05		3
	8	7	21.09	20.99	21.10		3
	15	0	20.95	21.05	21.09		3

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

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.92	24.18	24.00	0	0
	1	2	24.04	24.20	24.08		0
	1	5	23.95	24.17	23.99		0
	3	0	24.01	24.24	24.08		0
	3	2	24.02	24.26	24.13		0
	3	3	23.97	24.24	24.07		0
	6	0	22.97	23.21	23.04	0-1	1
16QAM	1	0	23.19	23.34	23.29	0-1	1
	1	2	23.28	23.38	23.35		1
	1	5	23.18	23.29	23.26		1
	3	0	23.18	23.26	23.21		1
	3	2	23.17	23.34	23.30		1
	3	3	23.14	23.22	23.22		1
	6	0	22.00	22.15	22.04	0-2	2
64QAM	1	0	22.17	22.24	22.17	0-2	2
	1	2	22.25	22.37	22.24		2
	1	5	22.10	22.24	22.25		2
	3	0	22.11	22.12	22.18		2
	3	2	22.09	22.25	22.25		2
	3	3	22.07	22.12	22.21		2
	6	0	20.87	21.02	20.92	0-3	3

Table 9-39
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.76	21.81	21.80	0	0
	1	50	22.03	21.83	**22.08**		0
	1	99	21.93	21.96	21.85		0
	50	0	22.00	21.80	21.90	0-1	0
	50	25	21.96	22.02	21.85		0
	50	50	22.04	**22.06**	21.82		0
	100	0	21.93	21.77	21.99		0
16QAM	1	0	21.72	22.00	21.90	0-1	0
	1	50	21.94	21.95	21.84		0
	1	99	21.87	22.07	21.81		0
	50	0	21.98	21.92	22.04	0-2	0
	50	25	21.87	21.92	21.72		0
	50	50	21.93	21.90	21.87		0
	100	0	21.84	21.84	22.02		0
64QAM	1	0	21.84	21.81	21.99	0-2	0
	1	50	21.93	21.83	22.09		0
	1	99	21.99	21.73	21.87		0
	50	0	20.89	20.99	20.96	0-3	1
	50	25	20.89	20.87	20.79		1
	50	50	21.04	20.85	20.79		1
	100	0	21.02	21.05	21.04		1

Table 9-40
LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.00	21.94	21.97	0	0
	1	36	21.90	21.95	21.98		0
	1	74	22.02	21.77	22.04		0
	36	0	22.05	22.02	21.87	0-1	0
	36	18	21.73	21.76	21.79		0
	36	37	21.82	21.92	21.92		0
	75	0	21.78	22.03	21.80		0
16QAM	1	0	21.77	21.78	21.84	0-1	0
	1	36	21.95	21.80	21.90		0
	1	74	21.77	21.93	22.07		0
	36	0	22.04	21.89	21.93	0-2	0
	36	18	22.03	21.96	21.79		0
	36	37	21.84	22.01	21.77		0
	75	0	21.90	21.90	21.82		0
64QAM	1	0	21.71	22.07	21.78	0-2	0
	1	36	22.00	21.81	21.71		0
	1	74	21.84	21.88	21.89		0
	36	0	20.94	20.77	20.77	0-3	1
	36	18	21.01	21.06	20.82		1
	36	37	20.89	20.90	20.83		1
	75	0	21.10	20.84	20.81		1

Table 9-41
LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.94	21.79	21.74	0	0
	1	25	21.93	21.74	21.95		0
	1	49	21.93	21.80	21.72		0
	25	0	21.84	21.76	21.98	0-1	0
	25	12	21.92	22.06	21.87		0
	25	25	21.78	21.92	21.85		0
	50	0	21.75	21.98	22.01		0
16QAM	1	0	21.96	21.77	21.87	0-1	0
	1	25	22.07	22.00	21.80		0
	1	49	21.80	21.77	22.01		0
	25	0	21.94	21.79	21.79	0-2	0
	25	12	21.99	21.99	21.99		0
	25	25	21.86	21.85	21.86		0
	50	0	22.02	21.97	21.85		0
64QAM	1	0	21.76	21.97	22.01	0-2	0
	1	25	22.00	21.88	21.85		0
	1	49	21.94	21.97	21.85		0
	25	0	20.87	20.88	20.96	0-3	1
	25	12	20.70	20.89	20.92		1
	25	25	20.99	21.03	21.05		1
	50	0	20.91	20.93	20.98		1

Table 9-42
LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.85	21.75	22.06	0	0
	1	12	22.07	22.09	21.94		0
	1	24	21.97	22.05	21.71		0
	12	0	21.95	21.93	21.89	0-1	0
	12	6	21.99	21.90	22.10		0
	12	13	21.73	22.09	22.02		0
	25	0	22.03	21.78	21.90		0
16QAM	1	0	21.91	22.03	21.86	0-1	0
	1	12	21.80	21.93	21.83		0
	1	24	21.86	21.90	21.86		0
	12	0	21.86	21.92	21.91	0-2	0
	12	6	22.03	21.72	21.78		0
	12	13	21.96	22.00	21.83		0
	25	0	21.99	22.02	21.99		0
64QAM	1	0	21.98	22.07	21.96	0-2	0
	1	12	21.90	21.79	21.88		0
	1	24	21.87	21.75	22.08		0
	12	0	20.98	20.93	20.98	0-3	1
	12	6	20.99	21.02	20.87		1
	12	13	20.77	20.85	20.74		1
	25	0	21.07	21.02	20.71		1

Table 9-43
LTE Band 25 (PCS) Reduced Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.02	22.05	21.98	0	0
	1	7	21.93	21.71	21.90		0
	1	14	22.08	22.10	21.73		0
	8	0	22.04	22.07	22.08	0-1	0
	8	4	21.81	22.04	21.90		0
	8	7	21.95	22.04	22.04		0
	15	0	21.83	22.00	22.05		0
16QAM	1	0	21.80	22.03	21.99	0-1	0
	1	7	21.80	21.85	21.77		0
	1	14	21.92	21.90	22.06		0
	8	0	21.92	21.89	21.90	0-2	0
	8	4	22.09	21.95	21.84		0
	8	7	21.76	21.94	21.83		0
	15	0	21.90	21.71	21.80		0
64QAM	1	0	21.81	21.86	21.91	0-2	0
	1	7	21.88	21.93	22.05		0
	1	14	21.84	22.01	22.05		0
	8	0	21.08	21.05	20.72	0-3	1
	8	4	21.06	20.98	21.03		1
	8	7	20.86	20.79	21.08		1
	15	0	20.91	20.79	21.04		1

Table 9-44
LTE Band 25 (PCS) Reduced Conducted Powers – 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.09	22.01	21.76	0	0
	1	2	21.98	21.82	21.84		0
	1	5	21.88	21.95	21.88		0
	3	0	22.07	22.04	22.09		0
	3	2	22.00	21.81	21.75		0
	3	3	22.10	21.95	21.99		0
	6	0	21.72	21.95	21.83	0-1	0
16QAM	1	0	21.81	21.81	21.97	0-1	0
	1	2	21.83	21.80	21.89		0
	1	5	21.75	21.80	22.06		0
	3	0	21.91	21.94	22.01		0
	3	2	21.77	21.90	21.95		0
	3	3	21.87	22.09	21.70		0
	6	0	22.00	22.07	22.01	0-2	0
64QAM	1	0	21.97	21.96	21.91	0-2	0
	1	2	22.06	21.71	21.71		0
	1	5	21.99	21.71	21.71		0
	3	0	21.79	22.03	21.97		0
	3	2	21.94	21.79	21.75		0
	3	3	21.86	21.88	21.99		0
	6	0	20.88	20.77	20.78	0-3	1

9.4.5 LTE Band 30

Table 9-45
LTE Band 30 Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	22.81	0	0
	1	25	**22.83**		0
	1	49	22.78		0
	25	0	21.88	0-1	1
	25	12	**21.89**		1
	25	25	21.87		1
	50	0	21.83		1
16QAM	1	0	21.84	0-1	1
	1	25	21.72		1
	1	49	21.67		1
	25	0	20.91	0-2	2
	25	12	20.87		2
	25	25	20.90		2
	50	0	20.87		2
64QAM	1	0	20.96	0-2	2
	1	25	20.94		2
	1	49	20.86		2
	25	0	19.80	0-3	3
	25	12	19.94		3
	25	25	19.97		3
	50	0	19.86		3

Table 9-46
LTE Band 30 Conducted Powers - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	22.76	0	0
	1	12	22.82		0
	1	24	22.69		0
	12	0	21.89	0-1	1
	12	6	21.76		1
	12	13	21.70		1
	25	0	21.79		1
16QAM	1	0	21.60	0-1	1
	1	12	21.62		1
	1	24	21.57		1
	12	0	20.83	0-2	2
	12	6	20.92		2
	12	13	20.85		2
	25	0	20.95		2
64QAM	1	0	20.97	0-2	2
	1	12	20.76		2
	1	24	20.86		2
	12	0	19.71	0-3	3
	12	6	19.84		3
	12	13	19.74		3
	25	0	19.74		3

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

9.4.6 LTE Band 7

Table 9-47
LTE Band 7 Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.37	**23.62**	23.45	0	0
	1	50	23.25	23.46	23.20		0
	1	99	23.26	23.47	23.21		0
	50	0	22.33	**22.54**	22.33	0-1	1
	50	25	22.33	22.51	22.37		1
	50	50	22.33	22.53	22.37		1
	100	0	22.33	22.53	22.37		1
16QAM	1	0	22.66	22.57	22.62	0-1	1
	1	50	22.59	22.70	22.66		1
	1	99	22.58	22.69	22.64		1
	50	0	21.39	21.55	21.41	0-2	2
	50	25	21.39	21.50	21.39		2
	50	50	21.39	21.45	21.40		2
	100	0	21.38	21.50	21.38		2
64QAM	1	0	21.55	21.43	21.51	0-2	2
	1	50	21.51	21.66	21.60		2
	1	99	21.51	21.63	21.59		2
	50	0	20.28	20.54	20.40	0-3	3
	50	25	20.38	20.47	20.35		3
	50	50	20.31	20.34	20.29		3
	100	0	20.24	20.39	20.32		3

Table 9-48
LTE Band 7 Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.41	23.40	23.62	0	0
	1	36	23.07	23.30	23.37		0
	1	74	23.10	23.19	23.37		0
	36	0	22.37	22.37	22.37	0-1	1
	36	18	22.29	22.40	22.33		1
	36	37	22.23	22.36	22.34		1
	75	0	22.24	22.31	22.43		1
16QAM	1	0	22.61	22.66	22.63	0-1	1
	1	36	22.44	22.56	22.56		1
	1	74	22.45	22.47	22.61		1
	36	0	21.42	21.40	21.43	0-2	2
	36	18	21.25	21.39	21.36		2
	36	37	21.20	21.31	21.37		2
	75	0	21.29	21.39	21.44		2
64QAM	1	0	21.59	21.57	21.60	0-2	2
	1	36	21.40	21.47	21.44		2
	1	74	21.43	21.44	21.59		2
	36	0	20.33	20.31	20.36	0-3	3
	36	18	20.13	20.29	20.28		3
	36	37	20.15	20.27	20.30		3
	75	0	20.24	20.27	20.37		3

Table 9-49
LTE Band 7 Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.32	23.34	23.32	0	0
	1	25	23.27	23.30	23.32		0
	1	49	23.04	23.19	23.31		0
	25	0	22.37	22.38	22.33	0-1	1
	25	12	22.34	22.39	22.51		1
	25	25	22.19	22.33	22.40		1
	50	0	22.30	22.36	22.35		1
16QAM	1	0	22.57	22.63	22.43	0-1	1
	1	25	22.51	22.59	22.47		1
	1	49	22.37	22.48	22.52		1
	25	0	21.38	21.37	21.39	0-2	2
	25	12	21.34	21.34	21.51		2
	25	25	21.22	21.32	21.45		2
	50	0	21.33	21.33	21.41		2
64QAM	1	0	21.57	21.57	21.39	0-2	2
	1	25	21.42	21.49	21.36		2
	1	49	21.35	21.43	21.47		2
	25	0	20.37	20.26	20.30	0-3	3
	25	12	20.29	20.22	20.42		3
	25	25	20.21	20.26	20.44		3
	50	0	20.22	20.27	20.34		3

Table 9-50
LTE Band 7 Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.40	23.34	23.30	0	0
	1	12	23.37	23.32	23.36		0
	1	24	23.32	23.31	23.28		0
	12	0	22.42	22.33	22.46	0-1	1
	12	6	22.42	22.35	22.44		1
	12	13	22.32	22.29	22.41		1
	25	0	22.35	22.30	22.43		1
16QAM	1	0	22.68	22.60	22.70	0-1	1
	1	12	22.66	22.59	22.67		1
	1	24	22.65	22.57	22.69		1
	12	0	21.45	21.36	21.55	0-2	2
	12	6	21.42	21.39	21.58		2
	12	13	21.37	21.34	21.49		2
	25	0	21.35	21.35	21.44		2
64QAM	1	0	21.68	21.53	21.58	0-2	2
	1	12	21.61	21.55	21.61		2
	1	24	21.55	21.51	21.63		2
	12	0	20.40	20.24	20.42	0-3	3
	12	6	20.32	20.39	20.50		3
	12	13	20.29	20.25	20.38		3
	25	0	20.27	20.25	20.42		3

9.4.7 LTE Band 41

Table 9-51
LTE Band 41 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	24.77	24.86	24.88	24.79	**24.90**	0	0
	1	50	24.71	24.77	24.86	24.63	24.77		0
	1	99	24.72	24.78	24.80	24.64	24.72		0
	50	0	23.83	23.82	23.78	23.77	23.67	0-1	1
	50	25	23.71	23.77	23.76	23.69	23.71		1
	50	50	23.69	23.74	23.76	23.61	**23.85**		1
	100	0	23.76	23.76	23.72	23.72	23.72		1
16QAM	1	0	23.81	23.88	23.87	23.79	23.78	0-1	1
	1	50	23.79	23.85	23.88	23.85	23.79		1
	1	99	23.82	23.79	23.87	23.82	23.86		1
	50	0	22.83	22.85	22.84	22.75	22.75	0-2	2
	50	25	22.71	22.84	22.79	22.70	22.76		2
	50	50	22.71	22.72	22.81	22.58	22.75		2
	100	0	22.75	22.80	22.71	22.66	22.72		2
64QAM	1	0	22.77	22.85	22.79	22.66	22.76	0-2	2
	1	50	22.77	22.82	22.75	22.72	22.74		2
	1	99	22.76	22.66	22.80	22.71	22.74		2
	50	0	21.79	21.74	21.77	21.73	21.71	0-3	3
	50	25	21.67	21.72	21.65	21.63	21.65		3
	50	50	21.59	21.60	21.68	21.56	21.66		3
	100	0	21.67	21.69	21.64	21.54	21.61		3

Table 9-52
LTE Band 41 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	24.83	24.82	24.75	24.77	24.85	0	0
	1	36	24.70	24.77	24.74	24.53	24.75		0
	1	74	24.58	24.73	24.74	24.52	24.76		0
	36	0	23.82	23.82	23.80	23.73	23.79	0-1	1
	36	18	23.81	23.80	23.75	23.66	23.76		1
	36	37	23.69	23.76	23.76	23.55	23.75		1
	75	0	23.80	23.77	23.68	23.63	23.80		1
16QAM	1	0	23.81	23.81	23.89	23.87	23.87	0-1	1
	1	36	23.80	23.86	23.87	23.77	23.87		1
	1	74	23.82	23.87	23.85	23.74	23.73		1
	36	0	22.83	22.83	22.81	22.70	22.80	0-2	2
	36	18	22.83	22.80	22.78	22.66	22.73		2
	36	37	22.68	22.76	22.80	22.58	22.79		2
	75	0	22.81	22.79	22.72	22.65	22.83		2
64QAM	1	0	22.71	22.79	22.81	22.80	22.77	0-2	2
	1	36	22.72	22.84	22.76	22.64	22.77		2
	1	74	22.71	22.75	22.74	22.71	22.62		2
	36	0	21.83	21.77	21.70	21.59	21.74	0-3	3
	36	18	21.72	21.80	21.65	21.65	21.64		3
	36	37	21.62	21.65	21.75	21.45	21.65		3
	75	0	21.80	21.70	21.61	21.58	21.77		3

Table 9-53
LTE Band 41 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	24.74	24.81	24.86	24.71	24.87	0	0
	1	25	24.72	24.82	24.74	24.59	24.83		0
	1	49	24.65	24.86	24.81	24.60	24.81		0
	25	0	23.81	23.81	23.76	23.69	23.75	0-1	1
	25	12	23.81	23.81	23.71	23.67	23.84		1
	25	25	23.80	23.77	23.80	23.61	23.74		1
	50	0	23.81	23.79	23.70	23.66	23.82		1
16QAM	1	0	23.81	23.81	23.89	23.86	23.88	0-1	1
	1	25	23.80	23.84	23.87	23.80	23.81		1
	1	49	23.88	23.87	23.85	23.81	23.83		1
	25	0	22.84	22.85	22.82	22.71	22.74	0-2	2
	25	12	22.87	22.82	22.80	22.67	22.81		2
	25	25	22.84	22.78	22.81	22.61	22.78		2
	50	0	22.84	22.85	22.79	22.64	22.84		2
64QAM	1	0	22.79	22.70	22.85	22.81	22.87	0-2	2
	1	25	22.76	22.71	22.74	22.75	22.71		2
	1	49	22.86	22.87	22.78	22.69	22.72		2
	25	0	21.76	21.78	21.70	21.57	21.64	0-3	3
	25	12	21.84	21.81	21.77	21.53	21.76		3
	25	25	21.79	21.78	21.73	21.56	21.71		3
	50	0	21.72	21.75	21.69	21.56	21.77		3

Table 9-54
LTE Band 41 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	24.80	24.81	24.64	24.69	24.78	0	0
	1	12	24.80	24.79	24.62	24.62	24.78		0
	1	24	24.70	24.76	24.66	24.61	24.79		0
	12	0	23.82	23.80	23.74	23.67	23.73	0-1	1
	12	6	23.82	23.80	23.74	23.72	23.75		1
	12	13	23.81	23.76	23.81	23.65	23.67		1
	25	0	23.79	23.75	23.70	23.65	23.70		1
16QAM	1	0	23.89	23.83	23.82	23.82	23.85	0-1	1
	1	12	23.80	23.81	23.80	23.80	23.85		1
	1	24	23.83	23.85	23.88	23.86	23.87		1
	12	0	22.83	22.80	22.83	22.74	22.74	0-2	2
	12	6	22.90	22.81	22.82	22.71	22.75		2
	12	13	22.82	22.77	22.89	22.66	22.70		2
	25	0	22.81	22.81	22.76	22.66	22.76		2
64QAM	1	0	22.87	22.80	22.69	22.68	22.84	0-2	2
	1	12	22.77	22.71	22.70	22.69	22.72		2
	1	24	22.82	22.85	22.84	22.86	22.79		2
	12	0	21.70	21.80	21.76	21.73	21.64	0-3	3
	12	6	21.90	21.78	21.73	21.64	21.62		3
	12	13	21.75	21.68	21.88	21.53	21.58		3
	25	0	21.71	21.70	21.67	21.58	21.67		3

9.5 WLAN Conducted Powers

Table 9-55
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11b	802.11g
		Average	Average
2412	1	20.42	17.93
2422	3	N/A	19.35
2437	6	20.47	19.48
2452	9	N/A	19.46
2462	11	**20.48**	16.95

Table 9-56
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11b	802.11g
		Average	Average
2412	1	20.43	17.90
2422	3	N/A	19.46
2437	6	**20.49**	19.39
2452	9	N/A	19.36
2462	11	20.47	16.83

Table 9-57
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.95	16.94	16.93
5200	40	**17.99**	17.98	17.96
5220	44	16.95	16.92	16.86
5240	48	16.97	16.94	16.95
5260	52	16.97	16.91	16.93
5280	56	**17.98**	17.97	17.94
5300	60	16.97	16.93	16.95
5320	64	16.99	16.97	16.97
5500	100	16.93	16.90	16.88
5600	120	**16.99**	16.96	16.97
5620	124	16.97	16.91	16.92
5720	144	16.99	16.96	16.94
5745	149	16.99	16.98	16.96
5785	157	**17.99**	17.98	17.96
5825	165	16.98	16.94	16.96

Table 9-58
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.91	16.73	16.73
5200	40	**17.95**	17.94	17.90
5220	44	16.98	16.94	16.93
5240	48	16.99	16.90	16.94
5260	52	16.97	16.79	16.80
5280	56	**17.98**	17.98	17.96
5300	60	16.96	16.90	16.90
5320	64	16.99	16.96	16.96
5500	100	16.99	16.92	16.91
5600	120	16.98	16.91	16.89
5620	124	16.94	16.83	16.84
5720	144	**16.99**	16.95	16.93
5745	149	16.99	16.96	16.96
5785	157	**17.95**	17.87	17.87
5825	165	16.97	16.80	16.82

Table 9-59
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	16.94	16.73	19.85
5200	40	**17.98**	**17.94**	20.97
5220	44	16.92	16.94	19.94
5240	48	16.94	16.90	19.93
5260	52	16.91	16.79	19.86
5280	56	**17.97**	**17.98**	20.99
5300	60	16.93	16.90	19.93
5320	64	16.97	16.96	19.98
5500	100	16.90	16.92	19.92
5600	120	16.96	16.91	19.95
5620	124	16.91	16.83	19.88
5720	144	**16.96**	**16.95**	19.97
5745	149	16.98	16.96	19.98
5785	157	**17.98**	**17.87**	20.94
5825	165	16.94	16.80	19.88

Table 9-60
2.4 GHz WLAN Reduced Average RF Power – Ant 1 (Held-to-ear and During Conditions with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2)

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	17.96	17.96	16.83	16.85
2422	3	N/A	17.90	17.73	17.71
2437	6	**17.98**	17.96	17.86	17.88
2452	9	N/A	17.94	17.74	17.76
2462	11	17.97	16.98	15.76	15.75

Table 9-61
2.4 GHz WLAN Reduced Average RF Power – Ant 2 (Held-to-ear)

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	17.96	17.92	16.65	16.68
2422	3	N/A	17.93	17.68	17.70
2437	6	**17.97**	17.97	17.79	17.77
2452	9	N/A	17.83	17.56	17.56
2462	11	17.92	16.85	15.60	15.62

Table 9-62
5GHz WLAN Reduced Output Powers During Conditions with 2.4 GHz Ant 1 and 5 GHz WLAN Ant 2

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	12.51	12.75
5230	46	**14.80**	14.98
5270	54	**14.81**	14.99
5310	62	12.20	12.41
5510	102	12.16	12.44
5590	118	14.71	14.92
5630	126	**14.90**	14.57
5710	142	14.54	14.91
5755	151	14.55	14.97
5795	159	**14.97**	14.92

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

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

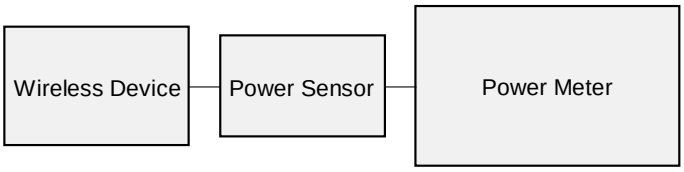


Figure 9-4
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-63
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	11.50	14.125
2441	1.0	39	**11.86**	15.346
2480	1.0	78	11.18	13.122
2402	2.0	0	10.84	12.134
2441	2.0	39	11.22	13.243
2480	2.0	78	10.52	11.272
2402	3.0	0	10.88	12.246
2441	3.0	39	11.29	13.459
2480	3.0	78	10.57	11.402

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

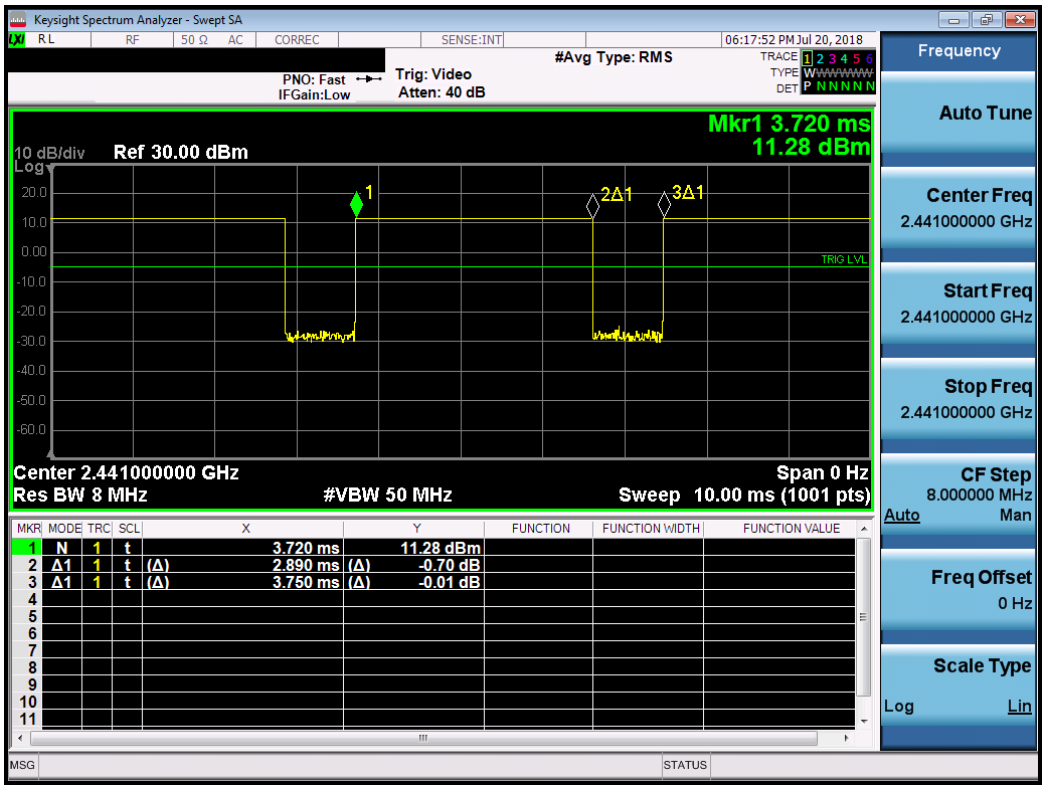


Figure 9-5
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.89ms}{3.75ms} * 100\% = 77.1\%$$

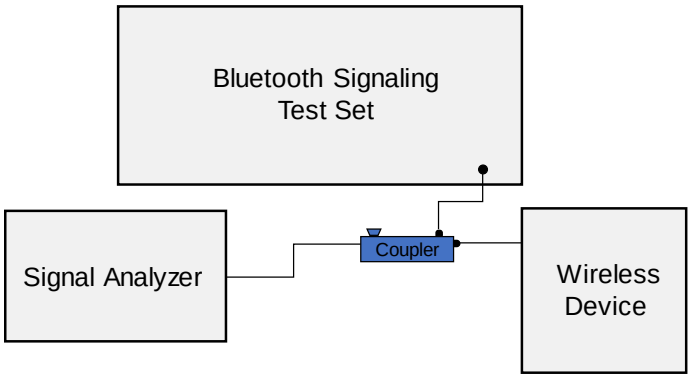


Figure 9-6
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
7/19/2018	750H	21.8	680	0.863	40.705	0.888	42.305	-2.82%	-3.78%
			695	0.872	40.666	0.889	42.227	-1.91%	-3.70%
			700	0.872	40.624	0.889	42.201	-1.91%	-3.74%
			710	0.877	40.601	0.890	42.149	-1.46%	-3.67%
			740	0.887	40.504	0.893	41.994	-0.67%	-3.55%
			755	0.891	40.498	0.894	41.916	-0.34%	-3.38%
			770	0.898	40.365	0.895	41.838	0.34%	-3.52%
			785	0.904	40.335	0.896	41.760	0.89%	-3.41%
7/16/2018	835H	21.2	820	0.922	41.578	0.899	41.578	2.56%	0.00%
			835	0.927	41.540	0.900	41.500	3.00%	0.10%
			850	0.932	41.497	0.916	41.500	1.75%	-0.01%
7/10/2018	1750H	21.1	1710	1.330	39.904	1.348	40.142	-1.34%	-0.59%
			1750	1.353	39.840	1.371	40.079	-1.31%	-0.60%
			1790	1.374	39.772	1.394	40.016	-1.43%	-0.61%
7/12/2018	1900H	22.8	1850	1.432	40.058	1.400	40.000	2.29%	0.15%
			1880	1.446	40.050	1.400	40.000	3.29%	0.12%
			1910	1.469	40.000	1.400	40.000	4.93%	0.00%
7/16/2018	1900H	20.8	1850	1.390	41.014	1.400	40.000	-0.71%	2.54%
			1880	1.411	40.995	1.400	40.000	0.79%	2.49%
			1910	1.432	40.905	1.400	40.000	2.29%	2.26%
7/11/2018	2450H	22.4	2300	1.681	38.529	1.670	39.500	0.66%	-2.46%
			2310	1.693	38.500	1.679	39.480	0.83%	-2.48%
			2320	1.700	38.434	1.687	39.460	0.77%	-2.60%
7/16/2018	2450H	21.6	2400	1.793	39.195	1.756	39.289	2.11%	-0.24%
			2450	1.852	39.033	1.800	39.200	2.89%	-0.43%
			2500	1.907	38.828	1.855	39.136	2.80%	-0.79%
			2550	1.968	38.636	1.909	39.073	3.09%	-1.12%
			2600	2.023	38.439	1.964	39.009	3.00%	-1.46%
			2650	2.083	38.247	2.018	38.945	3.22%	-1.79%
			2700	2.139	38.033	2.073	38.882	3.18%	-2.18%
7/18/2018	2450H	22.8	2400	1.796	39.035	1.756	39.289	2.28%	-0.65%
			2450	1.853	38.837	1.800	39.200	2.94%	-0.93%
			2500	1.909	38.650	1.855	39.136	2.91%	-1.24%
07/09/2018	5200H-5800H	20.3	5240	4.607	35.738	4.696	35.940	-1.90%	-0.56%
			5260	4.628	35.683	4.717	35.917	-1.89%	-0.65%
			5280	4.655	35.637	4.737	35.894	-1.73%	-0.72%
			5300	4.669	35.624	4.758	35.871	-1.87%	-0.69%
			5320	4.693	35.577	4.778	35.849	-1.78%	-0.76%
			5500	4.886	35.265	4.963	35.643	-1.55%	-1.06%
			5520	4.917	35.198	4.983	35.620	-1.32%	-1.18%
			5540	4.931	35.192	5.004	35.597	-1.46%	-1.14%
			5560	4.963	35.144	5.024	35.574	-1.21%	-1.21%
			5580	4.984	35.106	5.045	35.551	-1.21%	-1.25%
			5600	5.014	35.059	5.065	35.529	-1.01%	-1.32%
			5620	5.030	35.008	5.086	35.506	-1.10%	-1.40%
			5640	5.046	34.981	5.106	35.483	-1.18%	-1.41%
			5660	5.097	34.957	5.127	35.460	-0.59%	-1.42%
			5680	5.105	34.956	5.147	35.437	-0.82%	-1.36%
			5700	5.129	34.876	5.168	35.414	-0.75%	-1.52%
			5745	5.183	34.784	5.214	35.363	-0.59%	-1.64%
			5765	5.211	34.730	5.234	35.340	-0.44%	-1.73%
			5785	5.226	34.702	5.255	35.317	-0.55%	-1.74%

Table 10-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
7/19/2018	750B	21.5	680	0.943	53.629	0.958	55.804	-1.57%	-3.90%
			695	0.952	53.541	0.959	55.745	-0.73%	-3.95%
			700	0.953	53.533	0.959	55.726	-0.63%	-3.94%
			710	0.959	53.503	0.960	55.687	-0.10%	-3.92%
			740	0.966	53.410	0.963	55.570	0.31%	-3.89%
			755	0.971	53.471	0.964	55.512	0.73%	-3.68%
			770	0.978	53.394	0.965	55.453	1.35%	-3.71%
			785	0.985	53.325	0.966	55.395	1.97%	-3.74%
7/17/2018	835B	20.5	820	0.997	53.226	0.969	55.258	2.89%	-3.68%
			835	1.003	53.203	0.970	55.200	3.40%	-3.62%
			850	1.009	53.159	0.988	55.154	2.13%	-3.62%
7/20/2018	835B	20.0	820	0.990	53.190	0.969	55.258	2.17%	-3.74%
			835	0.993	53.151	0.970	55.200	2.37%	-3.71%
			850	0.999	53.086	0.988	55.154	1.11%	-3.75%
7/16/2018	1750B	20.4	1710	1.461	51.712	1.463	53.537	-0.14%	-3.41%
			1750	1.490	51.674	1.488	53.432	0.13%	-3.29%
			1790	1.521	51.602	1.514	53.326	0.46%	-3.23%
7/8/2018	1900B	22.2	1850	1.506	52.525	1.520	53.300	-0.92%	-1.45%
			1880	1.541	52.499	1.520	53.300	1.38%	-1.50%
			1910	1.578	52.368	1.520	53.300	3.82%	-1.75%
7/11/2018	1900B	22.3	1850	1.511	52.497	1.520	53.300	-0.59%	-1.51%
			1880	1.544	52.399	1.520	53.300	1.58%	-1.69%
			1910	1.576	52.306	1.520	53.300	3.68%	-1.86%
7/16/2018	1900B	21.4	1850	1.509	51.758	1.520	53.300	-0.72%	-2.89%
			1880	1.541	51.653	1.520	53.300	1.38%	-3.09%
			1910	1.579	51.555	1.520	53.300	3.88%	-3.27%
7/9/2018	2450B	22.8	2300	1.818	51.779	1.809	52.900	0.50%	-2.12%
			2310	1.834	51.764	1.816	52.887	0.99%	-2.12%
			2320	1.840	51.737	1.826	52.873	0.77%	-2.15%
7/12/2018	2450B	21.6	2400	1.961	50.922	1.902	52.767	3.10%	-3.50%
			2450	2.025	50.739	1.950	52.700	3.85%	-3.72%
			2500	2.078	50.596	2.021	52.636	2.82%	-3.88%
			2550	2.132	50.505	2.092	52.573	1.91%	-3.93%
			2600	2.190	50.319	2.163	52.509	1.25%	-4.17%
			2650	2.253	50.162	2.234	52.445	0.85%	-4.35%
			2700	2.305	49.992	2.305	52.382	0.00%	-4.56%
7/16/2018	2450B	21.6	2400	1.971	51.003	1.902	52.767	3.63%	-3.34%
			2450	2.027	50.882	1.950	52.700	3.95%	-3.45%
			2500	2.088	50.709	2.021	52.636	3.32%	-3.66%
			2550	2.149	50.568	2.092	52.573	2.72%	-3.81%
			2600	2.207	50.400	2.163	52.509	2.03%	-4.02%
			2650	2.271	50.254	2.234	52.445	1.66%	-4.18%
			2700	2.329	50.073	2.305	52.382	1.04%	-4.41%
7/23/2018	2450B	21.8	2400	1.947	50.814	1.902	52.767	2.37%	-3.70%
			2450	2.007	50.654	1.950	52.700	2.92%	-3.88%
			2500	2.062	50.487	2.021	52.636	2.03%	-4.08%
			2550	2.121	50.333	2.092	52.573	1.39%	-4.26%
			2600	2.175	50.177	2.163	52.509	0.55%	-4.44%
			2650	2.233	50.018	2.234	52.445	-0.04%	-4.63%
			2700	2.292	49.876	2.305	52.382	-0.56%	-4.78%
07/16/2018	5200B-5800B	22.0	5180	5.360	48.377	5.276	49.041	1.59%	-1.35%
			5200	5.393	48.318	5.299	49.014	1.77%	-1.42%
			5220	5.416	48.296	5.323	48.987	1.75%	-1.41%
			5240	5.434	48.261	5.346	48.960	1.65%	-1.43%
			5260	5.464	48.235	5.369	48.933	1.77%	-1.43%
			5280	5.500	48.202	5.393	48.906	1.98%	-1.44%
			5300	5.519	48.168	5.416	48.879	1.90%	-1.45%
			5320	5.540	48.121	5.439	48.851	1.86%	-1.49%
			5500	5.774	47.818	5.650	48.607	2.19%	-1.62%
			5520	5.809	47.779	5.673	48.580	2.40%	-1.65%
			5540	5.841	47.779	5.696	48.553	2.55%	-1.59%
			5560	5.865	47.729	5.720	48.526	2.53%	-1.64%
			5580	5.892	47.688	5.743	48.499	2.59%	-1.67%
			5600	5.915	47.648	5.766	48.471	2.58%	-1.70%
			5620	5.960	47.602	5.790	48.444	2.94%	-1.74%
			5640	5.986	47.556	5.813	48.417	2.98%	-1.78%
			5660	6.013	47.532	5.837	48.390	3.02%	-1.77%
			5680	6.026	47.559	5.860	48.363	2.83%	-1.66%
			5700	6.069	47.476	5.883	48.336	3.16%	-1.78%
			5745	6.131	47.422	5.936	48.275	3.29%	-1.77%
			5765	6.168	47.380	5.959	48.248	3.51%	-1.80%
			5785	6.199	47.341	5.982	48.220	3.63%	-1.82%

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)	$Deviation_{1g}$ (%)
E	750	HEAD	07/19/2018	22.0	21.8	0.200	1161	3213	1.570	8.170	7.850	-3.92%
E	835	HEAD	07/16/2018	21.9	21.2	0.200	4d047	3213	1.950	9.130	9.750	6.79%
E	1750	HEAD	07/10/2018	23.3	21.1	0.100	1150	3213	3.570	36.100	35.700	-1.11%
E	1900	HEAD	07/12/2018	24.0	22.8	0.100	5d148	3213	4.130	40.100	41.300	2.99%
H	1900	HEAD	07/16/2018	23.5	20.8	0.100	5d080	7409	3.950	39.300	39.500	0.51%
G	2300	HEAD	07/11/2018	21.9	21.4	0.100	1008	3332	4.970	49.600	49.700	0.20%
G	2450	HEAD	07/16/2018	22.4	21.5	0.100	797	3332	5.290	52.700	52.900	0.38%
G	2450	HEAD	07/18/2018	22.7	21.4	0.100	719	3332	5.460	51.900	54.600	5.20%
G	2600	HEAD	07/16/2018	22.4	21.5	0.100	1004	3332	5.760	55.900	57.600	3.04%
H	5250	HEAD	07/09/2018	20.3	20.3	0.050	1191	7409	3.820	78.900	76.400	-3.17%
H	5600	HEAD	07/09/2018	20.3	20.3	0.050	1191	7409	4.060	83.600	81.200	-2.87%
H	5750	HEAD	07/09/2018	20.3	20.3	0.050	1191	7409	3.810	79.100	76.200	-3.67%
I	750	BODY	07/19/2018	23.4	21.5	0.200	1003	7406	1.750	8.580	8.750	1.98%
J	835	BODY	07/17/2018	20.3	20.5	0.200	4d133	3347	1.900	9.410	9.500	0.96%
J	835	BODY	07/20/2018	20.1	20.0	0.200	4d133	3347	1.940	9.410	9.700	3.08%
J	1750	BODY	07/16/2018	20.1	20.4	0.100	1008	3347	3.770	37.400	37.700	0.80%
I	1900	BODY	07/08/2018	20.3	21.1	0.100	5d080	7406	4.110	39.100	41.100	5.12%
I	1900	BODY	07/11/2018	21.3	21.8	0.100	5d149	7406	4.280	40.100	42.800	6.73%
I	1900	BODY	07/16/2018	21.3	21.3	0.100	5d080	7406	4.090	39.100	40.900	4.60%
K	2300	BODY	07/09/2018	22.2	22.0	0.100	1073	3319	5.040	48.100	50.400	4.78%
K	2450	BODY	07/12/2018	23.3	21.6	0.100	797	3319	5.390	51.100	53.900	5.48%
K	2450	BODY	07/16/2018	22.6	21.6	0.100	797	3319	5.490	51.100	54.900	7.44%
K	2450	BODY	07/23/2018	22.4	21.8	0.100	797	3319	5.070	51.100	50.700	-0.78%
K	2600	BODY	07/12/2018	23.3	21.6	0.100	1004	3319	5.580	54.800	55.800	1.82%
K	2600	BODY	07/16/2018	22.6	21.6	0.100	1071	3319	5.480	54.200	54.800	1.11%
K	2600	BODY	07/23/2018	22.4	21.8	0.100	1071	3319	5.290	54.200	52.900	-2.40%
D	5250	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	3.540	76.900	70.800	-7.93%
D	5600	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	3.980	78.500	79.600	1.40%
D	5750	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	3.630	77.100	72.600	-5.84%

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)	$Deviation_{10g}$ (%)
J	1750	BODY	07/16/2018	20.1	20.4	0.100	1008	3347	2.010	19.900	20.100	1.01%
I	1900	BODY	07/08/2018	20.3	21.1	0.100	5d080	7406	2.090	20.700	20.900	0.97%
I	1900	BODY	07/16/2018	21.3	21.3	0.100	5d080	7406	2.080	20.700	20.800	0.48%
D	5250	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	1.010	21.500	20.200	-6.05%
D	5600	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	1.100	22.100	22.000	-0.45%
D	5750	BODY	07/16/2018	21.7	21.6	0.050	1237	7357	1.000	21.400	20.000	-6.54%

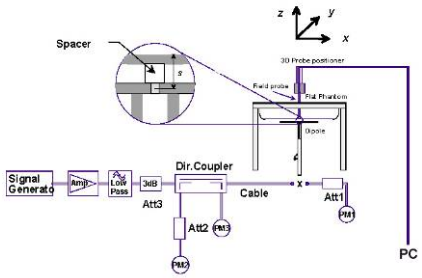


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
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	25.5	25.21	0.01	Right	Cheek	04118	1:1	0.182	1.069	0.195	A1
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.21	-0.04	Right	Tilt	04118	1:1	0.093	1.069	0.099	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.21	0.05	Left	Cheek	04118	1:1	0.131	1.069	0.140	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.21	0.21	Left	Tilt	04118	1:1	0.082	1.069	0.088	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.31	0.00	Right	Cheek	04118	1:1	0.148	1.045	0.155	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.31	0.04	Right	Tilt	04118	1:1	0.071	1.045	0.074	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.31	0.01	Left	Cheek	04118	1:1	0.106	1.045	0.111	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.31	0.01	Left	Tilt	04118	1:1	0.059	1.045	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-2
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.5	25.21	0.05	Right	Cheek	04118	1:1	0.111	1.069	0.119	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.06	Right	Tilt	04118	1:1	0.057	1.069	0.061	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.09	Left	Cheek	04118	1:1	0.082	1.069	0.088	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.21	0.16	Left	Tilt	04118	1:1	0.050	1.069	0.053	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.22	0.06	Right	Cheek	04118	1:1	0.119	1.067	0.127	A2
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.22	0.04	Right	Tilt	04118	1:1	0.055	1.067	0.059	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.22	0.09	Left	Cheek	04118	1:1	0.095	1.067	0.101	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.22	0.11	Left	Tilt	04118	1:1	0.052	1.067	0.055	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-3
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	24.4	24.09	0.07	Right	Cheek	04118	1:1	0.079	1.074	0.085	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.09	0.15	Right	Tilt	04118	1:1	0.056	1.074	0.060	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.09	-0.08	Left	Cheek	04118	1:1	0.117	1.074	0.126	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.09	-0.10	Left	Tilt	04118	1:1	0.055	1.074	0.059	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.04	-0.17	Right	Cheek	04118	1:1	0.069	1.086	0.075	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.04	-0.18	Right	Tilt	04118	1:1	0.060	1.086	0.065	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.04	0.16	Left	Cheek	04118	1:1	0.118	1.086	0.128	A3
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.04	-0.15	Left	Tilt	04118	1:1	0.052	1.086	0.056	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# 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	33.66	-0.01	Right	Cheek	04126	1	1:8.3	0.161	1.009	0.162	
836.60	190	GSM 850	GSM	33.7	33.66	0.10	Right	Tilt	04126	1	1:8.3	0.077	1.009	0.078	
836.60	190	GSM 850	GSM	33.7	33.66	0.01	Left	Cheek	04126	1	1:8.3	0.133	1.009	0.134	
836.60	190	GSM 850	GSM	33.7	33.66	0.05	Left	Tilt	04126	1	1:8.3	0.076	1.009	0.077	
836.60	190	GSM 850	GPRS	30.7	30.44	0.00	Right	Cheek	04126	3	1:2.76	0.193	1.062	**0.205**	A4
836.60	190	GSM 850	GPRS	30.7	30.44	-0.04	Right	Tilt	04126	3	1:2.76	0.092	1.062	0.098	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.03	Left	Cheek	04126	3	1:2.76	0.148	1.062	0.157	
836.60	190	GSM 850	GPRS	30.7	30.44	0.21	Left	Tilt	04126	3	1:2.76	0.087	1.062	0.092	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-5
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# 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	30.46	0.12	Right	Cheek	04118	1	1:8.3	0.036	1.057	0.038	
1880.00	661	GSM 1900	GSM	30.7	30.46	0.10	Right	Tilt	04118	1	1:8.3	0.034	1.057	0.036	
1880.00	661	GSM 1900	GSM	30.7	30.46	-0.08	Left	Cheek	04118	1	1:8.3	0.056	1.057	0.059	
1880.00	661	GSM 1900	GSM	30.7	30.46	0.08	Left	Tilt	04118	1	1:8.3	0.029	1.057	0.031	
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.20	Right	Cheek	04118	3	1:2.76	0.044	1.067	0.047	
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.08	Right	Tilt	04118	3	1:2.76	0.038	1.067	0.041	
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.03	Left	Cheek	04118	3	1:2.76	0.064	1.067	0.068	A5
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.06	Left	Tilt	04118	3	1:2.76	0.036	1.067	0.038	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-6
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	25.22	0.02	Right	Cheek	04126	1:1	0.171	1.067	0.182	A6
836.60	4183	UMTS 850	RMC	25.5	25.22	0.02	Right	Tilt	04126	1:1	0.080	1.067	0.085	
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.01	Left	Cheek	04126	1:1	0.144	1.067	0.154	
836.60	4183	UMTS 850	RMC	25.5	25.22	0.07	Left	Tilt	04126	1:1	0.083	1.067	0.089	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-7
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.07	Right	Cheek	04118	1:1	0.076	1.094	0.083	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.05	Right	Tilt	04118	1:1	0.065	1.094	0.071	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.09	Left	Cheek	04118	1:1	0.122	1.094	0.133	A7
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.02	Left	Tilt	04118	1:1	0.074	1.094	0.081	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-8
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	24.4	24.23	0.04	Right	Cheek	04126	1:1	0.077	1.040	0.080	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	-0.04	Right	Tilt	04126	1:1	0.060	1.040	0.062	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	-0.19	Left	Cheek	04126	1:1	0.119	1.040	0.124	A8
1880.00	9400	UMTS 1900	RMC	24.4	24.23	-0.14	Left	Tilt	04126	1:1	0.057	1.040	0.059	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-9
LTE Band 12 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	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	25.25	0.01	0	Right	Cheek	QPSK	1	49	04134	1:1	0.101	1.059	0.107	A9
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.06	1	Right	Cheek	QPSK	25	25	04134	1:1	0.086	1.026	0.088	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.10	0	Right	Tilt	QPSK	1	49	04134	1:1	0.039	1.059	0.041	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.12	1	Right	Tilt	QPSK	25	25	04134	1:1	0.031	1.026	0.032	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	-0.01	0	Left	Cheek	QPSK	1	49	04134	1:1	0.080	1.059	0.085	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.01	1	Left	Cheek	QPSK	25	25	04134	1:1	0.076	1.026	0.078	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.18	0	Left	Tilt	QPSK	1	49	04134	1:1	0.037	1.059	0.039	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.03	1	Left	Tilt	QPSK	25	25	04134	1:1	0.031	1.026	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										

Table 11-10
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	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	25.22	-0.09	0	Right	Cheek	QPSK	1	0	04134	1:1	0.159	1.067	0.170	A10
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.03	1	Right	Cheek	QPSK	25	12	04134	1:1	0.136	1.040	0.141	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	-0.04	0	Right	Tilt	QPSK	1	0	04134	1:1	0.078	1.067	0.083	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.03	1	Right	Tilt	QPSK	25	12	04134	1:1	0.069	1.040	0.072	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	-0.04	0	Left	Cheek	QPSK	1	0	04134	1:1	0.126	1.067	0.134	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.04	1	Left	Cheek	QPSK	25	12	04134	1:1	0.104	1.040	0.108	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	0.04	0	Left	Tilt	QPSK	1	0	04134	1:1	0.076	1.067	0.081	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.01	1	Left	Tilt	QPSK	25	12	04134	1:1	0.063	1.040	0.066	
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 5 (Cell) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.03	0	Right	Cheek	QPSK	1	25	04167	1:1	0.119	1.030	0.123	A11
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.09	1	Right	Cheek	QPSK	25	25	04167	1:1	0.096	1.023	0.098	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.04	0	Right	Tilt	QPSK	1	25	04167	1:1	0.061	1.030	0.063	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.08	1	Right	Tilt	QPSK	25	25	04167	1:1	0.048	1.023	0.049	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.04	0	Left	Cheek	QPSK	1	25	04167	1:1	0.101	1.030	0.104	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.03	1	Left	Cheek	QPSK	25	25	04167	1:1	0.080	1.023	0.082	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.00	0	Left	Tilt	QPSK	1	25	04167	1:1	0.052	1.030	0.054	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.03	1	Left	Tilt	QPSK	25	25	04167	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 11-12
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	25.29	0.01	0	Right	Cheek	QPSK	1	36	04167	1:1	0.117	1.050	0.123	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.07	1	Right	Cheek	QPSK	36	0	04167	1:1	0.099	1.019	0.101	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.09	0	Right	Tilt	QPSK	1	36	04167	1:1	0.053	1.050	0.056	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.08	1	Right	Tilt	QPSK	36	0	04167	1:1	0.042	1.019	0.043	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.04	0	Left	Cheek	QPSK	1	36	04167	1:1	0.096	1.050	0.101	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.05	1	Left	Cheek	QPSK	36	0	04167	1:1	0.079	1.019	0.081	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.07	0	Left	Tilt	QPSK	1	36	04167	1:1	0.043	1.050	0.045	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.10	1	Left	Tilt	QPSK	36	0	04167	1:1	0.037	1.019	0.038	
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	24.2	24.18	0.05	0	Right	Cheek	QPSK	1	0	04159	1:1	0.091	1.005	0.091	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.04	1	Right	Cheek	QPSK	50	25	04159	1:1	0.083	1.028	0.085	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	0.07	0	Right	Tilt	QPSK	1	0	04159	1:1	0.085	1.005	0.085	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.09	1	Right	Tilt	QPSK	50	25	04159	1:1	0.073	1.028	0.075	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	0.10	0	Left	Cheek	QPSK	1	0	04159	1:1	0.096	1.005	0.096	A13
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.09	1	Left	Cheek	QPSK	50	25	04159	1:1	0.089	1.028	0.091	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.02	0	Left	Tilt	QPSK	1	0	04159	1:1	0.094	1.005	0.094	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.03	1	Left	Tilt	QPSK	50	25	04159	1:1	0.080	1.028	0.082	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.09	0	Right	Cheek	QPSK	1	0	04159	1:1	0.086	1.012	0.087	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.01	1	Right	Cheek	QPSK	50	0	04159	1:1	0.067	1.007	0.067	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.14	0	Right	Tilt	QPSK	1	0	04159	1:1	0.062	1.012	0.063	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.09	1	Right	Tilt	QPSK	50	0	04159	1:1	0.053	1.007	0.053	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.18	0	Left	Cheek	QPSK	1	0	04159	1:1	0.132	1.012	0.134	A14
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.15	1	Left	Cheek	QPSK	50	0	04159	1:1	0.104	1.007	0.105	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.15	0	Left	Tilt	QPSK	1	0	04159	1:1	0.065	1.012	0.066	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	-0.01	1	Left	Tilt	QPSK	50	0	04159	1:1	0.050	1.007	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-15
LTE Band 30 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	0.09	0	Right	Cheek	QPSK	1	25	04134	1:1	0.018	1.040	0.019	A15
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.17	1	Right	Cheek	QPSK	25	12	04134	1:1	0.014	1.026	0.014	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	0.13	0	Right	Tilt	QPSK	1	25	04134	1:1	0.012	1.040	0.012	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.19	1	Right	Tilt	QPSK	25	12	04134	1:1	0.011	1.026	0.011	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	0.11	0	Left	Cheek	QPSK	1	25	04134	1:1	0.016	1.040	0.017	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	-0.03	1	Left	Cheek	QPSK	25	12	04134	1:1	0.015	1.026	0.015	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	0.05	0	Left	Tilt	QPSK	1	25	04134	1:1	0.012	1.040	0.012	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.17	1	Left	Tilt	QPSK	25	12	04134	1:1	0.009	1.026	0.009	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-16
LTE Band 7 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)	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.16	0	Right	Cheek	QPSK	1	0	04134	1:1	0.037	1.019	0.038	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.17	1	Right	Cheek	QPSK	50	0	04134	1:1	0.031	1.038	0.032	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.13	0	Right	Tilt	QPSK	1	0	04134	1:1	0.030	1.019	0.031	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.14	1	Right	Tilt	QPSK	50	0	04134	1:1	0.025	1.038	0.026	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.14	0	Left	Cheek	QPSK	1	0	04134	1:1	0.036	1.019	0.037	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.14	1	Left	Cheek	QPSK	50	0	04134	1:1	0.035	1.038	0.036	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.15	0	Left	Tilt	QPSK	1	0	04134	1:1	0.040	1.019	0.041	A16
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.00	1	Left	Tilt	QPSK	50	0	04134	1:1	0.035	1.038	0.036	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-17
LTE Band 41 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)	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.19	0	Right	Cheek	QPSK	1	0	04134	1:1.58	0.033	1.000	0.033	A17
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.19	1	Right	Cheek	QPSK	50	50	04134	1:1.58	0.025	1.012	0.025	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.15	0	Right	Tilt	QPSK	1	0	04134	1:1.58	0.017	1.000	0.017	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.17	1	Right	Tilt	QPSK	50	50	04134	1:1.58	0.008	1.012	0.008	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.13	0	Left	Cheek	QPSK	1	0	04134	1:1.58	0.022	1.000	0.022	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.16	1	Left	Cheek	QPSK	50	50	04134	1:1.58	0.012	1.012	0.012	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.07	0	Left	Tilt	QPSK	1	0	04134	1:1.58	0.024	1.000	0.024	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.21	1	Left	Tilt	QPSK	50	50	04134	1:1.58	0.013	1.012	0.013	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-18
DTS Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	18.0	17.98	0.20	Right	Cheek	1	04175	1	100.0	0.481	0.484	1.005	1.000	**0.486**	A18
2437	6	802.11b	DSSS	22	18.0	17.98	0.09	Right	Tilt	1	04175	1	100.0	0.475	0.372	1.005	1.000	0.374	
2437	6	802.11b	DSSS	22	18.0	17.98	0.00	Left	Cheek	1	04175	1	100.0	0.351	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.98	0.19	Left	Tilt	1	04175	1	100.0	0.406	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.97	0.14	Right	Cheek	2	04175	1	100.0	0.100	0.075	1.007	1.000	0.076	
2437	6	802.11b	DSSS	22	18.0	17.97	0.21	Right	Tilt	2	04175	1	100.0	0.047	-	1.007	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.97	0.16	Left	Cheek	2	04175	1	100.0	0.027	-	1.007	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.97	0.18	Left	Tilt	2	04175	1	100.0	0.014	-	1.007	1.000	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-19
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.98	0.11	Right	Cheek	1	04175	6	99.2	1.033	0.579	1.005	1.008	**0.587**	A19
5280	56	802.11a	OFDM	20	18.0	17.98	0.13	Right	Tilt	1	04175	6	99.2	0.683	0.411	1.005	1.008	0.416	
5280	56	802.11a	OFDM	20	18.0	17.98	0.01	Left	Cheek	1	04175	6	99.2	0.345	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.15	Left	Tilt	1	04175	6	99.2	0.363	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.16	Right	Cheek	2	04175	6	98.8	0.087	0.033	1.005	1.012	0.034	
5280	56	802.11a	OFDM	20	18.0	17.98	0.14	Right	Tilt	2	04175	6	98.8	0.053	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.19	Left	Cheek	2	04175	6	98.8	0.057	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.00	Left	Tilt	2	04175	6	98.8	0.058	-	1.005	1.012	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.14	Right	Cheek	1	04175	6	99.2	1.170	0.523	1.002	1.008	0.528	
5600	120	802.11a	OFDM	20	17.0	16.99	0.16	Right	Tilt	1	04175	6	99.2	0.811	0.409	1.002	1.008	0.413	
5600	120	802.11a	OFDM	20	17.0	16.99	-0.18	Left	Cheek	1	04175	6	99.2	0.401	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	-0.12	Left	Tilt	1	04175	6	99.2	0.348	-	1.002	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.12	Right	Cheek	2	04175	6	98.8	0.167	0.036	1.002	1.012	0.037	
5720	144	802.11a	OFDM	20	17.0	16.99	0.18	Right	Tilt	2	04175	6	98.8	0.040	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.12	Left	Cheek	2	04175	6	98.8	0.097	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	-0.15	Left	Tilt	2	04175	6	98.8	0.050	-	1.002	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.99	-0.12	Right	Cheek	1	04175	6	99.2	0.893	0.498	1.002	1.008	0.503	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	Right	Tilt	1	04175	6	99.2	0.846	0.382	1.002	1.008	0.386	
5785	157	802.11a	OFDM	20	18.0	17.99	0.16	Left	Cheek	1	04175	6	99.2	0.339	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	Left	Tilt	1	04175	6	99.2	0.334	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.20	Right	Cheek	2	04175	6	98.8	0.221	0.101	1.012	1.012	0.103	
5785	157	802.11a	OFDM	20	18.0	17.95	0.13	Right	Tilt	2	04175	6	98.8	0.063	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	-0.19	Left	Cheek	2	04175	6	98.8	0.141	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.13	Left	Tilt	2	04175	6	98.8	0.070	-	1.012	1.012	-	

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

Table 11-20
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	12.0	11.86	-0.17	Right	Cheek	04183	1	77.1	0.089	1.033	1.297	**0.119**	A20
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.18	Right	Tilt	04183	1	77.1	0.068	1.033	1.297	0.091	
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.09	Left	Cheek	04183	1	77.1	0.050	1.033	1.297	0.067	
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.16	Left	Tilt	04183	1	77.1	0.058	1.033	1.297	0.078	

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 11-21
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.5	25.26	-0.15	10 mm	04118	N/A	1:1	back	0.434	1.057	0.459	A21
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.5	25.30	0.04	10 mm	04118	N/A	1:1	back	0.344	1.047	0.360	A23
1880.00	600	PCS CDMA	TDSO / SO32	24.4	24.14	0.00	10 mm	04118	N/A	1:1	back	0.499	1.062	0.530	A25
836.60	190	GSM 850	GSM	33.7	33.66	-0.16	10 mm	04126	1	1:8.3	back	0.311	1.009	0.314	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.14	10 mm	04126	3	1:2.76	back	0.351	1.062	0.373	A27
1880.00	661	GSM 1900	GSM	30.7	30.46	-0.01	10 mm	04126	1	1:8.3	back	0.277	1.057	0.293	
1880.00	661	GSM 1900	GPRS	27.7	27.42	-0.09	10 mm	04126	3	1:2.76	back	0.315	1.067	0.336	A28
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.13	10 mm	04126	N/A	1:1	back	0.368	1.067	0.393	A30
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.01	10 mm	04126	N/A	1:1	back	0.438	1.094	0.479	A31
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.05	10 mm	04126	N/A	1:1	back	0.547	1.040	0.569	A33
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
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	-0.09	0	04167	QPSK	1	49	10 mm	back	1:1	0.406	1.059	0.430	A35
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	-0.08	1	04167	QPSK	25	25	10 mm	back	1:1	0.333	1.026	0.342	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	-0.07	0	04167	QPSK	1	0	10 mm	back	1:1	0.412	1.067	0.440	A36
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.06	1	04167	QPSK	25	12	10 mm	back	1:1	0.356	1.040	0.370	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.04	0	04134	QPSK	1	25	10 mm	back	1:1	0.353	1.030	0.364	A37
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.05	1	04134	QPSK	25	25	10 mm	back	1:1	0.279	1.023	0.285	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.12	0	04167	QPSK	1	36	10 mm	back	1:1	0.408	1.050	0.428	A38
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	-0.11	1	04167	QPSK	36	0	10 mm	back	1:1	0.332	1.019	0.338	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.04	0	04142	QPSK	1	0	10 mm	back	1:1	0.455	1.005	0.457	A39
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.00	1	04142	QPSK	50	25	10 mm	back	1:1	0.407	1.028	0.418	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.07	0	04159	QPSK	1	0	10 mm	back	1:1	0.591	1.012	0.598	A41
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.03	1	04159	QPSK	50	0	10 mm	back	1:1	0.483	1.007	0.486	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	-0.03	0	04142	QPSK	1	25	10 mm	back	1:1	0.486	1.040	0.505	A43
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	-0.01	1	04142	QPSK	25	12	10 mm	back	1:1	0.414	1.026	0.425	
2510.00	20850	Low	LTE Band 7	20	23.7	23.37	-0.05	0	04142	QPSK	1	0	10 mm	back	1:1	1.030	1.079	1.111	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	-0.08	0	04142	QPSK	1	0	10 mm	back	1:1	1.140	1.019	1.162	A45
2560.00	21350	High	LTE Band 7	20	23.7	23.45	-0.08	0	04142	QPSK	1	0	10 mm	back	1:1	1.120	1.059	**1.186**	
2510.00	20850	Low	LTE Band 7	20	22.7	22.33	-0.06	1	04142	QPSK	50	0	10 mm	back	1:1	0.936	1.089	1.019	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	-0.14	1	04142	QPSK	50	0	10 mm	back	1:1	1.000	1.038	1.038	
2560.00	21350	High	LTE Band 7	20	22.7	22.37	-0.10	1	04142	QPSK	50	50	10 mm	back	1:1	0.954	1.079	1.029	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.53	-0.06	1	04142	QPSK	100	0	10 mm	back	1:1	0.985	1.040	1.024	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	-0.04	0	04142	QPSK	1	0	10 mm	back	1:1.58	0.514	1.000	0.514	A47
2680.00	41490	High	LTE Band 41	20	23.9	23.85	-0.06	1	04142	QPSK	50	50	10 mm	back	1:1.58	0.310	1.012	0.314	

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
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2462	11	802.11b	DSSS	22	20.5	20.48	0.02	10 mm	1	04183	1	back	100.0	0.274	0.229	1.005	1.000	0.230	
2437	6	802.11b	DSSS	22	20.5	20.49	0.01	10 mm	2	04183	1	back	100.0	0.318	0.334	1.002	1.000	**0.335**	A48

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
NII SISO Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.98	0.19	10 mm	1	04175	6	back	99.2	0.247	0.109	1.005	1.008	0.110	
5260	52	802.11a	OFDM	20	17.0	16.97	0.06	10 mm	2	04175	6	back	98.8	1.761	0.786	1.007	1.012	0.801	
5280	56	802.11a	OFDM	20	18.0	17.98	0.02	10 mm	2	04175	6	back	98.8	2.296	1.040	1.005	1.012	**1.058**	
5320	64	802.11a	OFDM	20	17.0	16.99	0.06	10 mm	2	04175	6	back	98.8	2.021	0.917	1.002	1.012	0.930	
5600	120	802.11a	OFDM	20	17.0	16.99	0.12	10 mm	1	04175	6	back	99.2	0.150	0.040	1.002	1.008	0.040	
5720	144	802.11a	OFDM	20	17.0	16.99	0.06	10 mm	2	04175	6	back	98.8	1.885	0.690	1.002	1.012	0.700	
5785	157	802.11a	OFDM	20	18.0	17.99	0.20	10 mm	1	04175	6	back	99.2	0.134	0.048	1.002	1.008	0.048	
5785	157	802.11a	OFDM	20	18.0	17.95	0.13	10 mm	2	04175	6	back	98.8	1.468	0.710	1.012	1.012	0.727	
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 11-25
NII MIMO Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5260	52	802.11n	OFDM	20	17.0	16.91	17.0	16.79	0.11	10 mm	MIMO	04175	13	back	98.4	1.911	0.806	1.050	1.016	0.860	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.08	10 mm	MIMO	04175	13	back	98.4	2.538	1.120	1.007	1.016	1.146	A49
5320	64	802.11n	OFDM	20	17.0	16.97	17.0	16.96	0.13	10 mm	MIMO	04175	13	back	98.4	2.240	0.969	1.009	1.016	0.993	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.07	10 mm	MIMO	04175	13	back	98.4	1.596	0.698	1.012	1.016	0.718	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.12	10 mm	MIMO	04175	13	back	98.4	1.827	0.758	1.030	1.016	0.793	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.10	10 mm	MIMO	04175	13	back	98.4	2.373	1.120	1.007	1.016	1.146	
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:

1. Blue entries represent variability measurements.
2. To achieve the 5GHz WLAN 20.0 dBm (Ch. 52, 64, 144) and 21 dBm (Ch. 56, 157) maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm (Ch. 52, 64, 144) and 18.0 dBm (Ch. 56, 157).

Table 11-26
NII Body-Worn SAR for Conditions with 2.4 GHz Ant 1 and 5 GHz Ant 2 WLAN

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	15.0	14.81	0.10	10 mm	2	04175	13.5	back	98.2	1.239	0.505	1.045	1.018	0.537	
5630	126	802.11n	OFDM	40	15.0	14.90	0.02	10 mm	2	04175	13.5	back	98.2	1.083	0.507	1.023	1.018	0.528	
5795	159	802.11n	OFDM	40	15.0	14.97	0.12	10 mm	2	04175	13.5	back	98.2	0.959	0.381	1.007	1.018	0.391	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

NII was additionally evaluated at the maximum allowed output power during operations with simultaneous 2.4 GHz Ant 1 and 5 GHz Ant 2 WLAN. 2.4 GHz Ant1 WIFI was not transmitting during the above evaluations.

Table 11-27
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.0	11.86	0.21	10 mm	04183	1	back	77.1	0.016	1.033	1.297	**0.021**	A51
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 11-28
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)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.20	-0.05	10 mm	04118	N/A	1:1	back	0.515	1.072	0.552	A22
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.20	-0.08	10 mm	04118	N/A	1:1	front	0.374	1.072	0.401	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.20	-0.09	10 mm	04118	N/A	1:1	bottom	0.173	1.072	0.185	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.20	0.00	10 mm	04118	N/A	1:1	right	0.272	1.072	0.292	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	25.20	-0.02	10 mm	04118	N/A	1:1	left	0.101	1.072	0.108	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.18	0.03	10 mm	04118	N/A	1:1	back	0.388	1.076	0.417	A24
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.18	0.05	10 mm	04118	N/A	1:1	front	0.282	1.076	0.303	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.18	-0.04	10 mm	04118	N/A	1:1	bottom	0.110	1.076	0.118	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.18	-0.02	10 mm	04118	N/A	1:1	right	0.164	1.076	0.176	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.5	25.18	0.04	10 mm	04118	N/A	1:1	left	0.036	1.076	0.039	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.03	10 mm	04118	N/A	1:1	back	0.471	1.033	0.487	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.02	10 mm	04118	N/A	1:1	front	0.428	1.033	0.442	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.05	10 mm	04118	N/A	1:1	bottom	0.676	1.000	0.676	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.01	10 mm	04118	N/A	1:1	bottom	0.689	1.033	0.712	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.4	24.09	0.02	10 mm	04118	N/A	1:1	bottom	0.852	1.074	0.915	A26
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.04	10 mm	04118	N/A	1:1	left	0.238	1.033	0.246	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.14	10 mm	04126	3	1:2.76	back	0.351	1.062	0.373	A27
836.60	190	GSM 850	GPRS	30.7	30.44	-0.08	10 mm	04126	3	1:2.76	front	0.321	1.062	0.341	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.07	10 mm	04126	3	1:2.76	bottom	0.261	1.062	0.277	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.13	10 mm	04126	3	1:2.76	right	0.285	1.062	0.303	
836.60	190	GSM 850	GPRS	30.7	30.44	-0.16	10 mm	04126	3	1:2.76	left	0.096	1.062	0.102	
1880.00	661	GSM 1900	GPRS	27.7	27.42	-0.09	10 mm	04126	3	1:2.76	back	0.315	1.067	0.336	
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.05	10 mm	04126	3	1:2.76	front	0.260	1.067	0.277	
1850.20	512	GSM 1900	GPRS	27.7	27.42	-0.04	10 mm	04126	3	1:2.76	bottom	0.612	1.067	0.653	
1880.00	661	GSM 1900	GPRS	27.7	27.42	-0.02	10 mm	04126	3	1:2.76	bottom	0.579	1.067	0.618	
1909.80	810	GSM 1900	GPRS	27.7	27.39	0.00	10 mm	04126	3	1:2.76	bottom	0.648	1.074	0.696	A29
1880.00	661	GSM 1900	GPRS	27.7	27.42	0.05	10 mm	04126	3	1:2.76	left	0.138	1.067	0.147	
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.13	10 mm	04126	N/A	1:1	back	0.368	1.067	0.393	A30
836.60	4183	UMTS 850	RMC	25.5	25.22	0.00	10 mm	04126	N/A	1:1	front	0.322	1.067	0.344	
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.08	10 mm	04126	N/A	1:1	bottom	0.261	1.067	0.278	
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.03	10 mm	04126	N/A	1:1	right	0.286	1.067	0.305	
836.60	4183	UMTS 850	RMC	25.5	25.22	-0.02	10 mm	04126	N/A	1:1	left	0.102	1.067	0.109	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.01	10 mm	04126	N/A	1:1	back	0.438	1.094	0.479	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.03	10 mm	04126	N/A	1:1	front	0.359	1.094	0.393	
1712.40	1312	UMTS 1750	RMC	24.7	24.58	-0.06	10 mm	04126	N/A	1:1	bottom	0.831	1.028	0.854	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.05	10 mm	04126	N/A	1:1	bottom	0.799	1.094	0.874	
1752.60	1513	UMTS 1750	RMC	24.7	24.62	-0.03	10 mm	04126	N/A	1:1	bottom	0.868	1.019	0.884	A32
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.01	10 mm	04126	N/A	1:1	left	0.301	1.094	0.329	
1752.60	1513	UMTS 1750	RMC	24.7	24.62	0.00	10 mm	04126	N/A	1:1	bottom	0.847	1.019	0.863	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.05	10 mm	04126	N/A	1:1	back	0.547	1.040	0.569	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.03	10 mm	04126	N/A	1:1	front	0.473	1.040	0.492	
1852.40	9262	UMTS 1900	RMC	24.4	24.34	-0.01	10 mm	04126	N/A	1:1	bottom	0.866	1.014	0.878	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.00	10 mm	04126	N/A	1:1	bottom	0.951	1.040	0.989	
1907.60	9538	UMTS 1900	RMC	24.4	24.31	0.01	10 mm	04126	N/A	1:1	bottom	1.080	1.021	1.103	A34
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.00	10 mm	04126	N/A	1:1	left	0.229	1.040	0.238	
1907.60	9538	UMTS 1900	RMC	24.4	24.31	-0.03	10 mm	04126	N/A	1:1	bottom	1.030	1.021	1.052	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Blue entries represent variability measurements.

Table 11-29
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	25.25	-0.09	0	04167	QPSK	1	49	10 mm	back	1:1	0.406	1.059	0.430	A35
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	-0.08	1	04167	QPSK	25	25	10 mm	back	1:1	0.333	1.026	0.342	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.01	0	04167	QPSK	1	49	10 mm	front	1:1	0.315	1.059	0.334	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.04	1	04167	QPSK	25	25	10 mm	front	1:1	0.259	1.026	0.266	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.16	0	04167	QPSK	1	49	10 mm	bottom	1:1	0.033	1.059	0.035	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.21	1	04167	QPSK	25	25	10 mm	bottom	1:1	0.055	1.026	0.056	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.05	0	04167	QPSK	1	49	10 mm	right	1:1	0.091	1.059	0.096	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.10	1	04167	QPSK	25	25	10 mm	right	1:1	0.050	1.026	0.051	
707.50	23095	Mid	LTE Band 12	10	25.5	25.25	0.15	0	04167	QPSK	1	49	10 mm	left	1:1	0.026	1.059	0.028	
707.50	23095	Mid	LTE Band 12	10	24.5	24.39	0.07	1	04167	QPSK	25	25	10 mm	left	1:1	0.033	1.026	0.034	
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 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	25.22	-0.07	0	04167	QPSK	1	0	10 mm	back	1:1	0.412	1.067	0.440	A36
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.06	1	04167	QPSK	25	12	10 mm	back	1:1	0.356	1.040	0.370	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	-0.01	0	04167	QPSK	1	0	10 mm	front	1:1	0.330	1.067	0.352	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.02	1	04167	QPSK	25	12	10 mm	front	1:1	0.287	1.040	0.298	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	0.04	0	04167	QPSK	1	0	10 mm	bottom	1:1	0.206	1.067	0.220	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.02	1	04167	QPSK	25	12	10 mm	bottom	1:1	0.173	1.040	0.180	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	0.07	0	04167	QPSK	1	0	10 mm	right	1:1	0.255	1.067	0.272	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	0.01	1	04167	QPSK	25	12	10 mm	right	1:1	0.224	1.040	0.233	
782.00	23230	Mid	LTE Band 13	10	25.5	25.22	0.06	0	04167	QPSK	1	0	10 mm	left	1:1	0.123	1.067	0.131	
782.00	23230	Mid	LTE Band 13	10	24.5	24.33	-0.13	1	04167	QPSK	25	12	10 mm	left	1:1	0.113	1.040	0.118	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-31
LTE Band 5 (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)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.04	0	04134	QPSK	1	25	10 mm	back	1:1	0.353	1.030	0.364	A37
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.05	1	04134	QPSK	25	25	10 mm	back	1:1	0.279	1.023	0.285	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.05	0	04134	QPSK	1	25	10 mm	front	1:1	0.271	1.030	0.279	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.07	1	04134	QPSK	25	25	10 mm	front	1:1	0.215	1.023	0.220	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	-0.10	0	04134	QPSK	1	25	10 mm	bottom	1:1	0.093	1.030	0.096	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	-0.10	1	04134	QPSK	25	25	10 mm	bottom	1:1	0.077	1.023	0.079	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	-0.03	0	04134	QPSK	1	25	10 mm	right	1:1	0.173	1.030	0.178	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	-0.05	1	04134	QPSK	25	25	10 mm	right	1:1	0.139	1.023	0.142	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.37	0.05	0	04134	QPSK	1	25	10 mm	left	1:1	0.032	1.030	0.033	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.40	0.07	1	04134	QPSK	25	25	10 mm	left	1:1	0.026	1.023	0.027	
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 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	25.29	-0.12	0	04167	QPSK	1	36	10 mm	back	1:1	0.408	1.050	0.428	A38
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	-0.11	1	04167	QPSK	36	0	10 mm	back	1:1	0.332	1.019	0.338	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.06	0	04167	QPSK	1	36	10 mm	front	1:1	0.288	1.050	0.302	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.07	1	04167	QPSK	36	0	10 mm	front	1:1	0.232	1.019	0.236	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.05	0	04167	QPSK	1	36	10 mm	bottom	1:1	0.113	1.050	0.119	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	-0.04	1	04167	QPSK	36	0	10 mm	bottom	1:1	0.099	1.019	0.101	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.01	0	04167	QPSK	1	36	10 mm	right	1:1	0.174	1.050	0.183	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.00	1	04167	QPSK	36	0	10 mm	right	1:1	0.141	1.019	0.144	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.00	0	04167	QPSK	1	36	10 mm	left	1:1	0.048	1.050	0.050	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.42	0.02	1	04167	QPSK	36	0	10 mm	left	1:1	0.039	1.019	0.040	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-33
LTE Band 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	24.2	24.18	-0.04	0	04142	QPSK	1	0	10 mm	back	1:1	0.455	1.005	0.457	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.00	1	04142	QPSK	50	25	10 mm	back	1:1	0.407	1.028	0.418	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.04	0	04142	QPSK	1	0	10 mm	front	1:1	0.361	1.005	0.363	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.02	1	04142	QPSK	50	25	10 mm	front	1:1	0.324	1.028	0.333	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.04	-0.01	0	04142	QPSK	1	0	10 mm	bottom	1:1	0.673	1.038	0.699	A40
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	0.13	0	04142	QPSK	1	0	10 mm	bottom	1:1	0.643	1.005	0.646	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.04	0	04142	QPSK	1	99	10 mm	bottom	1:1	0.651	1.038	0.676	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.03	1	04142	QPSK	50	25	10 mm	bottom	1:1	0.591	1.028	0.608	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	0.01	0	04142	QPSK	1	0	10 mm	left	1:1	0.261	1.005	0.262	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	0.01	1	04142	QPSK	50	25	10 mm	left	1:1	0.228	1.028	0.234	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-34
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.07	0	04159	QPSK	1	0	10 mm	back	1:1	0.591	1.012	0.598	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.03	1	04159	QPSK	50	0	10 mm	back	1:1	0.483	1.007	0.486	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.01	0	04159	QPSK	1	0	10 mm	front	1:1	0.395	1.012	0.400	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.00	1	04159	QPSK	50	0	10 mm	front	1:1	0.324	1.007	0.326	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.4	24.32	-0.01	0	04159	QPSK	1	0	10 mm	bottom	1:1	0.618	1.019	0.630	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.02	0	04159	QPSK	1	0	10 mm	bottom	1:1	0.678	1.012	0.686	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.31	0.04	0	04159	QPSK	1	50	10 mm	bottom	1:1	0.911	1.021	0.930	A42
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.00	1	04159	QPSK	50	0	10 mm	bottom	1:1	0.576	1.007	0.580	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.29	0.03	1	04159	QPSK	100	0	10 mm	bottom	1:1	0.812	1.026	0.833	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.01	0	04159	QPSK	1	0	10 mm	left	1:1	0.260	1.012	0.263	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.05	1	04159	QPSK	50	0	10 mm	left	1:1	0.209	1.007	0.210	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-35
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	-0.03	0	04142	QPSK	1	25	10 mm	back	1:1	0.486	1.040	0.505	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	-0.01	1	04142	QPSK	25	12	10 mm	back	1:1	0.414	1.026	0.425	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	-0.04	0	04142	QPSK	1	25	10 mm	front	1:1	0.207	1.040	0.215	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	-0.05	1	04142	QPSK	25	12	10 mm	front	1:1	0.177	1.026	0.182	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	-0.06	0	04142	QPSK	1	25	10 mm	bottom	1:1	0.617	1.040	0.642	A44
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.12	1	04142	QPSK	25	12	10 mm	bottom	1:1	0.570	1.026	0.585	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	0.15	0	04142	QPSK	1	25	10 mm	right	1:1	0.011	1.040	0.011	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.14	1	04142	QPSK	25	12	10 mm	right	1:1	0.006	1.026	0.006	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.83	-0.01	0	04142	QPSK	1	25	10 mm	left	1:1	0.072	1.040	0.075	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.89	0.08	1	04142	QPSK	25	12	10 mm	left	1:1	0.060	1.026	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 11-36
LTE Band 7 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)	
2510.00	20850	Low	LTE Band 7	20	23.7	23.37	-0.05	0	04142	QPSK	1	0	10 mm	back	1:1	1.030	1.079	1.111	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	-0.08	0	04142	QPSK	1	0	10 mm	back	1:1	1.140	1.019	1.162	
2560.00	21350	High	LTE Band 7	20	23.7	23.45	-0.08	0	04142	QPSK	1	0	10 mm	back	1:1	1.120	1.059	1.186	
2510.00	20850	Low	LTE Band 7	20	22.7	22.33	-0.06	1	04142	QPSK	50	0	10 mm	back	1:1	0.936	1.089	1.019	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	-0.14	1	04142	QPSK	50	0	10 mm	back	1:1	1.000	1.038	1.038	
2560.00	21350	High	LTE Band 7	20	22.7	22.37	-0.10	1	04142	QPSK	50	50	10 mm	back	1:1	0.954	1.079	1.029	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.53	-0.06	1	04142	QPSK	100	0	10 mm	back	1:1	0.985	1.040	1.024	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	-0.04	0	04142	QPSK	1	0	10 mm	front	1:1	0.504	1.019	0.514	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.17	1	04142	QPSK	50	0	10 mm	front	1:1	0.459	1.038	0.476	
2510.00	20850	Low	LTE Band 7	20	23.7	23.37	0.03	0	04142	QPSK	1	0	10 mm	bottom	1:1	1.100	1.079	1.187	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	-0.03	0	04142	QPSK	1	0	10 mm	bottom	1:1	1.170	1.019	1.192	A46
2560.00	21350	High	LTE Band 7	20	23.7	23.45	-0.07	0	04142	QPSK	1	0	10 mm	bottom	1:1	1.130	1.059	**1.197**	
2510.00	20850	Low	LTE Band 7	20	22.7	22.33	-0.03	1	04142	QPSK	50	0	10 mm	bottom	1:1	1.020	1.089	1.111	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.04	1	04142	QPSK	50	0	10 mm	bottom	1:1	1.060	1.038	1.100	
2560.00	21350	High	LTE Band 7	20	22.7	22.37	0.13	1	04142	QPSK	50	50	10 mm	bottom	1:1	0.997	1.079	1.076	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.53	0.03	1	04142	QPSK	100	0	10 mm	bottom	1:1	1.030	1.040	1.071	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.07	0	04142	QPSK	1	0	10 mm	right	1:1	0.066	1.019	0.067	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.01	1	04142	QPSK	50	0	10 mm	right	1:1	0.056	1.038	0.058	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	0.05	0	04142	QPSK	1	0	10 mm	left	1:1	0.075	1.019	0.076	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.54	0.05	1	04142	QPSK	50	0	10 mm	left	1:1	0.069	1.038	0.072	
2510.00	20850	Low	LTE Band 7	20	23.7	23.37	-0.04	0	04142	QPSK	1	0	10 mm	bottom	1:1	1.090	1.079	1.176	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.62	-0.03	0	04142	QPSK	1	0	10 mm	bottom	1:1	1.160	1.019	1.182	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**														**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

Note: Blue entries represent variability measurements.

Table 11-37
LTE Band 41 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)	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	-0.04	0	04142	QPSK	1	0	10 mm	back	1:1.58	0.514	1.000	0.514	A47
2680.00	41490	High	LTE Band 41	20	23.9	23.85	-0.06	1	04142	QPSK	50	50	10 mm	back	1:1.58	0.310	1.012	0.314	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	-0.07	0	04142	QPSK	1	0	10 mm	front	1:1.58	0.206	1.000	0.206	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	-0.02	1	04142	QPSK	50	50	10 mm	front	1:1.58	0.131	1.012	0.133	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.04	0	04142	QPSK	1	0	10 mm	bottom	1:1.58	0.500	1.000	0.500	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.05	1	04142	QPSK	50	50	10 mm	bottom	1:1.58	0.327	1.012	0.331	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	-0.04	0	04142	QPSK	1	0	10 mm	right	1:1.58	0.037	1.000	0.037	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.07	1	04142	QPSK	50	50	10 mm	right	1:1.58	0.026	1.012	0.026	
2680.00	41490	High	LTE Band 41	20	24.9	24.90	0.04	0	04142	QPSK	1	0	10 mm	left	1:1.58	0.026	1.000	0.026	
2680.00	41490	High	LTE Band 41	20	23.9	23.85	0.15	1	04142	QPSK	50	50	10 mm	left	1:1.58	0.024	1.012	0.024	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**														**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

Table 11-38
WLAN SISO Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	20.48	0.02	10 mm	1	04183	1	back	100.0	0.274	0.229	1.005	1.000	0.230	
2462	11	802.11b	DSSS	22	20.5	20.48	0.17	10 mm	1	04183	1	front	100.0	0.245	-	1.005	1.000	-	
2462	11	802.11b	DSSS	22	20.5	20.48	0.14	10 mm	1	04183	1	top	100.0	0.435	0.327	1.005	1.000	0.329	
2462	11	802.11b	DSSS	22	20.5	20.48	0.14	10 mm	1	04183	1	left	100.0	0.082	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.01	10 mm	2	04183	1	back	100.0	0.318	0.334	1.002	1.000	**0.335**	A48
2437	6	802.11b	DSSS	22	20.5	20.49	0.19	10 mm	2	04183	1	front	100.0	0.038	-	1.002	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.12	10 mm	2	04183	1	top	100.0	0.030	-	1.002	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.20	10 mm	2	04183	1	left	100.0	0.189	-	1.002	1.000	-	
5200	40	802.11a	OFDM	20	18.0	17.99	0.20	10 mm	1	04175	6	back	99.2	0.211	0.099	1.002	1.008	0.100	
5200	40	802.11a	OFDM	20	18.0	17.99	0.00	10 mm	1	04175	6	front	99.2	0.037	-	1.002	1.008	-	
5200	40	802.11a	OFDM	20	18.0	17.99	0.20	10 mm	1	04175	6	top	99.2	0.033	-	1.002	1.008	-	
5200	40	802.11a	OFDM	20	18.0	17.99	0.19	10 mm	1	04175	6	left	99.2	0.021	-	1.002	1.008	-	
5180	36	802.11a	OFDM	20	17.0	16.91	0.13	10 mm	2	04175	6	back	98.8	1.314	0.585	1.021	1.012	0.604	
5200	40	802.11a	OFDM	20	18.0	17.95	0.10	10 mm	2	04175	6	back	98.8	1.877	0.804	1.012	1.012	**0.823**	
5240	48	802.11a	OFDM	20	17.0	16.99	0.20	10 mm	2	04175	6	back	98.8	1.757	0.725	1.002	1.012	0.735	
5200	40	802.11a	OFDM	20	18.0	17.95	0.21	10 mm	2	04175	6	front	98.8	0.011	0.004	1.012	1.012	0.004	
5200	40	802.11a	OFDM	20	18.0	17.95	0.19	10 mm	2	04175	6	top	98.8	0.106	-	1.012	1.012	-	
5200	40	802.11a	OFDM	20	18.0	17.95	0.18	10 mm	2	04175	6	left	98.8	0.391	0.182	1.012	1.012	0.186	
5785	157	802.11a	OFDM	20	18.0	17.99	0.20	10 mm	1	04175	6	back	99.2	0.134	0.048	1.002	1.008	0.048	
5785	157	802.11a	OFDM	20	18.0	17.99	0.21	10 mm	1	04175	6	front	99.2	0.039	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.99	-0.12	10 mm	1	04175	6	top	99.2	0.044	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.99	-0.21	10 mm	1	04175	6	left	99.2	0.041	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.13	10 mm	2	04175	6	back	98.8	1.468	0.710	1.012	1.012	0.727	
5785	157	802.11a	OFDM	20	18.0	17.95	0.00	10 mm	2	04175	6	front	98.8	0.010	0.006	1.012	1.012	0.006	
5785	157	802.11a	OFDM	20	18.0	17.95	0.16	10 mm	2	04175	6	top	98.8	0.094	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.16	10 mm	2	04175	6	left	98.8	0.470	0.186	1.012	1.012	0.190	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram											

Table 11-39
WLAN MIMO Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5180	36	802.11n	OFDM	20	17.0	16.94	17.0	16.73	0.07	10 mm	MIMO	04175	13	back	98.4	1.533	0.624	1.064	1.016	0.675	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.18	10 mm	MIMO	04175	13	back	98.4	1.976	0.834	1.014	1.016	0.859	A50
5220	44	802.11n	OFDM	20	17.0	16.92	17.0	16.94	0.21	10 mm	MIMO	04175	13	back	98.4	1.637	0.718	1.019	1.016	0.743	
5240	48	802.11n	OFDM	20	17.0	16.94	17.0	16.90	0.02	10 mm	MIMO	04175	13	back	98.4	1.809	0.778	1.023	1.016	0.809	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.19	10 mm	MIMO	04175	13	front	98.4	0.045	0.015	1.014	1.016	0.015	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	-0.01	10 mm	MIMO	04175	13	top	98.4	0.142	-	1.014	1.016	-	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.13	10 mm	MIMO	04175	13	left	98.4	0.393	0.191	1.014	1.016	0.197	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.12	10 mm	MIMO	04175	13	back	98.4	1.827	0.758	1.030	1.016	0.793	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.20	10 mm	MIMO	04175	13	front	98.4	0.042	0.013	1.030	1.016	0.014	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.15	10 mm	MIMO	04175	13	top	98.4	0.132	-	1.030	1.016	-	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	-0.15	10 mm	MIMO	04175	13	left	98.4	0.408	0.175	1.030	1.016	0.183	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: To achieve the 5GHz WLAN 20.0 dBm (Ch. 36, 44, 48) and 21 dBm (Ch. 40, 157) maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm (Ch. 36, 44, 48) and 18.0 dBm (Ch. 40, 157).

Table 11-40
WLAN Hotspot SAR for Conditions with 2.4 GHz Ant 1 and 5 GHz WLAN Ant 2

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5230	46	802.11n	OFDM	40	15.0	14.80	0.07	10 mm	2	04175	13.5	back	98.2	1.168	0.436	1.047	1.018	0.465	
5230	46	802.11n	OFDM	40	15.0	14.80	0.19	10 mm	2	04175	13.5	front	98.2	0.005	-	1.047	1.018	-	
5230	46	802.11n	OFDM	40	15.0	14.80	0.19	10 mm	2	04175	13.5	top	98.2	0.065	-	1.047	1.018	-	
5230	46	802.11n	OFDM	40	15.0	14.80	0.17	10 mm	2	04175	13.5	left	98.2	0.228	0.100	1.047	1.018	0.107	
5795	159	802.11n	OFDM	40	15.0	14.97	0.12	10 mm	2	04175	13.5	back	98.2	0.959	0.381	1.007	1.018	0.391	
5795	159	802.11n	OFDM	40	15.0	14.97	0.19	10 mm	2	04175	13.5	front	98.2	0.007	-	1.007	1.018	-	
5795	159	802.11n	OFDM	40	15.0	14.97	-0.19	10 mm	2	04175	13.5	top	98.2	0.048	-	1.007	1.018	-	
5795	159	802.11n	OFDM	40	15.0	14.97	0.19	10 mm	2	04175	13.5	left	98.2	0.211	-	1.007	1.018	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram					

NII was additionally evaluated at the maximum allowed output power during operations with simultaneous 2.4 GHz Ant 1 and 5 GHz Ant 2 WLAN. 2.4 GHz Ant1 WIFI was not transmitting during the above evaluations.

Table 11-41
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	12.0	11.86	0.21	10 mm	04183	1	back	77.1	0.016	1.033	1.297	0.021	
2441	39	Bluetooth	FHSS	12.0	11.86	0.17	10 mm	04183	1	front	77.1	0.010	1.033	1.297	0.013	
2441	39	Bluetooth	FHSS	12.0	11.86	0.06	10 mm	04183	1	top	77.1	0.023	1.033	1.297	**0.031**	A52
2441	39	Bluetooth	FHSS	12.0	11.86	0.02	10 mm	04183	1	left	77.1	0.005	1.033	1.297	0.007	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram				

11.4 Standalone Phablet SAR Data

Table 11-42
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	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	0.00	3 mm	04118	1:1	back	0.768	1.033	0.793	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.02	2 mm	04118	1:1	front	0.672	1.033	0.694	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.04	5 mm	04118	1:1	bottom	0.915	1.033	0.945	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.26	-0.02	0 mm	04118	1:1	left	0.538	1.033	0.556	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.2	21.98	0.03	0 mm	04118	1:1	back	1.770	1.052	1.862	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.2	21.98	0.00	0 mm	04118	1:1	front	1.250	1.052	1.315	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.2	21.95	0.01	0 mm	04118	1:1	bottom	2.730	1.059	2.891	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.2	21.98	0.01	0 mm	04118	1:1	bottom	2.740	1.052	2.882	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.2	21.96	0.01	0 mm	04118	1:1	bottom	2.780	1.057	2.938	A53
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.2	21.96	-0.07	0 mm	04118	1:1	bottom	2.730	1.057	2.886	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	0.00	3 mm	04126	1:1	back	0.826	1.094	0.904	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.06	2 mm	04126	1:1	front	0.936	1.094	1.024	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.03	5 mm	04126	1:1	bottom	1.030	1.094	1.127	
1732.40	1412	UMTS 1750	RMC	24.7	24.31	-0.10	0 mm	04126	1:1	left	0.806	1.094	0.882	
1732.40	1412	UMTS 1750	RMC	23.2	23.00	-0.01	0 mm	04126	1:1	back	1.520	1.047	1.591	
1732.40	1412	UMTS 1750	RMC	23.2	23.00	-0.13	0 mm	04126	1:1	front	1.340	1.047	1.403	
1712.40	1312	UMTS 1750	RMC	23.2	23.06	-0.05	0 mm	04126	1:1	bottom	3.010	1.033	3.109	
1732.40	1412	UMTS 1750	RMC	23.2	23.00	-0.07	0 mm	04126	1:1	bottom	3.050	1.047	**3.193**	
1752.60	1513	UMTS 1750	RMC	23.2	23.12	-0.06	0 mm	04126	1:1	bottom	3.130	1.019	**3.189**	A54
1752.60	1513	UMTS 1750	RMC	23.2	23.12	-0.12	0 mm	04126	1:1	bottom	3.070	1.019	3.128	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.08	3 mm	04126	1:1	back	0.915	1.040	0.952	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.05	2 mm	04126	1:1	front	1.090	1.040	1.134	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.02	5 mm	04126	1:1	bottom	1.250	1.040	1.300	
1880.00	9400	UMTS 1900	RMC	24.4	24.23	0.01	0 mm	04126	1:1	left	0.736	1.040	0.765	
1880.00	9400	UMTS 1900	RMC	22.2	22.01	-0.03	0 mm	04188	1:1	back	1.860	1.045	1.944	
1880.00	9400	UMTS 1900	RMC	22.2	22.01	0.09	0 mm	04188	1:1	front	1.460	1.045	1.526	
1852.40	9262	UMTS 1900	RMC	22.2	21.90	-0.03	0 mm	04188	1:1	bottom	2.340	1.072	2.508	A55
1880.00	9400	UMTS 1900	RMC	22.2	22.01	-0.05	0 mm	04188	1:1	bottom	2.340	1.045	2.445	
1907.60	9538	UMTS 1900	RMC	22.2	22.04	-0.08	0 mm	04188	1:1	bottom	2.200	1.038	2.284	
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 11-43
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)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.03	0	04142	QPSK	1	0	3 mm	back	1:1	0.711	1.005	0.715	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.03	1	04142	QPSK	50	25	3 mm	back	1:1	0.628	1.028	0.646	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	0.00	0	04142	QPSK	1	0	2 mm	front	1:1	0.833	1.005	0.837	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.06	1	04142	QPSK	50	25	2 mm	front	1:1	0.745	1.028	0.766	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.04	0	04142	QPSK	1	0	5 mm	bottom	1:1	0.884	1.005	0.888	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.04	1	04142	QPSK	50	25	5 mm	bottom	1:1	0.804	1.028	0.827	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.18	-0.11	0	04142	QPSK	1	0	0 mm	left	1:1	0.644	1.005	0.647	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.08	-0.13	1	04142	QPSK	50	25	0 mm	left	1:1	0.567	1.028	0.583	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	-0.04	0	04159	QPSK	1	50	0 mm	back	1:1	1.680	1.042	1.751	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.95	-0.04	0	04159	QPSK	50	25	0 mm	back	1:1	1.640	1.059	1.737	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	-0.13	0	04159	QPSK	1	50	0 mm	front	1:1	1.310	1.042	1.365	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.95	-0.18	0	04159	QPSK	50	25	0 mm	front	1:1	1.070	1.059	1.133	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.99	-0.02	0	04159	QPSK	1	50	0 mm	bottom	1:1	2.110	1.050	2.216	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.97	-0.04	0	04159	QPSK	1	99	0 mm	bottom	1:1	2.340	1.054	2.466	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	23.02	-0.07	0	04159	QPSK	1	50	0 mm	bottom	1:1	2.460	1.042	2.563	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.95	-0.05	0	04159	QPSK	50	25	0 mm	bottom	1:1	2.220	1.059	2.351	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.89	-0.02	0	04159	QPSK	50	25	0 mm	bottom	1:1	2.470	1.074	2.653	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.75	-0.05	0	04159	QPSK	50	0	0 mm	bottom	1:1	2.690	1.109	2.983	A56
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.82	0.02	0	04159	QPSK	100	0	0 mm	bottom	1:1	2.230	1.091	2.433	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	-0.02	0	04126	QPSK	1	0	3 mm	back	1:1	1.050	1.012	1.063	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	-0.10	1	04126	QPSK	50	0	3 mm	back	1:1	0.842	1.007	0.848	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.11	0	04126	QPSK	1	0	2 mm	front	1:1	0.952	1.012	0.963	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.11	1	04126	QPSK	50	0	2 mm	front	1:1	0.784	1.007	0.789	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	0.04	0	04126	QPSK	1	0	5 mm	bottom	1:1	0.867	1.012	0.877	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.05	1	04126	QPSK	50	0	5 mm	bottom	1:1	0.740	1.007	0.745	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.35	-0.01	0	04126	QPSK	1	0	0 mm	left	1:1	0.721	1.012	0.730	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	23.37	0.02	1	04126	QPSK	50	0	0 mm	left	1:1	0.589	1.007	0.593	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.2	22.08	0.17	0	04134	QPSK	1	50	0 mm	back	1:1	1.230	1.028	1.264	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.2	22.06	-0.11	0	04134	QPSK	50	50	0 mm	back	1:1	1.300	1.033	1.343	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.2	22.08	0.03	0	04134	QPSK	1	50	0 mm	front	1:1	1.450	1.028	1.491	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.2	22.06	0.06	0	04134	QPSK	50	50	0 mm	front	1:1	1.400	1.033	1.446	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.2	22.03	0.02	0	04134	QPSK	1	50	0 mm	bottom	1:1	2.280	1.040	2.371	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.2	21.96	0.01	0	04134	QPSK	1	99	0 mm	bottom	1:1	2.310	1.057	2.442	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.2	22.08	0.03	0	04134	QPSK	1	50	0 mm	bottom	1:1	2.290	1.028	2.354	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.2	22.04	0.03	0	04134	QPSK	50	50	0 mm	bottom	1:1	2.360	1.038	2.450	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.2	22.06	0.02	0	04134	QPSK	50	50	0 mm	bottom	1:1	2.300	1.033	2.376	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.2	21.90	0.03	0	04134	QPSK	50	0	0 mm	bottom	1:1	2.500	1.072	2.680	A57
1905.00	26590	High	LTE Band 25 (PCS)	20	22.2	21.99	0.05	0	04134	QPSK	100	0	0 mm	bottom	1:1	2.440	1.050	2.562	
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 11-44
WLAN SISO Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	18.0	17.98	-0.11	0 mm	1	04175	6	back	99.2	5.114	0.314	1.005	1.008	0.318	
5280	56	802.11a	OFDM	20	18.0	17.98	0.17	0 mm	1	04175	6	front	99.2	3.760	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.12	0 mm	1	04175	6	top	99.2	0.451	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.21	0 mm	1	04175	6	left	99.2	0.308	-	1.005	1.008	-	
5260	52	802.11a	OFDM	20	17.0	16.97	-0.12	0 mm	2	04175	6	back	98.8	30.287	1.960	1.007	1.012	1.997	
5280	56	802.11a	OFDM	20	18.0	17.98	0.03	0 mm	2	04175	6	back	98.8	38.606	2.500	1.005	1.012	**2.543**	
5320	64	802.11a	OFDM	20	17.0	16.99	-0.01	0 mm	2	04175	6	back	98.8	47.827	2.150	1.002	1.012	2.180	
5280	56	802.11a	OFDM	20	18.0	17.98	0.19	0 mm	2	04175	6	front	98.8	0.164	0.022	1.005	1.012	0.022	
5280	56	802.11a	OFDM	20	18.0	17.98	0.16	0 mm	2	04175	6	top	98.8	0.278	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.18	0 mm	2	04175	6	left	98.8	3.903	0.437	1.005	1.012	0.444	
5600	120	802.11a	OFDM	20	17.0	16.99	0.13	0 mm	1	04175	6	back	99.2	8.236	0.350	1.002	1.008	0.354	
5600	120	802.11a	OFDM	20	17.0	16.99	0.18	0 mm	1	04175	6	front	99.2	4.023	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.13	0 mm	1	04175	6	top	99.2	0.428	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.16	0 mm	1	04175	6	left	99.2	0.473	-	1.002	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.16	0 mm	2	04175	6	back	98.8	13.882	1.450	1.002	1.012	1.470	
5720	144	802.11a	OFDM	20	17.0	16.99	0.19	0 mm	2	04175	6	front	98.8	0.482	0.080	1.002	1.012	0.081	
5720	144	802.11a	OFDM	20	17.0	16.99	0.18	0 mm	2	04175	6	top	98.8	0.174	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.19	0 mm	2	04175	6	left	98.8	2.546	0.320	1.002	1.012	0.324	

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

Table 11-45
WLAN MIMO Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	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	802.11n	OFDM	20	17.0	16.91	17.0	16.79	0.20	0 mm	MIMO	04175	13	back	98.4	23.840	2.050	1.050	1.016	2.187	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	-0.02	0 mm	MIMO	04175	13	back	98.4	54.401	2.690	1.007	1.016	2.752	A58
5320	64	802.11n	OFDM	20	17.0	16.97	17.0	16.96	0.21	0 mm	MIMO	04175	13	back	98.4	42.277	2.150	1.009	1.016	2.204	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.15	0 mm	MIMO	04175	13	front	98.4	3.525	0.279	1.007	1.016	0.285	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	-0.08	0 mm	MIMO	04175	13	top	98.4	0.620	-	1.007	1.016	-	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.13	0 mm	MIMO	04175	13	left	98.4	4.009	0.443	1.007	1.016	0.453	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.18	0 mm	MIMO	04175	13	back	98.4	24.032	1.480	1.012	1.016	1.522	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.21	0 mm	MIMO	04175	13	front	98.4	2.185	0.270	1.012	1.016	0.278	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.14	0 mm	MIMO	04175	13	top	98.4	0.517	-	1.012	1.016	-	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.18	0 mm	MIMO	04175	13	left	98.4	2.645	0.311	1.012	1.016	0.320	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.06	0 mm	MIMO	04175	13	back	98.4	48.467	2.530	1.007	1.016	2.588	

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

Note:

1. Blue entries indicate variability measurements.
2. To achieve the 5GHz WLAN 20.0 dBm (Ch. 52, 64, 144) and 21 dBm (Ch. 56) maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm (Ch. 52, 64, 144) and 18.0 dBm (Ch. 56).

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. 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. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).
13. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.

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.
6. CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

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 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.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test

positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.
5. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
6. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
7. When 10-g 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.

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 Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.195	0.486	0.076	0.681	0.271	0.757
	CDMA/EVDO BC0 (§22H)	0.127	0.486	0.076	0.613	0.203	0.689
	PCS CDMA/EVDO	0.128	0.486	0.076	0.614	0.204	0.690
	GSM/GPRS 850	0.205	0.486	0.076	0.691	0.281	**0.767**
	GSM/GPRS 1900	0.068	0.486	0.076	0.554	0.144	0.630
	UMTS 850	0.182	0.486	0.076	0.668	0.258	0.744
	UMTS 1750	0.133	0.486	0.076	0.619	0.209	0.695
	UMTS 1900	0.124	0.486	0.076	0.610	0.200	0.686
	LTE Band 12	0.107	0.486	0.076	0.593	0.183	0.669
	LTE Band 13	0.170	0.486	0.076	0.656	0.246	0.732
	LTE Band 5 (Cell)	0.123	0.486	0.076	0.609	0.199	0.685
	LTE Band 26 (Cell)	0.123	0.486	0.076	0.609	0.199	0.685
	LTE Band 66 (AWS)	0.096	0.486	0.076	0.582	0.172	0.658
	LTE Band 25 (PCS)	0.134	0.486	0.076	0.620	0.210	0.696
	LTE Band 30	0.019	0.486	0.076	0.505	0.095	0.581
	LTE Band 7	0.041	0.486	0.076	0.527	0.117	0.603
	LTE Band 41	0.033	0.486	0.076	0.519	0.109	0.595

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.195	0.587	0.103	0.782	0.298	0.885
	CDMA/EVDO BC0 (§22H)	0.127	0.587	0.103	0.714	0.230	0.817
	PCS CDMA/EVDO	0.128	0.587	0.103	0.715	0.231	0.818
	GSM/GPRS 850	0.205	0.587	0.103	0.792	0.308	**0.895**
	GSM/GPRS 1900	0.068	0.587	0.103	0.655	0.171	0.758
	UMTS 850	0.182	0.587	0.103	0.769	0.285	0.872
	UMTS 1750	0.133	0.587	0.103	0.720	0.236	0.823
	UMTS 1900	0.124	0.587	0.103	0.711	0.227	0.814
	LTE Band 12	0.107	0.587	0.103	0.694	0.210	0.797
	LTE Band 13	0.170	0.587	0.103	0.757	0.273	0.860
	LTE Band 5 (Cell)	0.123	0.587	0.103	0.710	0.226	0.813
	LTE Band 26 (Cell)	0.123	0.587	0.103	0.710	0.226	0.813
	LTE Band 66 (AWS)	0.096	0.587	0.103	0.683	0.199	0.786
	LTE Band 25 (PCS)	0.134	0.587	0.103	0.721	0.237	0.824
	LTE Band 30	0.019	0.587	0.103	0.606	0.122	0.709
	LTE Band 7	0.041	0.587	0.103	0.628	0.144	0.731
	LTE Band 41	0.033	0.587	0.103	0.620	0.136	0.723

Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.195	0.486	0.103	0.681	0.298	0.784
	CDMA/EVDO BC0 (§22H)	0.127	0.486	0.103	0.613	0.230	0.716
	PCS CDMA/EVDO	0.128	0.486	0.103	0.614	0.231	0.717
	GSM/GPRS 850	0.205	0.486	0.103	0.691	0.308	**0.794**
	GSM/GPRS 1900	0.068	0.486	0.103	0.554	0.171	0.657
	UMTS 850	0.182	0.486	0.103	0.668	0.285	0.771
	UMTS 1750	0.133	0.486	0.103	0.619	0.236	0.722
	UMTS 1900	0.124	0.486	0.103	0.610	0.227	0.713
	LTE Band 12	0.107	0.486	0.103	0.593	0.210	0.696
	LTE Band 13	0.170	0.486	0.103	0.656	0.273	0.759
	LTE Band 5 (Cell)	0.123	0.486	0.103	0.609	0.226	0.712
	LTE Band 26 (Cell)	0.123	0.486	0.103	0.609	0.226	0.712
	LTE Band 66 (AWS)	0.096	0.486	0.103	0.582	0.199	0.685
	LTE Band 25 (PCS)	0.134	0.486	0.103	0.620	0.237	0.723
	LTE Band 30	0.019	0.486	0.103	0.505	0.122	0.608
	LTE Band 7	0.041	0.486	0.103	0.527	0.144	0.630
	LTE Band 41	0.033	0.486	0.103	0.519	0.136	0.622

Note: For some simultaneous transmission scenarios with 2.4 GHz WLAN and 5 GHz WLAN, SAR values at the maximum output power level were used since they were conservative.

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	CDMA/EVDO BC10 (§90S)	0.195	0.119	0.314
	CDMA/EVDO BC0 (§22H)	0.127	0.119	0.246
	PCS CDMA/EVDO	0.128	0.119	0.247
	GSM/GPRS 850	0.205	0.119	**0.324**
	GSM/GPRS 1900	0.068	0.119	0.187
	UMTS 850	0.182	0.119	0.301
	UMTS 1750	0.133	0.119	0.252
	UMTS 1900	0.124	0.119	0.243
	LTE Band 12	0.107	0.119	0.226
	LTE Band 13	0.170	0.119	0.289
	LTE Band 5 (Cell)	0.123	0.119	0.242
	LTE Band 26 (Cell)	0.123	0.119	0.242
	LTE Band 66 (AWS)	0.096	0.119	0.215
	LTE Band 25 (PCS)	0.134	0.119	0.253
	LTE Band 30	0.019	0.119	0.138
	LTE Band 7	0.041	0.119	0.160
	LTE Band 41	0.033	0.119	0.152

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 Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)			SPLSR		
		1	2	3	1+2	1+3	1+2+3	1+2	1+3	2+3
Body-Worn	CDMA BC10 (§90S)	0.459	0.230	0.335	0.689	0.794	1.024	N/A	N/A	N/A
	CDMA BC0 (§22H)	0.360	0.230	0.335	0.590	0.695	0.925	N/A	N/A	N/A
	PCS CDMA	0.530	0.230	0.335	0.760	0.865	1.095	N/A	N/A	N/A
	GSM/GPRS 850	0.373	0.230	0.335	0.603	0.708	0.938	N/A	N/A	N/A
	GSM/GPRS 1900	0.336	0.230	0.335	0.566	0.671	0.901	N/A	N/A	N/A
	UMTS 850	0.393	0.230	0.335	0.623	0.728	0.958	N/A	N/A	N/A
	UMTS 1750	0.479	0.230	0.335	0.709	0.814	1.044	N/A	N/A	N/A
	UMTS 1900	0.569	0.230	0.335	0.799	0.904	1.134	N/A	N/A	N/A
	LTE Band 12	0.430	0.230	0.335	0.660	0.765	0.995	N/A	N/A	N/A
	LTE Band 13	0.440	0.230	0.335	0.670	0.775	1.005	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.364	0.230	0.335	0.594	0.699	0.929	N/A	N/A	N/A
	LTE Band 26 (Cell)	0.428	0.230	0.335	0.658	0.763	0.993	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.457	0.230	0.335	0.687	0.792	1.022	N/A	N/A	N/A
	LTE Band 25 (PCS)	0.598	0.230	0.335	0.828	0.933	1.163	N/A	N/A	N/A
	LTE Band 30	0.505	0.230	0.335	0.735	0.840	1.070	N/A	N/A	N/A
	LTE Band 7	1.186	0.230	0.335	1.416	**1.521**	See Note 1	0.01	0.01	0.02
	LTE Band 41	0.514	0.230	0.335	0.744	0.849	1.079	N/A	N/A	N/A

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 Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		SPLSR
		1	2	3	1+2	1+3	1+3
Body-Worn	CDMA BC10 (§90S)	0.459	0.110	1.058	0.569	1.517	N/A
	CDMA BC0 (§22H)	0.360	0.110	1.058	0.470	1.418	N/A
	PCS CDMA	0.530	0.110	1.058	0.640	**1.588**	N/A
	GSM/GPRS 850	0.373	0.110	1.058	0.483	1.431	N/A
	GSM/GPRS 1900	0.336	0.110	1.058	0.446	1.394	N/A
	UMTS 850	0.393	0.110	1.058	0.503	1.451	N/A
	UMTS 1750	0.479	0.110	1.058	0.589	1.537	N/A
	UMTS 1900	0.569	0.110	1.058	0.679	See Note 1	0.02
	LTE Band 12	0.430	0.110	1.058	0.540	1.488	N/A
	LTE Band 13	0.440	0.110	1.058	0.550	1.498	N/A
	LTE Band 5 (Cell)	0.364	0.110	1.058	0.474	1.422	N/A
	LTE Band 26 (Cell)	0.428	0.110	1.058	0.538	1.486	N/A
	LTE Band 66 (AWS)	0.457	0.110	1.058	0.567	1.515	N/A
	LTE Band 25 (PCS)	0.598	0.110	1.058	0.708	See Note 1	0.02
	LTE Band 30	0.505	0.110	1.058	0.615	1.563	N/A
	LTE Band 7	1.186	0.110	1.058	1.296	See Note 1	0.03
	LTE Band 41	0.514	0.110	1.058	0.624	1.572	N/A

Table 12-7
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Body-Worn	CDMA BC10 (§90S)	0.459	1.146	See Note 1	0.02
	CDMA BC0 (§22H)	0.360	1.146	1.506	N/A
	PCS CDMA	0.530	1.146	See Note 1	0.02
	GSM/GPRS 850	0.373	1.146	1.519	N/A
	GSM/GPRS 1900	0.336	1.146	1.482	N/A
	UMTS 850	0.393	1.146	1.539	N/A
	UMTS 1750	0.479	1.146	See Note 1	0.02
	UMTS 1900	0.569	1.146	See Note 1	0.02
	LTE Band 12	0.430	1.146	1.576	N/A
	LTE Band 13	0.440	1.146	**1.586**	N/A
	LTE Band 5 (Cell)	0.364	1.146	1.510	N/A
	LTE Band 26 (Cell)	0.428	1.146	1.574	N/A
	LTE Band 66 (AWS)	0.457	1.146	See Note 1	0.02
	LTE Band 25 (PCS)	0.598	1.146	See Note 1	0.02
	LTE Band 30	0.505	1.146	See Note 1	0.02
	LTE Band 7	1.186	1.146	See Note 1	0.03
	LTE Band 41	0.514	1.146	See Note 1	0.02

Table 12-8
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Body-Worn	CDMA BC10 (§90S)	0.459	0.230	0.537	1.226	N/A	N/A	N/A
	CDMA BC0 (§22H)	0.360	0.230	0.537	1.127	N/A	N/A	N/A
	PCS CDMA	0.530	0.230	0.537	1.297	N/A	N/A	N/A
	GSM/GPRS 850	0.373	0.230	0.537	1.140	N/A	N/A	N/A
	GSM/GPRS 1900	0.336	0.230	0.537	1.103	N/A	N/A	N/A
	UMTS 850	0.393	0.230	0.537	1.160	N/A	N/A	N/A
	UMTS 1750	0.479	0.230	0.537	1.246	N/A	N/A	N/A
	UMTS 1900	0.569	0.230	0.537	1.336	N/A	N/A	N/A
	LTE Band 12	0.430	0.230	0.537	1.197	N/A	N/A	N/A
	LTE Band 13	0.440	0.230	0.537	1.207	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.364	0.230	0.537	1.131	N/A	N/A	N/A
	LTE Band 26 (Cell)	0.428	0.230	0.537	1.195	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.457	0.230	0.537	1.224	N/A	N/A	N/A
	LTE Band 25 (PCS)	0.598	0.230	0.537	**1.365**	N/A	N/A	N/A
	LTE Band 30	0.505	0.230	0.537	1.272	N/A	N/A	N/A
	LTE Band 7	1.186	0.230	0.537	See Note 1	0.01	0.02	0.02
	LTE Band 41	0.514	0.230	0.537	1.281	N/A	N/A	N/A

Note: For some simultaneous transmission scenarios with 2.4 GHz WLAN and 5 GHz WLAN, SAR values at the maximum output power level were used since they were conservative.

Table 12-9
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	CDMA BC10 (§90S)	0.459	0.021	0.480
	CDMA BC0 (§22H)	0.360	0.021	0.381
	PCS CDMA	0.530	0.021	0.551
	GSM/GPRS 850	0.373	0.021	0.394
	GSM/GPRS 1900	0.336	0.021	0.357
	UMTS 850	0.393	0.021	0.414
	UMTS 1750	0.479	0.021	0.500
	UMTS 1900	0.569	0.021	0.590
	LTE Band 12	0.430	0.021	0.451
	LTE Band 13	0.440	0.021	0.461
	LTE Band 5 (Cell)	0.364	0.021	0.385
	LTE Band 26 (Cell)	0.428	0.021	0.449
	LTE Band 66 (AWS)	0.457	0.021	0.478
	LTE Band 25 (PCS)	0.598	0.021	0.619
	LTE Band 30	0.505	0.021	0.526
	LTE Band 7	1.186	0.021	**1.207**
	LTE Band 41	0.514	0.021	0.535

Notes:

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

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 applicable exposure conditions was used for simultaneous transmission analysis.

Table 12-10
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 Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.552	0.329	0.335	0.881	0.887	1.216
	EVDO BC0 (§22H)	0.417	0.329	0.335	0.746	0.752	1.081
	PCS EVDO	0.915	0.329	0.335	1.244	1.250	1.579
	GPRS 850	0.373	0.329	0.335	0.702	0.708	1.037
	GPRS 1900	0.696	0.329	0.335	1.025	1.031	1.360
	UMTS 850	0.393	0.329	0.335	0.722	0.728	1.057
	UMTS 1750	0.884	0.329	0.335	1.213	1.219	1.548
	UMTS 1900	1.103	0.329	0.335	1.432	1.438	See Table Below
	LTE Band 12	0.430	0.329	0.335	0.759	0.765	1.094
	LTE Band 13	0.440	0.329	0.335	0.769	0.775	1.104
	LTE Band 5 (Cell)	0.364	0.329	0.335	0.693	0.699	1.028
	LTE Band 26 (Cell)	0.428	0.329	0.335	0.757	0.763	1.092
	LTE Band 66 (AWS)	0.699	0.329	0.335	1.028	1.034	1.363
	LTE Band 25 (PCS)	0.930	0.329	0.335	1.259	1.265	**1.594**
	LTE Band 30	0.642	0.329	0.335	0.971	0.977	1.306
	LTE Band 7	1.197	0.329	0.335	1.526	1.532	See Table Below
	LTE Band 41	0.514	0.329	0.335	0.843	0.849	1.178

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	Back	0.569	0.230	0.335	0.799	0.904	1.134
	Front	0.492	0.329*	0.335*	0.821	0.827	**1.156**
	Top	-	0.329	0.335*	0.329	0.335	0.664
	Bottom	1.103	-	-	1.103	1.103	1.103
	Right	-	-	-	0.000	0.000	0.000
	Left	0.238	0.329*	0.335*	0.567	0.573	0.902

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)			SPLSR		
		1	2	3	1+2	1+3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	1.186	0.230	0.335	1.416	**1.521**	See Note 1	0.01	0.01	0.02
	Front	0.514	0.329*	0.335*	0.843	0.849	1.178	N/A	N/A	N/A
	Top	-	0.329	0.335*	0.329	0.335	0.664	N/A	N/A	N/A
	Bottom	1.197	-	-	1.197	1.197	1.197	N/A	N/A	N/A
	Right	0.067	-	-	0.067	0.067	0.067	N/A	N/A	N/A
	Left	0.076	0.329*	0.335*	0.405	0.411	0.740	N/A	N/A	N/A

Table 12-11
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Hotspot SAR	EVDO BC10 (§90S)	0.552	0.100	0.823	0.652	1.375
	EVDO BC0 (§22H)	0.417	0.100	0.823	0.517	1.240
	PCS EVDO	0.915	0.100	0.823	1.015	See Table Below
	GPRS 850	0.373	0.100	0.823	0.473	1.196
	GPRS 1900	0.696	0.100	0.823	0.796	1.519
	UMTS 850	0.393	0.100	0.823	0.493	1.216
	UMTS 1750	0.884	0.100	0.823	0.984	See Table Below
	UMTS 1900	1.103	0.100	0.823	1.203	See Table Below
	LTE Band 12	0.430	0.100	0.823	0.530	1.253
	LTE Band 13	0.440	0.100	0.823	0.540	1.263
	LTE Band 5 (Cell)	0.364	0.100	0.823	0.464	1.187
	LTE Band 26 (Cell)	0.428	0.100	0.823	0.528	1.251
	LTE Band 66 (AWS)	0.699	0.100	0.823	0.799	**1.522**
	LTE Band 25 (PCS)	0.930	0.100	0.823	1.030	See Table Below
	LTE Band 30	0.642	0.100	0.823	0.742	1.465
	LTE Band 7	1.197	0.100	0.823	1.297	See Table Below
	LTE Band 41	0.514	0.100	0.823	0.614	1.337

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.487	0.823	**1.310**
	Front	0.442	0.006	0.448
	Top	-	0.823*	0.823
	Bottom	0.915	-	0.915
	Right	-	-	0.000
	Left	0.246	0.190	0.436

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.479	0.823	**1.302**
	Front	0.393	0.006	0.399
	Top	-	0.823*	0.823
	Bottom	0.884	-	0.884
	Right	-	-	0.000
	Left	0.329	0.190	0.519

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.569	0.823	**1.392**
	Front	0.492	0.006	0.498
	Top	-	0.823*	0.823
	Bottom	1.103	-	1.103
	Right	-	-	0.000
	Left	0.238	0.190	0.428

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.598	0.823	**1.421**
	Front	0.400	0.006	0.406
	Top	-	0.823*	0.823
	Bottom	0.930	-	0.930
	Right	-	-	0.000
	Left	0.263	0.190	0.453

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.186	0.823	See Note 1	0.03
	Front	0.514	0.006	0.520	N/A
	Top	-	0.823*	0.823	N/A
	Bottom	1.197	-	**1.197**	N/A
	Right	0.067	-	0.067	N/A
	Left	0.076	0.190	0.266	N/A

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	EVDO BC10 (§90S)	0.552	0.859	1.411
	EVDO BC0 (§22H)	0.417	0.859	1.276
	PCS EVDO	0.915	0.859	See Table Below
	GPRS 850	0.373	0.859	1.232
	GPRS 1900	0.696	0.859	1.555
	UMTS 850	0.393	0.859	1.252
	UMTS 1750	0.884	0.859	See Table Below
	UMTS 1900	1.103	0.859	See Table Below
	LTE Band 12	0.430	0.859	1.289
	LTE Band 13	0.440	0.859	1.299
	LTE Band 5 (Cell)	0.364	0.859	1.223
	LTE Band 26 (Cell)	0.428	0.859	1.287
	LTE Band 66 (AWS)	0.699	0.859	**1.558**
	LTE Band 25 (PCS)	0.930	0.859	See Table Below
	LTE Band 30	0.642	0.859	1.501
	LTE Band 7	1.197	0.859	See Table Below
	LTE Band 41	0.514	0.859	1.373

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.487	0.859	**1.346**
	Front	0.442	0.015	0.457
	Top	-	0.859*	0.859
	Bottom	0.915	-	0.915
	Right	-	-	0.000
	Left	0.246	0.197	0.443

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.479	0.859	**1.338**
	Front	0.393	0.015	0.408
	Top	-	0.859*	0.859
	Bottom	0.884	-	0.884
	Right	-	-	0.000
	Left	0.329	0.197	0.526

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.569	0.859	**1.428**
	Front	0.492	0.015	0.507
	Top	-	0.859*	0.859
	Bottom	1.103	-	1.103
	Right	-	-	0.000
	Left	0.238	0.197	0.435

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.598	0.859	**1.457**
	Front	0.400	0.015	0.415
	Top	-	0.859*	0.859
	Bottom	0.930	-	0.930
	Right	-	-	0.000
	Left	0.263	0.197	0.460

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.186	0.859	See Note 1	0.03
	Front	0.514	0.015	0.529	N/A
	Top	-	0.859*	0.859	N/A
	Bottom	1.197	-	**1.197**	N/A
	Right	0.067	-	0.067	N/A
	Left	0.076	0.197	0.273	N/A

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.552	0.329	0.465	1.346
	EVDO BC0 (§22H)	0.417	0.329	0.465	1.211
	PCS EVDO	0.915	0.329	0.465	See Table Below
	GPRS 850	0.373	0.329	0.465	1.167
	GPRS 1900	0.696	0.329	0.465	1.490
	UMTS 850	0.393	0.329	0.465	1.187
	UMTS 1750	0.884	0.329	0.465	See Table Below
	UMTS 1900	1.103	0.329	0.465	See Table Below
	LTE Band 12	0.430	0.329	0.465	1.224
	LTE Band 13	0.440	0.329	0.465	1.234
	LTE Band 5 (Cell)	0.364	0.329	0.465	1.158
	LTE Band 26 (Cell)	0.428	0.329	0.465	1.222
	LTE Band 66 (AWS)	0.699	0.329	0.465	**1.493**
	LTE Band 25 (PCS)	0.930	0.329	0.465	See Table Below
	LTE Band 30	0.642	0.329	0.465	1.436
	LTE Band 7	1.197	0.329	0.465	See Table Below
	LTE Band 41	0.514	0.329	0.465	1.308

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.487	0.230	0.465	1.182
	Front	0.442	0.329*	0.465*	**1.236**
	Top	-	0.329	0.465*	0.794
	Bottom	0.915	-	-	0.915
	Right	-	-	-	0.000
	Left	0.246	0.329*	0.107	0.682

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.479	0.230	0.465	1.174
	Front	0.393	0.329*	0.465*	**1.187**
	Top	-	0.329	0.465*	0.794
	Bottom	0.884	-	-	0.884
	Right	-	-	-	0.000
	Left	0.329	0.329*	0.107	0.765

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.569	0.230	0.465	1.264
	Front	0.492	0.329*	0.465*	**1.286**
	Top	-	0.329	0.465*	0.794
	Bottom	1.103	-	-	1.103
	Right	-	-	-	0.000
	Left	0.238	0.329*	0.107	0.674

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.598	0.230	0.465	**1.293**
	Front	0.400	0.329*	0.465*	1.194
	Top	-	0.329	0.465*	0.794
	Bottom	0.930	-	-	0.930
	Right	-	-	-	0.000
	Left	0.263	0.329*	0.107	0.699

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 at 14 dBm SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	1.186	0.230	0.465	See Note 1	0.01	0.02	0.02
	Front	0.514	0.329*	0.465*	**1.308**	N/A	N/A	N/A
	Top	-	0.329	0.465*	0.794	N/A	N/A	N/A
	Bottom	1.197	-	-	1.197	N/A	N/A	N/A
	Right	0.067	-	-	0.067	N/A	N/A	N/A
	Left	0.076	0.329*	0.107	0.512	N/A	N/A	N/A

Note: For some simultaneous transmission scenarios with 2.4 GHz WLAN and 5 GHz WLAN, SAR values at the maximum output power level were used since they were conservative.

Table 12-14
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	EVDO BC10 (§90S)	0.552	0.031	0.583
	EVDO BC0 (§22H)	0.417	0.031	0.448
	PCS EVDO	0.915	0.031	0.946
	GPRS 850	0.373	0.031	0.404
	GPRS 1900	0.696	0.031	0.727
	UMTS 850	0.393	0.031	0.424
	UMTS 1750	0.884	0.031	0.915
	UMTS 1900	1.103	0.031	1.134
	LTE Band 12	0.430	0.031	0.461
	LTE Band 13	0.440	0.031	0.471
	LTE Band 5 (Cell)	0.364	0.031	0.395
	LTE Band 26 (Cell)	0.428	0.031	0.459
	LTE Band 66 (AWS)	0.699	0.031	0.730
	LTE Band 25 (PCS)	0.930	0.031	0.961
	LTE Band 30	0.642	0.031	0.673
	LTE Band 7	1.197	0.031	**1.228**
	LTE Band 41	0.514	0.031	0.545

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

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 applicable exposure conditions was used for simultaneous transmission analysis.

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.

Per FCC KDB Publication 648474 D04, 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.

Table 12-15
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	PCS EVDO	2.938	0.354	2.543	3.292	See Table Below
	UMTS 1750	3.193	0.354	2.543	**3.547**	See Table Below
	UMTS 1900	2.508	0.354	2.543	2.862	See Table Below
	LTE Band 66 (AWS)	2.983	0.354	2.543	3.337	See Table Below
	LTE Band 25 (PCS)	2.680	0.354	2.543	3.034	See Table Below

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.862	2.543	See Note 1	0.08
	Front	1.315	0.081	1.396	N/A
	Top	-	2.543*	2.543	N/A
	Bottom	2.938	-	**2.938**	N/A
	Right	-	-	0.000	N/A
	Left	0.556	0.444	1.000	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.591	2.543	See Note 1	0.07
	Front	1.403	0.081	1.484	N/A
	Top	-	2.543*	2.543	N/A
	Bottom	3.193	-	**3.193**	N/A
	Right	-	-	-	N/A
	Left	0.882	0.444	1.326	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.944	2.543	See Note 1	0.08
	Front	1.526	0.081	1.607	N/A
	Top	-	2.543*	**2.543**	N/A
	Bottom	2.508	-	2.508	N/A
	Right	-	-	0.000	N/A
	Left	0.765	0.444	1.209	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.751	2.543	See Note 1	0.07
	Front	1.365	0.081	1.446	N/A
	Top	-	2.543*	2.543	N/A
	Bottom	2.983	-	**2.983**	N/A
	Right	-	-	-	N/A
	Left	0.647	0.444	1.091	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	1.343	2.543	**3.886**
	Front	1.491	0.081	1.572
	Top	-	2.543*	2.543
	Bottom	2.680	-	2.680
	Right	-	-	0.000
	Left	0.730	0.444	1.174

Table 12-16
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Phablet)

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.862	2.752	See Note 1	0.09
	Front	1.315	0.285	1.600	N/A
	Top	-	2.752*	2.752	N/A
	Bottom	2.938	-	**2.938**	N/A
	Right	-	-	0.000	N/A
	Left	0.556	0.453	1.009	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.591	2.752	See Note 1	0.08
	Front	1.403	0.285	1.688	N/A
	Top	-	2.752*	2.752	N/A
	Bottom	3.193	-	**3.193**	N/A
	Right	-	-	-	N/A
	Left	0.882	0.453	1.335	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.944	2.752	See Note 1	0.09
	Front	1.526	0.285	1.811	N/A
	Top	-	2.752*	**2.752**	N/A
	Bottom	2.508	-	2.508	N/A
	Right	-	-	-	N/A
	Left	0.765	0.453	1.218	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.751	2.752	See Note 1	0.08
	Front	1.365	0.285	1.650	N/A
	Top	-	2.752*	2.752	N/A
	Bottom	2.983	-	**2.983**	N/A
	Right	-	-	-	N/A
	Left	0.647	0.453	1.100	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.343	2.752	See Note 1	0.07
	Front	1.491	0.285	1.776	N/A
	Top	-	2.752*	**2.752**	N/A
	Bottom	2.680	-	2.680	N/A
	Right	-	-	0.000	N/A
	Left	0.730	0.453	1.183	N/A

Notes:

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

12.7 SPLSR Evaluation and Analysis

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

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

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

12.7.1 Body-Worn Back Side SPLSR Evaluation and Analysis

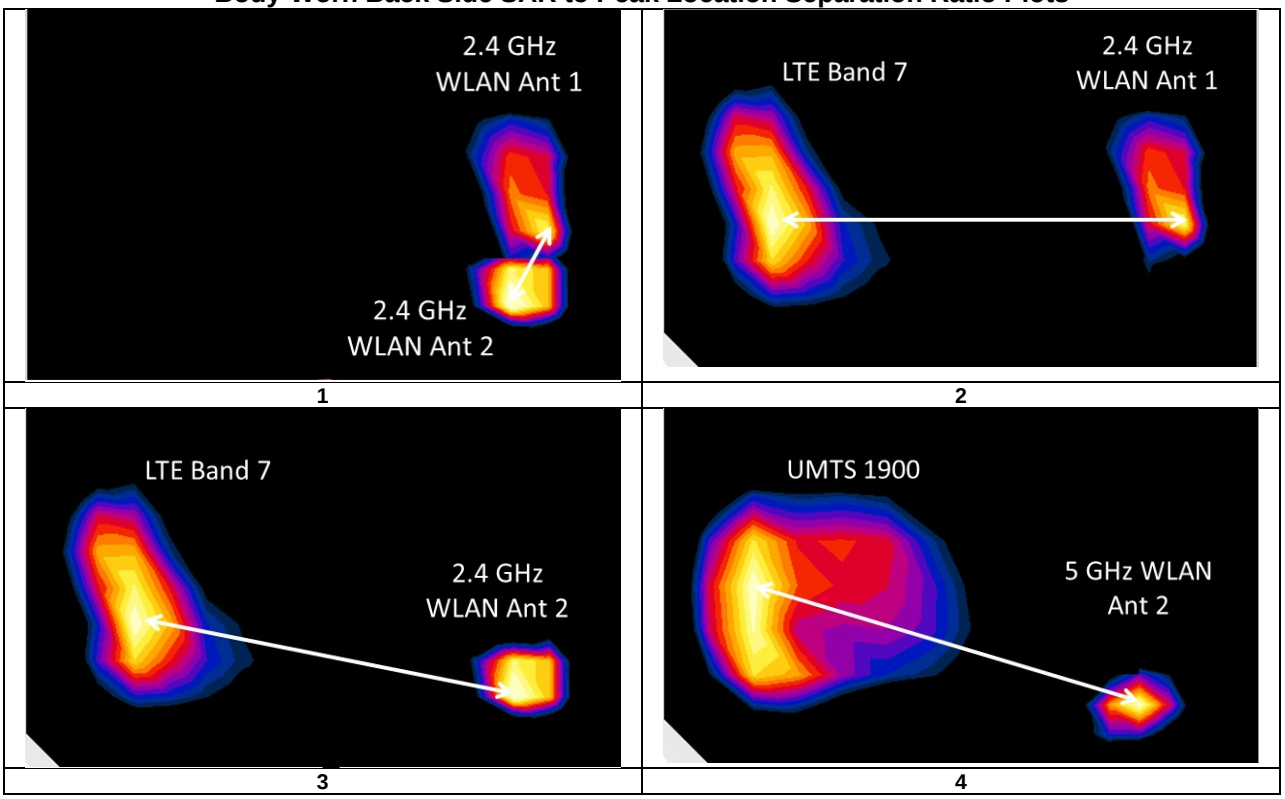
Table 12-17
Peak SAR Locations for Body-Worn Back Side

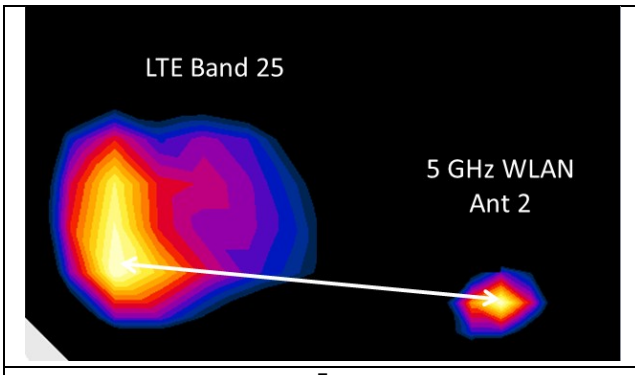
Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-14.20	69.60
2.4 GHz WLAN Ant 2	6.20	63.60
5 GHz WLAN Ant 2	11.00	43.00
5 GHz WLAN Ant 2 at 14 dBm	12.00	48.00
5 GHz WLAN MIMO	12.00	42.00
CDMA BC10	-17.50	-67.50
PCS CDMA	-15.50	-72.00
UMTS 1750	-19.50	-72.00
UMTS 1900	-23.50	-73.50
LTE Band 66 (AWS)	-5.00	-73.50
LTE Band 25 (PCS)	0.50	-73.50
LTE Band 30	-20.20	-73.20
LTE Band 7	-14.20	-66.60
LTE Band 41	-9.70	-62.20

Table 12-18
Body-Worn Back Side SAR to Peak Location Separation Ratio Calculations

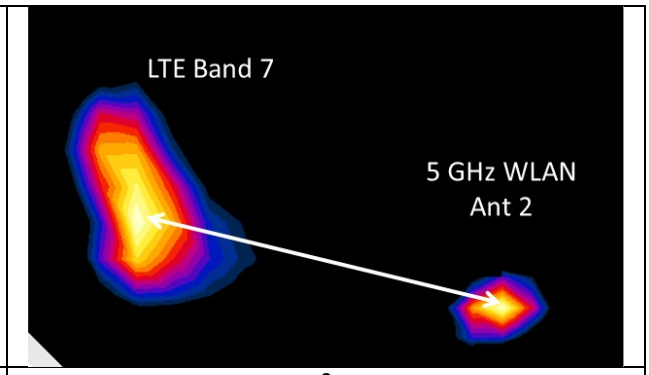
Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
2.4 GHz WLAN Ant 1	2.4 GHz WLAN Ant 2	0.23	0.335	0.565	21.26	0.02	1
2.4 GHz WLAN Ant 1	LTE Band 7	0.23	1.186	1.416	136.20	0.01	2
2.4 GHz WLAN Ant 2	LTE Band 7	0.335	1.186	1.521	131.79	0.01	3
5 GHz WLAN Ant 2	UMTS 1900	1.058	0.569	1.627	121.50	0.02	4
5 GHz WLAN Ant 2	LTE Band 25 (PCS)	1.058	0.598	1.656	116.97	0.02	5
5 GHz WLAN Ant 2	LTE Band 7	1.058	1.186	2.244	112.46	0.03	6
5 GHz WLAN MIMO	CDMA BC10	1.146	0.459	1.605	113.40	0.02	7
5 GHz WLAN MIMO	PCS CDMA	1.146	0.53	1.676	117.27	0.02	8
5 GHz WLAN MIMO	UMTS 1750	1.146	0.479	1.625	118.27	0.02	9
5 GHz WLAN MIMO	UMTS 1900	1.146	0.569	1.715	120.83	0.02	10
5 GHz WLAN MIMO	LTE Band 66 (AWS)	1.146	0.457	1.603	116.74	0.02	11
5 GHz WLAN MIMO	LTE Band 25 (PCS)	1.146	0.598	1.744	116.07	0.02	12
5 GHz WLAN MIMO	LTE Band 30	1.146	0.505	1.651	119.62	0.02	13
5 GHz WLAN MIMO	LTE Band 7	1.146	1.186	2.332	111.72	0.03	14
5 GHz WLAN MIMO	LTE Band 41	1.146	0.514	1.660	106.44	0.02	15
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2 at 14 dBm	0.23	0.537	0.767	33.96	0.02	16
5 GHz WLAN Ant 2 at 14 dBm	LTE Band 7	0.537	1.186	1.723	117.56	0.02	17

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

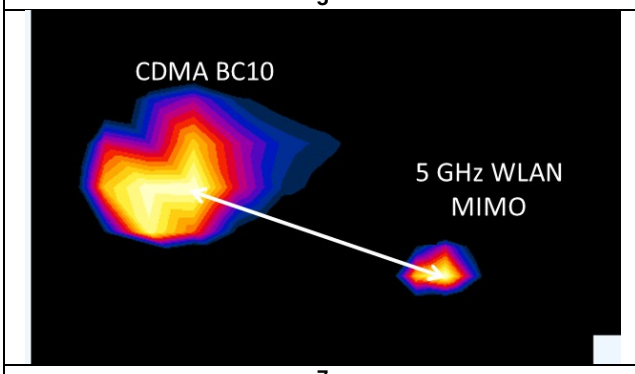




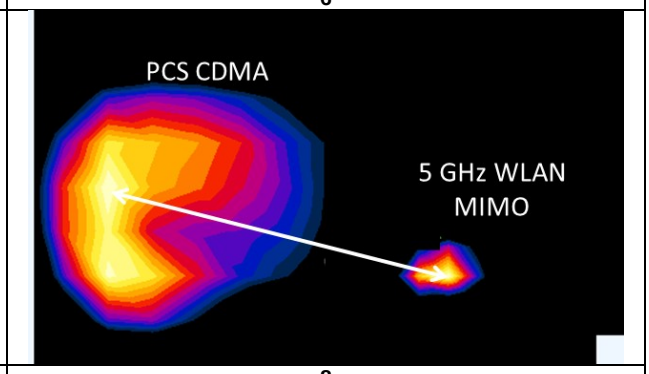
5



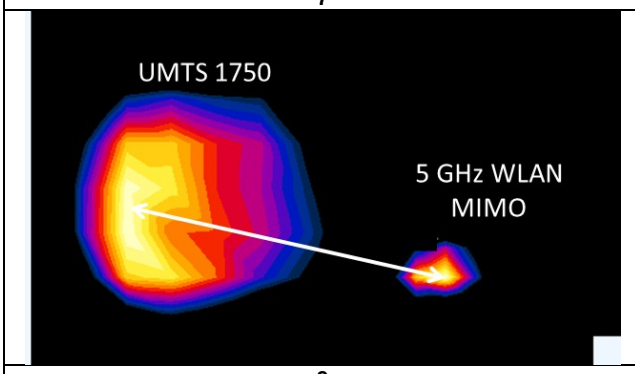
6



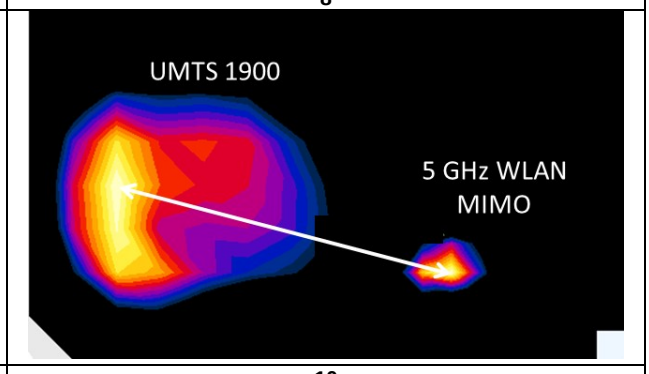
7



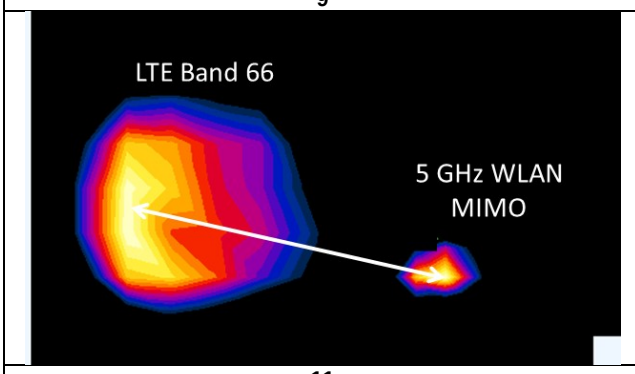
8



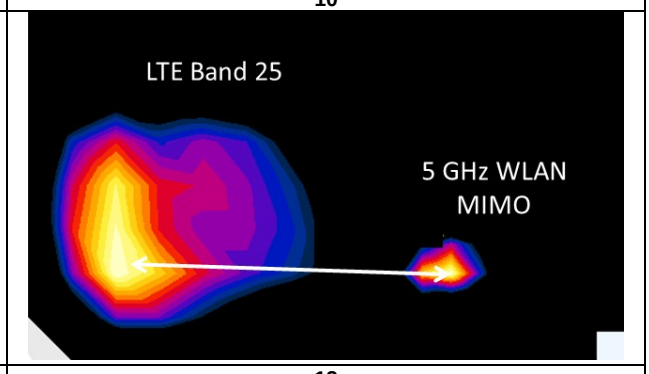
9



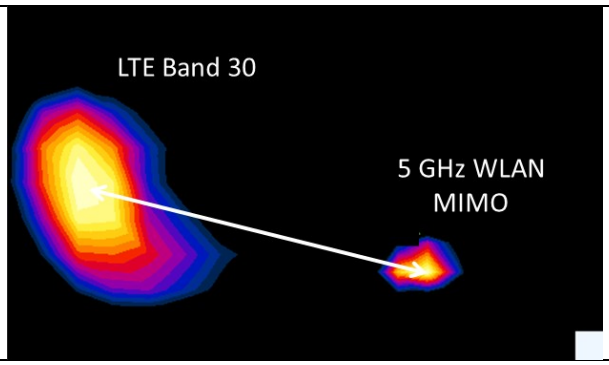
10



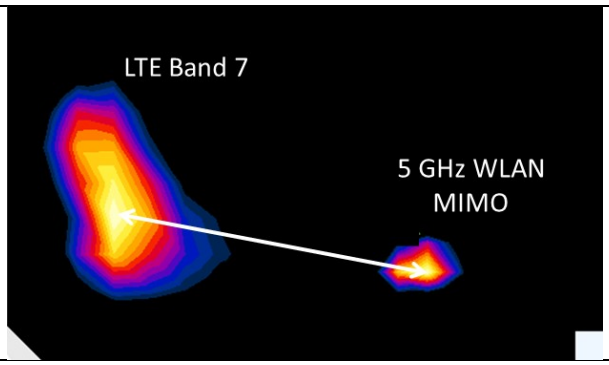
11



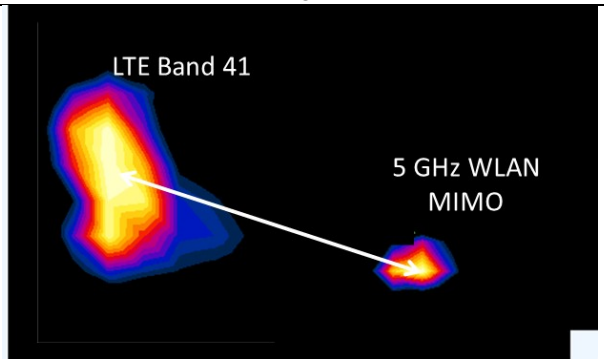
12



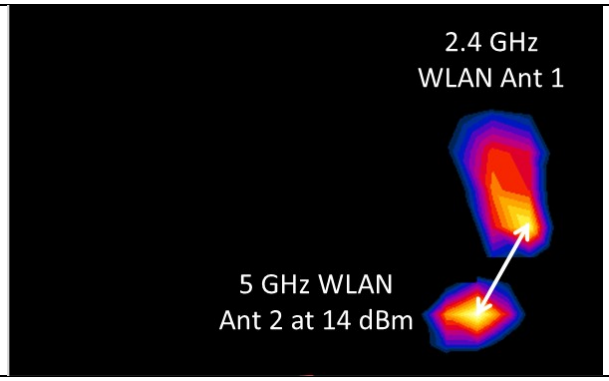
13



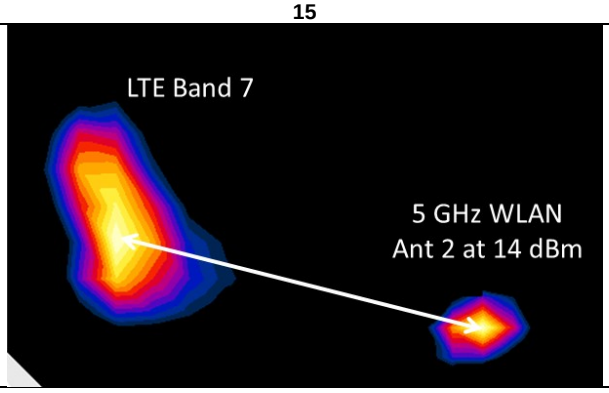
14



15



16



17

12.7.1 Hotspot Back Side SPLSR Evaluation and Analysis

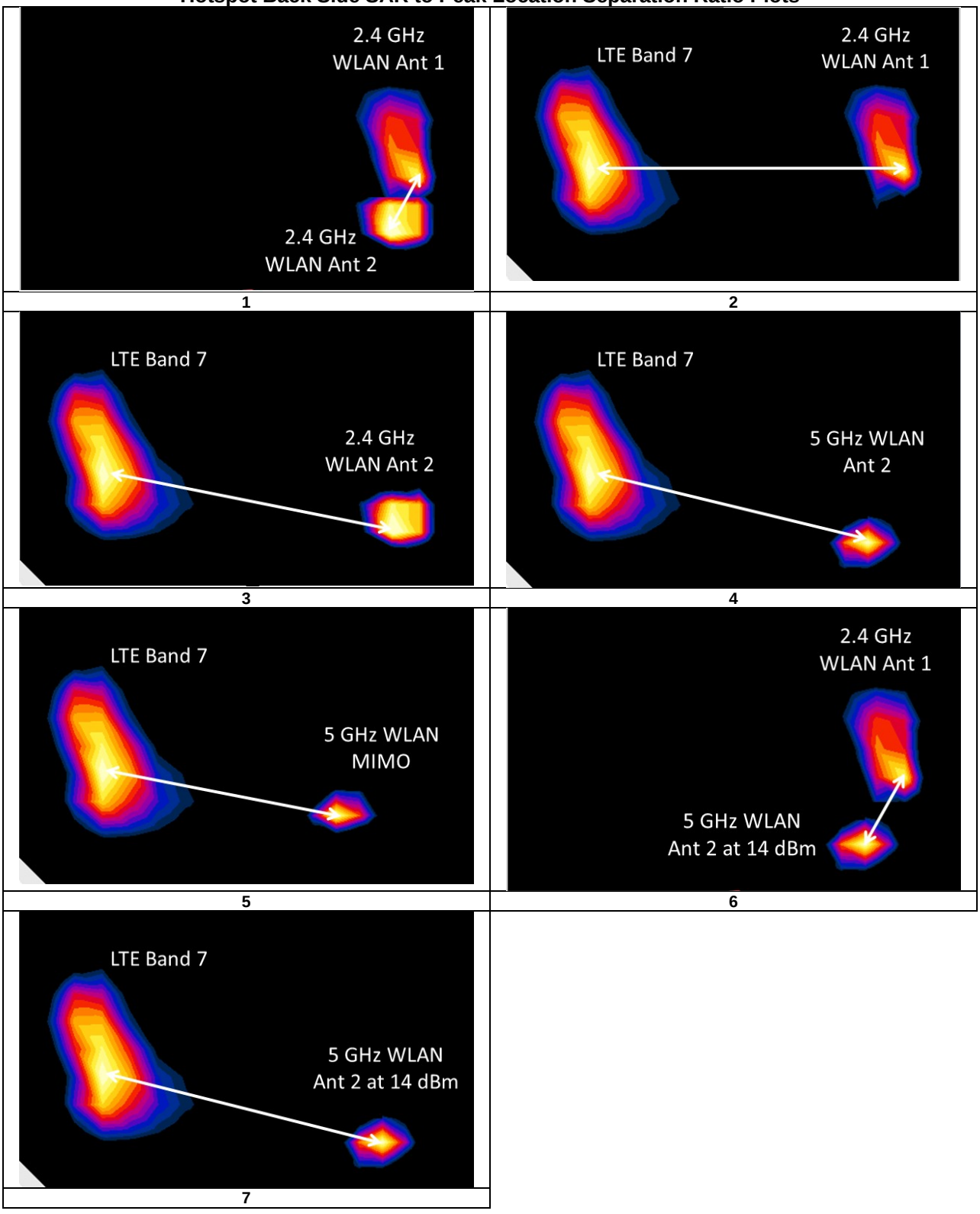
Table 12-20
Peak SAR Locations for Hotspot Back Side

Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-14.20	69.60
2.4 GHz WLAN Ant 2	6.20	63.60
5 GHz WLAN Ant 2	11.00	41.00
5 GHz WLAN Ant 2 at 14 dBm	13.00	51.50
5 GHz WLAN MIMO	12.00	42.00
LTE Band 7	-14.20	-66.60

Table 12-21
Hotspot Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
2.4 GHz WLAN Ant 1	2.4 GHz WLAN Ant 2	0.23	0.335	0.565	21.26	0.02	1
2.4 GHz WLAN Ant 1	LTE Band 7	0.23	1.186	1.416	136.20	0.01	2
2.4 GHz WLAN Ant 2	LTE Band 7	0.335	1.186	1.521	131.79	0.01	3
5 GHz WLAN Ant 2	LTE Band 7	0.823	1.186	2.009	110.51	0.03	4
5 GHz WLAN MIMO	LTE Band 7	0.859	1.186	2.045	111.72	0.03	5
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2 at 14 dBm	0.23	0.465	0.695	32.67	0.02	6
5 GHz WLAN Ant 2 at 14 dBm	LTE Band 7	0.465	1.186	1.651	121.19	0.02	7

Table 12-22
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



12.7.1 Phablet Back Side SPLSR Evaluation and Analysis

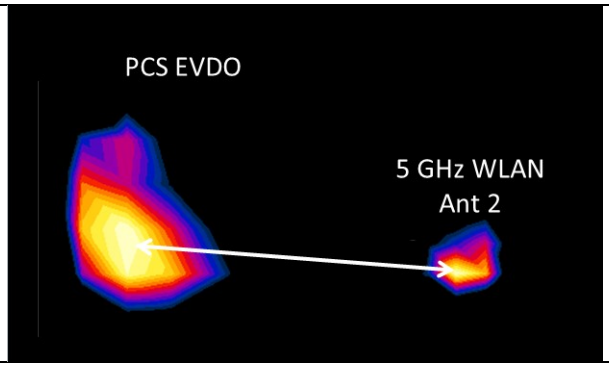
Table 12-23
Phablet Peak SAR Locations for Body Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 2	12.00	49.00
5 GHz WLAN MIMO	13.00	41.00
PCS EVDO	-9.00	-66.50
UMTS 1750	-8.50	-70.50
UMTS 1900	-5.50	-72.00
LTE Band 66 (AWS)	-10.00	-70.50
LTE Band 25 (PCS)	-2.50	-70.50

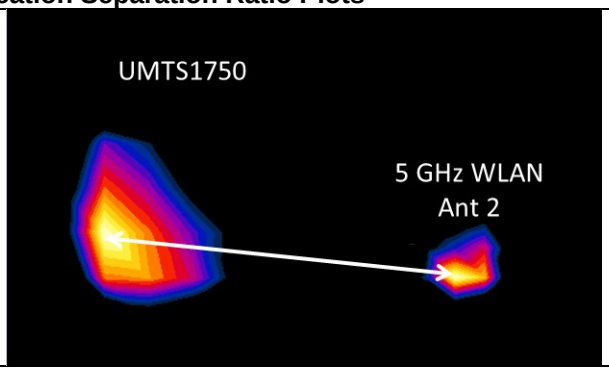
Table 12-24
Phablet Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN Ant 2	PCS EVDO	2.543	1.862	4.405	117.39	0.08	1
5 GHz WLAN Ant 2	UMTS 1750	2.543	1.591	4.134	121.25	0.07	2
5 GHz WLAN Ant 2	UMTS 1900	2.543	1.944	4.487	122.26	0.08	3
5 GHz WLAN Ant 2	LTE Band 66 (AWS)	2.543	1.751	4.294	121.51	0.07	4
5 GHz WLAN MIMO	PCS EVDO	2.752	1.862	4.614	109.73	0.09	5
5 GHz WLAN MIMO	UMTS 1750	2.752	1.591	4.343	113.55	0.08	6
5 GHz WLAN MIMO	UMTS 1900	2.752	1.944	4.696	114.50	0.09	7
5 GHz WLAN MIMO	LTE Band 66 (AWS)	2.752	1.751	4.503	113.85	0.08	8
5 GHz WLAN MIMO	LTE Band 25 (PCS)	2.752	1.343	4.095	112.57	0.07	9

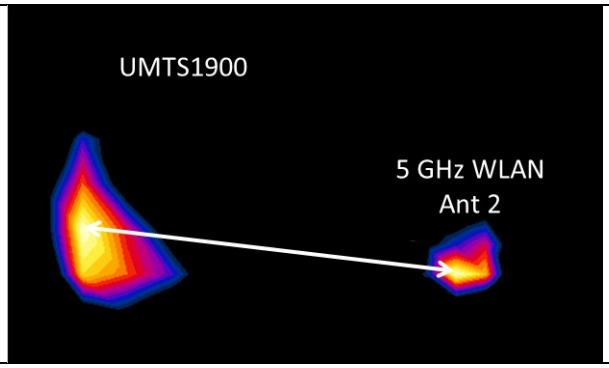
Table 12-25
Phablet Back Side SAR to Peak Location Separation Ratio Plots



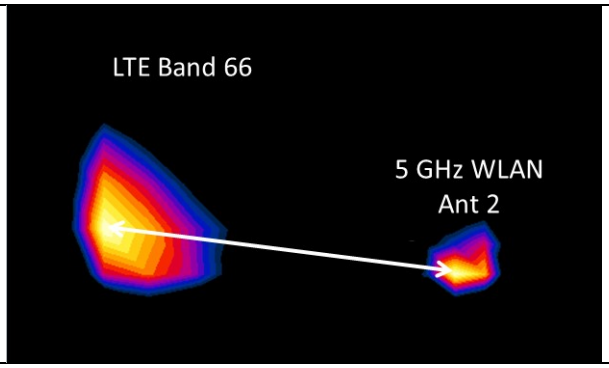
1



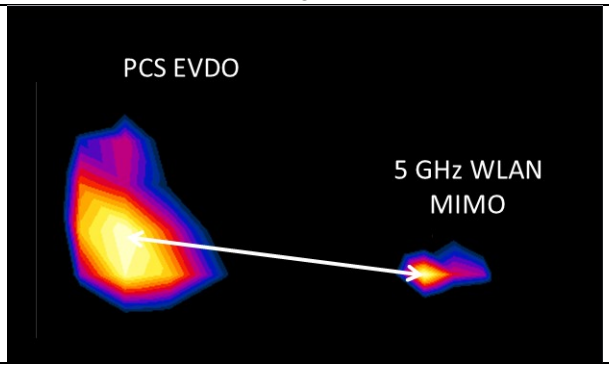
2



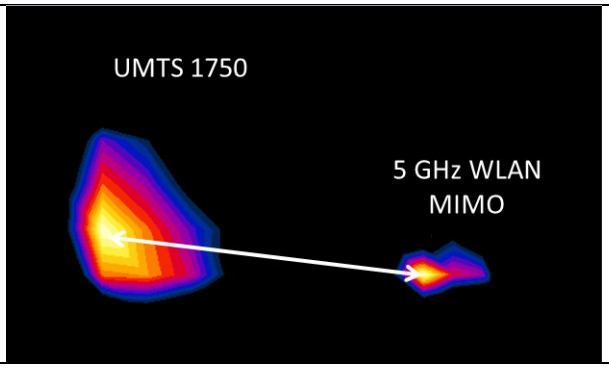
3



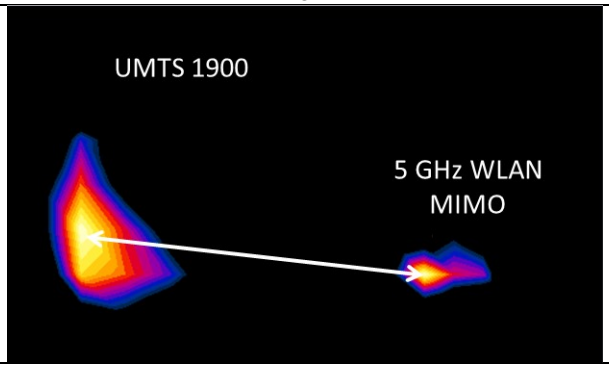
4



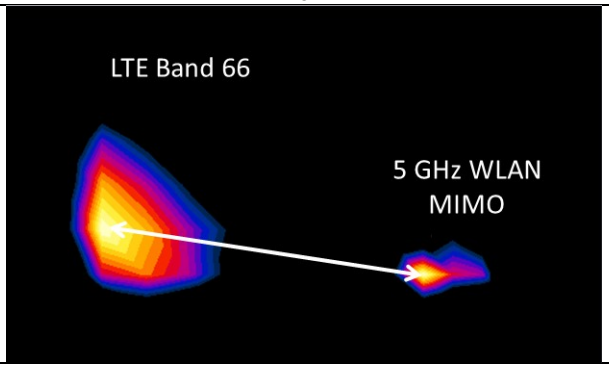
5



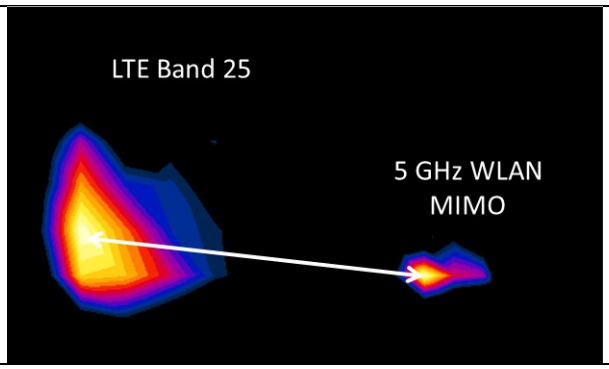
6



7



8



9

12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are 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.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 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
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Data Rate (Mbps)	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	N/A	bottom	10 mm	0.868	0.847	1.02	N/A	N/A	N/A	N/A
1900	1907.60	9538	UMTS 1900	RMC	N/A	bottom	10 mm	1.080	1.030	1.05	N/A	N/A	N/A	N/A
2450	2510.00	20850	LTE Band 7, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	10 mm	1.100	1.090	1.01	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	Bottom	10 mm	1.170	1.160	1.01	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM , MIMO	13	back	10 mm	1.120	1.120	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 13-2
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Data Rate (Mbps)	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	N/A	bottom	0 mm	3.130	3.070	1.02	N/A	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	N/A	bottom	0 mm	2.780	2.730	1.02	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.690	2.530	1.06	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 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/17/2017	Annual	8/17/2018	MY40003841
Agilent	8753ES	S-Parameter Network Analyzer	2/8/2018	Annual	2/8/2019	US39170122
Agilent	E4438C	ESG Vector Signal Generator	4/19/2018	Annual	4/19/2019	MY47270002
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	11/15/2017	Annual	11/15/2018	GB42230325
Agilent	E5515C	Wireless Communications Test Set	1/24/2018	Annual	1/24/2019	GB44400860
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Agilent	N9020A	MXA Signal Analyzer	1/24/2018	Annual	1/24/2019	US46470561
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433978
Anritsu	MA24106A	USB Power Sensor	6/5/2018	Annual	6/5/2019	1244515
Anritsu	MA24106A	USB Power Sensor	6/5/2018	Annual	6/5/2019	1248508
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2496A	Power Meter	6/19/2018	Annual	6/19/2019	1306009
Anritsu	MT8820C	Radio Communication Analyzer	1/5/2018	Annual	1/5/2019	6201144418
Control Company	4040	Therm./ Clock/ Humidity Monitor	1/8/2018	Annual	1/8/2019	160473909
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mitutoyo	CD-6"CSX	Digital Caliper	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	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	4/18/2018	Annual	4/18/2019	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	5/18/2018	Annual	5/18/2019	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	8/2/2017	Annual	8/2/2018	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	4/5/2018	Annual	4/5/2019	128633
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/12/2017	Annual	9/12/2018	1091
SPEAG	D750V3	750 MHz SAR Dipole	7/13/2016	Triennial	7/13/2019	1161
SPEAG	D835V2	835 MHz SAR Dipole	7/13/2016	Triennial	7/13/2019	4d047
SPEAG	D1750V2	1750 MHz SAR Dipole	7/14/2016	Triennial	7/14/2019	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	7/8/2016	Triennial	7/8/2019	5d080
SPEAG	D2300V2	2300 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	1008
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Annual	9/11/2018	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Biennial	8/17/2019	719
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Annual	4/11/2019	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/21/2016	Biennial	9/21/2018	1191
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Annual	1/15/2019	1003
SPEAG	D835V2	835 MHz SAR Dipole	7/11/2017	Biennial	7/11/2019	4d133
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Annual	5/23/2019	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	7/11/2017	Biennial	7/11/2019	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	7/25/2016	Biennial	7/25/2018	1073
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Biennial	9/13/2018	1071
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/15/2017	Annual	8/15/2018	1237
SPEAG	ES3DV3	SAR Probe	2/13/2018	Annual	2/13/2019	3213
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	ES3DV3	SAR Probe	8/14/2017	Annual	8/14/2018	3332
SPEAG	EX3DV4	SAR Probe	5/22/2018	Annual	5/22/2019	7406
SPEAG	ES3DV3	SAR Probe	3/27/2018	Annual	3/27/2019	3347
SPEAG	ES3DV3	SAR Probe	3/13/2018	Annual	3/13/2019	3319
SPEAG	EX3DV4	SAR Probe	4/18/2018	Annual	4/18/2019	7357
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2018	Annual	2/9/2019	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/9/2017	Annual	8/9/2018	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/22/2018	Annual	5/22/2019	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/9/2017	Annual	11/9/2018	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/7/2018	Annual	3/7/2019	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/11/2018	Annual	4/11/2019	1407

Note:

1. Each equipment was used solely within each calibration period.
2. CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

15 MEASUREMENT UNCERTAINTIES

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

16 CONCLUSION

16.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and 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]

17 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: ZNFQ910QM; Type: Portable Handset; Serial: 04118

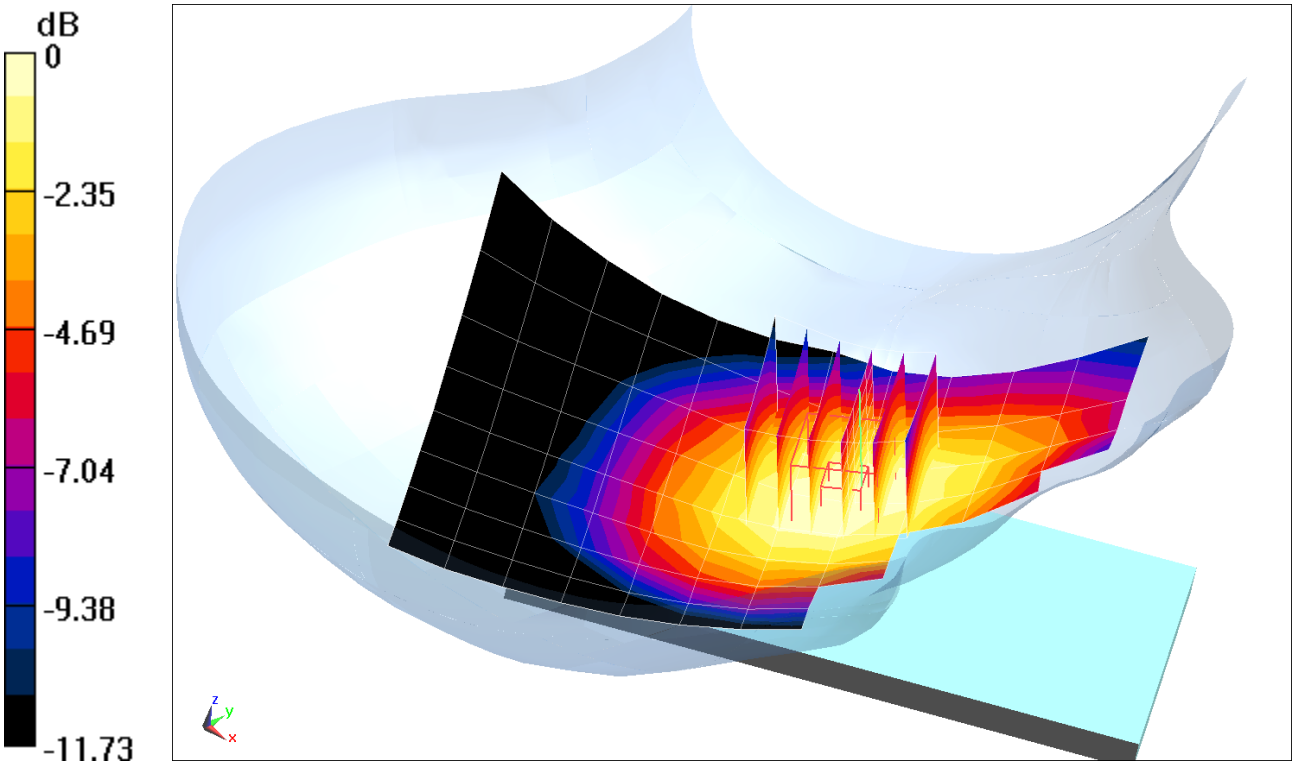
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 820.1$ MHz; $\sigma = 0.922$ S/m; $\varepsilon_r = 41.578$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: Cell. CDMA, Rule Part 90S, 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 = 14.48 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.232 W/kg
SAR(1 g) = 0.182 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04118

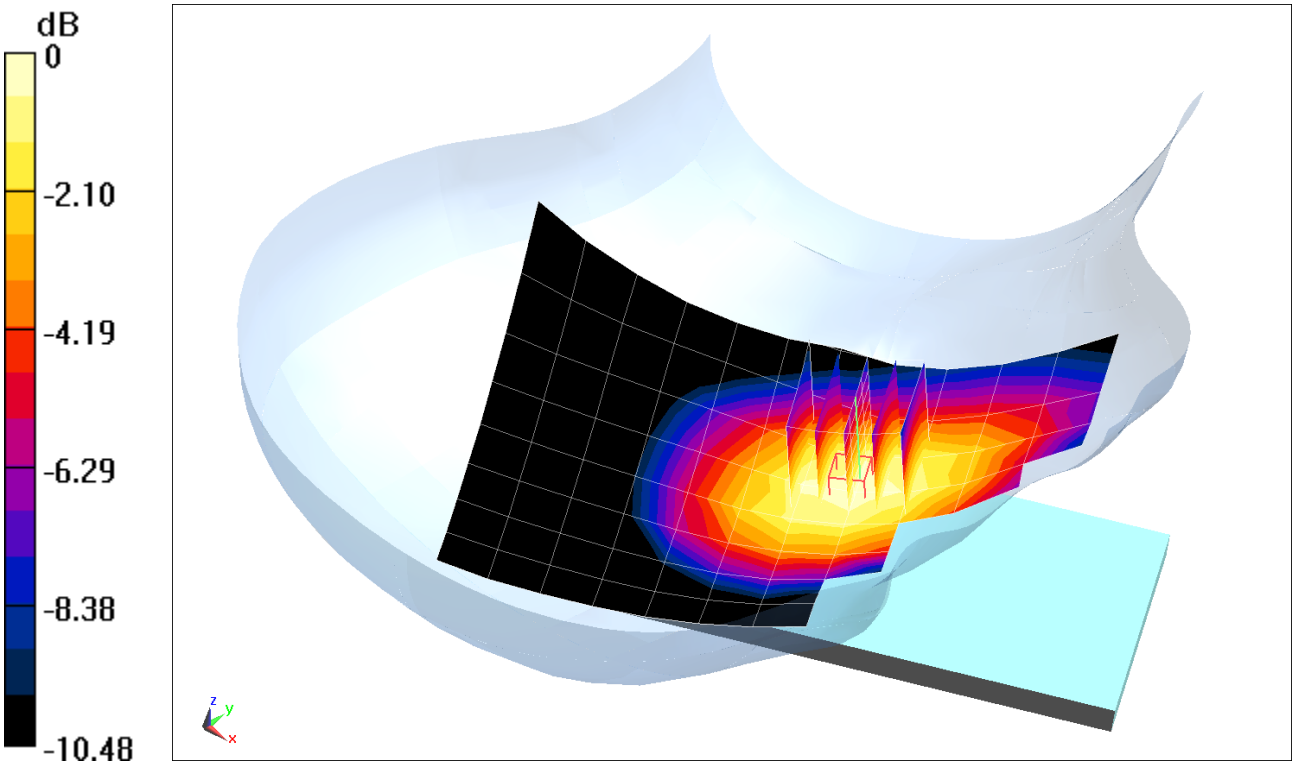
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.928 S/m; ε_r = 41.536; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: Cell. EVDO Rev. A, Rule Part 22H, 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 = 11.63 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.160 W/kg
SAR(1 g) = 0.119 W/kg



0 dB = 0.131 W/kg = -8.83 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04118

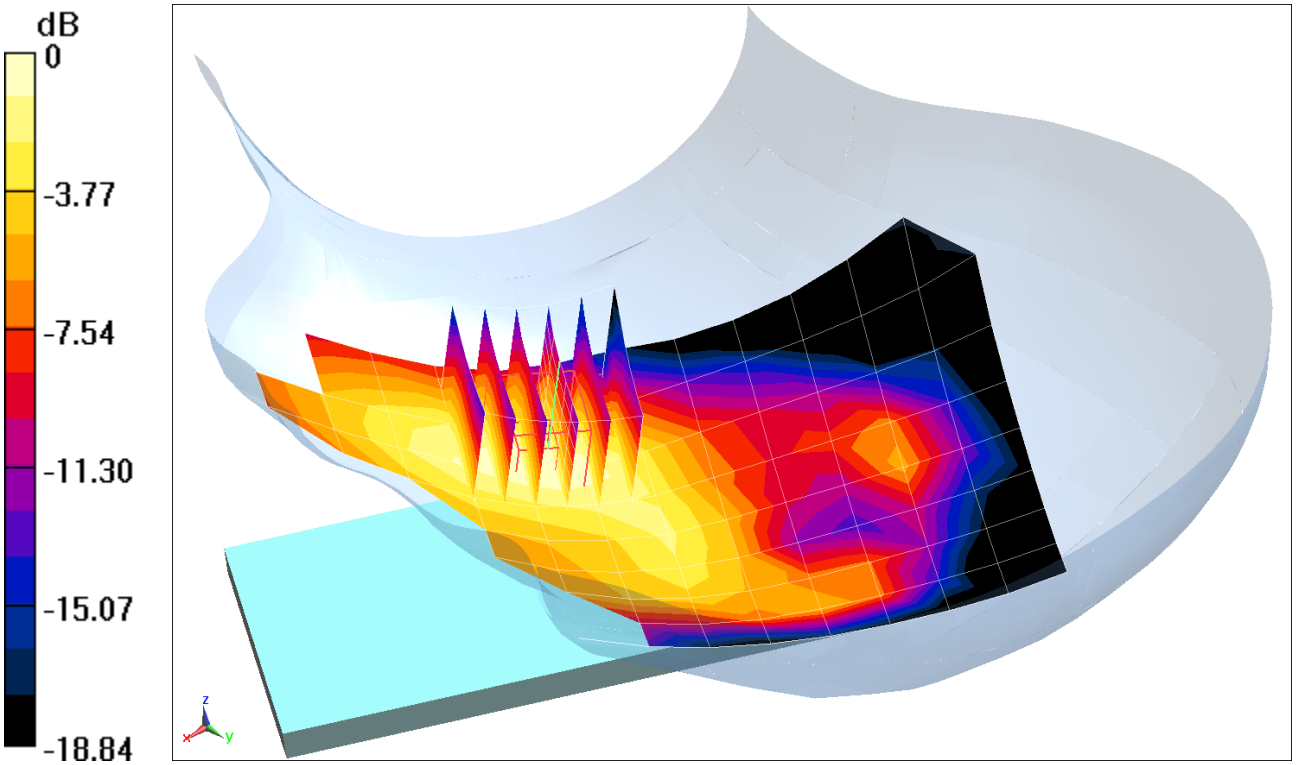
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 40.995; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-16-2018; Ambient Temp: 23.5°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7409; ConvF(8.05, 8.05, 8.05); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: PCS EVDO Rev. A, Left 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 = 9.069 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.118 W/kg



0 dB = 0.161 W/kg = -7.93 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04126

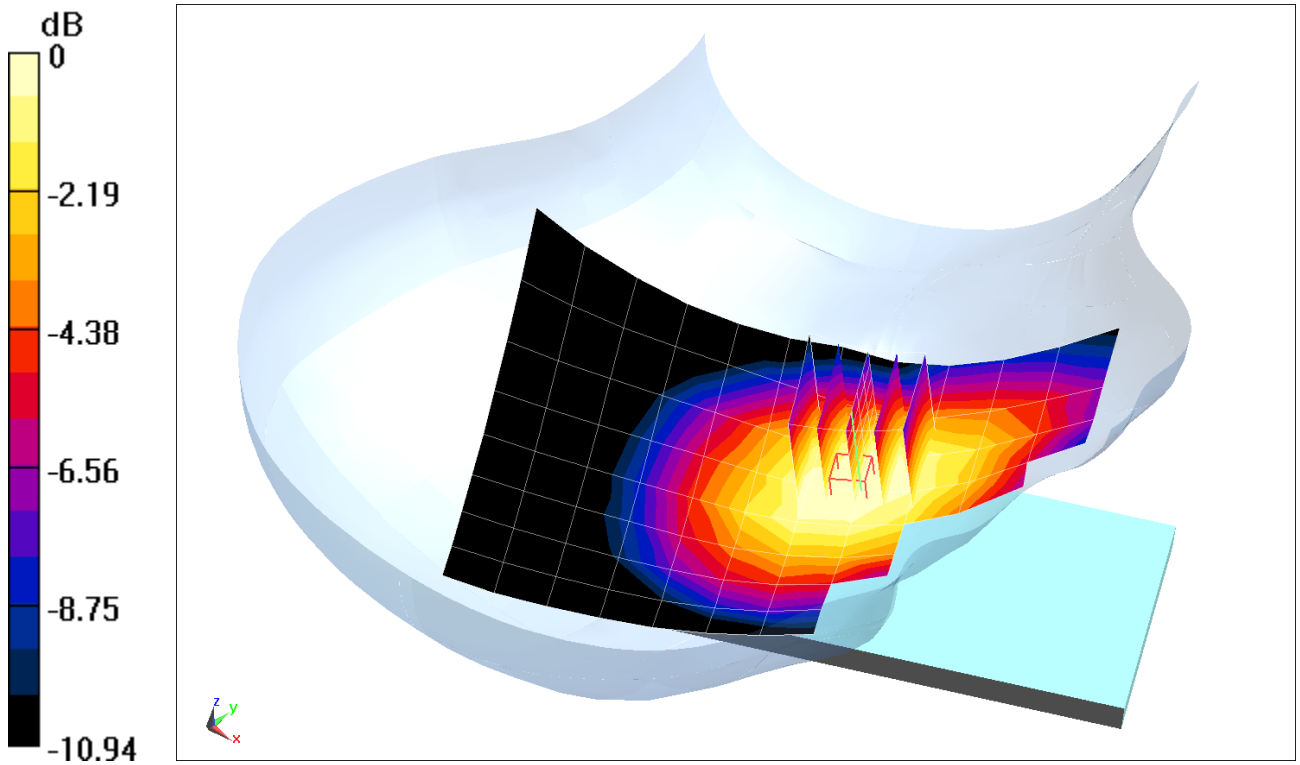
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 0.928$ S/m; $\varepsilon_r = 41.535$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 850, Right Head, Cheek, Mid.ch, 3 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.72 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.256 W/kg
SAR(1 g) = 0.193 W/kg



0 dB = 0.210 W/kg = -6.78 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04118

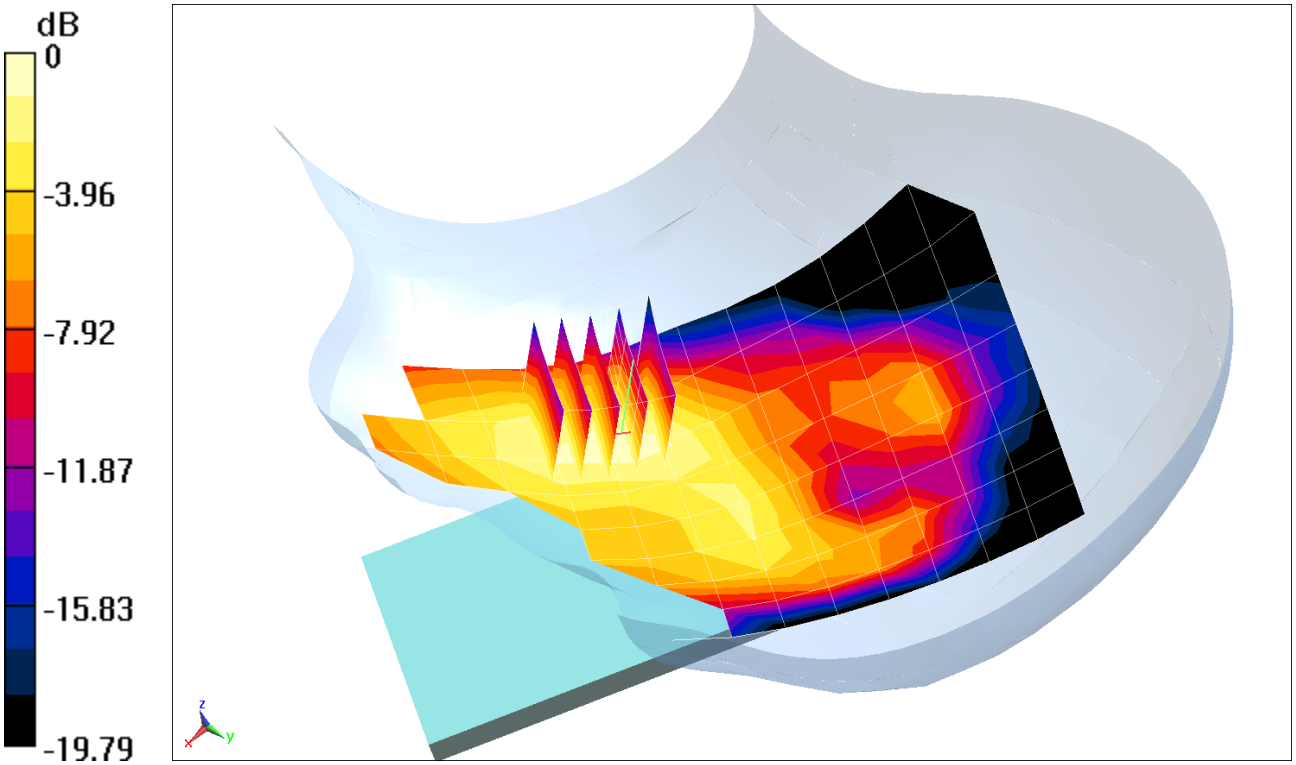
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.446 S/m; ε_r = 40.05; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-12-2018; Ambient Temp: 24.0°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3213; ConvF(5.3, 5.3, 5.3); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 1900, Left Head, Cheek, Mid.ch, 3 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.933 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.108 W/kg
SAR(1 g) = 0.064 W/kg



0 dB = 0.0786 W/kg = -11.05 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04126

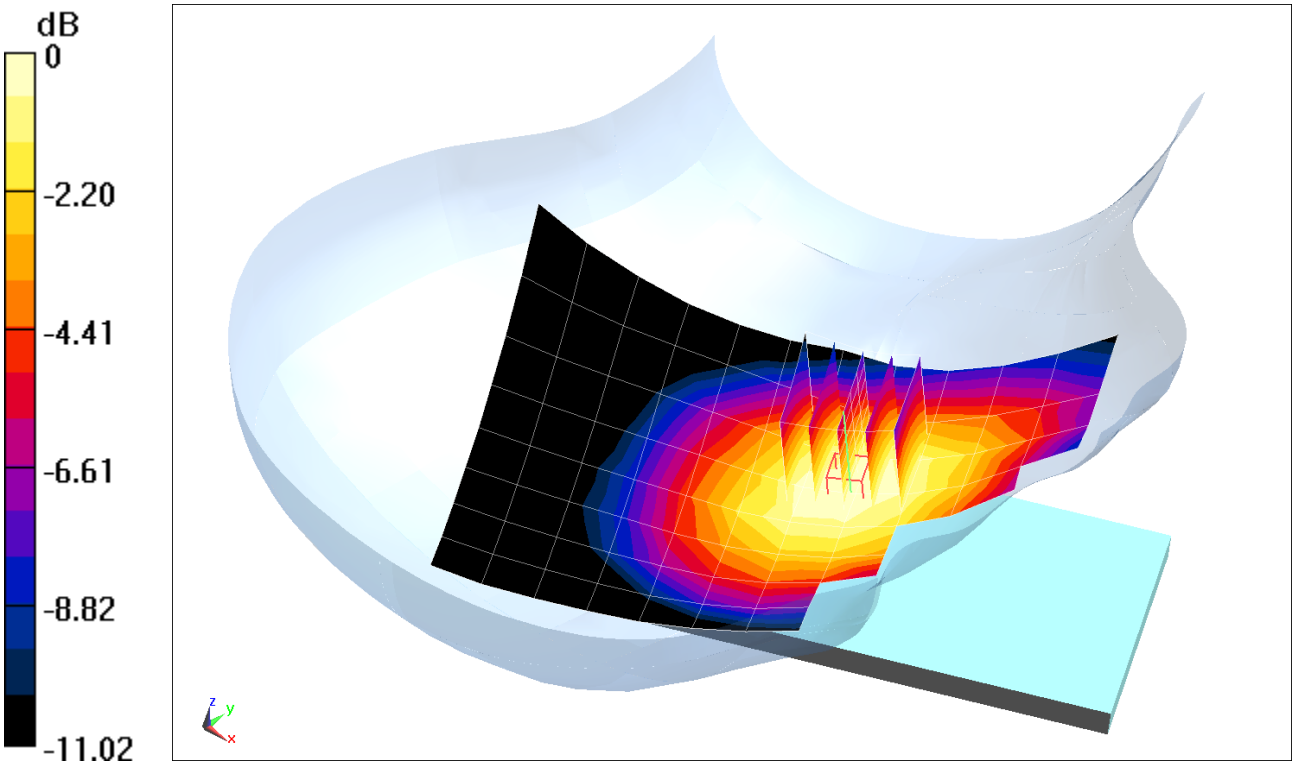
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.928 S/m; ε_r = 41.535; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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 = 13.90 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.171 W/kg



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

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04118

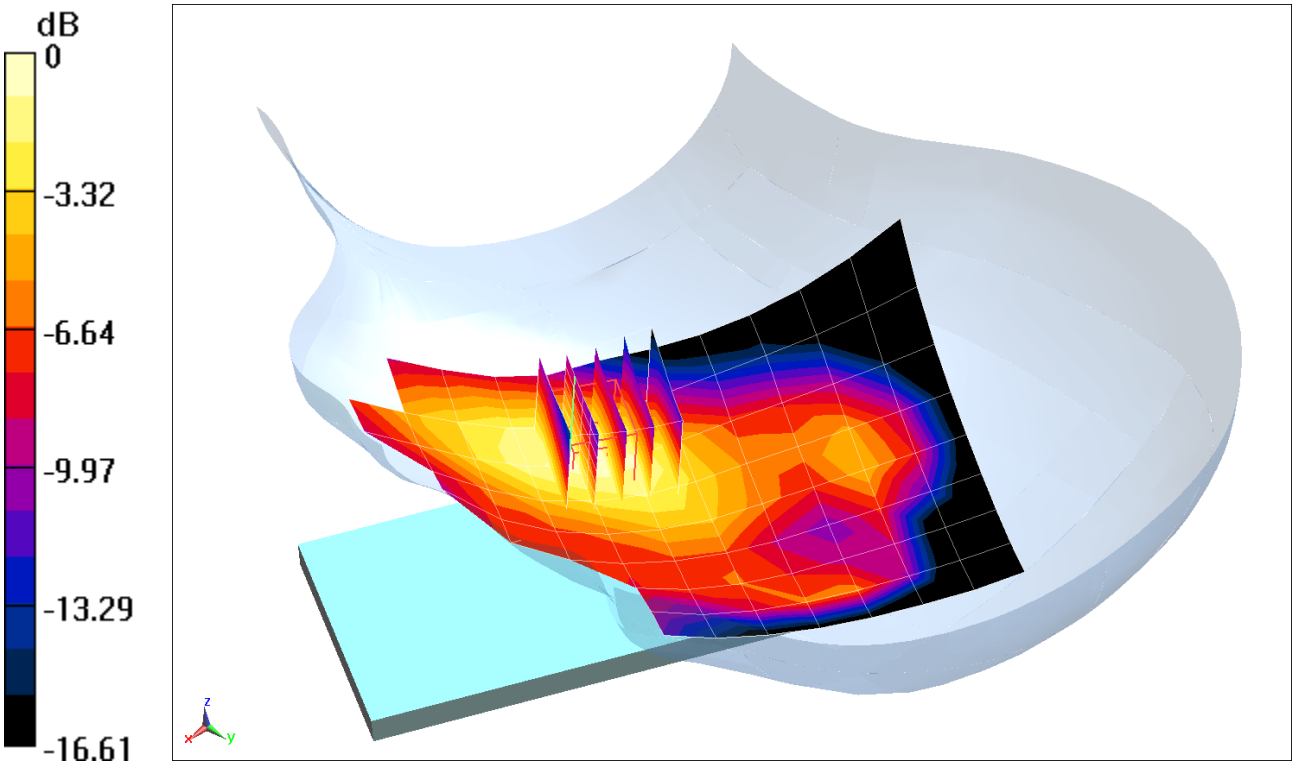
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.343 S/m; ε_r = 39.868; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-10-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3213; ConvF(5.45, 5.45, 5.45); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.711 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.122 W/kg



0 dB = 0.146 W/kg = -8.36 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04126

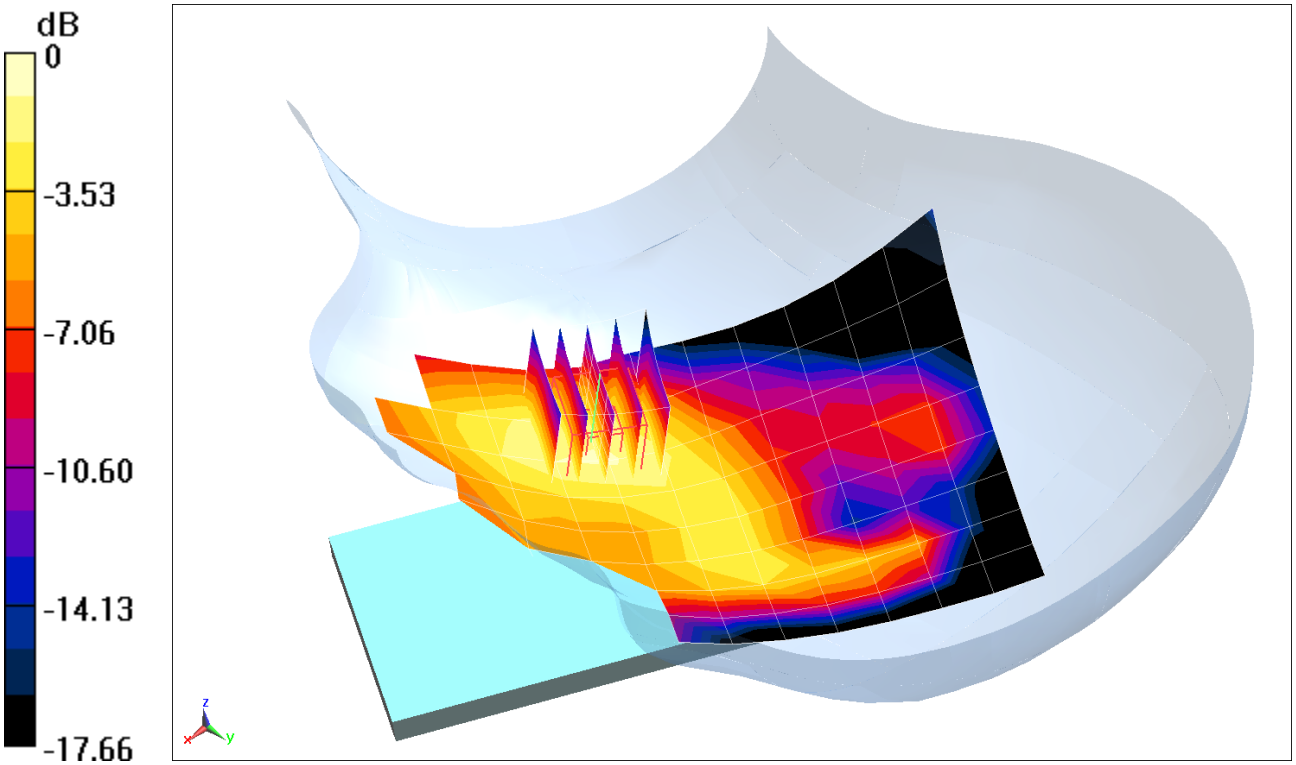
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 40.995; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-16-2018; Ambient Temp: 23.5°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7409; ConvF(8.05, 8.05, 8.05); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.749 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.197 W/kg
SAR(1 g) = 0.119 W/kg



0 dB = 0.171 W/kg = -7.67 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04134

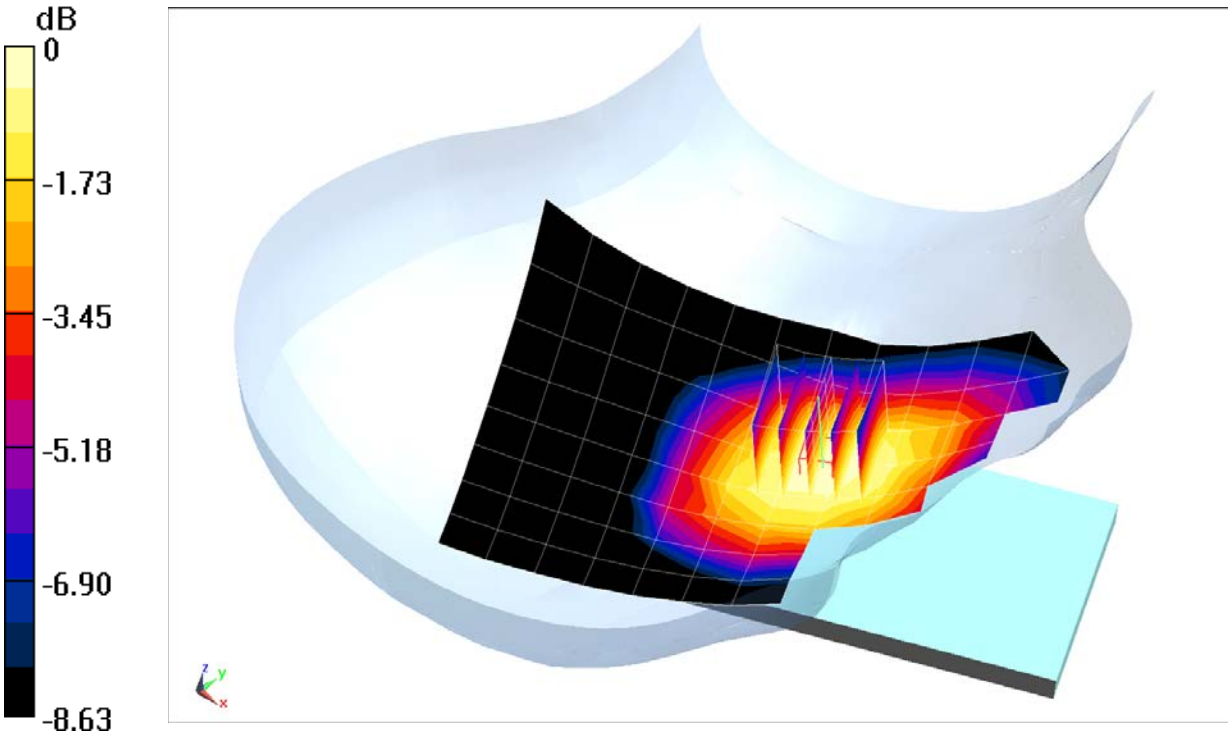
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.876 S/m; ε_r = 40.607; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-19-2018; Ambient Temp: 22.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3213; ConvF(6.75, 6.75, 6.75); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 12, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.59 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.129 W/kg
SAR(1 g) = 0.101 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04134

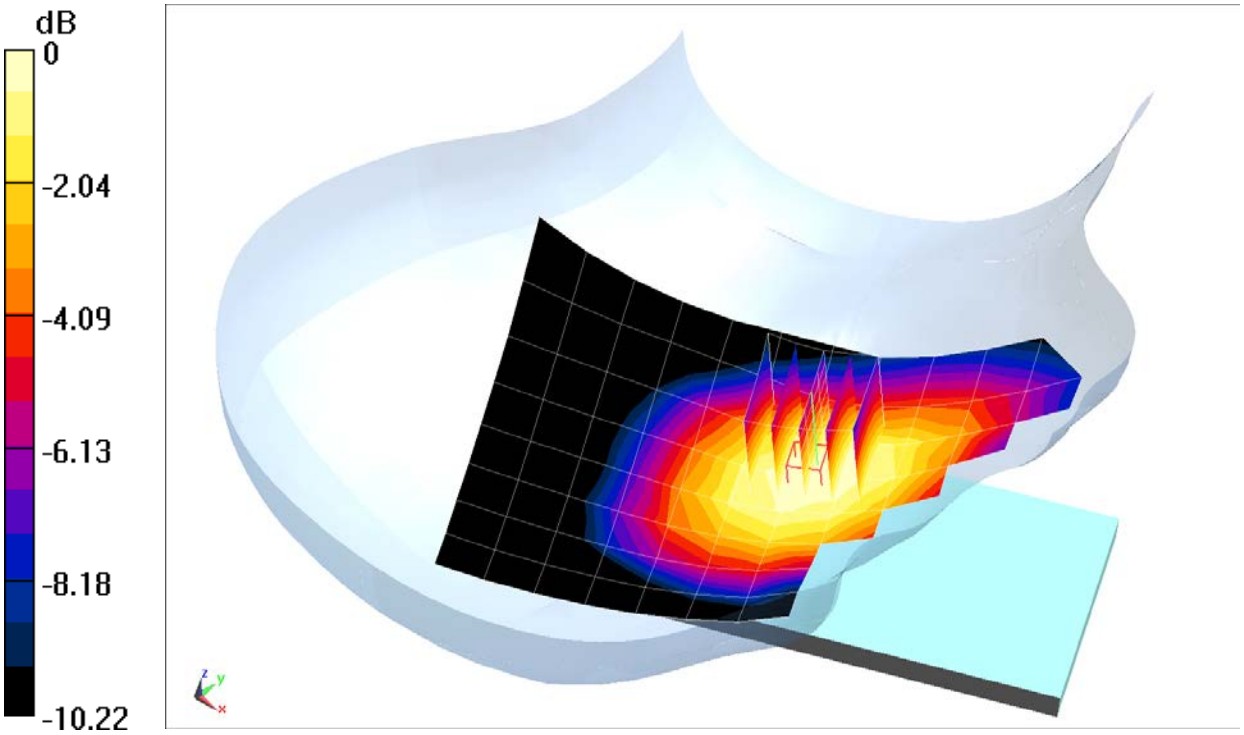
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.903 S/m; ε_r = 40.341; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-19-2018; Ambient Temp: 22.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3213; ConvF(6.75, 6.75, 6.75); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 13, 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 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.46 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.206 W/kg
SAR(1 g) = 0.159 W/kg



0 dB = 0.173 W/kg = -7.62 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04167

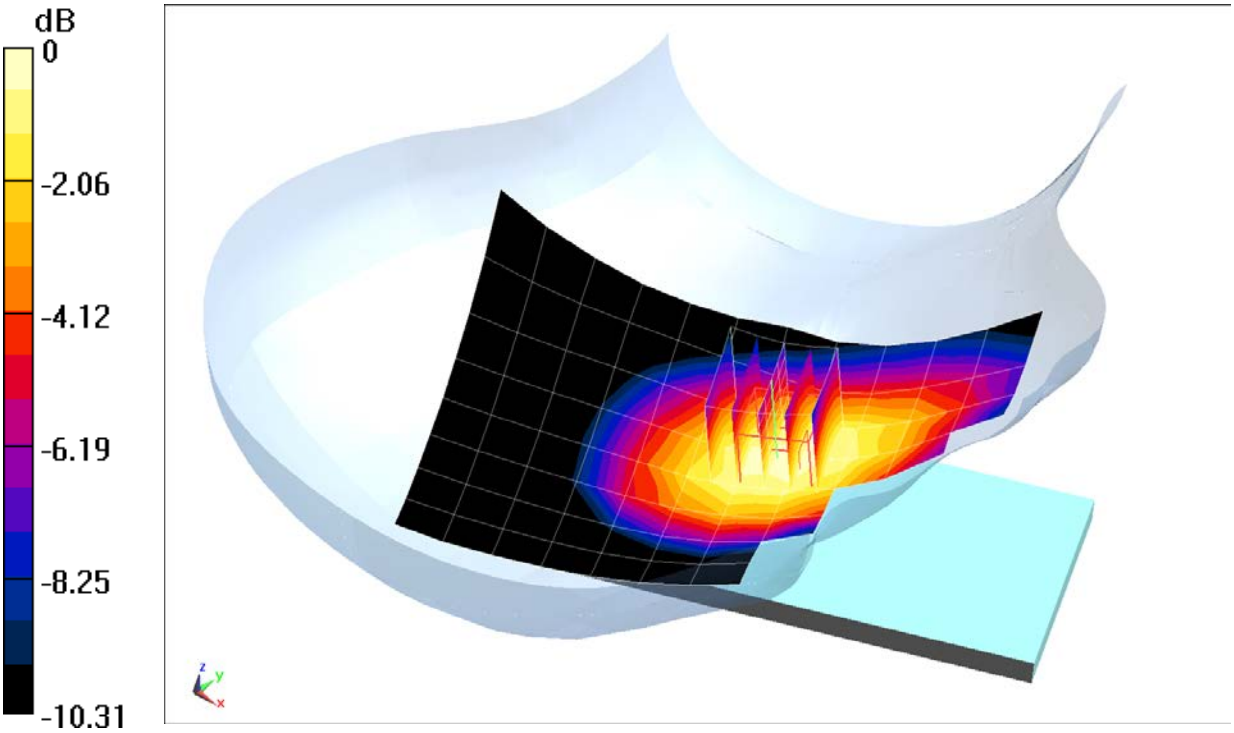
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.927$ S/m; $\varepsilon_r = 41.536$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.23 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.119 W/kg



0 dB = 0.130 W/kg = -8.86 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04167

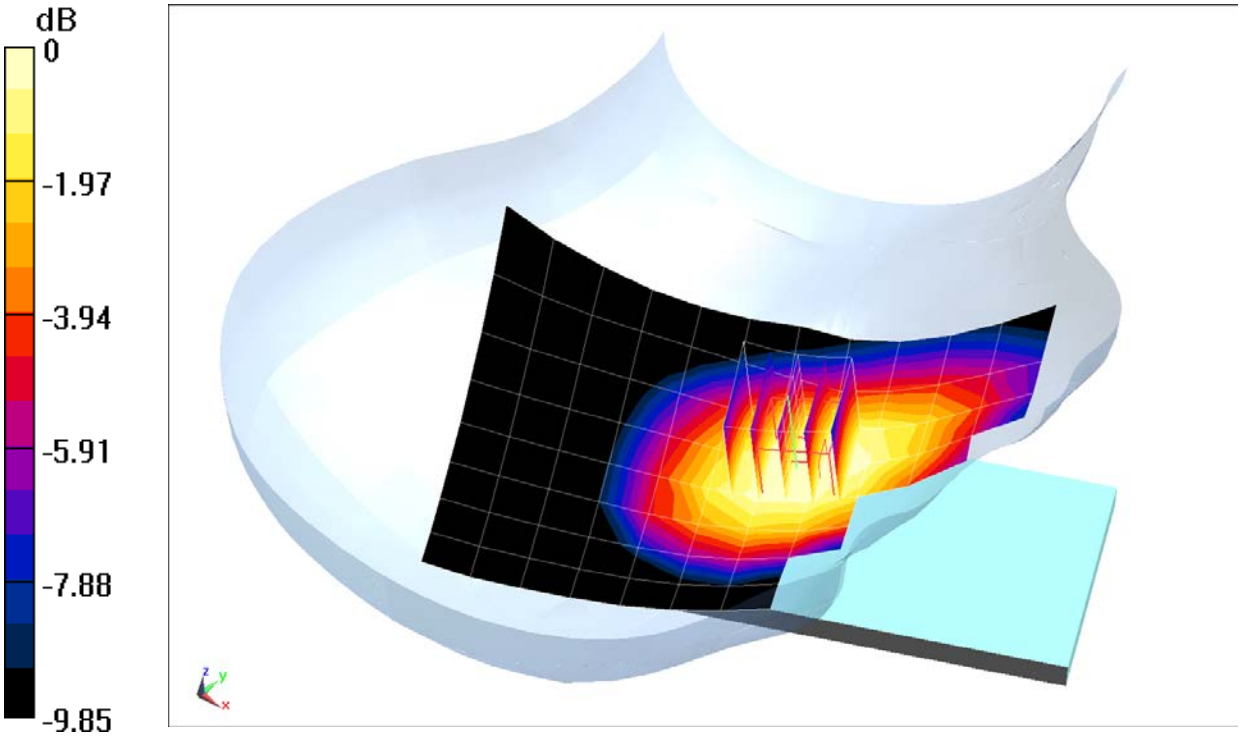
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.926 S/m; ε_r = 41.549; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.20 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.150 W/kg
SAR(1 g) = 0.117 W/kg



0 dB = 0.128 W/kg = -8.93 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04159

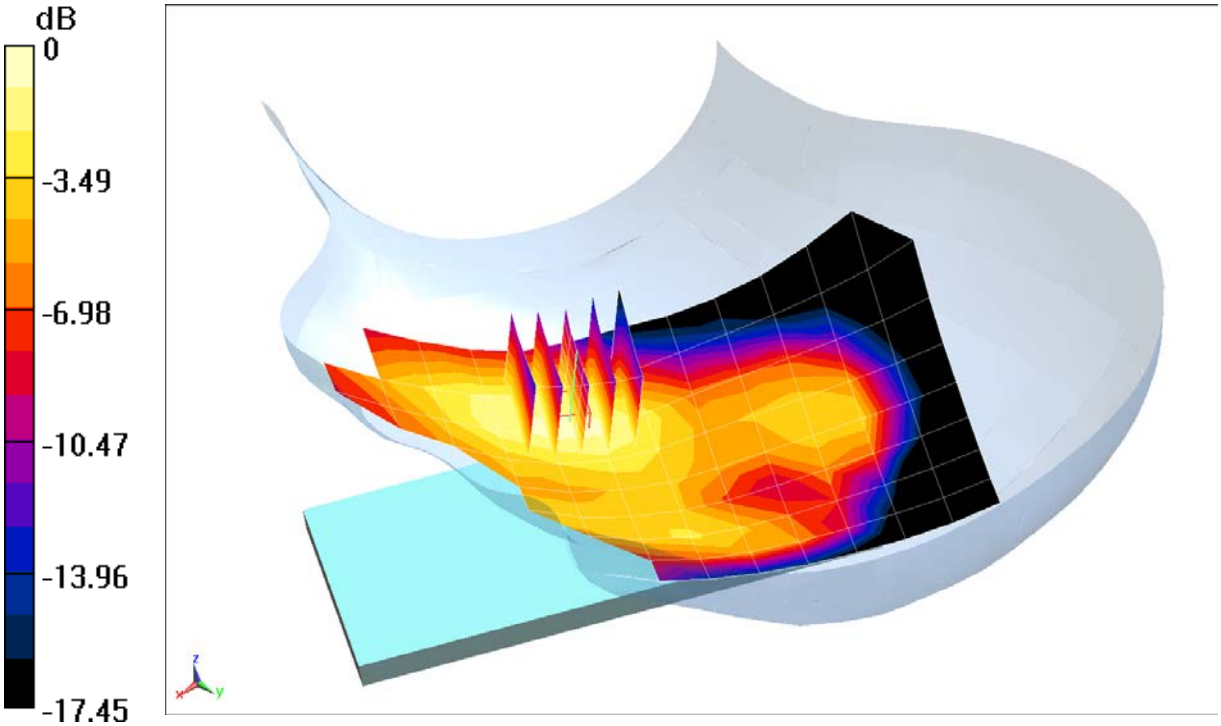
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1745$ MHz; $\sigma = 1.35$ S/m; $\varepsilon_r = 39.848$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 07-10-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3213; ConvF(5.45, 5.45, 5.45); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.618 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.096 W/kg



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

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04159

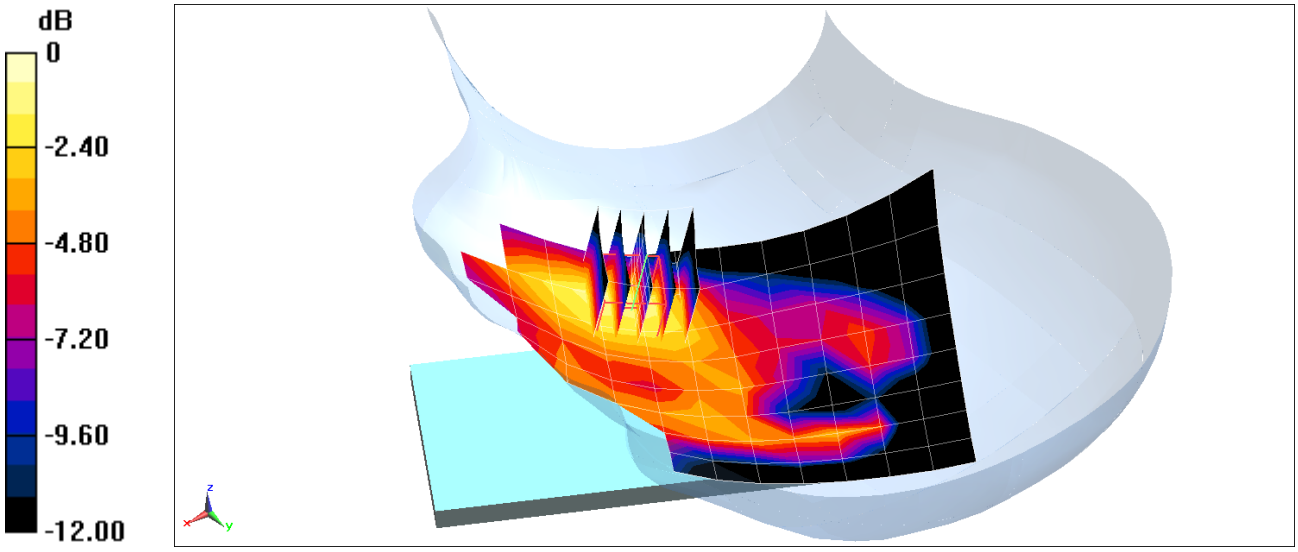
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
$f = 1882.5$ MHz; $\sigma = 1.413$ S/m; $\varepsilon_r = 40.987$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 07-16-2018; Ambient Temp: 23.5°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7409; ConvF(8.05, 8.05, 8.05); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 25 (PCS), Left Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.986 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.216 W/kg
SAR(1 g) = 0.132 W/kg



0 dB = 0.141 W/kg = -8.51 dBW/kg

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04134

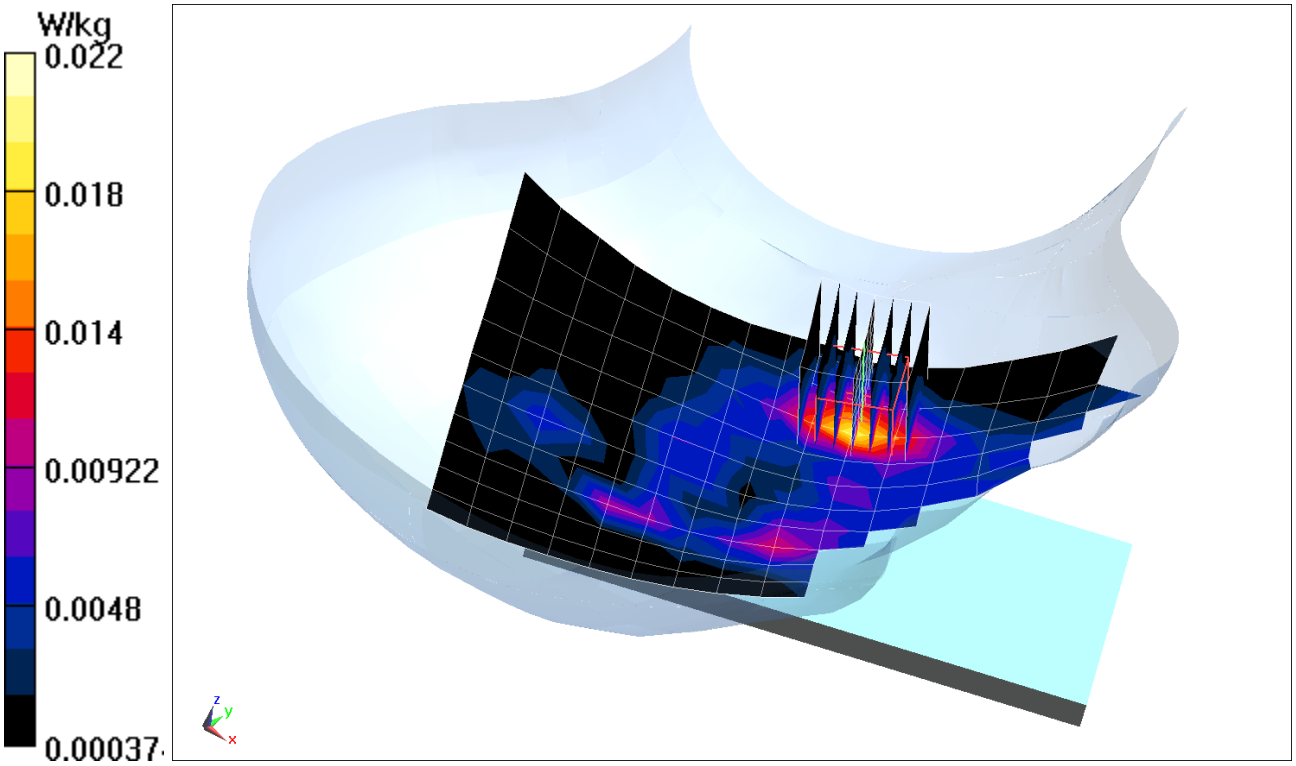
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2310 MHz; σ = 1.693 S/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-11-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3332; ConvF(4.99, 4.99, 4.99); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 30, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.919 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.0400 W/kg
SAR(1 g) = 0.018 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04134

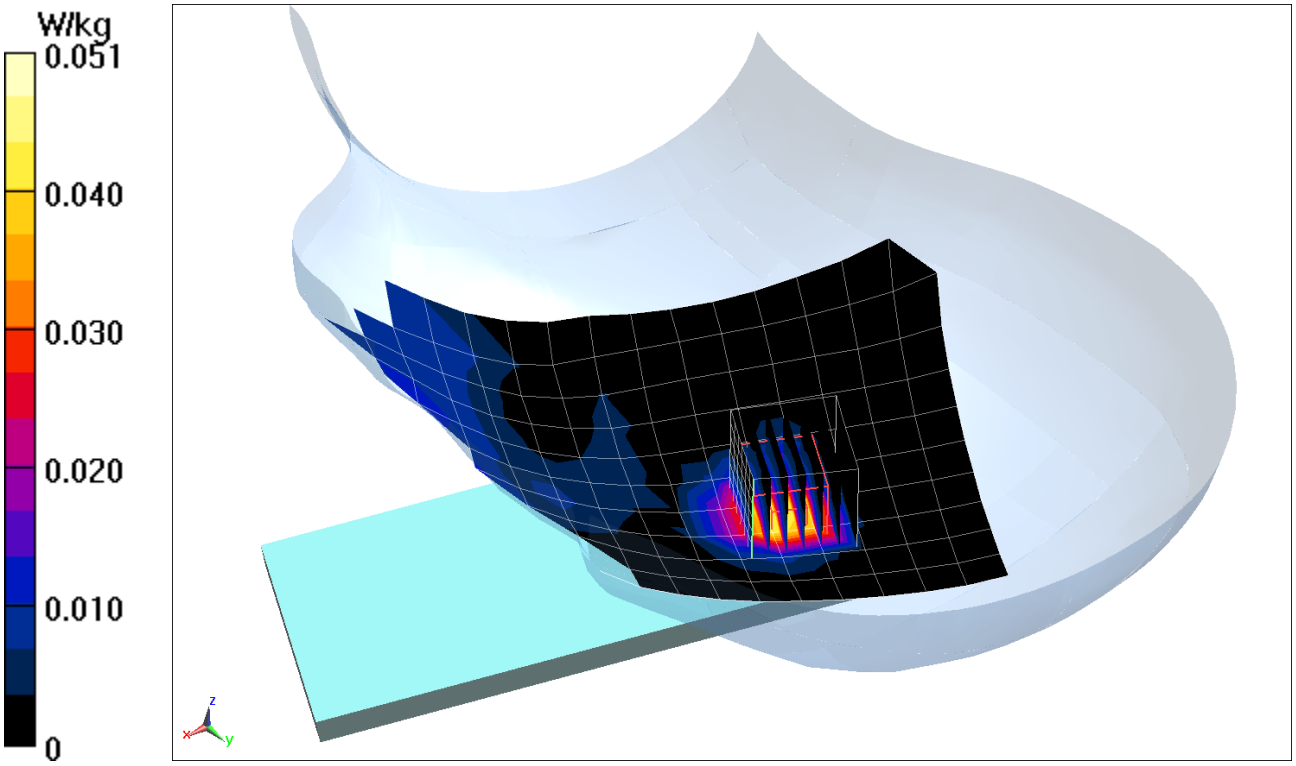
Communication System: UID 0, _LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 1.95$ S/m; $\varepsilon_r = 38.694$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 07-16-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3332; ConvF(4.56, 4.56, 4.56); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 7, Left Head, Tilt, Mid.ch, QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.249 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0920 W/kg
SAR(1 g) = 0.040 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04134

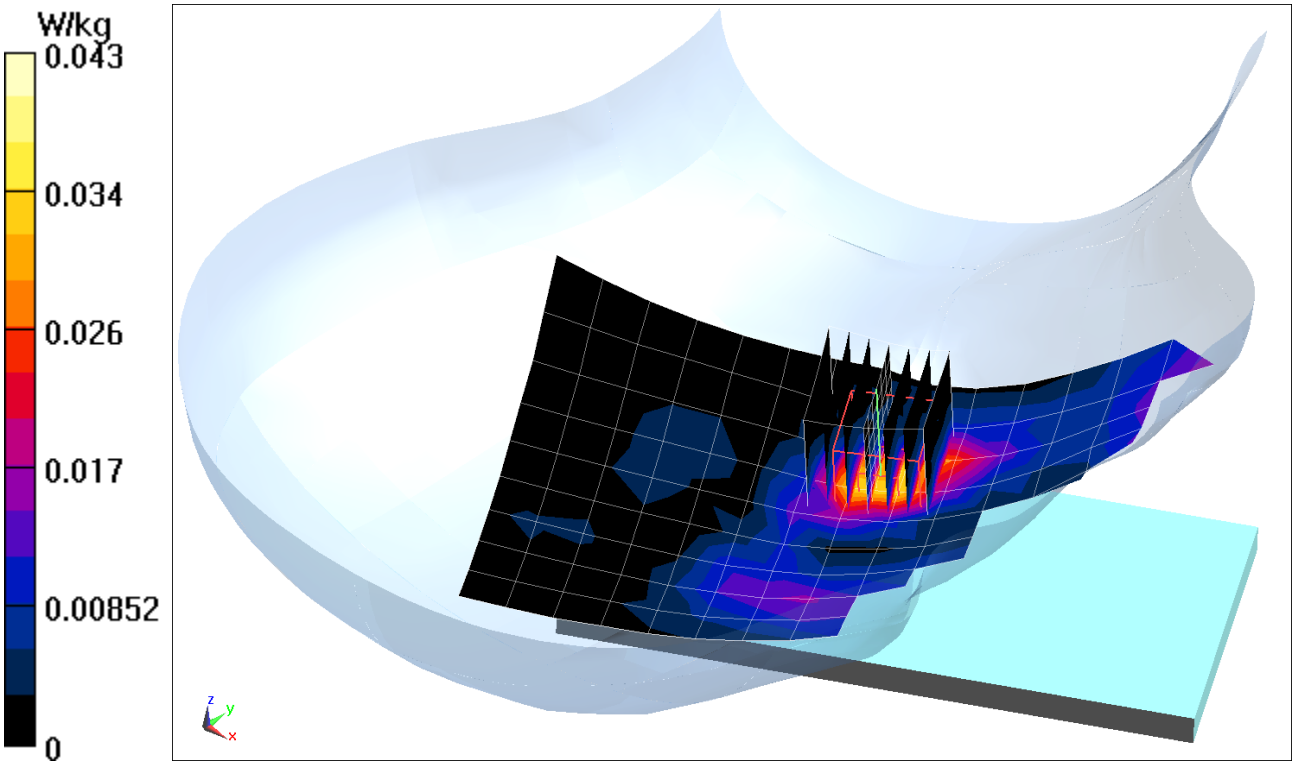
Communication System: UID 0, LTE Band 41; Frequency: 2680 MHz; Duty Cycle: 1:1.58
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2680$ MHz; $\sigma = 2.117$ S/m; $\varepsilon_r = 38.119$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3332; ConvF(4.56, 4.56, 4.56); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 41, Right Head, Cheek, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.603 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.104 W/kg
SAR(1 g) = 0.033 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04175

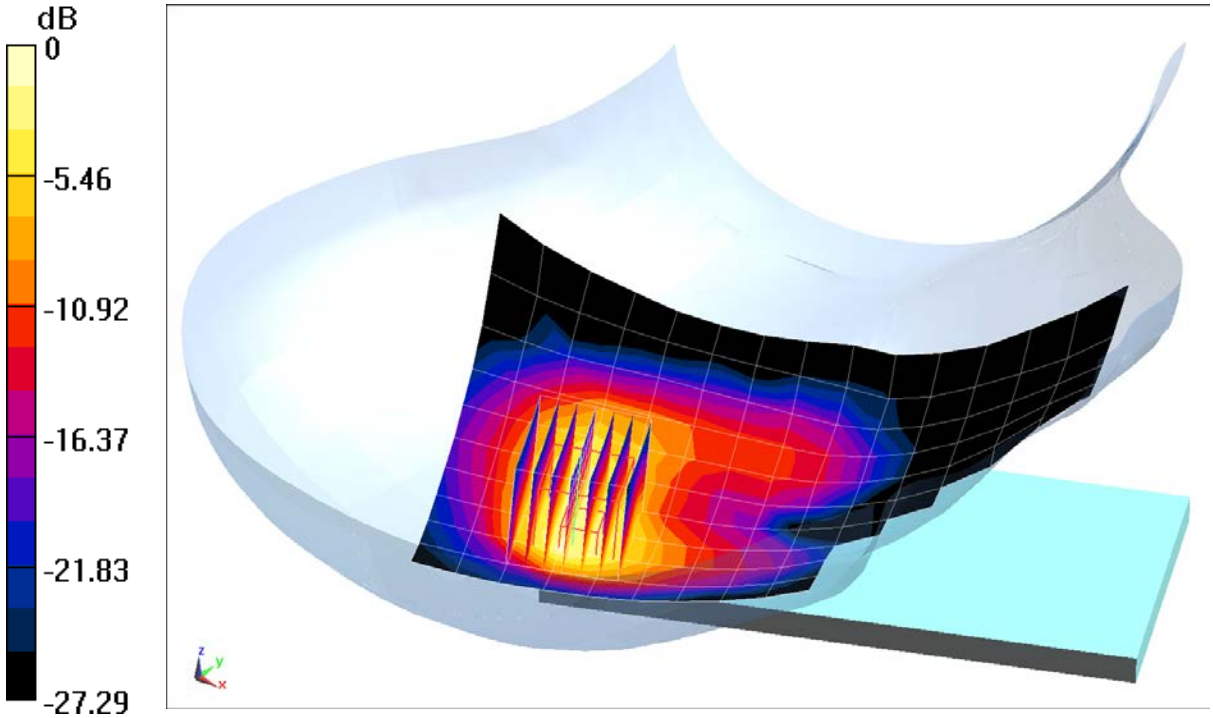
Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.837 S/m; ε_r = 39.075; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-16-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3332; ConvF(4.68, 4.68, 4.68); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.95 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.484 W/kg



0 dB = 0.647 W/kg = -1.89 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 04175

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used:
f = 5280 MHz; σ = 4.655 S/m; ε_r = 35.637; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-09-2018; Ambient Temp: 20.3°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: IEEE 802.11a, U-NII-2A, Antenna 1, 20 MHz Bandwidth, Right Head, Cheek, Ch 56, 6 Mbps

Area scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 4.814 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.62 W/kg
SAR(1 g) = 0.579 W/kg