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:
08/20/18 - 09/05/18
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1808210167-01-R1.ZNF

FCC ID: **ZNFQ910QM**

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

DUT Type: Portable Handset
Application Type: Class II Permissive Change
FCC Rule Part(s): CFR §2.1093
Model: LM-Q910QM
Additional Model(s): LMQ910QM, Q910QM, LM-Q910UM, LMQ910UM, Q910UM
Permissive Change(s): See FCC Change Document

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.27	0.76	0.76	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.12	0.53	1.01	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.24	0.50	0.50	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.21	0.79	1.07	2.78
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.18	0.75	1.03	2.43
PCE	LTE Band 12	699.7 - 715.3 MHz	0.19	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	0.25	0.52	0.52	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.28	0.51	0.51	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.24	0.55	0.55	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.21	0.84	1.21	3.20
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	0.14	0.98	1.30	3.13
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	0.71	0.78	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	< 0.1	1.18	1.30	2.83
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	1.11	1.11	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.39	0.34	0.34	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.76	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.43	1.13	N/A	2.61
NII	U-NII-2C	5500 - 5720 MHz	0.65	0.64	N/A	1.70
NII	U-NII-3	5745 - 5825 MHz	0.61	0.72	0.72	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.11	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.01	1.57	1.59	3.60

Note: This revised Test Report (S/N: 1M1808210167-01-R1.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 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)
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	**23.7**	**23.7**	**23.7**	**23.7**
	Nominal	**23.2**	**23.2**	**23.2**	**23.2**
UMTS Band 2 (1900 MHz)	Maximum	**23.4**	**23.4**	**23.4**	**23.4**
	Nominal	**22.9**	**22.9**	**22.9**	**22.9**

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	**23.4**
	Nominal	**22.9**
LTE Band 2 (PCS)	Maximum	**23.4**
	Nominal	**22.9**

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
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 5 (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 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
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	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
2	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
3	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^Bluetooth Tethering is considered
4	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
5	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	GSM voice + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	N/A	Yes	
7	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
8	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
9	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
10	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
11	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
12	UMTS + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
13	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
14	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
15	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^Bluetooth Tethering is considered
16	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
17	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
18	LTE + 2.4 GHz WI-FI Ant 1 + 5 GHz WI-FI Ant 2	Yes	Yes	Yes	Yes	
19	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
20	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
21	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^Bluetooth Tethering is considered
22	GPRS/EDGE + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
23	GPRS/EDGE + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
24	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, when 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. When the highest reported SAR for U-NII-2A is > 1.2 W/kg, SAR is required for U-NII-1 band.

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.

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. Per FCC guidance, downlink LTE CA conducted power measurements for bands impacted by this permissive change are included 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 15 (QPSK, 16QAM, 64QAM, 256QAM), UL UE Cat 5 (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 CA 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 (□). 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:

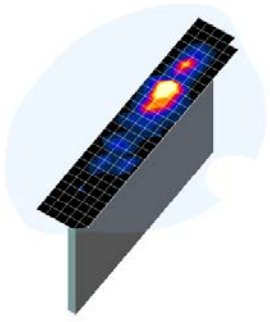


Figure 4-1
Sample SAR Area Scan

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].

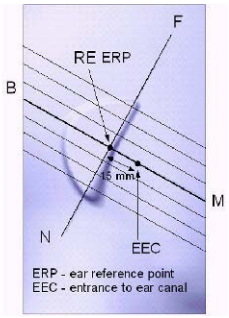


Figure 5-1
Close-Up Side view of ERP

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.

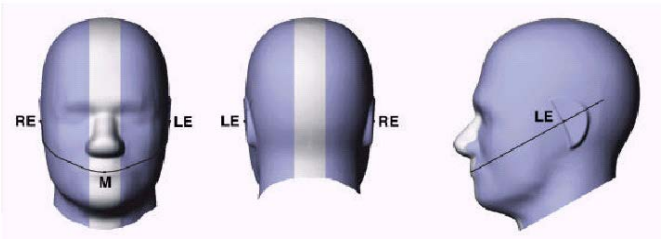


Figure 5-2
Front, back and side view of SAM Twin Phantom

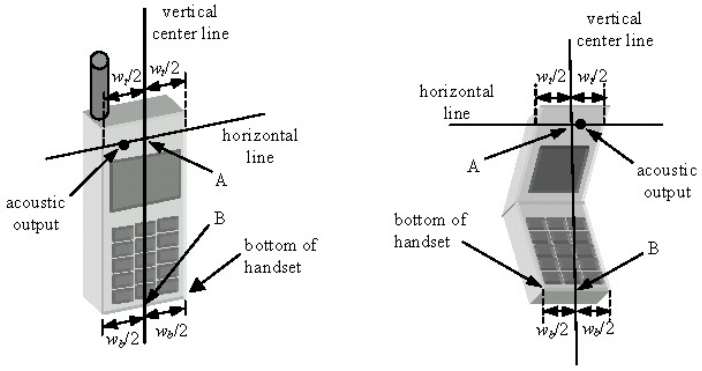


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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).

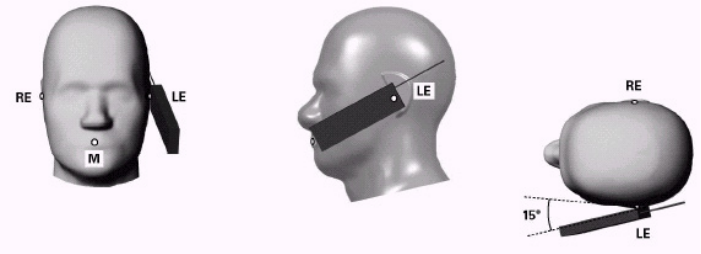


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

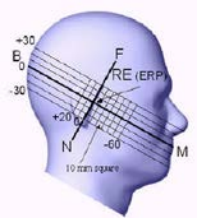


Figure 6-3
Side view w/ relevant markings

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.

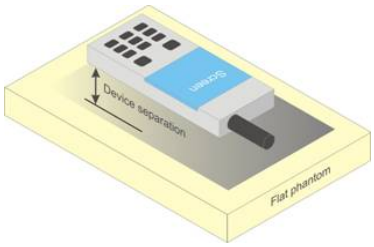


Figure 6-4
Sample Body-Worn Diagram

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for UMTS

8.4.1 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.

8.4.2 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.

8.4.3 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.

8.4.4 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.

8.4.5 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.

8.4.6 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.

8.5 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).

8.5.1 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.

8.5.2 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.

8.5.3 A-MPR

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

8.5.4 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.

8.5.5 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.

8.5.6 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.

8.6 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.

8.6.1 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.

8.6.2 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.

8.6.3 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.

8.6.4 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.

8.6.5 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.

8.6.6 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.

8.6.7 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 8.6.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.8 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.

8.6.9 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 GSM Conducted Powers

Table 9-1
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	32.88	32.79	31.44	**28.96**	27.22	26.77	26.45	25.69	25.52
	190	32.80	32.72	31.43	**29.06**	27.43	26.71	26.39	25.60	25.39
	251	32.96	32.89	31.11	**29.31**	27.36	26.65	26.36	25.65	25.41
GSM 1900	512	29.98	30.10	29.15	**26.79**	24.89	25.68	25.42	24.65	24.38
	661	29.98	30.11	29.16	**26.81**	24.90	25.53	25.33	24.48	24.11
	810	29.91	30.05	29.09	**26.76**	24.93	25.55	25.29	24.50	24.09

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	23.85	23.76	25.42	**24.70**	24.21	17.74	20.43	21.43	22.51
	190	23.77	23.69	25.41	**24.80**	24.42	17.68	20.37	21.34	22.38
	251	23.93	23.86	25.09	**25.05**	24.35	17.62	20.34	21.39	22.40
GSM 1900	512	20.95	21.07	23.13	**22.53**	21.88	16.65	19.40	20.39	21.37
	661	20.95	21.08	23.14	**22.55**	21.89	16.50	19.31	20.22	21.10
	810	20.88	21.02	23.07	**22.50**	21.92	16.52	19.27	20.24	21.08

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 9-1
Power Measurement Setup

9.2 UMTS Conducted Powers

Table 9-2
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	25.45	25.37	25.50	24.48	24.49	24.34	23.63	23.47	23.58	-
99		12.2 kbps AMR	25.33	25.40	25.48	24.46	24.42	24.36	23.75	23.55	23.51	-
6	HSDPA	Subtest 1	25.28	25.04	25.22	24.41	24.37	24.25	23.88	23.75	23.67	0
6		Subtest 2	25.31	25.06	25.23	24.37	24.38	24.22	23.90	23.80	23.65	0
6		Subtest 3	24.87	24.60	24.76	23.92	23.89	23.71	23.39	23.30	23.15	0.5
6		Subtest 4	24.85	24.61	24.77	23.90	23.87	23.72	23.42	23.27	23.18	0.5
6	HSUPA	Subtest 1	25.23	25.02	25.14	24.30	24.31	24.14	23.70	23.56	23.48	0
6		Subtest 2	22.34	22.11	22.23	21.41	21.39	21.28	20.92	20.80	20.68	2
6		Subtest 3	23.30	23.07	23.25	22.43	22.43	22.32	21.94	21.79	21.73	1
6		Subtest 4	22.30	22.09	22.26	21.39	21.41	21.28	20.92	20.78	20.61	2
6		Subtest 5	25.34	25.06	25.24	24.43	24.40	24.26	23.90	23.79	23.72	0
8	DC-HSDPA	Subtest 1	25.33	25.07	24.25	24.39	24.41	24.27	23.91	23.76	23.72	0
8		Subtest 2	25.33	25.11	25.26	24.37	24.39	24.23	23.88	23.76	23.67	0
8		Subtest 3	24.85	24.63	24.74	23.93	23.88	23.77	23.41	23.23	23.15	0.5
8		Subtest 4	24.87	24.62	24.71	23.86	23.89	23.78	23.39	23.24	23.17	0.5

Table 9-3
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	23.18	23.14	23.19	22.93	22.76	22.88	-
99		12.2 kbps AMR	23.14	23.15	23.17	22.96	22.78	22.78	-
6	HSDPA	Subtest 1	23.20	23.15	23.22	22.85	22.56	22.64	0
6		Subtest 2	23.24	23.16	23.24	22.81	22.53	22.72	0
6		Subtest 3	22.76	22.66	22.77	22.40	22.02	22.26	0.5
6		Subtest 4	22.75	22.67	22.73	22.36	22.08	22.23	0.5
6	HSUPA	Subtest 1	23.04	22.98	23.01	22.64	22.30	22.51	0
6		Subtest 2	20.25	20.16	20.24	19.85	19.54	19.73	2
6		Subtest 3	21.25	21.14	21.25	20.86	20.53	20.75	1
6		Subtest 4	20.20	20.14	20.21	19.82	19.50	19.61	2
6		Subtest 5	23.23	23.12	23.23	22.84	22.53	22.73	0
8	DC-HSDPA	Subtest 1	23.23	23.14	23.21	22.83	22.52	22.71	0
8		Subtest 2	23.21	23.12	23.22	22.79	22.52	22.69	0
8		Subtest 3	22.74	22.62	22.69	22.32	22.00	22.15	0.5
8		Subtest 4	22.71	22.62	22.70	22.32	22.02	22.18	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 9-2
Power Measurement Setup

9.3 LTE Conducted Powers

9.3.1 LTE Band 12

Table 9-4
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	**25.24**	0	0
	1	25	25.22		0
	1	49	25.23		0
	25	0	24.31	0-1	1
	25	12	**24.33**		1
	25	25	24.30		1
	50	0	24.24		1
16QAM	1	0	24.19	0-1	1
	1	25	24.28		1
	1	49	24.50		1
	25	0	23.29	0-2	2
	25	12	23.25		2
	25	25	23.31		2
	50	0	23.28		2
64QAM	1	0	23.42	0-2	2
	1	25	23.27		2
	1	49	23.41		2
	25	0	22.44	0-3	3
	25	12	22.32		3
	25	25	22.34		3
	50	0	22.32		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 9-5
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	25.33	25.12	25.11	0	0
	1	12	25.13	25.28	25.22		0
	1	24	25.16	25.18	25.13		0
	12	0	24.26	24.24	24.30	0-1	1
	12	6	24.31	24.30	24.24		1
	12	13	24.30	24.17	24.22		1
	25	0	24.29	24.17	24.18		1
16QAM	1	0	24.21	24.07	24.09	0-1	1
	1	12	24.13	24.30	24.31		1
	1	24	24.20	24.25	24.49		1
	12	0	23.17	23.21	23.32	0-2	2
	12	6	23.26	23.17	23.31		2
	12	13	23.36	23.27	23.29		2
	25	0	23.29	23.24	23.30		2
64QAM	1	0	23.36	23.37	23.40	0-2	2
	1	12	23.26	23.35	23.29		2
	1	24	23.34	23.47	23.32		2
	12	0	22.41	22.43	22.38	0-3	3
	12	6	22.33	22.26	22.28		3
	12	13	22.28	22.33	22.29		3
	25	0	22.27	22.28	22.23		3

Table 9-6
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	25.24	25.24	25.13	0	0
	1	7	25.27	25.17	25.23		0
	1	14	25.19	25.28	25.13		0
	8	0	24.33	24.35	24.29	0-1	1
	8	4	24.35	24.30	24.35		1
	8	7	24.22	24.27	24.31		1
	15	0	24.30	24.19	24.22		1
16QAM	1	0	24.17	24.25	24.19	0-1	1
	1	7	24.27	24.22	24.33		1
	1	14	24.42	24.39	24.39		1
	8	0	23.21	23.30	23.32	0-2	2
	8	4	23.27	23.35	23.20		2
	8	7	23.22	23.22	23.28		2
	15	0	23.18	23.26	23.31		2
64QAM	1	0	23.38	23.41	23.33	0-2	2
	1	7	23.26	23.24	23.14		2
	1	14	23.32	23.46	23.35		2
	8	0	22.35	22.30	22.49	0-3	3
	8	4	22.27	22.44	22.25		3
	8	7	22.31	22.35	22.41		3
	15	0	22.37	22.24	22.31		3

Table 9-7
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	25.23	25.23	25.16	0	0
	1	2	25.26	25.24	25.16		0
	1	5	25.19	25.12	25.27		0
	3	0	25.25	25.26	25.12		0
	3	2	25.21	25.34	25.14		0
	3	3	25.28	25.13	25.12		0
	6	0	24.15	24.27	24.33	0-1	1
16QAM	1	0	24.18	24.22	24.18	0-1	1
	1	2	24.15	24.31	24.37		1
	1	5	24.45	24.35	24.46		1
	3	0	24.20	24.19	24.21		1
	3	2	24.36	24.29	24.29		1
	3	3	24.33	24.37	24.27		1
	6	0	23.36	23.19	23.26	0-2	2
64QAM	1	0	23.44	23.46	23.36	0-2	2
	1	2	23.38	23.23	23.32		2
	1	5	23.40	23.38	23.37		2
	3	0	23.33	23.28	23.22		2
	3	2	23.38	23.28	23.39		2
	3	3	23.24	23.26	23.31		2
	6	0	22.26	22.28	22.40	0-3	3

9.3.2 LTE Band 13

Table 9-8
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	25.05	0	0
	1	25	**25.43**		0
	1	49	25.40		0
	25	0	24.49	0-1	1
	25	12	**24.50**		1
	25	25	24.37		1
	50	0	24.47		1
16QAM	1	0	24.24	0-1	1
	1	25	24.50		1
	1	49	24.35		1
	25	0	23.46	0-2	2
	25	12	23.50		2
	25	25	23.35		2
	50	0	23.50		2
64QAM	1	0	23.34	0-2	2
	1	25	23.50		2
	1	49	23.46		2
	25	0	22.50	0-3	3
	25	12	22.49		3
	25	25	22.46		3
	50	0	22.48		3

Table 9-9
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	25.03	0	0
	1	12	25.34		0
	1	24	25.42		0
	12	0	24.36	0-1	1
	12	6	24.48		1
	12	13	24.38		1
	25	0	24.36		1
16QAM	1	0	24.28	0-1	1
	1	12	24.46		1
	1	24	24.29		1
	12	0	23.38	0-2	2
	12	6	23.50		2
	12	13	23.29		2
	25	0	23.45		2
64QAM	1	0	23.21	0-2	2
	1	12	23.39		2
	1	24	23.36		2
	12	0	22.25	0-3	3
	12	6	22.46		3
	12	13	22.34		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.

9.3.1 LTE Band 26 (Cell)

Table 9-10
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	**25.47**	0	0
	1	36	25.39		0
	1	74	25.35		0
	36	0	**24.50**	0-1	1
	36	18	24.47		1
	36	37	24.44		1
	75	0	24.44		1
16QAM	1	0	24.49	0-1	1
	1	36	24.50		1
	1	74	24.49		1
	36	0	23.46	0-2	2
	36	18	23.49		2
	36	37	23.42		2
	75	0	23.45		2
64QAM	1	0	23.50	0-2	2
	1	36	23.46		2
	1	74	23.48		2
	36	0	22.47	0-3	3
	36	18	22.45		3
	36	37	22.43		3
	75	0	22.50		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 9-11
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	25.44	25.41	25.46	0	0
	1	25	25.37	25.28	25.36		0
	1	49	25.30	25.25	25.30		0
	25	0	24.48	24.42	24.42	0-1	1
	25	12	24.44	24.39	24.37		1
	25	25	24.43	24.39	24.39		1
	50	0	24.42	24.39	24.39		1
16QAM	1	0	24.44	24.45	24.45	0-1	1
	1	25	24.46	24.46	24.50		1
	1	49	24.47	24.39	24.38		1
	25	0	23.34	23.37	23.42	0-2	2
	25	12	23.49	23.39	23.45		2
	25	25	23.38	23.33	23.34		2
	50	0	23.43	23.33	23.36		2
64QAM	1	0	23.41	23.40	23.47	0-2	2
	1	25	23.45	23.40	23.41		2
	1	49	23.47	23.45	23.46		2
	25	0	22.41	22.35	22.43	0-3	3
	25	12	22.34	22.33	22.33		3
	25	25	22.40	22.42	22.34		3
	50	0	22.42	22.39	22.41		3

Table 9-12
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	25.44	25.46	25.40	0	0
	1	12	25.34	25.32	25.27		0
	1	24	25.26	25.33	25.28		0
	12	0	24.46	24.45	24.46	0-1	1
	12	6	24.37	24.39	24.43		1
	12	13	24.33	24.43	24.39		1
	25	0	24.40	24.42	24.34		1
16QAM	1	0	24.38	24.37	24.42	0-1	1
	1	12	24.45	24.46	24.40		1
	1	24	24.44	24.37	24.41		1
	12	0	23.43	23.43	23.40	0-2	2
	12	6	23.48	23.47	23.44		2
	12	13	23.34	23.34	23.32		2
	25	0	23.39	23.34	23.41		2
64QAM	1	0	23.40	23.46	23.39	0-2	2
	1	12	23.45	23.37	23.46		2
	1	24	23.48	23.47	23.45		2
	12	0	22.39	22.39	22.46	0-3	3
	12	6	22.34	22.35	22.38		3
	12	13	22.36	22.38	22.37		3
	25	0	22.44	22.47	22.47		3

Table 9-13
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	25.35	25.46	25.37	0	0
	1	7	25.28	25.38	25.32		0
	1	14	25.33	25.26	25.24		0
	8	0	24.48	24.42	24.49	0-1	1
	8	4	24.40	24.43	24.40		1
	8	7	24.41	24.33	24.39		1
	15	0	24.41	24.34	24.39		1
16QAM	1	0	24.48	24.38	24.41	0-1	1
	1	7	24.45	24.42	24.49		1
	1	14	24.48	24.39	24.41		1
	8	0	23.42	23.37	23.35	0-2	2
	8	4	23.43	23.47	23.37		2
	8	7	23.42	23.40	23.40		2
	15	0	23.33	23.38	23.42		2
64QAM	1	0	23.41	23.43	23.39	0-2	2
	1	7	23.34	23.41	23.40		2
	1	14	23.48	23.37	23.47		2
	8	0	22.45	22.39	22.43	0-3	3
	8	4	22.35	22.36	22.38		3
	8	7	22.40	22.38	22.41		3
	15	0	22.47	22.39	22.41		3

Table 9-14
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	25.40	25.44	25.39	0	0
	1	2	25.34	25.32	25.35		0
	1	5	25.23	25.32	25.29		0
	3	0	25.43	25.36	25.39		0
	3	2	25.34	25.34	25.30		0
	3	3	25.27	25.31	25.32		0
	6	0	24.41	24.35	24.40	0-1	1
16QAM	1	0	24.45	24.39	24.47	0-1	1
	1	2	24.38	24.38	24.46		1
	1	5	24.41	24.45	24.37		1
	3	0	24.43	24.42	24.50		1
	3	2	24.46	24.40	24.36		1
	3	3	24.43	24.38	24.38		1
	6	0	23.44	23.37	23.44	0-2	2
64QAM	1	0	23.46	23.41	23.42	0-2	2
	1	2	23.38	23.45	23.34		2
	1	5	23.46	23.48	23.44		2
	3	0	23.42	23.38	23.37		2
	3	2	23.32	23.32	23.30		2
	3	3	23.40	23.33	23.40		2
	6	0	22.42	22.50	22.45	0-3	3

9.3.1 LTE Band 5 (Cell)

Table 9-15
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	**25.41**	0	0
	1	25	25.27		0
	1	49	25.26		0
	25	0	**24.49**	0-1	1
	25	12	24.46		1
	25	25	24.34		1
	50	0	24.41		1
16QAM	1	0	24.50	0-1	1
	1	25	24.33		1
	1	49	24.38		1
	25	0	23.50	0-2	2
	25	12	23.49		2
	25	25	23.34		2
	50	0	23.43		2
64QAM	1	0	23.50	0-2	2
	1	25	23.44		2
	1	49	23.46		2
	25	0	22.48	0-3	3
	25	12	22.49		3
	25	25	22.36		3
	50	0	22.49		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 9-16
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	25.39	25.28	25.45	0	0
	1	12	25.16	25.27	25.36		0
	1	24	25.19	25.25	25.31		0
	12	0	24.47	24.45	24.39	0-1	1
	12	6	24.46	24.44	24.23		1
	12	13	24.32	24.31	24.19		1
	25	0	24.41	24.41	24.42		1
16QAM	1	0	24.45	24.50	24.46	0-1	1
	1	12	24.31	24.29	24.29		1
	1	24	24.40	24.27	24.36		1
	12	0	23.48	23.40	23.42	0-2	2
	12	6	23.49	23.34	23.44		2
	12	13	23.23	23.33	23.27		2
	25	0	23.45	23.39	23.34		2
64QAM	1	0	23.42	23.34	23.48	0-2	2
	1	12	23.48	23.48	23.45		2
	1	24	23.40	23.39	23.42		2
	12	0	22.33	22.41	22.15	0-3	3
	12	6	22.45	22.43	22.39		3
	12	13	22.29	22.03	22.25		3
	25	0	22.44	22.40	22.40		3

Table 9-17
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	25.41	25.29	25.36	0	0
	1	7	25.28	25.34	25.28		0
	1	14	25.32	25.21	25.24		0
	8	0	24.41	24.43	24.45	0-1	1
	8	4	24.31	24.43	24.37		1
	8	7	24.30	24.24	24.32		1
	15	0	24.37	24.31	24.49		1
16QAM	1	0	24.48	24.46	24.49	0-1	1
	1	7	24.34	24.39	24.23		1
	1	14	24.35	24.35	24.40		1
	8	0	23.42	23.40	23.50	0-2	2
	8	4	23.13	23.43	23.43		2
	8	7	23.32	23.32	23.40		2
	15	0	23.34	23.37	23.36		2
64QAM	1	0	23.16	23.41	23.44	0-2	2
	1	7	23.47	23.41	23.44		2
	1	14	23.50	23.48	23.39		2
	8	0	22.45	22.45	22.41	0-3	3
	8	4	22.40	22.43	22.38		3
	8	7	22.32	22.37	22.25		3
	15	0	22.43	22.44	22.49		3

Table 9-18
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	25.40	25.45	25.44	0	0
	1	2	25.15	25.25	25.20		0
	1	5	25.35	25.13	25.24		0
	3	0	25.31	25.39	25.41		0
	3	2	25.20	25.25	25.30		0
	3	3	25.18	25.25	25.34		0
	6	0	24.47	24.46	24.28	0-1	1
16QAM	1	0	24.44	24.41	24.47	0-1	1
	1	2	24.28	24.25	24.34		1
	1	5	24.37	24.38	24.34		1
	3	0	24.15	24.06	24.25		1
	3	2	24.47	24.42	24.44		1
	3	3	24.26	24.29	24.37		1
	6	0	23.33	23.25	23.30	0-2	2
64QAM	1	0	23.40	23.40	23.48	0-2	2
	1	2	23.41	23.44	23.34		2
	1	5	23.41	23.44	23.44		2
	3	0	23.50	23.45	23.50		2
	3	2	23.33	23.27	23.35		2
	3	3	23.40	23.43	23.47		2
	6	0	22.40	22.49	22.42	0-3	3

9.3.2 LTE Band 66 (AWS)

Table 9-19
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	**24.13**	24.06	24.04	0	0
	1	50	24.07	23.85	23.92		0
	1	99	24.02	23.85	23.88		0
	50	0	**23.00**	22.82	22.80	0-1	1
	50	25	22.92	22.80	22.79		1
	50	50	22.89	22.76	22.79		1
	100	0	22.97	22.80	22.84		1
16QAM	1	0	23.04	22.78	22.94	0-1	1
	1	50	22.93	22.54	22.79		1
	1	99	22.90	22.50	22.81		1
	50	0	22.00	21.64	21.82	0-2	2
	50	25	21.94	21.55	21.83		2
	50	50	21.85	21.51	21.81		2
	100	0	21.93	21.58	21.84		2
64QAM	1	0	22.00	21.72	21.93	0-2	2
	1	50	21.90	21.48	21.74		2
	1	99	21.82	21.48	21.80		2
	50	0	20.90	20.55	20.72	0-3	3
	50	25	20.90	20.47	20.75		3
	50	50	20.84	20.41	20.72		3
	100	0	20.84	20.48	20.77		3

Table 9-20
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	23.98	24.07	24.00	0	0
	1	36	24.09	23.78	23.89		0
	1	74	23.90	23.87	23.81		0
	36	0	22.95	22.77	22.84	0-1	1
	36	18	22.92	22.87	22.74		1
	36	37	22.90	22.75	22.75		1
	75	0	22.88	22.76	22.76		1
16QAM	1	0	22.99	22.65	22.93	0-1	1
	1	36	22.92	22.55	22.78		1
	1	74	22.84	22.46	22.77		1
	36	0	22.03	21.56	21.73	0-2	2
	36	18	21.98	21.51	21.74		2
	36	37	21.92	21.42	21.80		2
	75	0	21.87	21.66	21.71		2
64QAM	1	0	22.06	21.71	21.87	0-2	2
	1	36	21.82	21.51	21.79		2
	1	74	21.85	21.43	21.81		2
	36	0	20.87	20.57	20.65	0-3	3
	36	18	20.88	20.48	20.68		3
	36	37	20.84	20.47	20.58		3
	75	0	20.88	20.42	20.76		3

Table 9-21
LTE Band 66 (AWS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.18	24.04	24.03	0	0
	1	25	24.01	23.90	23.90		0
	1	49	23.99	23.84	23.77		0
	25	0	22.85	22.81	22.83	0-1	1
	25	12	22.84	22.72	22.73		1
	25	25	22.87	22.71	22.81		1
	50	0	22.99	22.74	22.77		1
16QAM	1	0	22.94	22.83	22.92	0-1	1
	1	25	22.87	22.59	22.73		1
	1	49	22.76	22.47	22.83		1
	25	0	22.06	21.59	21.77	0-2	2
	25	12	21.94	21.47	21.84		2
	25	25	21.92	21.52	21.71		2
	50	0	21.89	21.57	21.80		2
64QAM	1	0	21.92	21.74	21.90	0-2	2
	1	25	21.90	21.49	21.67		2
	1	49	21.86	21.45	21.65		2
	25	0	20.81	20.48	20.71	0-3	3
	25	12	20.85	20.56	20.66		3
	25	25	20.85	20.30	20.67		3
	50	0	20.87	20.45	20.70		3

Table 9-22
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	24.15	24.03	24.11	0	0
	1	12	24.06	23.78	23.91		0
	1	24	23.98	23.90	23.90		0
	12	0	22.87	22.72	22.71	0-1	1
	12	6	22.90	22.74	22.84		1
	12	13	22.89	22.79	22.71		1
	25	0	22.97	22.80	22.80		1
16QAM	1	0	23.08	22.71	22.95	0-1	1
	1	12	22.98	22.43	22.77		1
	1	24	22.90	22.45	22.80		1
	12	0	22.00	21.65	21.69	0-2	2
	12	6	21.99	21.61	21.79		2
	12	13	21.69	21.55	21.79		2
	25	0	21.96	21.63	21.75		2
64QAM	1	0	21.94	21.65	21.83	0-2	2
	1	12	21.84	21.32	21.61		2
	1	24	21.88	21.42	21.82		2
	12	0	20.94	20.49	20.74	0-3	3
	12	6	20.83	20.41	20.77		3
	12	13	20.82	20.46	20.68		3
	25	0	20.77	20.38	20.72		3

Table 9-23
LTE Band 66 (AWS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.09	24.06	24.13	0	0
	1	7	24.04	23.89	23.98		0
	1	14	23.99	23.84	23.84		0
	8	0	22.91	22.88	22.80	0-1	1
	8	4	22.97	22.77	22.74		1
	8	7	22.87	22.74	22.78		1
	15	0	22.93	22.85	22.83		1
16QAM	1	0	22.91	22.82	22.91	0-1	1
	1	7	22.96	22.58	22.85		1
	1	14	22.86	22.45	22.78		1
	8	0	21.92	21.58	21.68	0-2	2
	8	4	21.89	21.54	21.85		2
	8	7	21.77	21.48	21.81		2
	15	0	21.79	21.45	21.83		2
64QAM	1	0	21.92	21.72	21.85	0-2	2
	1	7	21.80	21.43	21.70		2
	1	14	21.83	21.35	21.80		2
	8	0	20.89	20.54	20.71	0-3	3
	8	4	20.77	20.41	20.63		3
	8	7	20.81	20.50	20.78		3
	15	0	20.85	20.49	20.79		3

Table 9-24
LTE Band 66 (AWS) Maximum Conducted Powers -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.04	24.08	24.04	0	0
	1	2	24.11	23.80	23.93		0
	1	5	24.03	23.75	23.78		0
	3	0	24.03	24.07	23.96		0
	3	2	24.03	23.82	23.79		0
	3	3	24.01	23.80	23.85		0
	6	0	23.01	22.79	22.89	0-1	1
16QAM	1	0	23.03	22.69	22.94	0-1	1
	1	2	22.86	22.39	22.76		1
	1	5	22.86	22.46	22.88		1
	3	0	23.01	22.83	22.82		1
	3	2	22.85	22.74	22.66		1
	3	3	22.74	22.66	22.79		1
	6	0	21.87	21.59	21.87	0-2	2
64QAM	1	0	22.06	21.70	21.85	0-2	2
	1	2	21.86	21.41	21.79		2
	1	5	21.78	21.44	21.69		2
	3	0	21.96	21.58	21.91		2
	3	2	21.84	21.48	21.74		2
	3	3	21.86	21.51	21.72		2
	6	0	20.88	20.41	20.65	0-3	3

Table 9-25
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	**22.61**	22.59	22.56	0	0
	1	50	22.46	22.39	22.39		0
	1	99	22.47	22.40	22.37		0
	50	0	**22.58**	22.45	22.49	0-1	0
	50	25	22.46	22.40	22.40		0
	50	50	22.39	22.36	22.34		0
	100	0	22.47	22.41	22.42		0
16QAM	1	0	22.56	22.57	22.53	0-1	0
	1	50	22.47	22.38	22.38		0
	1	99	22.46	22.36	22.37		0
	50	0	21.51	21.47	21.41	0-2	1
	50	25	21.45	21.42	21.41		1
	50	50	21.41	21.36	21.34		1
	100	0	21.47	21.41	21.44		1
64QAM	1	0	21.50	21.54	21.50	0-2	1
	1	50	21.41	21.32	21.34		1
	1	99	21.41	21.33	21.32		1
	50	0	20.45	20.38	20.33	0-3	2
	50	25	20.39	20.31	20.34		2
	50	50	20.36	20.26	20.29		2
	100	0	20.38	20.32	20.37		2

Table 9-26
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	22.56	22.54	22.53	0	0
	1	36	22.40	22.28	22.30		0
	1	74	22.44	22.30	22.32		0
	36	0	22.49	22.39	22.42	0-1	0
	36	18	22.39	22.39	22.40		0
	36	37	22.37	22.33	22.28		0
	75	0	22.45	22.41	22.30		0
16QAM	1	0	22.55	22.54	22.41	0-1	0
	1	36	22.46	22.29	22.32		0
	1	74	22.40	22.24	22.28		0
	36	0	21.42	21.43	21.33	0-2	1
	36	18	21.34	21.37	21.41		1
	36	37	21.37	21.31	21.31		1
	75	0	21.37	21.30	21.41		1
64QAM	1	0	21.48	21.51	21.48	0-2	1
	1	36	21.31	21.31	21.28		1
	1	74	21.34	21.21	21.22		1
	36	0	20.41	20.35	20.29	0-3	2
	36	18	20.31	20.24	20.31		2
	36	37	20.28	20.22	20.23		2
	75	0	20.31	20.29	20.32		2

Table 9-27
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	22.58	22.51	22.47	0	0
	1	25	22.44	22.31	22.36		0
	1	49	22.44	22.36	22.29		0
	25	0	22.51	22.43	22.43	0-1	0
	25	12	22.38	22.38	22.33		0
	25	25	22.30	22.29	22.23		0
	50	0	22.38	22.38	22.36		0
16QAM	1	0	22.45	22.45	22.44	0-1	0
	1	25	22.43	22.35	22.30		0
	1	49	22.35	22.26	22.34		0
	25	0	21.39	21.45	21.39	0-2	1
	25	12	21.38	21.34	21.30		1
	25	25	21.29	21.33	21.32		1
	50	0	21.43	21.32	21.41		1
64QAM	1	0	21.45	21.44	21.43	0-2	1
	1	25	21.38	21.26	21.34		1
	1	49	21.30	21.25	21.21		1
	25	0	20.43	20.30	20.22	0-3	2
	25	12	20.29	20.29	20.28		2
	25	25	20.31	20.20	20.22		2
	50	0	20.33	20.31	20.28		2

Table 9-28
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	22.50	22.59	22.49	0	0
	1	12	22.43	22.39	22.34		0
	1	24	22.43	22.28	22.27		0
	12	0	22.53	22.44	22.46	0-1	0
	12	6	22.39	22.34	22.40		0
	12	13	22.38	22.32	22.24		0
	25	0	22.43	22.33	22.40		0
16QAM	1	0	22.49	22.55	22.43	0-1	0
	1	12	22.45	22.28	22.36		0
	1	24	22.39	22.27	22.33		0
	12	0	21.42	21.43	21.31	0-2	1
	12	6	21.44	21.31	21.31		1
	12	13	21.37	21.34	21.27		1
	25	0	21.45	21.40	21.36		1
64QAM	1	0	21.45	21.54	21.41	0-2	1
	1	12	21.33	21.31	21.26		1
	1	24	21.33	21.28	21.21		1
	12	0	20.38	20.29	20.29	0-3	2
	12	6	20.29	20.20	20.24		2
	12	13	20.29	20.25	20.20		2
	25	0	20.30	20.30	20.35		2

Table 9-29
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	22.54	22.52	22.44	0	0
	1	7	22.37	22.28	22.30		0
	1	14	22.47	22.40	22.35		0
	8	0	22.55	22.34	22.46	0-1	0
	8	4	22.41	22.30	22.33		0
	8	7	22.30	22.34	22.28		0
	15	0	22.36	22.38	22.39		0
16QAM	1	0	22.45	22.52	22.46	0-1	0
	1	7	22.35	22.33	22.30		0
	1	14	22.36	22.32	22.29		0
	8	0	21.50	21.36	21.35	0-2	1
	8	4	21.40	21.41	21.36		1
	8	7	21.38	21.28	21.23		1
	15	0	21.42	21.31	21.38		1
64QAM	1	0	21.44	21.45	21.44	0-2	1
	1	7	21.35	21.32	21.30		1
	1	14	21.29	21.27	21.31		1
	8	0	20.42	20.35	20.28	0-3	2
	8	4	20.28	20.24	20.30		2
	8	7	20.30	20.20	20.28		2
	15	0	20.26	20.29	20.34		2

Table 9-30
LTE Band 66 (AWS) Reduced Conducted Powers – 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.50	22.52	22.50	0	0
	1	2	22.38	22.32	22.27		0
	1	5	22.43	22.36	22.32		0
	3	0	22.50	22.39	22.40		0
	3	2	22.39	22.38	22.38		0
	3	3	22.36	22.25	22.29		0
	6	0	22.43	22.34	22.39	0-1	0
16QAM	1	0	22.47	22.51	22.53	0-1	0
	1	2	22.40	22.32	22.29		0
	1	5	22.39	22.34	22.34		0
	3	0	22.49	22.48	22.53		0
	3	2	22.39	22.34	22.39		0
	3	3	22.44	22.35	22.28		0
	6	0	21.45	21.30	21.36	0-2	1
64QAM	1	0	21.46	21.53	21.40	0-2	1
	1	2	21.39	21.23	21.24		1
	1	5	21.35	21.29	21.23		1
	3	0	21.48	21.46	21.39		1
	3	2	21.33	21.41	21.38		1
	3	3	21.34	21.32	21.26		1
	6	0	20.33	20.29	20.28	0-3	2

9.3.3 LTE Band 25 (PCS)

Table 9-31
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	24.05	24.06	**24.17**	0	0
	1	50	23.66	23.79	23.99		0
	1	99	23.88	23.94	24.13		0
	50	0	22.89	22.89	**23.12**	0-1	1
	50	25	22.75	22.86	23.10		1
	50	50	22.74	22.82	23.05		1
	100	0	22.87	22.91	23.10		1
16QAM	1	0	23.16	23.15	23.29	0-1	1
	1	50	22.76	23.26	23.11		1
	1	99	23.01	23.05	23.20		1
	50	0	21.88	21.88	22.13	0-2	2
	50	25	21.75	21.88	22.11		2
	50	50	21.76	21.78	22.05		2
	100	0	21.86	21.88	22.12		2
64QAM	1	0	22.22	22.21	22.34	0-2	2
	1	50	21.83	21.92	22.18		2
	1	99	22.03	22.12	22.27		2
	50	0	20.92	20.91	21.16	0-3	3
	50	25	20.79	20.89	21.14		3
	50	50	20.78	20.82	21.10		3
	100	0	20.88	20.91	21.12		3

Table 9-32
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	24.03	23.95	24.08	0	0
	1	36	23.66	23.67	23.91		0
	1	74	23.80	23.93	24.10		0
	36	0	22.85	22.77	23.05	0-1	1
	36	18	22.73	22.77	23.02		1
	36	37	22.69	22.70	22.98		1
	75	0	22.87	22.81	23.05		1
16QAM	1	0	23.07	23.04	23.28	0-1	1
	1	36	22.72	23.15	23.08		1
	1	74	22.98	23.03	23.14		1
	36	0	21.80	21.84	22.02	0-2	2
	36	18	21.69	21.79	22.01		2
	36	37	21.71	21.73	21.93		2
	75	0	21.77	21.77	22.04		2
64QAM	1	0	22.14	22.16	22.34	0-2	2
	1	36	21.74	21.81	22.06		2
	1	74	21.97	22.10	22.22		2
	36	0	20.89	20.90	21.10	0-3	3
	36	18	20.71	20.83	21.06		3
	36	37	20.67	20.70	21.05		3
	75	0	20.82	20.86	21.04		3

Table 9-33
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	23.94	23.96	24.07	0	0
	1	25	23.54	23.72	23.98		0
	1	49	23.81	23.89	24.13		0
	25	0	22.87	22.89	23.10	0-1	1
	25	12	22.69	22.84	23.05		1
	25	25	22.67	22.79	22.98		1
	50	0	22.80	22.85	23.10		1
16QAM	1	0	23.09	23.13	23.21	0-1	1
	1	25	22.66	23.23	23.05		1
	1	49	22.99	23.02	23.16		1
	25	0	21.79	21.82	22.11	0-2	2
	25	12	21.73	21.86	21.99		2
	25	25	21.76	21.72	22.05		2
	50	0	21.75	21.81	22.03		2
64QAM	1	0	22.18	22.13	22.23	0-2	2
	1	25	21.81	21.83	22.15		2
	1	49	21.98	22.07	22.15		2
	25	0	20.87	20.81	21.05	0-3	3
	25	12	20.78	20.80	21.13		3
	25	25	20.70	20.70	21.04		3
	50	0	20.86	20.85	21.11		3

Table 9-34
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	24.01	23.97	24.05	0	0
	1	12	23.60	23.79	23.87		0
	1	24	23.78	23.92	24.01		0
	12	0	22.84	22.78	23.09	0-1	1
	12	6	22.64	22.86	23.07		1
	12	13	22.71	22.78	23.01		1
	25	0	22.81	22.80	23.03		1
16QAM	1	0	23.14	23.11	23.26	0-1	1
	1	12	22.65	23.17	23.01		1
	1	24	22.90	22.97	23.10		1
	12	0	21.77	21.77	22.09	0-2	2
	12	6	21.67	21.79	22.10		2
	12	13	21.64	21.66	22.02		2
	25	0	21.85	21.77	22.03		2
64QAM	1	0	22.13	22.19	22.32	0-2	2
	1	12	21.73	21.80	22.14		2
	1	24	21.92	22.09	22.18		2
	12	0	20.85	20.83	21.11	0-3	3
	12	6	20.78	20.77	21.08		3
	12	13	20.76	20.81	21.06		3
	25	0	20.78	20.87	21.08		3

Table 9-35
LTE Band 25 (PCS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.00	23.96	24.09	0	0
	1	7	23.66	23.72	23.88		0
	1	14	23.84	23.90	24.04		0
	8	0	22.86	22.80	23.08	0-1	1
	8	4	22.66	22.86	23.03		1
	8	7	22.62	22.71	23.03		1
	15	0	22.75	22.86	23.06		1
16QAM	1	0	23.11	23.04	23.22	0-1	1
	1	7	22.72	23.26	23.08		1
	1	14	22.89	22.93	23.11		1
	8	0	21.85	21.81	22.03	0-2	2
	8	4	21.73	21.78	22.05		2
	8	7	21.70	21.66	22.01		2
	15	0	21.76	21.81	22.02		2
64QAM	1	0	22.19	22.10	22.22	0-2	2
	1	7	21.77	21.89	22.06		2
	1	14	21.94	22.11	22.23		2
	8	0	20.90	20.84	21.08	0-3	3
	8	4	20.76	20.86	21.07		3
	8	7	20.66	20.74	21.07		3
	15	0	20.85	20.79	21.01		3

Table 9-36
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	23.97	24.03	24.14	0	0
	1	2	23.54	23.69	23.99		0
	1	5	23.87	23.89	24.11		0
	3	0	24.04	23.94	24.16		0
	3	2	23.54	23.71	23.97		0
	3	3	23.81	23.85	24.13		0
	6	0	22.86	22.81	22.99	0-1	1
16QAM	1	0	23.04	23.08	23.27	0-1	1
	1	2	22.71	23.23	23.10		1
	1	5	22.91	22.97	23.08		1
	3	0	22.86	22.86	23.00		1
	3	2	22.65	22.83	23.08		1
	3	3	22.70	22.75	23.00		1
	6	0	21.80	21.77	22.07	0-2	2
64QAM	1	0	22.19	22.18	22.25	0-2	2
	1	2	21.73	21.85	22.07		2
	1	5	21.97	22.05	22.17		2
	3	0	21.81	21.87	22.03		2
	3	2	21.66	21.79	22.08		2
	3	3	21.73	21.67	22.02		2
	6	0	20.87	20.84	21.02	0-3	3

Table 9-37
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.85	22.85	**22.97**	0	0
	1	50	22.45	22.56	22.82		0
	1	99	22.73	22.74	22.93		0
	50	0	22.70	22.70	**22.94**	0-1	0
	50	25	22.58	22.68	22.92		0
	50	50	22.57	22.60	22.87		0
	100	0	22.69	22.71	22.91		0
16QAM	1	0	22.98	22.96	23.05	0-1	0
	1	50	22.59	22.69	22.93		0
	1	99	22.80	22.87	23.02		0
	50	0	21.90	21.90	22.13	0-2	1
	50	25	21.77	21.86	22.11		1
	50	50	21.77	21.79	22.06		1
	100	0	21.90	21.91	22.13		1
64QAM	1	0	22.24	22.23	22.36	0-2	1
	1	50	21.83	21.92	22.19		1
	1	99	22.06	22.12	22.29		1
	50	0	20.94	20.93	21.16	0-3	2
	50	25	20.81	20.90	21.14		2
	50	50	20.81	20.82	21.10		2
	100	0	20.91	20.91	21.12		2

Table 9-38
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	22.76	22.84	22.92	0	0
	1	36	22.44	22.53	22.81		0
	1	74	22.65	22.62	22.86		0
	36	0	22.68	22.63	22.93	0-1	0
	36	18	22.55	22.65	22.90		0
	36	37	22.49	22.50	22.80		0
	75	0	22.65	22.64	22.82		0
16QAM	1	0	22.93	22.88	22.94	0-1	0
	1	36	22.52	22.63	22.84		0
	1	74	22.73	22.79	22.97		0
	36	0	21.85	21.86	22.01	0-2	1
	36	18	21.67	21.83	22.04		1
	36	37	21.68	21.79	21.95		1
	75	0	21.81	21.88	22.11		1
64QAM	1	0	22.16	22.22	22.30	0-2	1
	1	36	21.82	21.81	22.15		1
	1	74	21.97	22.05	22.21		1
	36	0	20.89	20.90	21.05	0-3	2
	36	18	20.80	20.86	21.06		2
	36	37	20.79	20.74	21.04		2
	75	0	20.82	20.88	21.06		2

Table 9-39
LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.84	22.85	22.90	0	0
	1	25	22.43	22.54	22.72		0
	1	49	22.63	22.71	22.88		0
	25	0	22.68	22.63	22.90	0-1	0
	25	12	22.53	22.68	22.91		0
	25	25	22.53	22.55	22.78		0
	50	0	22.65	22.68	22.85		0
16QAM	1	0	22.97	22.95	23.03	0-1	0
	1	25	22.52	22.69	22.82		0
	1	49	22.75	22.75	22.96		0
	25	0	21.78	21.79	22.05	0-2	1
	25	12	21.68	21.85	22.03		1
	25	25	21.68	21.79	22.00		1
	50	0	21.83	21.84	22.01		1
64QAM	1	0	22.14	22.21	22.28	0-2	1
	1	25	21.74	21.81	22.13		1
	1	49	21.97	22.04	22.23		1
	25	0	20.83	20.81	21.12	0-3	2
	25	12	20.79	20.80	21.08		2
	25	25	20.78	20.79	21.01		2
	50	0	20.85	20.81	21.03		2

Table 9-40
LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.84	22.80	22.90	0	0
	1	12	22.41	22.44	22.78		0
	1	24	22.72	22.65	22.93		0
	12	0	22.68	22.65	22.92	0-1	0
	12	6	22.57	22.60	22.81		0
	12	13	22.50	22.48	22.86		0
	25	0	22.61	22.60	22.85		0
16QAM	1	0	22.89	22.91	22.99	0-1	0
	1	12	22.52	22.63	22.91		0
	1	24	22.69	22.78	22.95		0
	12	0	21.89	21.82	22.11	0-2	1
	12	6	21.70	21.74	21.99		1
	12	13	21.74	21.79	22.02		1
	25	0	21.84	21.85	22.09		1
64QAM	1	0	22.16	22.11	22.28	0-2	1
	1	12	21.82	21.83	22.14		1
	1	24	21.94	22.09	22.27		1
	12	0	20.91	20.89	21.10	0-3	2
	12	6	20.69	20.88	21.11		2
	12	13	20.80	20.80	21.00		2
	25	0	20.90	20.87	21.03		2

Table 9-41
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	22.83	22.82	22.85	0	0
	1	7	22.34	22.54	22.79		0
	1	14	22.62	22.73	22.84		0
	8	0	22.66	22.65	22.94	0-1	0
	8	4	22.55	22.62	22.91		0
	8	7	22.56	22.54	22.84		0
	15	0	22.68	22.63	22.84		0
16QAM	1	0	22.96	22.95	23.01	0-1	0
	1	7	22.52	22.66	22.88		0
	1	14	22.70	22.82	23.01		0
	8	0	21.86	21.89	22.09	0-2	1
	8	4	21.76	21.76	22.07		1
	8	7	21.69	21.79	21.97		1
	15	0	21.89	21.85	22.11		1
64QAM	1	0	22.23	22.11	22.32	0-2	1
	1	7	21.79	21.88	22.17		1
	1	14	22.01	22.07	22.25		1
	8	0	20.92	20.91	21.08	0-3	2
	8	4	20.72	20.84	21.08		2
	8	7	20.79	20.79	21.01		2
	15	0	20.84	20.90	21.04		2

Table 9-42
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	22.77	22.79	22.87	0	0
	1	2	22.38	22.45	22.76		0
	1	5	22.67	22.74	22.83		0
	3	0	22.69	22.58	22.87		0
	3	2	22.56	22.63	22.83		0
	3	3	22.47	22.52	22.82		0
	6	0	22.64	22.67	22.90	0-1	0
16QAM	1	0	22.97	22.87	22.98	0-1	0
	1	2	22.54	22.57	22.89		0
	1	5	22.76	22.77	22.95		0
	3	0	22.77	22.81	22.88		0
	3	2	22.33	22.54	22.71		0
	3	3	22.63	22.63	22.91		0
	6	0	21.85	21.90	22.05	0-2	1
64QAM	1	0	22.14	22.12	22.33	0-2	1
	1	2	21.71	21.92	22.18		1
	1	5	22.02	22.02	22.19		1
	3	0	21.84	21.83	22.02		1
	3	2	21.69	21.77	22.03		1
	3	3	21.65	21.79	21.98		1
	6	0	20.79	20.86	21.04	0-3	2

9.3.4 LTE Band 30

Table 9-43
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	**22.41**	0	0
	1	25	22.28		0
	1	49	22.37		0
	25	0	21.52	0-1	1
	25	12	21.54		1
	25	25	**21.58**		1
	50	0	21.53		1
16QAM	1	0	21.40	0-1	1
	1	25	21.25		1
	1	49	21.33		1
	25	0	20.60	0-2	2
	25	12	20.55		2
	25	25	20.63		2
	50	0	20.50		2
64QAM	1	0	20.36	0-2	2
	1	25	20.21		2
	1	49	20.31		2
	25	0	19.21	0-3	3
	25	12	19.17		3
	25	25	19.23		3
	50	0	19.16		3

Table 9-44
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	22.44	0	0
	1	12	22.38		0
	1	24	22.39		0
	12	0	21.55	0-1	1
	12	6	21.45		1
	12	13	21.75		1
	25	0	21.54		1
16QAM	1	0	21.59	0-1	1
	1	12	21.52		1
	1	24	21.67		1
	12	0	20.68	0-2	2
	12	6	20.80		2
	12	13	20.78		2
	25	0	20.78		2
64QAM	1	0	20.98	0-2	2
	1	12	20.68		2
	1	24	20.80		2
	12	0	19.73	0-3	3
	12	6	19.59		3
	12	13	19.54		3
	25	0	19.82		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.

9.3.5 LTE Band 7

Table 9-45
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	23.67	**23.70**	23.64	0	0
	1	50	23.54	23.55	23.65		0
	1	99	23.52	23.51	23.66		0
	50	0	22.67	**22.68**	22.65	0-1	1
	50	25	22.66	22.62	22.65		1
	50	50	22.57	22.59	22.67		1
	100	0	22.60	22.66	22.58		1
16QAM	1	0	22.69	22.66	22.54	0-1	1
	1	50	22.46	22.67	22.67		1
	1	99	22.63	22.68	22.70		1
	50	0	21.67	21.63	21.69	0-2	2
	50	25	21.62	21.60	21.68		2
	50	50	21.55	21.64	21.70		2
	100	0	21.62	21.57	21.67		2
64QAM	1	0	21.70	21.70	21.69	0-2	2
	1	50	21.68	21.69	21.67		2
	1	99	21.65	21.69	21.70		2
	50	0	20.70	20.66	20.68	0-3	3
	50	25	20.66	20.58	20.67		3
	50	50	20.67	20.57	20.69		3
	100	0	20.66	20.60	20.70		3

Table 9-46
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	23.62	23.69	23.50	0	0
	1	36	23.54	23.40	23.49		0
	1	74	23.37	23.44	23.58		0
	36	0	22.56	22.67	22.55	0-1	1
	36	18	22.60	22.54	22.62		1
	36	37	22.54	22.52	22.54		1
	75	0	22.46	22.63	22.44		1
16QAM	1	0	22.68	22.51	22.49	0-1	1
	1	36	22.37	22.66	22.59		1
	1	74	22.47	22.57	22.66		1
	36	0	21.59	21.57	21.55	0-2	2
	36	18	21.46	21.51	21.63		2
	36	37	21.51	21.61	21.57		2
	75	0	21.52	21.44	21.59		2
64QAM	1	0	21.70	21.53	21.68	0-2	2
	1	36	21.55	21.55	21.56		2
	1	74	21.50	21.68	21.60		2
	36	0	20.58	20.55	20.62	0-3	3
	36	18	20.66	20.50	20.59		3
	36	37	20.64	20.45	20.58		3
	75	0	20.61	20.54	20.66		3

Table 9-47
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	23.65	23.65	23.60	0	0
	1	25	23.43	23.54	23.52		0
	1	49	23.36	23.38	23.53		0
	25	0	22.54	22.68	22.58	0-1	1
	25	12	22.61	22.58	22.53		1
	25	25	22.50	22.56	22.57		1
	50	0	22.55	22.60	22.57		1
16QAM	1	0	22.67	22.54	22.53	0-1	1
	1	25	22.45	22.52	22.64		1
	1	49	22.58	22.61	22.62		1
	25	0	21.65	21.56	21.63	0-2	2
	25	12	21.46	21.45	21.57		2
	25	25	21.51	21.63	21.62		2
	50	0	21.53	21.46	21.61		2
64QAM	1	0	21.55	21.65	21.66	0-2	2
	1	25	21.64	21.56	21.53		2
	1	49	21.63	21.53	21.62		2
	25	0	20.70	20.56	20.58	0-3	3
	25	12	20.65	20.53	20.52		3
	25	25	20.54	20.53	20.58		3
	50	0	20.61	20.57	20.66		3

Table 9-48
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	23.64	23.63	23.52	0	0
	1	12	23.39	23.44	23.50		0
	1	24	23.46	23.46	23.62		0
	12	0	22.57	22.61	22.63	0-1	1
	12	6	22.51	22.58	22.61		1
	12	13	22.46	22.47	22.59		1
	25	0	22.59	22.59	22.46		1
16QAM	1	0	22.64	22.50	22.52	0-1	1
	1	12	22.31	22.59	22.66		1
	1	24	22.50	22.67	22.65		1
	12	0	21.52	21.57	21.68	0-2	2
	12	6	21.50	21.53	21.55		2
	12	13	21.39	21.48	21.65		2
	25	0	21.53	21.49	21.62		2
64QAM	1	0	21.64	21.57	21.56	0-2	2
	1	12	21.55	21.68	21.60		2
	1	24	21.62	21.64	21.65		2
	12	0	20.58	20.60	20.56	0-3	3
	12	6	20.52	20.56	20.52		3
	12	13	20.58	20.46	20.57		3
	25	0	20.58	20.48	20.70		3

9.3.6 LTE Band 41

Table 9-49
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	24.52	24.84	**24.85**	24.83	24.83	0	0
	1	50	24.53	24.57	24.55	24.64	24.71		0
	1	99	24.71	24.44	24.47	24.49	24.45		0
	50	0	23.76	23.80	**23.82**	23.79	23.68	0-1	1
	50	25	23.69	23.66	23.70	23.63	23.70		1
	50	50	23.60	23.52	23.57	23.54	23.69		1
	100	0	23.59	23.63	23.71	23.69	23.68		1
16QAM	1	0	23.90	23.89	23.87	23.90	23.88	0-1	1
	1	50	23.78	23.79	23.80	23.81	23.90		1
	1	99	23.42	23.62	23.61	23.64	23.83		1
	50	0	22.74	22.77	22.83	22.79	22.79	0-2	2
	50	25	22.71	22.66	22.77	22.67	22.76		2
	50	50	22.61	22.55	22.67	22.60	22.73		2
	100	0	22.63	22.66	22.75	22.73	22.76		2
64QAM	1	0	22.53	22.57	22.57	22.21	22.49	0-2	2
	1	50	22.54	22.36	22.53	22.24	22.40		2
	1	99	22.24	22.13	22.13	22.17	22.26		2
	50	0	21.83	21.72	21.83	21.82	21.74	0-3	3
	50	25	21.65	21.66	21.74	21.69	21.79		3
	50	50	21.62	21.54	21.57	21.56	21.71		3
	100	0	21.68	21.68	21.81	21.68	21.73		3

Table 9-50
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	24.51	24.83	24.82	24.78	24.71	0	0
	1	36	24.46	24.45	24.51	24.56	24.70		0
	1	74	24.55	24.42	24.39	24.41	24.34		0
	36	0	23.75	23.65	23.66	23.65	23.64	0-1	1
	36	18	23.60	23.54	23.55	23.53	23.56		1
	36	37	23.56	23.52	23.56	23.53	23.68		1
	75	0	23.42	23.56	23.59	23.65	23.61		1
16QAM	1	0	23.78	23.76	23.85	23.75	23.73	0-1	1
	1	36	23.75	23.67	23.67	23.78	23.78		1
	1	74	23.37	23.52	23.46	23.62	23.75		1
	36	0	22.59	22.68	22.82	22.77	22.69	0-2	2
	36	18	22.59	22.63	22.69	22.57	22.63		2
	36	37	22.45	22.40	22.66	22.52	22.60		2
	75	0	22.58	22.54	22.69	22.73	22.73		2
64QAM	1	0	22.50	22.55	22.55	22.05	22.33	0-2	2
	1	36	22.43	22.30	22.45	22.16	22.25		2
	1	74	22.11	22.12	22.02	22.14	22.16		2
	36	0	21.77	21.58	21.81	21.76	21.69	0-3	3
	36	18	21.62	21.51	21.58	21.65	21.74		3
	36	37	21.52	21.44	21.42	21.51	21.66		3
	75	0	21.61	21.63	21.67	21.55	21.57		3

Table 9-51
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	24.50	24.75	24.69	24.79	24.83	0	0
	1	25	24.42	24.57	24.42	24.48	24.55		0
	1	49	24.61	24.43	24.42	24.39	24.43		0
	25	0	23.67	23.76	23.78	23.68	23.57	0-1	1
	25	12	23.57	23.56	23.65	23.48	23.62		1
	25	25	23.49	23.47	23.54	23.46	23.59		1
	50	0	23.58	23.51	23.62	23.54	23.53		1
16QAM	1	0	23.89	23.87	23.80	23.79	23.78	0-1	1
	1	25	23.77	23.67	23.72	23.74	23.73		1
	1	49	23.27	23.48	23.51	23.56	23.77		1
	25	0	22.63	22.76	22.70	22.79	22.74	0-2	2
	25	12	22.64	22.64	22.68	22.52	22.65		2
	25	25	22.52	22.51	22.59	22.58	22.69		2
	50	0	22.54	22.55	22.69	22.68	22.61		2
64QAM	1	0	22.50	22.44	22.47	22.21	22.44	0-2	2
	1	25	22.53	22.34	22.50	22.23	22.28		2
	1	49	22.24	21.98	22.00	22.01	22.14		2
	25	0	21.68	21.56	21.68	21.76	21.66	0-3	3
	25	12	21.65	21.59	21.69	21.63	21.79		3
	25	25	21.46	21.43	21.43	21.48	21.67		3
	50	0	21.57	21.67	21.74	21.59	21.70		3

Table 9-52
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	24.37	24.68	24.75	24.76	24.82	0	0
	1	12	24.47	24.50	24.48	24.50	24.56		0
	1	24	24.64	24.32	24.46	24.46	24.29		0
	12	0	23.75	23.76	23.73	23.71	23.54	0-1	1
	12	6	23.57	23.60	23.63	23.60	23.69		1
	12	13	23.58	23.48	23.53	23.51	23.63		1
	25	0	23.54	23.57	23.69	23.54	23.58		1
16QAM	1	0	23.77	23.77	23.85	23.77	23.74	0-1	1
	1	12	23.64	23.76	23.75	23.78	23.89		1
	1	24	23.40	23.52	23.46	23.62	23.70		1
	12	0	22.60	22.64	22.72	22.76	22.72	0-2	2
	12	6	22.59	22.52	22.65	22.66	22.70		2
	12	13	22.60	22.39	22.57	22.60	22.67		2
	25	0	22.49	22.58	22.75	22.70	22.62		2
64QAM	1	0	22.44	22.50	22.47	22.18	22.47	0-2	2
	1	12	22.42	22.30	22.50	22.14	22.34		2
	1	24	22.18	22.02	22.04	22.08	22.15		2
	12	0	21.70	21.64	21.68	21.78	21.62	0-3	3
	12	6	21.59	21.64	21.62	21.56	21.75		3
	12	13	21.49	21.37	21.42	21.40	21.63		3
	25	0	21.63	21.53	21.64	21.66	21.62		3

9.4 WLAN Conducted Powers

Table 9-53
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 9-54
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 9-55
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
5805	161	17.92	17.93	17.86
5825	165	16.98	16.94	16.96

Table 9-56
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
5805	161	17.92	17.82	17.78
5825	165	16.97	16.80	16.82

Table 9-57
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
5805	161	17.93	17.82	20.89
5825	165	16.94	16.80	19.88

Table 9-58
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 9-59
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 9-60
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.

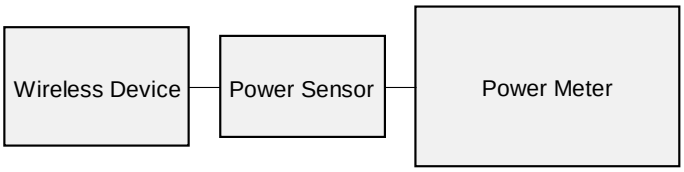


Figure 9-3
Power Measurement Setup

9.5 Bluetooth Conducted Powers

Table 9-61
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.

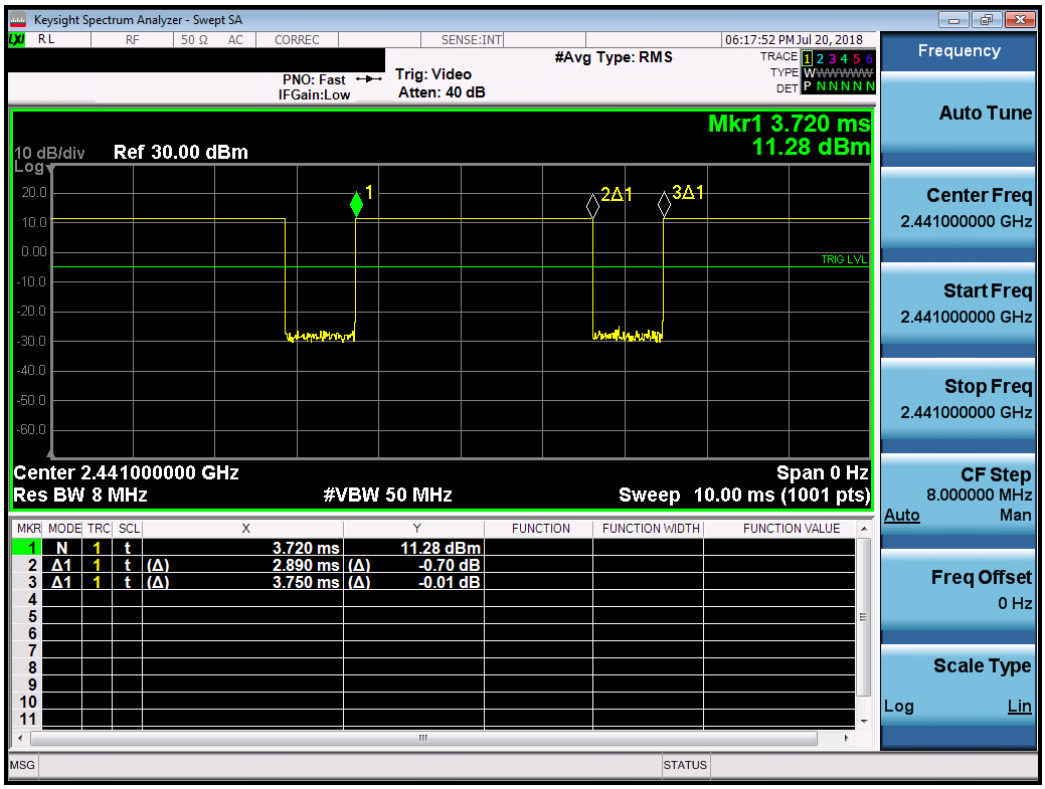


Figure 9-4
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

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

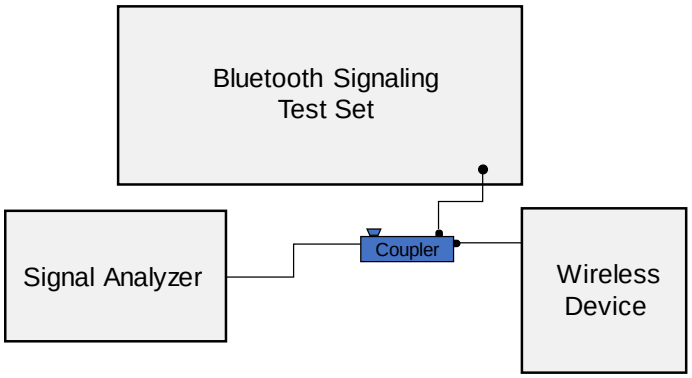


Figure 9-5
Power Measurement Setup

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
09/05/2018	750H	21.5	700	0.872	42.010	0.889	42.201	-1.91%	-0.45%
			710	0.875	41.988	0.890	42.149	-1.69%	-0.38%
			740	0.884	41.896	0.893	41.994	-1.01%	-0.23%
			755	0.889	41.828	0.894	41.916	-0.56%	-0.21%
			770	0.895	41.781	0.895	41.838	0.00%	-0.14%
			785	0.900	41.749	0.896	41.760	0.45%	-0.03%
08/22/2018	835H	21.5	820	0.935	42.531	0.899	41.578	4.00%	2.29%
			835	0.941	42.471	0.900	41.500	4.56%	2.34%
			850	0.946	42.420	0.916	41.500	3.28%	2.22%
08/27/2018	1750H	21.0	1710	1.327	39.892	1.348	40.142	-1.56%	-0.62%
			1750	1.351	39.817	1.371	40.079	-1.46%	-0.65%
			1790	1.372	39.725	1.394	40.016	-1.58%	-0.73%
08/23/2018	1900H	21.5	1850	1.426	40.060	1.400	40.000	1.86%	0.15%
			1880	1.443	39.989	1.400	40.000	3.07%	-0.03%
			1910	1.460	39.939	1.400	40.000	4.29%	-0.15%
08/28/2018	1900H	21.9	1850	1.432	40.071	1.400	40.000	2.29%	0.18%
			1880	1.451	40.024	1.400	40.000	3.64%	0.06%
			1910	1.468	39.984	1.400	40.000	4.86%	-0.04%
08/27/2018	2450H	21.5	2300	1.733	39.108	1.670	39.500	3.77%	-0.99%
			2310	1.742	39.111	1.679	39.480	3.75%	-0.93%
			2320	1.750	39.103	1.687	39.460	3.73%	-0.90%
			2400	1.808	38.935	1.756	39.289	2.96%	-0.90%
			2450	1.849	38.894	1.800	39.200	2.72%	-0.78%
			2500	1.882	38.795	1.855	39.136	1.46%	-0.87%
			2550	1.926	38.713	1.909	39.073	0.89%	-0.92%
			2600	1.961	38.638	1.964	39.009	-0.15%	-0.95%
08/20/2018	5200H-5800H	20.5	5240	4.548	35.119	4.696	35.940	-3.15%	-2.28%
			5260	4.570	35.088	4.717	35.917	-3.12%	-2.31%
			5280	4.600	35.022	4.737	35.894	-2.89%	-2.43%
			5500	4.830	34.642	4.963	35.643	-2.68%	-2.81%
			5600	4.947	34.474	5.065	35.529	-2.33%	-2.97%
			5700	5.077	34.284	5.168	35.414	-1.76%	-3.19%
			5745	5.126	34.176	5.214	35.363	-1.69%	-3.36%
			5765	5.146	34.183	5.234	35.340	-1.68%	-3.27%
			5785	5.157	34.114	5.255	35.317	-1.86%	-3.41%

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
08/21/2018	750B	24.6	700	0.914	56.527	0.959	55.726	-4.69%	1.44%
			710	0.922	56.429	0.960	55.687	-3.96%	1.33%
			740	0.948	56.203	0.963	55.570	-1.56%	1.14%
			755	0.962	56.085	0.964	55.512	-0.21%	1.03%
			770	0.975	55.946	0.965	55.453	1.04%	0.89%
			785	0.989	55.789	0.966	55.395	2.38%	0.71%
08/22/2018	835B	20.9	820	0.999	53.686	0.969	55.258	3.10%	-2.84%
			835	1.005	53.644	0.970	55.200	3.61%	-2.82%
			850	1.010	53.607	0.988	55.154	2.23%	-2.80%
08/20/2018	1750B	21.7	1710	1.446	51.982	1.463	53.537	-1.16%	-2.90%
			1750	1.489	51.829	1.488	53.432	0.07%	-3.00%
			1790	1.531	51.649	1.514	53.326	1.12%	-3.14%

Table 10-3
Measured Body Tissue Properties (Cont.)

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
08/27/2018	1750B	21.8	1710	1.443	53.316	1.463	53.537	-1.37%	-0.41%
			1750	1.476	53.262	1.488	53.432	-0.81%	-0.32%
			1790	1.505	53.210	1.514	53.326	-0.59%	-0.22%
08/20/2018	1900B	20.4	1850	1.546	51.507	1.520	53.300	1.71%	-3.36%
			1880	1.568	51.496	1.520	53.300	3.16%	-3.38%
			1910	1.592	51.477	1.520	53.300	4.74%	-3.42%
08/23/2018	1900B	24.2	1850	1.490	52.313	1.520	53.300	-1.97%	-1.85%
			1880	1.523	52.217	1.520	53.300	0.20%	-2.03%
			1910	1.555	52.131	1.520	53.300	2.30%	-2.19%
08/27/2018	1900B	21.8	1850	1.547	53.115	1.520	53.300	1.78%	-0.35%
			1880	1.570	53.086	1.520	53.300	3.29%	-0.40%
			1910	1.591	53.053	1.520	53.300	4.67%	-0.46%
08/30/2018	1900B	22.3	1850	1.532	52.457	1.520	53.300	0.79%	-1.58%
			1880	1.551	52.426	1.520	53.300	2.04%	-1.64%
			1910	1.573	52.423	1.520	53.300	3.49%	-1.65%
08/20/2018	2450B	23.7	2400	1.942	50.962	1.902	52.767	2.10%	-3.42%
			2450	1.990	50.819	1.950	52.700	2.05%	-3.57%
			2500	2.061	50.657	2.021	52.636	1.98%	-3.76%
08/27/2018	2450B	23.2	2300	1.852	51.837	1.809	52.900	2.38%	-2.01%
			2310	1.864	51.822	1.816	52.887	2.64%	-2.01%
			2320	1.876	51.803	1.826	52.873	2.74%	-2.02%
			2450	2.024	51.431	1.950	52.700	3.79%	-2.41%
			2500	2.078	51.263	2.021	52.636	2.82%	-2.61%
			2550	2.141	51.109	2.092	52.573	2.34%	-2.78%
			2600	2.195	50.983	2.163	52.509	1.48%	-2.91%
			2650	2.258	50.827	2.234	52.445	1.07%	-3.09%
			2700	2.313	50.673	2.305	52.382	0.35%	-3.26%
08/30/2018	2450B	22.3	2450	2.033	50.862	1.950	52.700	4.26%	-3.49%
			2500	2.091	50.715	2.021	52.636	3.46%	-3.65%
			2550	2.158	50.574	2.092	52.573	3.15%	-3.80%
			2600	2.216	50.422	2.163	52.509	2.45%	-3.97%
08/20/2018	5200B-5800B	21.6	5180	5.400	47.659	5.276	49.041	2.35%	-2.82%
			5200	5.425	47.645	5.299	49.014	2.38%	-2.79%
			5220	5.445	47.552	5.323	48.987	2.29%	-2.93%
			5240	5.469	47.531	5.346	48.960	2.30%	-2.92%
			5260	5.489	47.481	5.369	48.933	2.24%	-2.97%
			5280	5.519	47.441	5.393	48.906	2.34%	-3.00%
			5300	5.553	47.472	5.416	48.879	2.53%	-2.88%
			5320	5.578	47.431	5.439	48.851	2.56%	-2.91%
			5600	5.951	46.951	5.766	48.471	3.21%	-3.14%
			5620	5.988	46.916	5.790	48.444	3.42%	-3.15%
			5640	6.011	46.871	5.813	48.417	3.41%	-3.19%
			5700	6.095	46.792	5.883	48.336	3.60%	-3.19%
			5745	6.162	46.697	5.936	48.275	3.81%	-3.27%
			5765	6.179	46.675	5.959	48.248	3.69%	-3.26%
			5785	6.210	46.639	5.982	48.220	3.81%	-3.28%
			5800	6.229	46.610	6.000	48.200	3.82%	-3.30%
			5805	6.238	46.594	6.006	48.193	3.86%	-3.32%
08/27/2018	5200B-5800B	22.0	5240	5.434	47.661	5.346	48.960	1.65%	-2.65%
			5260	5.457	47.618	5.369	48.933	1.64%	-2.69%
			5280	5.485	47.579	5.393	48.906	1.71%	-2.71%
			5320	5.539	47.502	5.439	48.851	1.84%	-2.76%
			5600	5.914	47.043	5.766	48.471	2.57%	-2.95%
			5700	6.050	46.871	5.883	48.336	2.84%	-3.03%
			5745	6.117	46.804	5.936	48.275	3.05%	-3.05%
			5765	6.153	46.768	5.959	48.248	3.26%	-3.07%

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 10-4
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
H	750	HEAD	09/05/2018	22.2	21.5	0.200	1003	7409	1.660	8.280	8.300	0.24%
G	835	HEAD	08/22/2018	23.5	21.5	0.200	4d047	7410	1.990	9.130	9.950	8.98%
H	1750	HEAD	08/27/2018	22.4	21.0	0.100	1148	7409	3.620	36.400	36.200	-0.55%
G	1900	HEAD	08/23/2018	22.7	21.5	0.100	5d148	7410	3.900	40.100	39.000	-2.74%
H	1900	HEAD	08/28/2018	22.6	21.7	0.100	5d148	7409	4.160	40.100	41.600	3.74%
G	2300	HEAD	08/27/2018	22.6	21.5	0.100	1064	7410	4.960	47.600	49.600	4.20%
G	2450	HEAD	08/27/2018	22.6	21.5	0.100	797	7410	5.510	52.700	55.100	4.55%
G	2600	HEAD	08/27/2018	22.6	21.5	0.100	1071	7410	5.760	56.300	57.600	2.31%
H	5250	HEAD	08/20/2018	21.1	20.5	0.050	1057	7409	3.740	79.200	74.800	-5.56%
H	5600	HEAD	08/20/2018	21.1	20.5	0.050	1057	7409	4.070	84.100	81.400	-3.21%
H	5750	HEAD	08/20/2018	21.1	20.5	0.050	1057	7409	3.800	80.500	76.000	-5.59%
G	750	BODY	08/21/2018	22.0	24.6	0.200	1161	7410	1.790	8.430	8.950	6.17%
I	835	BODY	08/22/2018	23.8	20.9	0.200	4d132	7406	2.050	9.710	10.250	5.56%
E	1750	BODY	08/20/2018	22.9	21.7	0.100	1148	3213	3.550	37.000	35.500	-4.05%
I	1750	BODY	08/27/2018	21.5	21.8	0.100	1150	7406	3.810	36.500	38.100	4.38%
I	1900	BODY	08/20/2018	21.5	20.6	0.100	5d080	7406	4.180	39.100	41.800	6.91%
I	1900	BODY	08/27/2018	21.5	21.8	0.100	5d148	7406	4.140	39.600	41.400	4.55%
J	1900	BODY	08/30/2018	21.5	22.3	0.100	5d149	3347	4.270	40.100	42.700	6.48%
K	2300	BODY	08/27/2018	22.8	21.9	0.100	1064	3319	4.980	46.500	49.800	7.10%
K	2450	BODY	08/20/2018	22.4	22.0	0.100	719	3319	5.180	50.100	51.800	3.39%
K	2450	BODY	08/27/2018	22.8	21.9	0.100	797	3319	5.280	51.100	52.800	3.33%
K	2600	BODY	08/27/2018	22.8	21.9	0.100	1071	3319	5.540	54.200	55.400	2.21%
D	5250	BODY	08/20/2018	22.5	21.4	0.050	1191	7357	3.720	77.000	74.400	-3.38%
D	5600	BODY	08/20/2018	22.5	21.4	0.050	1191	7357	4.020	79.200	80.400	1.52%
D	5750	BODY	08/20/2018	22.5	21.4	0.050	1191	7357	3.770	76.100	75.400	-0.92%

Table 10-5
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)	$Deviation_{10g}$ (%)
E	1750	BODY	08/20/2018	22.9	21.7	0.100	1148	3213	1.900	19.800	19.000	-4.04%
I	1750	BODY	08/27/2018	21.5	21.8	0.100	1150	7406	2.020	19.500	20.200	3.59%
E	1900	BODY	08/23/2018	22.9	24.2	0.100	5d080	3213	2.180	20.700	21.800	5.31%
J	1900	BODY	08/30/2018	21.5	22.3	0.100	5d149	3347	2.220	21.300	22.200	4.23%
K	2450	BODY	08/30/2018	24.2	21.9	0.100	797	3319	2.490	24.200	24.900	2.89%
K	2600	BODY	08/30/2018	24.2	21.9	0.100	1071	3319	2.500	24.500	25.000	2.04%
D	5250	BODY	08/27/2018	21.8	21.3	0.050	1191	7357	1.020	21.600	20.400	-5.56%
D	5600	BODY	08/27/2018	21.8	21.3	0.050	1191	7357	1.100	22.200	22.000	-0.90%
D	5750	BODY	08/27/2018	21.8	21.3	0.050	1191	7357	1.040	21.200	20.800	-1.89%

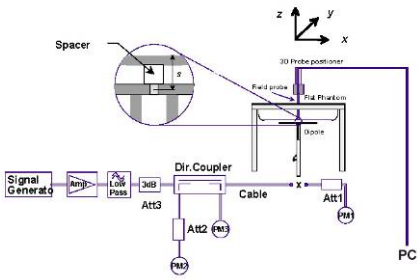


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	32.80	0.16	Right	Cheek	19728	1	1:8.3	0.144	1.230	0.177	
836.60	190	GSM 850	GSM	33.7	32.80	0.05	Right	Tilt	19728	1	1:8.3	0.060	1.230	0.074	
836.60	190	GSM 850	GSM	33.7	32.80	-0.05	Left	Cheek	19728	1	1:8.3	0.104	1.230	0.128	
836.60	190	GSM 850	GSM	33.7	32.80	0.12	Left	Tilt	19728	1	1:8.3	0.064	1.230	0.079	
836.60	190	GSM 850	GPRS	30.7	29.06	0.16	Right	Cheek	19728	3	1:2.76	0.182	1.459	0.266	A1
836.60	190	GSM 850	GPRS	30.7	29.06	-0.09	Right	Tilt	19728	3	1:2.76	0.069	1.459	0.101	
836.60	190	GSM 850	GPRS	30.7	29.06	-0.11	Left	Cheek	19728	3	1:2.76	0.123	1.459	0.179	
836.60	190	GSM 850	GPRS	30.7	29.06	0.14	Left	Tilt	19728	3	1:2.76	0.073	1.459	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.7	29.98	0.01	Right	Cheek	19728	1	1:8.3	0.067	1.180	0.079	
1880.00	661	GSM 1900	GSM	30.7	29.98	0.10	Right	Tilt	19728	1	1:8.3	0.062	1.180	0.073	
1880.00	661	GSM 1900	GSM	30.7	29.98	0.08	Left	Cheek	19728	1	1:8.3	0.073	1.180	0.086	
1880.00	661	GSM 1900	GSM	30.7	29.98	0.02	Left	Tilt	19728	1	1:8.3	0.057	1.180	0.067	
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.20	Right	Cheek	19728	3	1:2.76	0.100	1.227	0.123	A2
1880.00	661	GSM 1900	GPRS	27.7	26.81	0.18	Right	Tilt	19728	3	1:2.76	0.083	1.227	0.102	
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.01	Left	Cheek	19728	3	1:2.76	0.098	1.227	0.120	
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.01	Left	Tilt	19728	3	1:2.76	0.071	1.227	0.087	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	25.37	0.06	Right	Cheek	19728	1:1	0.234	1.030	0.241	A3
836.60	4183	UMTS 850	RMC	25.5	25.37	0.08	Right	Tilt	19728	1:1	0.097	1.030	0.100	
836.60	4183	UMTS 850	RMC	25.5	25.37	0.01	Left	Cheek	19728	1:1	0.175	1.030	0.180	
836.60	4183	UMTS 850	RMC	25.5	25.37	-0.14	Left	Tilt	19728	1:1	0.095	1.030	0.098	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.16	Right	Cheek	19728	1:1	0.120	1.050	0.126	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.03	Right	Tilt	19728	1:1	0.107	1.050	0.112	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.11	Left	Cheek	19728	1:1	0.195	1.050	0.205	A4
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.06	Left	Tilt	19728	1:1	0.128	1.050	0.134	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.03	Right	Cheek	19728	1:1	0.115	1.239	0.142	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	-0.01	Right	Tilt	19728	1:1	0.109	1.239	0.135	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.07	Left	Cheek	19728	1:1	0.144	1.239	0.178	A5
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.02	Left	Tilt	19728	1:1	0.100	1.239	0.124	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
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	25.24	-0.02	0	Right	Cheek	QPSK	1	0	19736	1:1	0.182	1.062	0.193	A6
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.19	1	Right	Cheek	QPSK	25	12	19736	1:1	0.134	1.040	0.139	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	0.16	0	Right	Tilt	QPSK	1	0	19736	1:1	0.072	1.062	0.076	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.13	1	Right	Tilt	QPSK	25	12	19736	1:1	0.059	1.040	0.061	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	-0.06	0	Left	Cheek	QPSK	1	0	19736	1:1	0.120	1.062	0.127	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.16	1	Left	Cheek	QPSK	25	12	19736	1:1	0.098	1.040	0.102	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	0.13	0	Left	Tilt	QPSK	1	0	19736	1:1	0.072	1.062	0.076	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.14	1	Left	Tilt	QPSK	25	12	19736	1:1	0.056	1.040	0.058	
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
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	25.43	-0.01	0	Right	Cheek	QPSK	1	25	19736	1:1	0.242	1.016	0.246	A7
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	-0.13	1	Right	Cheek	QPSK	25	12	19736	1:1	0.174	1.000	0.174	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	0.00	0	Right	Tilt	QPSK	1	25	19736	1:1	0.123	1.016	0.125	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	0.10	1	Right	Tilt	QPSK	25	12	19736	1:1	0.084	1.000	0.084	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.07	0	Left	Cheek	QPSK	1	25	19736	1:1	0.210	1.016	0.213	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	0.03	1	Left	Cheek	QPSK	25	12	19736	1:1	0.127	1.000	0.127	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.07	0	Left	Tilt	QPSK	1	25	19736	1:1	0.121	1.016	0.123	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	0.12	1	Left	Tilt	QPSK	25	12	19736	1:1	0.089	1.000	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 11-8
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	25.47	-0.03	0	Right	Cheek	QPSK	1	0	19744	1:1	0.274	1.007	**0.276**	A8
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.04	1	Right	Cheek	QPSK	36	0	19744	1:1	0.171	1.000	0.171	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.09	0	Right	Tilt	QPSK	1	0	19744	1:1	0.119	1.007	0.120	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.06	1	Right	Tilt	QPSK	36	0	19744	1:1	0.074	1.000	0.074	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.08	0	Left	Cheek	QPSK	1	0	19744	1:1	0.167	1.007	0.168	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.10	1	Left	Cheek	QPSK	36	0	19744	1:1	0.118	1.000	0.118	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.18	0	Left	Tilt	QPSK	1	0	19744	1:1	0.103	1.007	0.104	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.08	1	Left	Tilt	QPSK	36	0	19744	1:1	0.072	1.000	0.072	
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 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	25.41	0.04	0	Right	Cheek	QPSK	1	0	19744	1:1	0.235	1.021	0.240	A9
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.04	1	Right	Cheek	QPSK	25	0	19744	1:1	0.163	1.002	0.163	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	0.05	0	Right	Tilt	QPSK	1	0	19744	1:1	0.105	1.021	0.107	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.07	1	Right	Tilt	QPSK	25	0	19744	1:1	0.069	1.002	0.069	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	0.08	0	Left	Cheek	QPSK	1	0	19744	1:1	0.189	1.021	0.193	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	-0.03	1	Left	Cheek	QPSK	25	0	19744	1:1	0.132	1.002	0.132	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	0.04	0	Left	Tilt	QPSK	1	0	19744	1:1	0.110	1.021	0.112	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.13	1	Left	Tilt	QPSK	25	0	19744	1:1	0.074	1.002	0.074	
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 66 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.11	0	Right	Cheek	QPSK	1	0	19736	1:1	0.166	1.016	0.169	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.06	1	Right	Cheek	QPSK	50	0	19736	1:1	0.103	1.047	0.108	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.02	0	Right	Tilt	QPSK	1	0	19736	1:1	0.176	1.016	0.179	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.09	1	Right	Tilt	QPSK	50	0	19736	1:1	0.125	1.047	0.131	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.10	0	Left	Cheek	QPSK	1	0	19736	1:1	0.207	1.016	0.210	A10
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.09	1	Left	Cheek	QPSK	50	0	19736	1:1	0.130	1.047	0.136	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.13	0	Left	Tilt	QPSK	1	0	19736	1:1	0.193	1.016	0.196	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.11	1	Left	Tilt	QPSK	50	0	19736	1:1	0.123	1.047	0.129	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.18	0	Right	Cheek	QPSK	1	0	19827	1:1	0.120	1.054	0.126	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.13	1	Right	Cheek	QPSK	50	0	19827	1:1	0.098	1.067	0.105	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.13	0	Right	Tilt	QPSK	1	0	19827	1:1	0.072	1.054	0.076	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.10	1	Right	Tilt	QPSK	50	0	19827	1:1	0.060	1.067	0.064	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.06	0	Left	Cheek	QPSK	1	0	19827	1:1	0.130	1.054	0.137	A11
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.10	1	Left	Cheek	QPSK	50	0	19827	1:1	0.098	1.067	0.105	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.11	0	Left	Tilt	QPSK	1	0	19827	1:1	0.071	1.054	0.075	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.15	1	Left	Tilt	QPSK	50	0	19827	1:1	0.057	1.067	0.061	
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 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) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	-0.03	0	Right	Cheek	QPSK	1	0	19751	1:1	0.021	1.146	0.024	A12
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	0.12	1	Right	Cheek	QPSK	25	25	19751	1:1	0.010	1.102	0.011	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	-0.05	0	Right	Tilt	QPSK	1	0	19751	1:1	0.021	1.146	0.024	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.09	1	Right	Tilt	QPSK	25	25	19751	1:1	0.011	1.102	0.012	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	0.10	0	Left	Cheek	QPSK	1	0	19751	1:1	0.015	1.146	0.017	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	0.10	1	Left	Cheek	QPSK	25	25	19751	1:1	0.007	1.102	0.008	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	0.14	0	Left	Tilt	QPSK	1	0	19751	1:1	0.016	1.146	0.018	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	0.15	1	Left	Tilt	QPSK	25	25	19751	1:1	0.008	1.102	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 11-13
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) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.09	0	Right	Cheek	QPSK	1	0	19751	1:1	0.050	1.000	0.050	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.20	1	Right	Cheek	QPSK	50	0	19751	1:1	0.040	1.005	0.040	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.17	0	Right	Tilt	QPSK	1	0	19751	1:1	0.039	1.000	0.039	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.18	1	Right	Tilt	QPSK	50	0	19751	1:1	0.029	1.005	0.029	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.16	0	Left	Cheek	QPSK	1	0	19751	1:1	0.049	1.000	0.049	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.18	1	Left	Cheek	QPSK	50	0	19751	1:1	0.038	1.005	0.038	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.19	0	Left	Tilt	QPSK	1	0	19751	1:1	0.061	1.000	0.061	A13
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.19	1	Left	Tilt	QPSK	50	0	19751	1:1	0.043	1.005	0.043	
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 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) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.17	0	Right	Cheek	QPSK	1	0	19751	1:1.58	0.042	1.012	0.043	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	0.18	1	Right	Cheek	QPSK	50	0	19751	1:1.58	0.033	1.019	0.034	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.20	0	Right	Tilt	QPSK	1	0	19751	1:1.58	0.030	1.012	0.030	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	0.18	1	Right	Tilt	QPSK	50	0	19751	1:1.58	0.021	1.019	0.021	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.02	0	Left	Cheek	QPSK	1	0	19751	1:1.58	0.039	1.012	0.039	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	0.17	1	Left	Cheek	QPSK	50	0	19751	1:1.58	0.029	1.019	0.030	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.15	0	Left	Tilt	QPSK	1	0	19751	1:1.58	0.050	1.012	0.051	A14
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	0.12	1	Left	Tilt	QPSK	50	0	19751	1:1.58	0.036	1.019	0.037	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-15
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	0.09	Right	Cheek	1	19868	1	100.0	0.525	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.98	0.05	Right	Tilt	1	19868	1	100.0	0.556	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.98	-0.07	Left	Cheek	1	19868	1	100.0	0.481	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.98	0.07	Left	Tilt	1	19868	1	100.0	0.576	0.384	1.005	1.000	**0.386**	A15
2437	6	802.11b	DSSS	22	18.0	17.97	0.10	Right	Cheek	2	19868	1	100.0	0.122	0.079	1.007	1.000	0.080	
2437	6	802.11b	DSSS	22	18.0	17.97	0.17	Right	Tilt	2	19868	1	100.0	0.041	-	1.007	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.97	0.10	Left	Cheek	2	19868	1	100.0	0.033	-	1.007	1.000	-	
2437	6	802.11b	DSSS	22	18.0	17.97	0.10	Left	Tilt	2	19868	1	100.0	0.012	-	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 11-16
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	0.02	Right	Cheek	1	19868	6	99.2	0.860	0.421	1.005	1.008	0.426	
5280	56	802.11a	OFDM	20	18.0	17.98	0.14	Right	Tilt	1	19868	6	99.2	0.662	0.330	1.005	1.008	0.334	
5280	56	802.11a	OFDM	20	18.0	17.98	-0.15	Left	Cheek	1	19868	6	99.2	0.251	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.00	Left	Tilt	1	19868	6	99.2	0.296	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.11	Right	Cheek	2	19868	6	98.8	0.108	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.13	Right	Tilt	2	19868	6	98.8	0.111	0.041	1.005	1.012	0.042	
5280	56	802.11a	OFDM	20	18.0	17.98	0.12	Left	Cheek	2	19868	6	98.8	0.073	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.19	Left	Tilt	2	19868	6	98.8	0.092	-	1.005	1.012	-	
5500	100	802.11a	OFDM	20	17.0	16.93	0.11	Right	Cheek	1	19868	6	99.2	1.422	0.576	1.016	1.008	0.590	
5600	120	802.11a	OFDM	20	17.0	16.99	0.17	Right	Cheek	1	19868	6	99.2	1.576	0.642	1.002	1.008	**0.648**	A16
5720	144	802.11a	OFDM	20	17.0	16.99	0.16	Right	Cheek	1	19868	6	99.2	1.113	0.520	1.002	1.008	0.525	
5600	120	802.11a	OFDM	20	17.0	16.99	0.19	Right	Tilt	1	19868	6	99.2	1.407	0.548	1.002	1.008	0.553	
5600	120	802.11a	OFDM	20	17.0	16.99	0.10	Left	Cheek	1	19868	6	99.2	0.456	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.12	Left	Tilt	1	19868	6	99.2	0.568	-	1.002	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.17	Right	Cheek	2	19868	6	98.8	0.165	0.054	1.002	1.012	0.055	
5720	144	802.11a	OFDM	20	17.0	16.99	0.13	Right	Tilt	2	19868	6	98.8	0.046	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	-0.19	Left	Cheek	2	19868	6	98.8	0.145	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.15	Left	Tilt	2	19868	6	98.8	0.036	-	1.002	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.99	0.16	Right	Cheek	1	19868	6	99.2	1.334	0.606	1.002	1.008	0.612	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	Right	Tilt	1	19868	6	99.2	1.282	0.514	1.002	1.008	0.519	
5785	157	802.11a	OFDM	20	18.0	17.99	0.19	Left	Cheek	1	19868	6	99.2	0.472	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.99	0.17	Left	Tilt	1	19868	6	99.2	0.587	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.20	Right	Cheek	2	19868	6	98.8	0.203	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.19	Right	Tilt	2	19868	6	98.8	0.040	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.17	Left	Cheek	2	19868	6	98.8	0.221	0.080	1.012	1.012	0.082	
5785	157	802.11a	OFDM	20	18.0	17.95	0.13	Left	Tilt	2	19868	6	98.8	0.037	-	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 11-17
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	0.18	Right	Cheek	19868	1	77.1	0.081	1.033	1.297	**0.109**	A17
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.12	Right	Tilt	19868	1	77.1	0.071	1.033	1.297	0.095	
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.11	Left	Cheek	19868	1	77.1	0.051	1.033	1.297	0.068	
2441.00	39	Bluetooth	FHSS	12.0	11.86	0.09	Left	Tilt	19868	1	77.1	0.060	1.033	1.297	0.080	
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 11-18
GSM/UMTS Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	32.80	-0.02	10 mm	19728	1	1:8.3	back	0.312	1.230	0.384	
824.20	128	GSM 850	GPRS	30.7	28.96	-0.03	10 mm	19728	3	1:2.76	back	0.422	1.493	0.630	
836.60	190	GSM 850	GPRS	30.7	29.06	0.00	10 mm	19728	3	1:2.76	back	0.520	1.459	0.759	A18
848.80	251	GSM 850	GPRS	30.7	29.31	0.08	10 mm	19728	3	1:2.76	back	0.506	1.377	0.697	
1880.00	661	GSM 1900	GSM	30.7	29.98	-0.01	10 mm	19728	1	1:8.3	back	0.329	1.180	0.388	
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.05	10 mm	19728	3	1:2.76	back	0.433	1.227	0.531	A19
836.60	4183	UMTS 850	RMC	25.5	25.37	0.02	10 mm	19728	N/A	1:1	back	0.488	1.030	0.503	A21
1712.40	1312	UMTS 1750	RMC	24.7	24.48	0.02	10 mm	19710	N/A	1:1	back	0.748	1.052	0.787	A22
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.00	10 mm	19710	N/A	1:1	back	0.744	1.050	0.781	
1752.60	1513	UMTS 1750	RMC	24.7	24.34	0.02	10 mm	19710	N/A	1:1	back	0.705	1.086	0.766	
1852.40	9262	UMTS 1900	RMC	24.4	23.63	0.04	10 mm	19728	N/A	1:1	back	0.629	1.194	0.751	A24
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.03	10 mm	19728	N/A	1:1	back	0.545	1.239	0.675	
1907.60	9538	UMTS 1900	RMC	24.4	23.58	0.04	10 mm	19728	N/A	1:1	back	0.511	1.208	0.617	
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 11-19
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	25.24	-0.04	0	19736	QPSK	1	0	10 mm	back	1:1	0.407	1.062	0.432	A26
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	-0.02	1	19736	QPSK	25	12	10 mm	back	1:1	0.316	1.040	0.329	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.04	0	19736	QPSK	1	25	10 mm	back	1:1	0.512	1.016	0.520	A27
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	-0.01	1	19736	QPSK	25	12	10 mm	back	1:1	0.370	1.000	0.370	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	-0.03	0	19769	QPSK	1	0	10 mm	back	1:1	0.502	1.007	0.506	A28
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	-0.17	1	19769	QPSK	36	0	10 mm	back	1:1	0.309	1.000	0.309	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	-0.02	0	19751	QPSK	1	0	10 mm	back	1:1	0.534	1.021	0.545	A29
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.00	1	19751	QPSK	25	0	10 mm	back	1:1	0.374	1.002	0.375	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.04	0	19769	QPSK	1	0	10 mm	back	1:1	0.760	1.016	0.772	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.06	-0.01	0	19769	QPSK	1	0	10 mm	back	1:1	0.784	1.033	0.810	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.10	0	19769	QPSK	1	0	10 mm	back	1:1	0.812	1.038	0.843	A30
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.03	1	19769	QPSK	50	0	10 mm	back	1:1	0.462	1.047	0.484	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.97	-0.02	1	19769	QPSK	100	0	10 mm	back	1:1	0.464	1.054	0.489	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.4	24.05	0.01	0	19744	QPSK	1	0	10 mm	back	1:1	0.906	1.084	0.982	A32
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.06	0.03	0	19744	QPSK	1	0	10 mm	back	1:1	0.845	1.081	0.913	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.00	0	19744	QPSK	1	0	10 mm	back	1:1	0.795	1.054	0.838	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	-0.08	1	19744	QPSK	50	0	10 mm	back	1:1	0.620	1.067	0.662	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.10	0.01	1	19744	QPSK	100	0	10 mm	back	1:1	0.592	1.072	0.635	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	-0.09	0	19744	QPSK	1	0	10 mm	back	1:1	0.616	1.146	0.706	A34
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.13	1	19744	QPSK	25	25	10 mm	back	1:1	0.403	1.102	0.444	
2510.00	20850	Low	LTE Band 7	20	23.7	23.67	0.01	0	19751	QPSK	1	0	10 mm	back	1:1	1.140	1.007	1.148	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.03	0	19751	QPSK	1	0	10 mm	back	1:1	1.180	1.000	**1.180**	A36
2560.00	21350	High	LTE Band 7	20	23.7	23.66	-0.03	0	19751	QPSK	1	99	10 mm	back	1:1	1.060	1.009	1.070	
2510.00	20850	Low	LTE Band 7	20	22.7	22.67	-0.02	1	19751	QPSK	50	0	10 mm	back	1:1	1.010	1.007	1.017	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	-0.04	1	19751	QPSK	50	0	10 mm	back	1:1	1.010	1.005	1.015	
2560.00	21350	High	LTE Band 7	20	22.7	22.67	0.04	1	19751	QPSK	50	50	10 mm	back	1:1	1.000	1.007	1.007	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.66	-0.04	1	19751	QPSK	100	0	10 mm	back	1:1	1.060	1.009	1.070	
2506.00	39750	Low	LTE Band 41	20	24.9	24.71	0.09	0	19744	QPSK	1	99	10 mm	back	1:1.58	1.060	1.045	1.108	A38
2549.50	40185	Low-Mid	LTE Band 41	20	24.9	24.84	-0.04	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.725	1.014	0.735	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	-0.02	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.994	1.012	1.006	
2636.50	41055	Mid-High	LTE Band 41	20	24.9	24.83	-0.04	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.784	1.016	0.797	
2680.00	41490	High	LTE Band 41	20	24.9	24.83	-0.05	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.554	1.016	0.563	
2506.00	39750	Low	LTE Band 41	20	23.9	23.76	0.05	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.763	1.033	0.788	
2549.50	40185	Low-Mid	LTE Band 41	20	23.9	23.80	-0.02	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.653	1.023	0.668	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	-0.05	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.849	1.019	0.865	
2636.50	41055	Mid-High	LTE Band 41	20	23.9	23.79	-0.03	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.566	1.026	0.581	
2680.00	41490	High	LTE Band 41	20	23.9	23.70	-0.03	1	19744	QPSK	50	25	10 mm	back	1:1.58	0.471	1.047	0.493	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.71	0.00	1	19744	QPSK	100	0	10 mm	back	1:1.58	0.817	1.045	0.854	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-20
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	20.48	0.06	10 mm	1	19868	1	back	100.0	0.409	0.339	1.005	1.000	**0.341**	A39
2437	6	802.11b	DSSS	22	20.5	20.49	0.08	10 mm	2	19868	1	back	100.0	0.296	0.243	1.002	1.000	0.243	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-21
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	0.14	10 mm	1	19850	6	back	99.2	0.354	0.155	1.005	1.008	0.157	
5260	52	802.11a	OFDM	20	17.0	16.97	0.04	10 mm	2	19850	6	back	98.8	1.803	0.808	1.007	1.012	0.823	
5280	56	802.11a	OFDM	20	18.0	17.98	0.10	10 mm	2	19850	6	back	98.8	2.332	1.110	1.005	1.012	1.129	
5320	64	802.11a	OFDM	20	17.0	16.99	0.06	10 mm	2	19850	6	back	98.8	2.380	1.080	1.002	1.012	1.095	
5600	120	802.11a	OFDM	20	17.0	16.99	0.10	10 mm	1	19850	6	back	99.2	0.148	0.058	1.002	1.008	0.059	
5720	144	802.11a	OFDM	20	17.0	16.99	0.13	10 mm	2	19850	6	back	98.8	1.330	0.632	1.002	1.012	0.641	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	10 mm	1	19850	6	back	99.2	0.135	0.052	1.002	1.008	0.053	
5785	157	802.11a	OFDM	20	18.0	17.95	0.16	10 mm	2	19850	6	back	98.8	1.483	0.706	1.012	1.012	0.723	
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
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.	Accessory	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.																W/kg	(W/kg)			(W/kg)	
5180	36	802.11n	OFDM	20	17.0	16.94	17.0	16.73	-0.07	10 mm	MIMO	N/A	19850	13	back	98.4	1.271	0.626	1.064	1.016	0.677	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.08	10 mm	MIMO	N/A	19850	13	back	98.4	1.660	0.829	1.014	1.016	0.854	
5220	44	802.11n	OFDM	20	17.0	16.92	17.0	16.94	0.11	10 mm	MIMO	N/A	19850	13	back	98.4	1.550	0.738	1.019	1.016	0.764	
5240	48	802.11n	OFDM	20	17.0	16.94	17.0	16.90	0.19	10 mm	MIMO	N/A	19850	13	back	98.4	1.773	0.820	1.023	1.016	0.852	
5260	52	802.11n	OFDM	20	17.0	16.91	17.0	16.79	0.16	10 mm	MIMO	N/A	19850	13	back	98.4	2.101	0.955	1.050	1.016	1.019	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.09	10 mm	MIMO	N/A	19850	13	back	98.4	3.073	1.240	1.007	1.016	1.269	A40
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.01	10 mm	MIMO	Headphones	19850	13	back	98.4	2.584	1.100	1.007	1.016	1.125	
5300	60	802.11n	OFDM	20	17.0	16.93	17.0	16.90	0.03	10 mm	MIMO	N/A	19850	13	back	98.4	2.174	1.060	1.023	1.016	1.102	
5320	64	802.11n	OFDM	20	17.0	16.97	17.0	16.96	0.01	10 mm	MIMO	N/A	19850	13	back	98.4	2.982	1.190	1.009	1.016	1.220	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.20	10 mm	MIMO	N/A	19850	13	back	98.4	1.893	0.763	1.012	1.016	0.785	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.17	10 mm	MIMO	N/A	19850	13	back	98.4	1.606	0.779	1.030	1.016	0.815	
5805	161	802.11n	OFDM	20	18.0	17.93	18.0	17.82	0.13	10 mm	MIMO	N/A	19850	13	back	98.4	1.577	0.738	1.042	1.016	0.781	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.11	10 mm	MIMO	N/A	19850	13	back	98.4	3.047	1.240	1.007	1.016	1.269	
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. 36, 44, 48, 52, 60, 64, 144) and 21 dBm (Ch. 40, 56, 157, 161) maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.0 dBm (Ch. 36, 44, 48, 52, 60, 64, 144) and 18.0 dBm (Ch. 40, 56, 157, 161)

Table 11-23
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	0.17	10 mm	2	19850	13.5	back	98.2	1.172	0.537	1.045	1.018	0.571	
5630	126	802.11n	OFDM	40	15.0	14.90	0.18	10 mm	2	19850	13.5	back	98.2	1.147	0.536	1.023	1.018	0.558	
5795	159	802.11n	OFDM	40	15.0	14.97	0.13	10 mm	2	19850	13.5	back	98.2	0.843	0.388	1.007	1.018	0.398	
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 11-24
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.0	11.86	0.12	10 mm	19868	1	back	77.1	0.023	1.033	1.297	**0.031**	A42
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

11.3 Standalone Hotspot SAR Data

Table 11-25
GPRS/UMTS 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)	
824.20	128	GSM 850	GPRS	30.7	28.96	-0.03	10 mm	19728	3	1:2.76	back	0.422	1.493	0.630	
836.60	190	GSM 850	GPRS	30.7	29.06	0.00	10 mm	19728	3	1:2.76	back	0.520	1.459	0.759	A18
848.80	251	GSM 850	GPRS	30.7	29.31	0.08	10 mm	19728	3	1:2.76	back	0.506	1.377	0.697	
836.60	190	GSM 850	GPRS	30.7	29.06	0.01	10 mm	19728	3	1:2.76	front	0.401	1.459	0.585	
836.60	190	GSM 850	GPRS	30.7	29.06	-0.13	10 mm	19728	3	1:2.76	bottom	0.244	1.459	0.356	
836.60	190	GSM 850	GPRS	30.7	29.06	0.04	10 mm	19728	3	1:2.76	right	0.264	1.459	0.385	
836.60	190	GSM 850	GPRS	30.7	29.06	-0.02	10 mm	19728	3	1:2.76	left	0.086	1.459	0.125	
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.05	10 mm	19728	3	1:2.76	back	0.433	1.227	0.531	
1880.00	661	GSM 1900	GPRS	27.7	26.81	0.12	10 mm	19728	3	1:2.76	front	0.392	1.227	0.481	
1850.20	512	GSM 1900	GPRS	27.7	26.79	0.03	10 mm	19728	3	1:2.76	bottom	0.710	1.233	0.875	
1880.00	661	GSM 1900	GPRS	27.7	26.81	0.02	10 mm	19728	3	1:2.76	bottom	0.747	1.227	0.917	
1909.80	810	GSM 1900	GPRS	27.7	26.76	-0.01	10 mm	19728	3	1:2.76	bottom	0.812	1.242	1.009	A20
1880.00	661	GSM 1900	GPRS	27.7	26.81	-0.01	10 mm	19728	3	1:2.76	left	0.197	1.227	0.242	
836.60	4183	UMTS 850	RMC	25.5	25.37	0.02	10 mm	19728	N/A	1:1	back	0.488	1.030	0.503	A21
836.60	4183	UMTS 850	RMC	25.5	25.37	0.00	10 mm	19728	N/A	1:1	front	0.409	1.030	0.421	
836.60	4183	UMTS 850	RMC	25.5	25.37	-0.03	10 mm	19728	N/A	1:1	bottom	0.301	1.030	0.310	
836.60	4183	UMTS 850	RMC	25.5	25.37	0.03	10 mm	19728	N/A	1:1	right	0.373	1.030	0.384	
836.60	4183	UMTS 850	RMC	25.5	25.37	0.03	10 mm	19728	N/A	1:1	left	0.157	1.030	0.162	
1712.40	1312	UMTS 1750	RMC	24.7	24.48	0.02	10 mm	19710	N/A	1:1	back	0.748	1.052	0.787	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.00	10 mm	19710	N/A	1:1	back	0.744	1.050	0.781	
1752.60	1513	UMTS 1750	RMC	24.7	24.34	0.02	10 mm	19710	N/A	1:1	back	0.705	1.086	0.766	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.01	10 mm	19710	N/A	1:1	front	0.597	1.050	0.627	
1712.40	1312	UMTS 1750	RMC	24.7	24.48	-0.06	10 mm	19710	N/A	1:1	bottom	0.977	1.052	1.028	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.06	10 mm	19710	N/A	1:1	bottom	0.996	1.050	1.046	A23
1752.60	1513	UMTS 1750	RMC	24.7	24.34	-0.04	10 mm	19710	N/A	1:1	bottom	0.985	1.086	1.070	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.05	10 mm	19710	N/A	1:1	left	0.443	1.050	0.465	
1852.40	9262	UMTS 1900	RMC	24.4	23.63	0.04	10 mm	19728	N/A	1:1	back	0.629	1.194	0.751	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.03	10 mm	19728	N/A	1:1	back	0.545	1.239	0.675	
1907.60	9538	UMTS 1900	RMC	24.4	23.58	0.04	10 mm	19728	N/A	1:1	back	0.511	1.208	0.617	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.02	10 mm	19728	N/A	1:1	front	0.434	1.239	0.538	
1852.40	9262	UMTS 1900	RMC	24.4	23.63	0.04	10 mm	19728	N/A	1:1	bottom	0.725	1.194	0.866	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	-0.02	10 mm	19728	N/A	1:1	bottom	0.755	1.239	0.935	
1907.60	9538	UMTS 1900	RMC	24.4	23.58	0.03	10 mm	19728	N/A	1:1	bottom	0.854	1.208	1.032	A25
1880.00	9400	UMTS 1900	RMC	24.4	23.47	-0.03	10 mm	19728	N/A	1:1	left	0.245	1.239	0.304	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram				

Table 11-26
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	25.24	-0.04	0	19736	QPSK	1	0	10 mm	back	1:1	0.407	1.062	0.432	A26
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	-0.02	1	19736	QPSK	25	12	10 mm	back	1:1	0.316	1.040	0.329	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	0.09	0	19736	QPSK	1	0	10 mm	front	1:1	0.396	1.062	0.421	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.07	1	19736	QPSK	25	12	10 mm	front	1:1	0.313	1.040	0.326	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	-0.08	0	19736	QPSK	1	0	10 mm	bottom	1:1	0.306	1.062	0.325	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.01	1	19736	QPSK	25	12	10 mm	bottom	1:1	0.238	1.040	0.248	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	0.11	0	19736	QPSK	1	0	10 mm	right	1:1	0.308	1.062	0.327	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.04	1	19736	QPSK	25	12	10 mm	right	1:1	0.228	1.040	0.237	
707.50	23095	Mid	LTE Band 12	10	25.5	25.24	0.05	0	19736	QPSK	1	0	10 mm	left	1:1	0.137	1.062	0.145	
707.50	23095	Mid	LTE Band 12	10	24.5	24.33	0.01	1	19736	QPSK	25	12	10 mm	left	1:1	0.102	1.040	0.106	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-27
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	25.43	-0.04	0	19736	QPSK	1	25	10 mm	back	1:1	0.512	1.016	0.520	A27
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	-0.01	1	19736	QPSK	25	12	10 mm	back	1:1	0.370	1.000	0.370	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	0.05	0	19736	QPSK	1	25	10 mm	front	1:1	0.417	1.016	0.424	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	0.05	1	19736	QPSK	25	12	10 mm	front	1:1	0.300	1.000	0.300	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.21	0	19736	QPSK	1	25	10 mm	bottom	1:1	0.351	1.016	0.357	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	-0.06	1	19736	QPSK	25	12	10 mm	bottom	1:1	0.216	1.000	0.216	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.17	0	19736	QPSK	1	25	10 mm	right	1:1	0.359	1.016	0.365	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	-0.15	1	19736	QPSK	25	12	10 mm	right	1:1	0.255	1.000	0.255	
782.00	23230	Mid	LTE Band 13	10	25.5	25.43	-0.07	0	19736	QPSK	1	25	10 mm	left	1:1	0.206	1.016	0.209	
782.00	23230	Mid	LTE Band 13	10	24.5	24.50	0.07	1	19736	QPSK	25	12	10 mm	left	1:1	0.146	1.000	0.146	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-28
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	25.47	-0.03	0	19769	QPSK	1	0	10 mm	back	1:1	0.502	1.007	0.506	A28
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	-0.17	1	19769	QPSK	36	0	10 mm	back	1:1	0.309	1.000	0.309	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.14	0	19769	QPSK	1	0	10 mm	front	1:1	0.489	1.007	0.492	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.02	1	19769	QPSK	36	0	10 mm	front	1:1	0.343	1.000	0.343	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	-0.05	0	19769	QPSK	1	0	10 mm	bottom	1:1	0.280	1.007	0.282	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	-0.03	1	19769	QPSK	36	0	10 mm	bottom	1:1	0.196	1.000	0.196	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.00	0	19769	QPSK	1	0	10 mm	right	1:1	0.376	1.007	0.379	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.01	1	19769	QPSK	36	0	10 mm	right	1:1	0.253	1.000	0.253	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.47	0.18	0	19769	QPSK	1	0	10 mm	left	1:1	0.140	1.007	0.141	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.50	0.16	1	19769	QPSK	36	0	10 mm	left	1:1	0.097	1.000	0.097	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-29
LTE Band 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	25.41	-0.02	0	19751	QPSK	1	0	10 mm	back	1:1	0.534	1.021	0.545	A29
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.00	1	19751	QPSK	25	0	10 mm	back	1:1	0.374	1.002	0.375	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	0.08	0	19751	QPSK	1	0	10 mm	front	1:1	0.382	1.021	0.390	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.04	1	19751	QPSK	25	0	10 mm	front	1:1	0.269	1.002	0.270	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	-0.03	0	19751	QPSK	1	0	10 mm	bottom	1:1	0.278	1.021	0.284	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.02	1	19751	QPSK	25	0	10 mm	bottom	1:1	0.225	1.002	0.225	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	-0.02	0	19751	QPSK	1	0	10 mm	right	1:1	0.386	1.021	0.394	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.00	1	19751	QPSK	25	0	10 mm	right	1:1	0.263	1.002	0.264	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.41	0.17	0	19751	QPSK	1	0	10 mm	left	1:1	0.110	1.021	0.112	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	24.49	0.15	1	19751	QPSK	25	0	10 mm	left	1:1	0.086	1.002	0.086	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

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

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.04	0	19769	QPSK	1	0	10 mm	back	1:1	0.760	1.016	0.772	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.06	-0.01	0	19769	QPSK	1	0	10 mm	back	1:1	0.784	1.033	0.810	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.10	0	19769	QPSK	1	0	10 mm	back	1:1	0.812	1.038	0.843	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.03	1	19769	QPSK	50	0	10 mm	back	1:1	0.462	1.047	0.484	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.97	-0.02	1	19769	QPSK	100	0	10 mm	back	1:1	0.464	1.054	0.489	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.02	0	19769	QPSK	1	0	10 mm	front	1:1	0.744	1.016	0.756	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.06	1	19769	QPSK	50	0	10 mm	front	1:1	0.452	1.047	0.473	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.06	0	19769	QPSK	1	0	10 mm	bottom	1:1	1.030	1.016	1.046	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	24.06	-0.16	0	19769	QPSK	1	0	10 mm	bottom	1:1	1.140	1.033	1.178	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	-0.07	0	19769	QPSK	1	0	10 mm	bottom	1:1	1.150	1.038	1.194	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.06	1	19769	QPSK	50	0	10 mm	bottom	1:1	0.636	1.047	0.666	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.97	-0.07	1	19769	QPSK	100	0	10 mm	bottom	1:1	0.639	1.054	0.674	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.01	0	19769	QPSK	1	0	10 mm	left	1:1	0.515	1.016	0.523	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.03	1	19769	QPSK	50	0	10 mm	left	1:1	0.308	1.047	0.322	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	24.04	0.00	0	19769	QPSK	1	0	10 mm	bottom	1:1	1.170	1.038	1.214	A31
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue entries represent variability measurements.

Table 11-31
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.4	24.05	0.01	0	19744	QPSK	1	0	10 mm	back	1:1	0.906	1.084	0.982	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.06	0.03	0	19744	QPSK	1	0	10 mm	back	1:1	0.845	1.081	0.913	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.00	0	19744	QPSK	1	0	10 mm	back	1:1	0.795	1.054	0.838	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	-0.08	1	19744	QPSK	50	0	10 mm	back	1:1	0.620	1.067	0.662	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.10	0.01	1	19744	QPSK	100	0	10 mm	back	1:1	0.592	1.072	0.635	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.04	0	19744	QPSK	1	0	10 mm	front	1:1	0.586	1.054	0.618	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.03	1	19744	QPSK	50	0	10 mm	front	1:1	0.466	1.067	0.497	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.4	24.05	0.02	0	19744	QPSK	1	0	10 mm	bottom	1:1	1.010	1.084	1.095	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.4	24.06	-0.03	0	19744	QPSK	1	0	10 mm	bottom	1:1	1.080	1.081	1.167	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.07	0	19744	QPSK	1	0	10 mm	bottom	1:1	1.170	1.054	1.233	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.4	22.89	0.02	1	19744	QPSK	50	0	10 mm	bottom	1:1	0.879	1.125	0.989	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	22.89	0.00	1	19744	QPSK	50	0	10 mm	bottom	1:1	0.960	1.125	1.080	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	-0.03	1	19744	QPSK	50	0	10 mm	bottom	1:1	1.040	1.067	1.110	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.10	-0.03	1	19744	QPSK	100	0	10 mm	bottom	1:1	1.030	1.072	1.104	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.01	0	19744	QPSK	1	0	10 mm	left	1:1	0.361	1.054	0.380	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.02	1	19744	QPSK	50	0	10 mm	left	1:1	0.283	1.067	0.302	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.02	0	19744	QPSK	1	0	10 mm	bottom	1:1	1.230	1.054	**1.296**	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							

Note: Blue entries represent variability measurements.

Table 11-32
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	22.41	-0.09	0	19744	QPSK	1	0	10 mm	back	1:1	0.616	1.146	0.706	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.13	1	19744	QPSK	25	25	10 mm	back	1:1	0.403	1.102	0.444	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	-0.05	0	19744	QPSK	1	0	10 mm	front	1:1	0.251	1.146	0.288	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.07	1	19744	QPSK	25	25	10 mm	front	1:1	0.168	1.102	0.185	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	-0.05	0	19744	QPSK	1	0	10 mm	bottom	1:1	0.677	1.146	0.776	A35
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.06	1	19744	QPSK	25	25	10 mm	bottom	1:1	0.429	1.102	0.473	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	0.19	0	19744	QPSK	1	0	10 mm	right	1:1	0.016	1.146	0.018	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	0.21	1	19744	QPSK	25	25	10 mm	right	1:1	0.010	1.102	0.011	
2310.00	27710	Mid	LTE Band 30	10	23.0	22.41	0.19	0	19744	QPSK	1	0	10 mm	left	1:1	0.055	1.146	0.063	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.58	-0.09	1	19744	QPSK	25	25	10 mm	left	1:1	0.037	1.102	0.041	
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 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	23.67	0.01	0	19751	QPSK	1	0	10 mm	back	1:1	1.140	1.007	1.148	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.03	0	19751	QPSK	1	0	10 mm	back	1:1	1.180	1.000	1.180	
2560.00	21350	High	LTE Band 7	20	23.7	23.66	-0.03	0	19751	QPSK	1	99	10 mm	back	1:1	1.060	1.009	1.070	
2510.00	20850	Low	LTE Band 7	20	22.7	22.67	-0.02	1	19751	QPSK	50	0	10 mm	back	1:1	1.010	1.007	1.017	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	-0.04	1	19751	QPSK	50	0	10 mm	back	1:1	1.010	1.005	1.015	
2560.00	21350	High	LTE Band 7	20	22.7	22.67	0.04	1	19751	QPSK	50	50	10 mm	back	1:1	1.000	1.007	1.007	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.66	-0.04	1	19751	QPSK	100	0	10 mm	back	1:1	1.060	1.009	1.070	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.02	0	19751	QPSK	1	0	10 mm	front	1:1	0.559	1.000	0.559	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	-0.07	1	19751	QPSK	50	0	10 mm	front	1:1	0.482	1.005	0.484	
2510.00	20850	Low	LTE Band 7	20	23.7	23.67	-0.13	0	19751	QPSK	1	0	10 mm	bottom	1:1	1.240	1.007	1.249	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.05	0	19751	QPSK	1	0	10 mm	bottom	1:1	1.300	1.000	**1.300**	A37
2560.00	21350	High	LTE Band 7	20	23.7	23.66	-0.08	0	19751	QPSK	1	99	10 mm	bottom	1:1	1.260	1.009	1.271	
2510.00	20850	Low	LTE Band 7	20	22.7	22.67	-0.07	1	19751	QPSK	50	0	10 mm	bottom	1:1	1.160	1.007	1.168	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.08	1	19751	QPSK	50	0	10 mm	bottom	1:1	1.170	1.005	1.176	
2560.00	21350	High	LTE Band 7	20	22.7	22.67	-0.03	1	19751	QPSK	50	50	10 mm	bottom	1:1	1.030	1.007	1.037	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.66	-0.03	1	19751	QPSK	100	0	10 mm	bottom	1:1	1.100	1.009	1.110	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.14	0	19751	QPSK	1	0	10 mm	right	1:1	0.048	1.000	0.048	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	-0.17	1	19751	QPSK	50	0	10 mm	right	1:1	0.048	1.005	0.048	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.17	0	19751	QPSK	1	0	10 mm	left	1:1	0.063	1.000	0.063	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	-0.06	1	19751	QPSK	50	0	10 mm	left	1:1	0.055	1.005	0.055	
2510.00	20850	Low	LTE Band 7	20	23.7	23.67	0.05	0	19751	QPSK	1	0	10 mm	bottom	1:1	1.230	1.007	1.239	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.02	0	19751	QPSK	1	0	10 mm	bottom	1:1	1.220	1.000	1.220	
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 11-34
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)	
2506.00	39750	Low	LTE Band 41	20	24.9	24.71	0.09	0	19744	QPSK	1	99	10 mm	back	1:1.58	1.060	1.045	1.108	A38
2549.50	40185	Low-Mid	LTE Band 41	20	24.9	24.84	-0.04	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.725	1.014	0.735	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	-0.02	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.994	1.012	1.006	
2636.50	41055	Mid-High	LTE Band 41	20	24.9	24.83	-0.04	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.784	1.016	0.797	
2680.00	41490	High	LTE Band 41	20	24.9	24.83	-0.05	0	19744	QPSK	1	0	10 mm	back	1:1.58	0.554	1.016	0.563	
2506.00	39750	Low	LTE Band 41	20	23.9	23.76	0.05	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.763	1.033	0.788	
2549.50	40185	Low-Mid	LTE Band 41	20	23.9	23.80	-0.02	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.653	1.023	0.668	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	-0.05	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.849	1.019	0.865	
2636.50	41055	Mid-High	LTE Band 41	20	23.9	23.79	-0.03	1	19744	QPSK	50	0	10 mm	back	1:1.58	0.566	1.026	0.581	
2680.00	41490	High	LTE Band 41	20	23.9	23.70	-0.03	1	19744	QPSK	50	25	10 mm	back	1:1.58	0.471	1.047	0.493	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.71	0.00	1	19744	QPSK	100	0	10 mm	back	1:1.58	0.817	1.045	0.854	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.03	0	19744	QPSK	1	0	10 mm	front	1:1.58	0.292	1.012	0.296	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	-0.12	1	19744	QPSK	50	0	10 mm	front	1:1.58	0.245	1.019	0.250	
2506.00	39750	Low	LTE Band 41	20	24.9	24.71	-0.02	0	19744	QPSK	1	99	10 mm	bottom	1:1.58	1.040	1.045	1.087	
2549.50	40185	Low-Mid	LTE Band 41	20	24.9	24.84	0.12	0	19744	QPSK	1	0	10 mm	bottom	1:1.58	0.705	1.014	0.715	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	-0.04	0	19744	QPSK	1	0	10 mm	bottom	1:1.58	0.786	1.012	0.795	
2636.50	41055	Mid-High	LTE Band 41	20	24.9	24.83	0.12	0	19744	QPSK	1	0	10 mm	bottom	1:1.58	0.840	1.016	0.853	
2680.00	41490	High	LTE Band 41	20	24.9	24.83	0.11	0	19744	QPSK	1	0	10 mm	bottom	1:1.58	0.661	1.016	0.672	
2506.00	39750	Low	LTE Band 41	20	23.9	23.76	0.12	1	19744	QPSK	50	0	10 mm	bottom	1:1.58	0.748	1.033	0.773	
2549.50	40185	Low-Mid	LTE Band 41	20	23.9	23.80	-0.12	1	19744	QPSK	50	0	10 mm	bottom	1:1.58	0.615	1.023	0.629	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	-0.08	1	19744	QPSK	50	0	10 mm	bottom	1:1.58	0.657	1.019	0.669	
2636.50	41055	Mid-High	LTE Band 41	20	23.9	23.79	-0.10	1	19744	QPSK	50	0	10 mm	bottom	1:1.58	0.605	1.026	0.621	
2680.00	41490	High	LTE Band 41	20	23.9	23.70	-0.07	1	19744	QPSK	50	25	10 mm	bottom	1:1.58	0.525	1.047	0.550	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.71	0.15	1	19744	QPSK	100	0	10 mm	bottom	1:1.58	0.625	1.045	0.653	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.19	0	19744	QPSK	1	0	10 mm	right	1:1.58	0.050	1.012	0.051	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	-0.05	1	19744	QPSK	50	0	10 mm	right	1:1.58	0.046	1.019	0.047	
2593.00	40620	Mid	LTE Band 41	20	24.9	24.85	0.15	0	19744	QPSK	1	0	10 mm	left	1:1.58	0.060	1.012	0.061	
2593.00	40620	Mid	LTE Band 41	20	23.9	23.82	0.06	1	19744	QPSK	50	0	10 mm	left	1:1.58	0.045	1.019	0.046	

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

Table 11-35
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	0.06	10 mm	1	19868	1	back	100.0	0.409	0.339	1.005	1.000	**0.341**	A39
2462	11	802.11b	DSSS	22	20.5	20.48	0.14	10 mm	1	19868	1	front	100.0	0.228	-	1.005	1.000	-	
2462	11	802.11b	DSSS	22	20.5	20.48	0.13	10 mm	1	19868	1	top	100.0	0.394	-	1.005	1.000	-	
2462	11	802.11b	DSSS	22	20.5	20.48	0.15	10 mm	1	19868	1	left	100.0	0.093	-	1.005	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.08	10 mm	2	19868	1	back	100.0	0.296	0.243	1.002	1.000	0.243	
2437	6	802.11b	DSSS	22	20.5	20.49	0.20	10 mm	2	19868	1	front	100.0	0.031	-	1.002	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.13	10 mm	2	19868	1	top	100.0	0.020	-	1.002	1.000	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.11	10 mm	2	19868	1	left	100.0	0.120	-	1.002	1.000	-	
5200	40	802.11a	OFDM	20	18.0	17.99	0.16	10 mm	1	19850	6	back	99.2	0.286	0.125	1.002	1.008	0.126	
5200	40	802.11a	OFDM	20	18.0	17.99	0.14	10 mm	1	19850	6	front	99.2	0.042	0.015	1.002	1.008	0.015	
5200	40	802.11a	OFDM	20	18.0	17.99	0.17	10 mm	1	19850	6	top	99.2	0.040	-	1.002	1.008	-	
5200	40	802.11a	OFDM	20	18.0	17.99	0.11	10 mm	1	19850	6	left	99.2	0.059	-	1.002	1.008	-	
5180	36	802.11a	OFDM	20	17.0	16.91	0.10	10 mm	2	19850	6	back	98.8	1.164	0.573	1.021	1.012	0.592	
5200	40	802.11a	OFDM	20	18.0	17.95	0.12	10 mm	2	19850	6	back	98.8	1.509	0.744	1.012	1.012	**0.762**	
5240	48	802.11a	OFDM	20	17.0	16.99	0.13	10 mm	2	19850	6	back	98.8	1.591	0.724	1.002	1.012	0.734	
5200	40	802.11a	OFDM	20	18.0	17.95	0.19	10 mm	2	19850	6	front	98.8	0.013	0.005	1.012	1.012	0.005	
5200	40	802.11a	OFDM	20	18.0	17.95	0.19	10 mm	2	19850	6	top	98.8	0.108	-	1.012	1.012	-	
5200	40	802.11a	OFDM	20	18.0	17.95	0.10	10 mm	2	19850	6	left	98.8	0.452	0.194	1.012	1.012	0.199	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	10 mm	1	19850	6	back	99.2	0.135	0.052	1.002	1.008	0.053	
5785	157	802.11a	OFDM	20	18.0	17.99	0.16	10 mm	1	19850	6	front	99.2	0.078	0.036	1.002	1.008	0.036	
5785	157	802.11a	OFDM	20	18.0	17.99	0.12	10 mm	1	19850	6	top	99.2	0.070	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.99	0.19	10 mm	1	19850	6	left	99.2	0.028	-	1.002	1.008	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.16	10 mm	2	19850	6	back	98.8	1.483	0.706	1.012	1.012	0.723	
5785	157	802.11a	OFDM	20	18.0	17.95	0.14	10 mm	2	19850	6	front	98.8	0.026	0.008	1.012	1.012	0.008	
5785	157	802.11a	OFDM	20	18.0	17.95	0.19	10 mm	2	19850	6	top	98.8	0.146	-	1.012	1.012	-	
5785	157	802.11a	OFDM	20	18.0	17.95	0.12	10 mm	2	19850	6	left	98.8	0.483	0.196	1.012	1.012	0.201	
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
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	19850	13	back	98.4	1.271	0.626	1.064	1.016	0.677	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.08	10 mm	MIMO	19850	13	back	98.4	1.660	0.829	1.014	1.016	0.854	A41
5220	44	802.11n	OFDM	20	17.0	16.92	17.0	16.94	0.11	10 mm	MIMO	19850	13	back	98.4	1.550	0.738	1.019	1.016	0.764	
5240	48	802.11n	OFDM	20	17.0	16.94	17.0	16.90	0.19	10 mm	MIMO	19850	13	back	98.4	1.773	0.820	1.023	1.016	0.852	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.15	10 mm	MIMO	19850	13	front	98.4	0.028	0.010	1.014	1.016	0.010	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	-0.04	10 mm	MIMO	19850	13	top	98.4	0.135	-	1.014	1.016	-	
5200	40	802.11n	OFDM	20	18.0	17.98	18.0	17.94	0.13	10 mm	MIMO	19850	13	left	98.4	0.411	0.192	1.014	1.016	0.198	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.17	10 mm	MIMO	19850	13	back	98.4	1.606	0.779	1.030	1.016	0.815	
5805	161	802.11n	OFDM	20	18.0	17.93	18.0	17.82	0.13	10 mm	MIMO	19850	13	back	98.4	1.577	0.738	1.042	1.016	0.781	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.00	10 mm	MIMO	19850	13	front	98.4	0.097	0.032	1.030	1.016	0.033	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.16	10 mm	MIMO	19850	13	top	98.4	0.172	-	1.030	1.016	-	
5785	157	802.11n	OFDM	20	18.0	17.98	18.0	17.87	0.12	10 mm	MIMO	19850	13	left	98.4	0.445	0.185	1.030	1.016	0.194	
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, 161) 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, 161).

Table 11-37
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	0.14	10 mm	2	19850	13.5	back	98.2	0.920	0.460	1.047	1.018	0.490	
5230	46	802.11n	OFDM	40	15.0	14.80	0.19	10 mm	2	19850	13.5	front	98.2	0.005	-	1.047	1.018	-	
5230	46	802.11n	OFDM	40	15.0	14.80	0.10	10 mm	2	19850	13.5	top	98.2	0.070	-	1.047	1.018	-	
5230	46	802.11n	OFDM	40	15.0	14.80	0.16	10 mm	2	19850	13.5	left	98.2	0.409	0.109	1.047	1.018	0.116	
5795	159	802.11n	OFDM	40	15.0	14.97	0.13	10 mm	2	19850	13.5	back	98.2	0.843	0.388	1.007	1.018	0.398	
5795	159	802.11n	OFDM	40	15.0	14.97	0.10	10 mm	2	19850	13.5	front	98.2	0.014	-	1.007	1.018	-	
5795	159	802.11n	OFDM	40	15.0	14.97	0.18	10 mm	2	19850	13.5	top	98.2	0.075	-	1.007	1.018	-	
5795	159	802.11n	OFDM	40	15.0	14.97	-0.12	10 mm	2	19850	13.5	left	98.2	0.212	-	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 11-38
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	0.12	10 mm	19868	1	back	77.1	0.023	1.033	1.297	0.031	
2441	39	Bluetooth	FHSS	12.0	11.86	0.04	10 mm	19868	1	front	77.1	0.017	1.033	1.297	0.023	
2441	39	Bluetooth	FHSS	12.0	11.86	-0.14	10 mm	19868	1	top	77.1	0.039	1.033	1.297	**0.052**	A43
2441	39	Bluetooth	FHSS	12.0	11.86	0.15	10 mm	19868	1	left	77.1	0.006	1.033	1.297	0.008	
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 11-39
UMTS 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)	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.00	3 mm	19710	1:1	back	1.080	1.050	1.134	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	0.08	2 mm	19710	1:1	front	1.370	1.050	1.439	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.03	5 mm	19710	1:1	bottom	1.240	1.050	1.302	
1732.40	1412	UMTS 1750	RMC	24.7	24.49	-0.18	0 mm	19710	1:1	left	1.130	1.050	1.187	
1732.40	1412	UMTS 1750	RMC	23.7	23.14	0.03	0 mm	19710	1:1	back	1.590	1.138	1.809	
1732.40	1412	UMTS 1750	RMC	23.7	23.14	-0.14	0 mm	19710	1:1	front	1.510	1.138	1.718	
1712.40	1312	UMTS 1750	RMC	23.7	23.18	-0.13	0 mm	19710	1:1	bottom	2.290	1.127	2.581	
1732.40	1412	UMTS 1750	RMC	23.7	23.14	-0.11	0 mm	19710	1:1	bottom	2.440	1.138	2.777	
1752.60	1513	UMTS 1750	RMC	23.7	23.19	-0.15	0 mm	19710	1:1	bottom	2.470	1.125	2.779	A44
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.00	3 mm	19710	1:1	back	0.605	1.239	0.750	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	0.09	2 mm	19710	1:1	front	0.819	1.239	1.015	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	-0.07	5 mm	19710	1:1	bottom	0.878	1.239	1.088	
1880.00	9400	UMTS 1900	RMC	24.4	23.47	-0.04	0 mm	19710	1:1	left	0.571	1.239	0.707	
1880.00	9400	UMTS 1900	RMC	23.4	22.76	-0.04	0 mm	19710	1:1	back	1.450	1.159	1.681	
1880.00	9400	UMTS 1900	RMC	23.4	22.76	-0.06	0 mm	19710	1:1	front	1.540	1.159	1.785	
1852.40	9262	UMTS 1900	RMC	23.4	22.93	-0.12	0 mm	19710	1:1	bottom	2.170	1.114	2.417	A45
1880.00	9400	UMTS 1900	RMC	23.4	22.76	-0.13	0 mm	19710	1:1	bottom	2.040	1.159	2.364	
1907.60	9538	UMTS 1900	RMC	23.4	22.88	-0.13	0 mm	19710	1:1	bottom	2.160	1.127	2.434	
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 11-40
LTE Band 66 (AWS)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) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																		
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.11	0	19769	QPSK	1	0	3 mm	back	1:1	1.200	1.016	1.219	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.09	1	19769	QPSK	50	0	3 mm	back	1:1	0.749	1.047	0.784	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	0.12	0	19769	QPSK	1	0	2 mm	front	1:1	1.470	1.016	1.494	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.09	1	19769	QPSK	50	0	2 mm	front	1:1	0.910	1.047	0.953	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.02	0	19769	QPSK	1	0	5 mm	bottom	1:1	1.330	1.016	1.351	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	-0.06	1	19769	QPSK	50	0	5 mm	bottom	1:1	0.827	1.047	0.866	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.13	-0.01	0	19769	QPSK	1	0	0 mm	left	1:1	1.230	1.016	1.250	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.00	0.00	1	19769	QPSK	50	0	0 mm	left	1:1	0.741	1.047	0.776	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.61	0.07	0	19736	QPSK	1	0	0 mm	back	1:1	1.620	1.146	1.857	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.58	0.08	0	19736	QPSK	50	0	0 mm	back	1:1	1.610	1.153	1.856	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.61	0.07	0	19736	QPSK	1	0	0 mm	front	1:1	1.710	1.146	1.960	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.58	0.07	0	19736	QPSK	50	0	0 mm	front	1:1	1.730	1.153	1.995	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.61	-0.05	0	19736	QPSK	1	0	0 mm	bottom	1:1	2.530	1.146	2.899	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.59	-0.05	0	19736	QPSK	1	0	0 mm	bottom	1:1	2.740	1.151	3.154	A46
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.56	-0.07	0	19736	QPSK	1	0	0 mm	bottom	1:1	2.710	1.159	3.141	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.58	-0.10	0	19736	QPSK	50	0	0 mm	bottom	1:1	2.600	1.153	2.998	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.45	-0.09	0	19736	QPSK	50	0	0 mm	bottom	1:1	2.690	1.189	**3.198**	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.49	-0.06	0	19736	QPSK	50	0	0 mm	bottom	1:1	2.700	1.178	3.181	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.47	-0.06	0	19736	QPSK	100	0	0 mm	bottom	1:1	2.590	1.183	3.064	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.59	0.03	0	19736	QPSK	1	0	0 mm	bottom	1:1	2.580	1.151	2.970	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																			
Phablet 4.0 W/kg (mW/g) averaged over 10 grams																			

Note: Blue entries represent variability measurements.

Table 11-41
LTE Band 25 (PCS) 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)	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.01	0	19736	QPSK	1	0	3 mm	back	1:1	1.200	1.054	1.265	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.00	1	19736	QPSK	50	0	3 mm	back	1:1	0.943	1.067	1.006	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.08	0	19736	QPSK	1	0	2 mm	front	1:1	1.370	1.054	1.444	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.08	1	19736	QPSK	50	0	2 mm	front	1:1	1.080	1.067	1.152	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.01	0	19736	QPSK	1	0	5 mm	bottom	1:1	1.810	1.054	1.908	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.04	1	19736	QPSK	50	0	5 mm	bottom	1:1	1.430	1.067	1.526	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.4	24.17	0.03	0	19736	QPSK	1	0	0 mm	left	1:1	1.110	1.054	1.170	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	23.12	0.06	1	19736	QPSK	50	0	0 mm	left	1:1	0.871	1.067	0.929	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.97	0.09	0	19744	QPSK	1	0	0 mm	back	1:1	1.750	1.104	1.932	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.94	0.07	0	19744	QPSK	50	0	0 mm	back	1:1	1.760	1.112	1.957	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.4	22.85	0.05	0	19744	QPSK	1	0	0 mm	front	1:1	1.940	1.135	2.202	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	22.85	0.11	0	19744	QPSK	1	0	0 mm	front	1:1	1.920	1.135	2.179	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.97	0.03	0	19744	QPSK	1	0	0 mm	front	1:1	1.930	1.104	2.131	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.4	22.70	0.04	0	19744	QPSK	50	0	0 mm	front	1:1	1.940	1.175	2.280	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	22.70	0.06	0	19744	QPSK	50	0	0 mm	front	1:1	1.840	1.175	2.162	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.94	-0.03	0	19744	QPSK	50	0	0 mm	front	1:1	1.960	1.112	2.180	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.91	0.02	0	19744	QPSK	100	0	0 mm	front	1:1	1.940	1.119	2.171	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.4	22.85	-0.03	0	19744	QPSK	1	0	0 mm	bottom	1:1	2.530	1.135	2.872	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	22.85	-0.02	0	19744	QPSK	1	0	0 mm	bottom	1:1	2.690	1.135	3.053	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.97	-0.03	0	19744	QPSK	1	0	0 mm	bottom	1:1	2.750	1.104	3.036	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.4	22.70	-0.02	0	19744	QPSK	50	0	0 mm	bottom	1:1	2.530	1.175	2.973	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.4	22.70	-0.02	0	19744	QPSK	50	0	0 mm	bottom	1:1	2.660	1.175	3.126	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.94	-0.03	0	19744	QPSK	50	0	0 mm	bottom	1:1	2.790	1.112	3.102	A47
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.91	-0.03	0	19744	QPSK	100	0	0 mm	bottom	1:1	2.760	1.119	3.088	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.4	22.94	-0.04	0	19744	QPSK	50	0	0 mm	bottom	1:1	2.750	1.112	3.058	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Note: Blue entries represent variability measurements.

Table 11-42
LTE Band 7 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)	
2510.00	20850	Low	LTE Band 7	20	23.7	23.67	0.01	0	19751	QPSK	1	0	0 mm	bottom	1:1	2.640	1.007	2.658	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.16	0	19751	QPSK	1	0	0 mm	bottom	1:1	2.560	1.000	2.560	
2560.00	21350	High	LTE Band 7	20	23.7	23.66	-0.18	0	19751	QPSK	1	99	0 mm	bottom	1:1	2.240	1.009	2.260	
2510.00	20850	Low	LTE Band 7	20	22.7	22.67	0.17	1	19751	QPSK	50	0	0 mm	bottom	1:1	2.450	1.007	2.467	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.68	0.18	1	19751	QPSK	50	0	0 mm	bottom	1:1	2.290	1.005	2.301	
2560.00	21350	High	LTE Band 7	20	22.7	22.67	-0.09	1	19751	QPSK	50	50	0 mm	bottom	1:1	2.300	1.007	2.316	
2535.00	21100	Mid	LTE Band 7	20	22.7	22.66	0.15	1	19751	QPSK	100	0	0 mm	bottom	1:1	2.250	1.009	2.270	
2510.00	20850	Low	LTE Band 7	20	23.7	23.67	-0.08	0	19751	QPSK	1	0	0 mm	bottom	1:1	2.810	1.007	2.830	A48
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.06	0	19751	QPSK	1	0	0 mm	bottom	1:1	2.630	1.000	2.630	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Note: Blue entries represent variability measurements.

Table 11-43
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	0.03	0 mm	1	19850	6	back	99.2	4.558	0.378	1.005	1.008	0.383	
5280	56	802.11a	OFDM	20	18.0	17.98	0.10	0 mm	1	19850	6	front	99.2	3.618	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.14	0 mm	1	19850	6	top	99.2	0.466	-	1.005	1.008	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.07	0 mm	1	19850	6	left	99.2	0.416	-	1.005	1.008	-	
5260	52	802.11a	OFDM	20	17.0	16.97	-0.03	0 mm	2	19850	6	back	98.8	16.841	2.070	1.007	1.012	2.110	
5280	56	802.11a	OFDM	20	18.0	17.98	-0.17	0 mm	2	19850	6	back	98.8	33.315	2.570	1.005	1.012	2.614	
5320	64	802.11a	OFDM	20	17.0	16.99	0.02	0 mm	2	19850	6	back	98.8	30.655	2.440	1.002	1.012	2.474	
5280	56	802.11a	OFDM	20	18.0	17.98	-0.01	0 mm	2	19850	6	front	98.8	0.149	0.022	1.005	1.012	0.022	
5280	56	802.11a	OFDM	20	18.0	17.98	0.18	0 mm	2	19850	6	top	98.8	0.286	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	0.18	0 mm	2	19850	6	left	98.8	4.473	0.469	1.005	1.012	0.477	
5600	120	802.11a	OFDM	20	17.0	16.99	0.03	0 mm	1	19850	6	back	99.2	7.663	0.399	1.002	1.008	0.403	
5600	120	802.11a	OFDM	20	17.0	16.99	-0.15	0 mm	1	19850	6	front	99.2	5.027	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.13	0 mm	1	19850	6	top	99.2	0.840	-	1.002	1.008	-	
5600	120	802.11a	OFDM	20	17.0	16.99	0.19	0 mm	1	19850	6	left	99.2	0.413	-	1.002	1.008	-	
5720	144	802.11a	OFDM	20	17.0	16.99	-0.04	0 mm	2	19850	6	back	98.8	21.248	1.680	1.002	1.012	1.704	
5720	144	802.11a	OFDM	20	17.0	16.99	0.12	0 mm	2	19850	6	front	98.8	0.431	0.081	1.002	1.012	0.082	
5720	144	802.11a	OFDM	20	17.0	16.99	0.16	0 mm	2	19850	6	top	98.8	0.252	-	1.002	1.012	-	
5720	144	802.11a	OFDM	20	17.0	16.99	0.15	0 mm	2	19850	6	left	98.8	3.826	0.330	1.002	1.012	0.335	
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 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	0.00	0 mm	MIMO	19850	13	back	98.4	26.135	2.160	1.050	1.016	2.304	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	-0.11	0 mm	MIMO	19850	13	back	98.4	47.856	2.680	1.007	1.016	2.742	A49
5320	64	802.11n	OFDM	20	17.0	16.97	17.0	16.96	-0.16	0 mm	MIMO	19850	13	back	98.4	14.917	2.480	1.009	1.016	2.542	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	-0.02	0 mm	MIMO	19850	13	front	98.4	2.956	-	1.007	1.016	-	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.17	0 mm	MIMO	19850	13	top	98.4	0.576	-	1.007	1.016	-	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.11	0 mm	MIMO	19850	13	left	98.4	4.785	0.470	1.007	1.016	0.481	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	-0.03	0 mm	MIMO	19850	13	back	98.4	13.505	1.750	1.012	1.016	1.799	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.17	0 mm	MIMO	19850	13	front	98.4	4.214	0.325	1.012	1.016	0.334	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.17	0 mm	MIMO	19850	13	top	98.4	0.858	-	1.012	1.016	-	
5720	144	802.11n	OFDM	20	17.0	16.96	17.0	16.95	0.18	0 mm	MIMO	19850	13	left	98.4	3.337	-	1.012	1.016	-	
5280	56	802.11n	OFDM	20	18.0	17.97	18.0	17.98	0.01	0 mm	MIMO	19850	13	back	98.4	32.132	2.620	1.007	1.016	2.681	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams					

Note:

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. Body-worn SAR was additionally evaluated using a headset cable when the standalone report body-worn SAR was ≥ 1.2 W/kg.
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.

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 8.5.4.
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 8.6.5 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 8.6.6 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 9.5 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.

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

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	GSM/GPRS 850	0.266	0.386	0.080	0.652	0.346	0.732
	GSM/GPRS 1900	0.123	0.386	0.080	0.509	0.203	0.589
	UMTS 850	0.241	0.386	0.080	0.627	0.321	0.707
	UMTS 1750	0.205	0.386	0.080	0.591	0.285	0.671
	UMTS 1900	0.178	0.386	0.080	0.564	0.258	0.644
	LTE Band 12	0.193	0.386	0.080	0.579	0.273	0.659
	LTE Band 13	0.246	0.386	0.080	0.632	0.326	0.712
	LTE Band 26 (Cell)	0.276	0.386	0.080	0.662	0.356	**0.742**
	LTE Band 5 (Cell)	0.240	0.386	0.080	0.626	0.320	0.706
	LTE Band 66 (AWS)	0.210	0.386	0.080	0.596	0.290	0.676
	LTE Band 25 (PCS)	0.137	0.386	0.080	0.523	0.217	0.603
	LTE Band 30	0.024	0.386	0.080	0.410	0.104	0.490
	LTE Band 7	0.061	0.386	0.080	0.447	0.141	0.527
	LTE Band 41	0.051	0.386	0.080	0.437	0.131	0.517

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	GSM/GPRS 850	0.266	0.648	0.082	0.914	0.348	0.996
	GSM/GPRS 1900	0.123	0.648	0.082	0.771	0.205	0.853
	UMTS 850	0.241	0.648	0.082	0.889	0.323	0.971
	UMTS 1750	0.205	0.648	0.082	0.853	0.287	0.935
	UMTS 1900	0.178	0.648	0.082	0.826	0.260	0.908
	LTE Band 12	0.193	0.648	0.082	0.841	0.275	0.923
	LTE Band 13	0.246	0.648	0.082	0.894	0.328	0.976
	LTE Band 26 (Cell)	0.276	0.648	0.082	0.924	0.358	**1.006**
	LTE Band 5 (Cell)	0.240	0.648	0.082	0.888	0.322	0.970
	LTE Band 66 (AWS)	0.210	0.648	0.082	0.858	0.292	0.940
	LTE Band 25 (PCS)	0.137	0.648	0.082	0.785	0.219	0.867
	LTE Band 30	0.024	0.648	0.082	0.672	0.106	0.754
	LTE Band 7	0.061	0.648	0.082	0.709	0.143	0.791
	LTE Band 41	0.051	0.648	0.082	0.699	0.133	0.781

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+3
Head SAR	GSM/GPRS 850	0.266	0.386	0.082	0.734
	GSM/GPRS 1900	0.123	0.386	0.082	0.591
	UMTS 850	0.241	0.386	0.082	0.709
	UMTS 1750	0.205	0.386	0.082	0.673
	UMTS 1900	0.178	0.386	0.082	0.646
	LTE Band 12	0.193	0.386	0.082	0.661
	LTE Band 13	0.246	0.386	0.082	0.714
	LTE Band 26 (Cell)	0.276	0.386	0.082	**0.744**
	LTE Band 5 (Cell)	0.240	0.386	0.082	0.708
	LTE Band 66 (AWS)	0.210	0.386	0.082	0.678
	LTE Band 25 (PCS)	0.137	0.386	0.082	0.605
	LTE Band 30	0.024	0.386	0.082	0.492
	LTE Band 7	0.061	0.386	0.082	0.529
	LTE Band 41	0.051	0.386	0.082	0.519

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	GSM/GPRS 850	0.266	0.109	0.375
	GSM/GPRS 1900	0.123	0.109	0.232
	UMTS 850	0.241	0.109	0.350
	UMTS 1750	0.205	0.109	0.314
	UMTS 1900	0.178	0.109	0.287
	LTE Band 12	0.193	0.109	0.302
	LTE Band 13	0.246	0.109	0.355
	LTE Band 26 (Cell)	0.276	0.109	**0.385**
	LTE Band 5 (Cell)	0.240	0.109	0.349
	LTE Band 66 (AWS)	0.210	0.109	0.319
	LTE Band 25 (PCS)	0.137	0.109	0.246
	LTE Band 30	0.024	0.109	0.133
	LTE Band 7	0.061	0.109	0.170
	LTE Band 41	0.051	0.109	0.160

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	GSM/GPRS 850	0.759	0.341	0.243	1.100	1.002	1.343	N/A	N/A	N/A
	GSM/GPRS 1900	0.531	0.341	0.243	0.872	0.774	1.115	N/A	N/A	N/A
	UMTS 850	0.503	0.341	0.243	0.844	0.746	1.087	N/A	N/A	N/A
	UMTS 1750	0.787	0.341	0.243	1.128	1.030	1.371	N/A	N/A	N/A
	UMTS 1900	0.751	0.341	0.243	1.092	0.994	1.335	N/A	N/A	N/A
	LTE Band 12	0.432	0.341	0.243	0.773	0.675	1.016	N/A	N/A	N/A
	LTE Band 13	0.520	0.341	0.243	0.861	0.763	1.104	N/A	N/A	N/A
	LTE Band 26 (Cell)	0.506	0.341	0.243	0.847	0.749	1.090	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.545	0.341	0.243	0.886	0.788	1.129	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.843	0.341	0.243	1.184	1.086	1.427	N/A	N/A	N/A
	LTE Band 25 (PCS)	0.982	0.341	0.243	1.323	1.225	**1.566**	N/A	N/A	N/A
	LTE Band 30	0.706	0.341	0.243	1.047	0.949	1.290	N/A	N/A	N/A
	LTE Band 7	1.180	0.341	0.243	1.521	1.423	See Note 1	0.01	0.01	0.02
	LTE Band 41	1.108	0.341	0.243	1.449	1.351	See Note 1	0.01	0.01	0.02

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	GSM/GPRS 850	0.759	0.157	1.129	0.916	See Table Below	N/A
	GSM/GPRS 1900	0.531	0.157	1.129	0.688	See Table Below	N/A
	UMTS 850	0.503	0.157	1.129	0.660	See Note 1	0.02
	UMTS 1750	0.787	0.157	1.129	0.944	See Note 1	0.02
	UMTS 1900	0.751	0.157	1.129	0.908	See Note 1	0.02
	LTE Band 12	0.432	0.157	1.129	0.589	**1.561**	N/A
	LTE Band 13	0.520	0.157	1.129	0.677	See Note 1	0.02
	LTE Band 26 (Cell)	0.506	0.157	1.129	0.663	See Note 1	0.02
	LTE Band 5 (Cell)	0.545	0.157	1.129	0.702	See Note 1	0.02
	LTE Band 66 (AWS)	0.843	0.157	1.129	1.000	See Note 1	0.02
	LTE Band 25 (PCS)	0.982	0.157	1.129	1.139	See Note 1	0.02
	LTE Band 30	0.706	0.157	1.129	0.863	See Note 1	0.02
	LTE Band 7	1.180	0.157	1.129	1.337	See Note 1	0.03
	LTE Band 41	1.108	0.157	1.129	1.265	See Note 1	0.03

Configuration	Mode	2G SAR (W/kg)	5 GHz WLAN Ant2 SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Back Side	GSM 850	0.384	1.129	1.513	N/A
Back Side	GPRS 850	0.759	1.129	See Note 1	0.02
Back Side	GSM 1900	0.388	1.129	**1.517**	N/A
Back Side	GPRS 1900	0.531	1.129	See Note 1	0.02

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	GSM/GPRS 850	0.759	1.269	See Table Below	N/A
	GSM/GPRS 1900	0.531	1.269	See Table Below	N/A
	UMTS 850	0.503	1.269	See Note 1	0.02
	UMTS 1750	0.787	1.269	See Note 1	0.02
	UMTS 1900	0.751	1.269	See Note 1	0.02
	LTE Band 12	0.432	1.269	See Note 1	0.02
	LTE Band 13	0.520	1.269	See Note 1	0.02
	LTE Band 26 (Cell)	0.506	1.269	See Note 1	0.02
	LTE Band 5 (Cell)	0.545	1.269	See Note 1	0.02
	LTE Band 66 (AWS)	0.843	1.269	See Note 1	0.02
	LTE Band 25 (PCS)	0.982	1.269	See Note 1	0.03
	LTE Band 30	0.706	1.269	See Note 1	0.02
	LTE Band 7	1.180	1.269	See Note 1	0.03
	LTE Band 41	1.108	1.269	See Note 1	0.03

Configuration	Mode	2G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Back Side	GSM 850	0.384	1.269	See Note 1	0.02
Back Side	GPRS 850	0.759	1.269	See Note 1	0.02
Back Side	GSM 1900	0.388	1.269	See Note 1	0.02
Back Side	GPRS 1900	0.531	1.269	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	GSM/GPRS 850	0.759	0.341	0.571	See Table Below	N/A	N/A	N/A
	GSM/GPRS 1900	0.531	0.341	0.571	1.443	N/A	N/A	N/A
	UMTS 850	0.503	0.341	0.571	1.415	N/A	N/A	N/A
	UMTS 1750	0.787	0.341	0.571	See Note 1	0.01	0.01	0.02
	UMTS 1900	0.751	0.341	0.571	See Note 1	0.01	0.01	0.02
	LTE Band 12	0.432	0.341	0.571	1.344	N/A	N/A	N/A
	LTE Band 13	0.520	0.341	0.571	1.432	N/A	N/A	N/A
	LTE Band 26 (Cell)	0.506	0.341	0.571	1.418	N/A	N/A	N/A
	LTE Band 5 (Cell)	0.545	0.341	0.571	**1.457**	N/A	N/A	N/A
	LTE Band 66 (AWS)	0.843	0.341	0.571	See Note 1	0.01	0.01	0.02
	LTE Band 25 (PCS)	0.982	0.341	0.571	See Note 1	0.01	0.02	0.02
	LTE Band 30	0.706	0.341	0.571	See Note 1	0.01	0.01	0.02
	LTE Band 7	1.180	0.341	0.571	See Note 1	0.01	0.02	0.02
	LTE Band 41	1.108	0.341	0.571	See Note 1	0.01	0.02	0.02

Configuration	Mode	2G 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
Back Side	GSM 850	0.384	0.341	0.571	**1.296**	N/A	N/A	N/A
Back Side	GPRS 850	0.759	0.341	0.571	See Note 1	0.01	0.01	0.02

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	GSM/GPRS 850	0.759	0.031	0.790
	GSM/GPRS 1900	0.531	0.031	0.562
	UMTS 850	0.503	0.031	0.534
	UMTS 1750	0.787	0.031	0.818
	UMTS 1900	0.751	0.031	0.782
	LTE Band 12	0.432	0.031	0.463
	LTE Band 13	0.520	0.031	0.551
	LTE Band 26 (Cell)	0.506	0.031	0.537
	LTE Band 5 (Cell)	0.545	0.031	0.576
	LTE Band 66 (AWS)	0.843	0.031	0.874
	LTE Band 25 (PCS)	0.982	0.031	1.013
	LTE Band 30	0.706	0.031	0.737
	LTE Band 7	1.180	0.031	**1.211**
	LTE Band 41	1.108	0.031	1.139

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	GPRS 850	0.759	0.341	0.243	1.100	1.002	1.343
	GPRS 1900	1.009	0.341	0.243	1.350	1.252	**1.593**
	UMTS 850	0.503	0.341	0.243	0.844	0.746	1.087
	UMTS 1750	1.070	0.341	0.243	1.411	1.313	See Table Below
	UMTS 1900	1.032	0.341	0.243	1.373	1.275	See Table Below
	LTE Band 12	0.432	0.341	0.243	0.773	0.675	1.016
	LTE Band 13	0.520	0.341	0.243	0.861	0.763	1.104
	LTE Band 26 (Cell)	0.506	0.341	0.243	0.847	0.749	1.090
	LTE Band 5 (Cell)	0.545	0.341	0.243	0.886	0.788	1.129
	LTE Band 66 (AWS)	1.214	0.341	0.243	1.555	1.457	See Table Below
	LTE Band 25 (PCS)	1.296	0.341	0.243	See Table Below	1.539	See Table Below
	LTE Band 30	0.776	0.341	0.243	1.117	1.019	1.360
	LTE Band 7	1.300	0.341	0.243	See Table Below	1.543	See Table Below
	LTE Band 41	1.108	0.341	0.243	1.449	1.351	See Table Below

Simult Tx	Configuration	UMTS 1750 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+3
Hotspot SAR	Back	0.787	0.341	0.243	**1.371**
	Front	0.627	0.341*	0.243*	1.211
	Top	-	0.341*	0.243*	0.584
	Bottom	1.070	-	-	1.070
	Right	-	-	-	0.000
	Left	0.465	0.341*	0.243*	1.049

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+3
Hotspot SAR	Back	0.751	0.341	0.243	**1.335**
	Front	0.538	0.341*	0.243*	1.122
	Top	-	0.341*	0.243*	0.584
	Bottom	1.032	-	-	1.032
	Right	-	-	-	0.000
	Left	0.304	0.341*	0.243*	0.888

Simult Tx	Configuration	LTE Band 66 (AWS) 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+3
Hotspot SAR	Back	0.843	0.341	0.243	**1.427**
	Front	0.756	0.341*	0.243*	1.340
	Top	-	0.341*	0.243*	0.584
	Bottom	1.214	-	-	1.214
	Right	-	-	-	0.000
	Left	0.523	0.341*	0.243*	1.107

Simult Tx	Configuration	LTE Band 25 (PCS) 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+2+3
Hotspot SAR	Back	0.982	0.341	0.243	1.323	**1.566**
	Front	0.618	0.341*	0.243*	0.959	1.202
	Top	-	0.341*	0.243*	0.341	0.584
	Bottom	1.296	-	-	1.296	1.296
	Right	-	-	-	0.000	0.000
	Left	0.380	0.341*	0.243*	0.721	0.964

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+2+3	1+2	1+3	2+3
Hotspot SAR	Back	1.180	0.341	0.243	**1.521**	See Note 1	0.01	0.01	0.02
	Front	0.559	0.341*	0.243*	0.900	1.143	N/A	N/A	N/A
	Top	-	0.341*	0.243*	0.341	0.584	N/A	N/A	N/A
	Bottom	1.300	-	-	1.300	1.300	N/A	N/A	N/A
	Right	0.048	-	-	0.048	0.048	N/A	N/A	N/A
	Left	0.063	0.341*	0.243*	0.404	0.647	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 41 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+3	1+2	1+3	2+3
Hotspot SAR	Back	1.108	0.341	0.243	See Note 1	0.01	0.01	0.02
	Front	0.296	0.341*	0.243*	0.880	N/A	N/A	N/A
	Top	-	0.341*	0.243*	0.584	N/A	N/A	N/A
	Bottom	1.087	-	-	**1.087**	N/A	N/A	N/A
	Right	0.051	-	-	0.051	N/A	N/A	N/A
	Left	0.061	0.341*	0.243*	0.645	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	GPRS 850	0.759	0.126	0.762	0.885	1.521
	GPRS 1900	1.009	0.126	0.762	1.135	See Table Below
	UMTS 850	0.503	0.126	0.762	0.629	1.265
	UMTS 1750	1.070	0.126	0.762	1.196	See Table Below
	UMTS 1900	1.032	0.126	0.762	1.158	See Table Below
	LTE Band 12	0.432	0.126	0.762	0.558	1.194
	LTE Band 13	0.520	0.126	0.762	0.646	1.282
	LTE Band 26 (Cell)	0.506	0.126	0.762	0.632	1.268
	LTE Band 5 (Cell)	0.545	0.126	0.762	0.671	1.307
	LTE Band 66 (AWS)	1.214	0.126	0.762	1.340	See Table Below
	LTE Band 25 (PCS)	1.296	0.126	0.762	1.422	See Table Below
	LTE Band 30	0.776	0.126	0.762	0.902	**1.538**
	LTE Band 7	1.300	0.126	0.762	1.426	See Table Below
	LTE Band 41	1.108	0.126	0.762	1.234	See Table Below

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.531	0.762	**1.293**
	Front	0.481	0.008	0.489
	Top	-	0.762*	0.762
	Bottom	1.009	-	1.009
	Right	-	-	0.000
	Left	0.242	0.201	0.443

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	0.787	0.762	**1.549**
	Front	0.627	0.008	0.635
	Top	-	0.762*	0.762
	Bottom	1.070	-	1.070
	Right	-	-	0.000
	Left	0.465	0.201	0.666

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	0.751	0.762	**1.513**
	Front	0.538	0.008	0.546
	Top	-	0.762*	0.762
	Bottom	1.032	-	1.032
	Right	-	-	0.000
	Left	0.304	0.201	0.505

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
Hotspot SAR	Back	0.843	0.762	See Note 1	0.02
	Front	0.756	0.008	0.764	N/A
	Top	-	0.762*	0.762	N/A
	Bottom	1.214	-	**1.214**	N/A
	Right	-	-	0.000	N/A
	Left	0.523	0.201	0.724	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) 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	0.982	0.762	See Note 1	0.02
	Front	0.618	0.008	0.626	N/A
	Top	-	0.762*	0.762	N/A
	Bottom	1.296	-	**1.296**	N/A
	Right	-	-	0.000	N/A
	Left	0.380	0.201	0.581	N/A

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	1.180	0.762	See Note 1	0.02
	Front	0.559	0.008	0.567	N/A
	Top	-	0.762*	0.762	N/A
	Bottom	1.300	-	**1.300**	N/A
	Right	0.048	-	0.048	N/A
	Left	0.063	0.201	0.264	N/A

Simult Tx	Configuration	LTE Band 41 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	1.108	0.762	See Note 1	0.02
	Front	0.296	0.008	0.304	N/A
	Top	-	0.762*	0.762	N/A
	Bottom	1.087	-	**1.087**	N/A
	Right	0.051	-	0.051	N/A
	Left	0.061	0.201	0.262	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	GPRS 850	0.759	0.854	See Table Below
	GPRS 1900	1.009	0.854	See Table Below
	UMTS 850	0.503	0.854	1.357
	UMTS 1750	1.070	0.854	See Table Below
	UMTS 1900	1.032	0.854	See Table Below
	LTE Band 12	0.432	0.854	1.286
	LTE Band 13	0.520	0.854	1.374
	LTE Band 26 (Cell)	0.506	0.854	1.360
	LTE Band 5 (Cell)	0.545	0.854	**1.399**
	LTE Band 66 (AWS)	1.214	0.854	See Table Below
	LTE Band 25 (PCS)	1.296	0.854	See Table Below
	LTE Band 30	0.776	0.854	See Table Below
	LTE Band 7	1.300	0.854	See Table Below
	LTE Band 41	1.108	0.854	See Table Below

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.759	0.854	See Note 1	0.02
	Front	0.585	0.033	0.618	N/A
	Top	-	0.854*	**0.854**	N/A
	Bottom	0.356	-	0.356	N/A
	Right	0.385	-	0.385	N/A
	Left	0.125	0.198	0.323	N/A

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.531	0.854	**1.385**
	Front	0.481	0.033	0.514
	Top	-	0.854*	0.854
	Bottom	1.009	-	1.009
	Right	-	-	0.000
	Left	0.242	0.198	0.440

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
Hotspot SAR	Back	0.787	0.854	See Note 1	0.02
	Front	0.627	0.033	0.660	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.070	-	**1.070**	N/A
	Right	-	-	0.000	N/A
	Left	0.465	0.198	0.663	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
Hotspot SAR	Back	0.751	0.854	See Note 1	0.02
	Front	0.538	0.033	0.571	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.032	-	**1.032**	N/A
	Right	-	-	0.000	N/A
	Left	0.304	0.198	0.502	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
Hotspot SAR	Back	0.843	0.854	See Note 1	0.02
	Front	0.756	0.033	0.789	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.214	-	**1.214**	N/A
	Right	-	-	0.000	N/A
	Left	0.523	0.198	0.721	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
Hotspot SAR	Back	0.982	0.854	See Note 1	0.02
	Front	0.618	0.033	0.651	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.296	-	**1.296**	N/A
	Right	-	-	0.000	N/A
	Left	0.380	0.198	0.578	N/A

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.706	0.854	**1.560**
	Front	0.288	0.033	0.321
	Top	-	0.854*	0.854
	Bottom	0.776	-	0.776
	Right	0.018	-	0.018
	Left	0.063	0.198	0.261

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	1.180	0.854	See Note 1	0.03
	Front	0.559	0.033	0.592	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.300	-	**1.300**	N/A
	Right	0.048	-	0.048	N/A
	Left	0.063	0.198	0.261	N/A

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	1.108	0.854	See Note 1	0.02
	Front	0.296	0.033	0.329	N/A
	Top	-	0.854*	0.854	N/A
	Bottom	1.087	-	**1.087**	N/A
	Right	0.051	-	0.051	N/A
	Left	0.061	0.198	0.259	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	GPRS 850	0.759	0.341	0.490	**1.590**
	GPRS 1900	1.009	0.341	0.490	See Table Below
	UMTS 850	0.503	0.341	0.490	1.334
	UMTS 1750	1.070	0.341	0.490	See Table Below
	UMTS 1900	1.032	0.341	0.490	See Table Below
	LTE Band 12	0.432	0.341	0.490	1.263
	LTE Band 13	0.520	0.341	0.490	1.351
	LTE Band 26 (Cell)	0.506	0.341	0.490	1.337
	LTE Band 5 (Cell)	0.545	0.341	0.490	1.376
	LTE Band 66 (AWS)	1.214	0.341	0.490	See Table Below
	LTE Band 25 (PCS)	1.296	0.341	0.490	See Table Below
	LTE Band 30	0.776	0.341	0.490	See Table Below
	LTE Band 7	1.300	0.341	0.490	See Table Below
	LTE Band 41	1.108	0.341	0.490	See Table Below

Simult Tx	Configuration	GPRS 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	0.531	0.341	0.490	**1.362**
	Front	0.481	0.341*	0.490*	1.312
	Top	-	0.341*	0.490*	0.831
	Bottom	1.009	-	-	1.009
	Right	-	-	-	0.000
	Left	0.242	0.341*	0.116	0.699

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)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	0.787	0.341	0.490	See Note 1	0.01	0.01	0.02
	Front	0.627	0.341*	0.490*	**1.458**	N/A	N/A	N/A
	Top	-	0.341*	0.490*	0.831	N/A	N/A	N/A
	Bottom	1.070	-	-	1.070	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.465	0.341*	0.116	0.922	N/A	N/A	N/A

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	0.751	0.341	0.490	**1.582**
	Front	0.538	0.341*	0.490*	1.369
	Top	-	0.341*	0.490*	0.831
	Bottom	1.032	-	-	1.032
	Right	-	-	-	0.000
	Left	0.304	0.341*	0.116	0.761

Simult Tx	Configuration	LTE Band 66 (AWS) 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	0.843	0.341	0.490	See Note 1	0.01	0.01	0.02
	Front	0.756	0.341*	0.490*	**1.587**	N/A	N/A	N/A
	Top	-	0.341*	0.490*	0.831	N/A	N/A	N/A
	Bottom	1.214	-	-	1.214	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.523	0.341*	0.116	0.980	N/A	N/A	N/A

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)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	0.982	0.341	0.490	See Note 1	0.01	0.01	0.02
	Front	0.618	0.341*	0.490*	1.449	N/A	N/A	N/A
	Top	-	0.341*	0.490*	0.831	N/A	N/A	N/A
	Bottom	1.296	-	-	1.296	N/A	N/A	N/A
	Right	-	-	-	0.000	N/A	N/A	N/A
	Left	0.380	0.341*	0.116	0.837	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 30 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	0.706	0.341	0.490	**1.537**
	Front	0.288	0.341*	0.490*	1.119
	Top	-	0.341*	0.490*	0.831
	Bottom	0.776	-	-	0.776
	Right	0.018	-	-	0.018
	Left	0.063	0.341*	0.116	0.520

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	1.180	0.341	0.490	See Note 1	0.01	0.02	0.02
	Front	0.559	0.341*	0.490*	**1.390**	N/A	N/A	N/A
	Top	-	0.341*	0.490*	0.831	N/A	N/A	N/A
	Bottom	1.300	-	-	1.300	N/A	N/A	N/A
	Right	0.048	-	-	0.048	N/A	N/A	N/A
	Left	0.063	0.341*	0.116	0.520	N/A	N/A	N/A

Simult Tx	Configuration	LTE Band 41 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	1.108	0.341	0.490	See Note 1	0.01	0.02	0.02
	Front	0.296	0.341*	0.490*	**1.127**	N/A	N/A	N/A
	Top	-	0.341*	0.490*	0.831	N/A	N/A	N/A
	Bottom	1.087	-	-	1.087	N/A	N/A	N/A
	Right	0.051	-	-	0.051	N/A	N/A	N/A
	Left	0.061	0.341*	0.116	0.518	N/A	N/A	N/A

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	GPRS 850	0.759	0.052	0.811
	GPRS 1900	1.009	0.052	1.061
	UMTS 850	0.503	0.052	0.555
	UMTS 1750	1.070	0.052	1.122
	UMTS 1900	1.032	0.052	1.084
	LTE Band 12	0.432	0.052	0.484
	LTE Band 13	0.520	0.052	0.572
	LTE Band 26 (Cell)	0.506	0.052	0.558
	LTE Band 5 (Cell)	0.545	0.052	0.597
	LTE Band 66 (AWS)	1.214	0.052	1.266
	LTE Band 25 (PCS)	1.296	0.052	1.348
	LTE Band 30	0.776	0.052	0.828
	LTE Band 7	1.300	0.052	**1.352**
	LTE Band 41	1.108	0.052	1.160

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)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	UMTS 1750	2.779	0.403	3.182
	UMTS 1900	2.434	0.403	2.837
	LTE Band 66 (AWS)	3.198	0.403	**3.601**
	LTE Band 25 (PCS)	3.126	0.403	3.529
	LTE Band 7	2.830	0.403	3.233

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	1.809	2.614	See Note 1	0.08
	Front	1.718	0.082	1.800	N/A
	Top	-	2.614*	2.614	N/A
	Bottom	2.779	-	**2.779**	N/A
	Left	1.187	0.477	1.664	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	1.681	2.614	See Note 1	0.07
	Front	1.785	0.082	1.867	N/A
	Top	-	2.614*	**2.614**	N/A
	Bottom	2.434	-	2.434	N/A
	Left	0.707	0.477	1.184	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	1.857	2.614	See Note 1	0.07
	Front	1.995	0.082	2.077	N/A
	Top	-	2.614*	2.614	N/A
	Bottom	3.198	-	**3.198**	N/A
	Left	1.250	0.477	1.727	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) 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	1.957	2.614	See Note 1	0.08
	Front	2.280	0.082	2.362	N/A
	Top	-	2.614*	2.614	N/A
	Bottom	3.126	-	**3.126**	N/A
	Left	1.170	0.477	1.647	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	-	2.614	2.614
	Front	-	0.082	0.082
	Top	-	2.614*	2.614
	Bottom	2.830	-	**2.830**
	Left	-	0.477	0.477

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

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	1.809	2.742	See Note 1	0.08
	Front	1.718	0.334	2.052	N/A
	Top	-	2.742*	2.742	N/A
	Bottom	2.779	-	**2.779**	N/A
	Left	1.187	0.481	1.668	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	1.681	2.742	See Note 1	0.07
	Front	1.785	0.334	2.119	N/A
	Top	-	2.742*	**2.742**	N/A
	Bottom	2.434	-	2.434	N/A
	Left	0.707	0.481	1.188	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	1.857	2.742	See Note 1	0.07
	Front	1.995	0.334	2.329	N/A
	Top	-	2.742*	2.742	N/A
	Bottom	3.198	-	**3.198**	N/A
	Left	1.250	0.481	1.731	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	1.957	2.742	See Note 1	0.08
	Front	2.280	0.334	2.614	N/A
	Top	-	2.742*	2.742	N/A
	Bottom	3.126	-	**3.126**	N/A
	Left	1.170	0.481	1.651	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	-	2.742	2.742
	Front	-	0.334	0.334
	Top	-	2.742*	2.742
	Bottom	2.830	-	**2.830**
	Left	-	0.481	0.481

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.
2. LTE Band 7 bottom edge hotspot 1g SAR was > 1.2 W/kg, therefore phablet SAR was tested for LTE Band 7 bottom edge per FCC KDB 648474 D04.

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

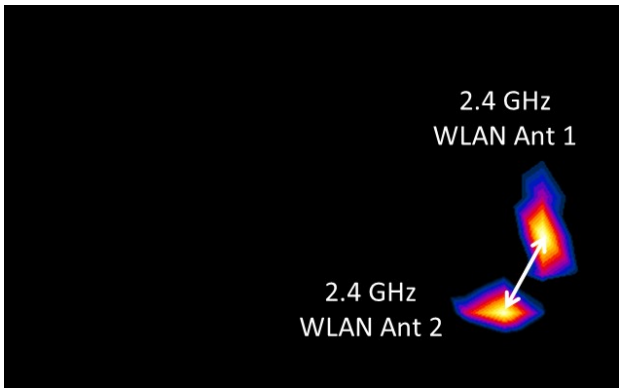
Table 12-17
Peak SAR Locations for Body-Worn Back Side

Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-8.00	72.00
2.4 GHz WLAN Ant 2	8.60	58.80
5 GHz WLAN Ant 2	13.00	44.00
5 GHz WLAN Ant 2 at 14 dBm	13.00	44.00
5 GHz WLAN MIMO	13.00	45.00
GSM 850	-21.00	-81.50
GPRS 850	-14.50	-72.00
GSM 1900	-14.00	-83.00
GPRS 1900	-14.00	-81.50
UMTS 850	-22.50	-81.50
UMTS 1750	-9.00	-80.00
UMTS 1900	-26.50	-73.50
LTE Band 12	-13.00	-80.00
LTE Band 13	-6.50	-72.00
LTE Band 26 (Cell)	-13.00	-73.50
LTE Band 5 (Cell)	-11.50	-81.50
LTE Band 66 (AWS)	-7.50	-80.00
LTE Band 25 (PCS)	-14.00	-81.50
LTE Band 30	-20.00	-67.20
LTE Band 7	-17.80	-65.40
LTE Band 41	-21.70	-64.80

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	0.341	0.243	0.584	21.21	0.02	1
LTE Band 7	2.4 GHz WLAN Ant 1	1.180	0.341	1.521	137.75	0.01	2
LTE Band 7	2.4 GHz WLAN Ant 2	1.180	0.243	1.423	126.97	0.01	3
LTE Band 41	2.4 GHz WLAN Ant 1	1.108	0.341	1.449	137.48	0.01	4
LTE Band 41	2.4 GHz WLAN Ant 2	1.108	0.243	1.351	127.26	0.01	5
GPRS 850	5 GHz WLAN Ant 2	0.759	1.129	1.888	119.22	0.02	6
GPRS 1900	5 GHz WLAN Ant 2	0.531	1.129	1.660	128.37	0.02	7
UMTS 850	5 GHz WLAN Ant 2	0.503	1.129	1.632	130.42	0.02	8
UMTS 1750	5 GHz WLAN Ant 2	0.787	1.129	1.916	125.94	0.02	9
UMTS 1900	5 GHz WLAN Ant 2	0.751	1.129	1.880	123.96	0.02	10
LTE Band 13	5 GHz WLAN Ant 2	0.520	1.129	1.649	117.63	0.02	11
LTE Band 26 (Cell)	5 GHz WLAN Ant 2	0.506	1.129	1.635	120.34	0.02	12
LTE Band 5 (Cell)	5 GHz WLAN Ant 2	0.545	1.129	1.674	127.87	0.02	13
LTE Band 66 (AWS)	5 GHz WLAN Ant 2	0.843	1.129	1.972	125.68	0.02	14
LTE Band 25 (PCS)	5 GHz WLAN Ant 2	0.982	1.129	2.111	128.37	0.02	15
LTE Band 30	5 GHz WLAN Ant 2	0.706	1.129	1.835	115.99	0.02	16
LTE Band 7	5 GHz WLAN Ant 2	1.180	1.129	2.309	113.65	0.03	17
LTE Band 41	5 GHz WLAN Ant 2	1.108	1.129	2.237	114.20	0.03	18
GSM 850	5 GHz WLAN MIMO	0.384	1.269	1.653	130.99	0.02	19
GPRS 850	5 GHz WLAN MIMO	0.759	1.269	2.028	120.19	0.02	20
GSM 1900	5 GHz WLAN MIMO	0.388	1.269	1.657	130.82	0.02	21
GPRS 1900	5 GHz WLAN MIMO	0.531	1.269	1.800	129.35	0.02	22
UMTS 850	5 GHz WLAN MIMO	0.503	1.269	1.772	131.39	0.02	23
UMTS 1750	5 GHz WLAN MIMO	0.787	1.269	2.056	126.92	0.02	24
UMTS 1900	5 GHz WLAN MIMO	0.751	1.269	2.020	124.91	0.02	25
LTE Band 12	5 GHz WLAN MIMO	0.432	1.269	1.701	127.68	0.02	26
LTE Band 13	5 GHz WLAN MIMO	0.520	1.269	1.789	118.61	0.02	27
LTE Band 26 (Cell)	5 GHz WLAN MIMO	0.506	1.269	1.775	121.32	0.02	28
LTE Band 5 (Cell)	5 GHz WLAN MIMO	0.545	1.269	1.814	128.85	0.02	29
LTE Band 66 (AWS)	5 GHz WLAN MIMO	0.843	1.269	2.112	126.67	0.02	30
LTE Band 25 (PCS)	5 GHz WLAN MIMO	0.982	1.269	2.251	129.35	0.03	31
LTE Band 30	5 GHz WLAN MIMO	0.706	1.269	1.975	116.95	0.02	32
LTE Band 7	5 GHz WLAN MIMO	1.180	1.269	2.449	114.62	0.03	33
LTE Band 41	5 GHz WLAN MIMO	1.108	1.269	2.377	115.15	0.03	34
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2 at 14 dBm	0.341	0.571	0.912	35.00	0.02	35
GPRS 850	2.4 GHz WLAN Ant 1	0.759	0.341	1.100	144.15	0.01	36
GPRS 850	5 GHz WLAN Ant 2 at 14 dBm	0.759	0.571	1.330	119.22	0.01	37
UMTS 1750	2.4 GHz WLAN Ant 1	0.787	0.341	1.128	152.00	0.01	38
UMTS 1750	5 GHz WLAN Ant 2 at 14 dBm	0.787	0.571	1.358	125.94	0.01	39
UMTS 1900	2.4 GHz WLAN Ant 1	0.751	0.341	1.092	146.67	0.01	40
UMTS 1900	5 GHz WLAN Ant 2 at 14 dBm	0.751	0.571	1.322	123.96	0.01	41
LTE Band 66 (AWS)	2.4 GHz WLAN Ant 1	0.843	0.341	1.184	152.00	0.01	42
LTE Band 66 (AWS)	5 GHz WLAN Ant 2 at 14 dBm	0.843	0.571	1.414	125.68	0.01	43
LTE Band 25 (PCS)	2.4 GHz WLAN Ant 1	0.982	0.341	1.323	153.62	0.01	44
LTE Band 25 (PCS)	5 GHz WLAN Ant 2 at 14 dBm	0.982	0.571	1.553	128.37	0.02	45
LTE Band 30	2.4 GHz WLAN Ant 1	0.706	0.341	1.047	139.72	0.01	46
LTE Band 30	5 GHz WLAN Ant 2 at 14 dBm	0.706	0.571	1.277	115.99	0.01	47
LTE Band 7	5 GHz WLAN Ant 2 at 14 dBm	1.180	0.571	1.751	113.65	0.02	48
LTE Band 41	5 GHz WLAN Ant 2 at 14 dBm	1.108	0.571	1.679	114.20	0.02	49

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



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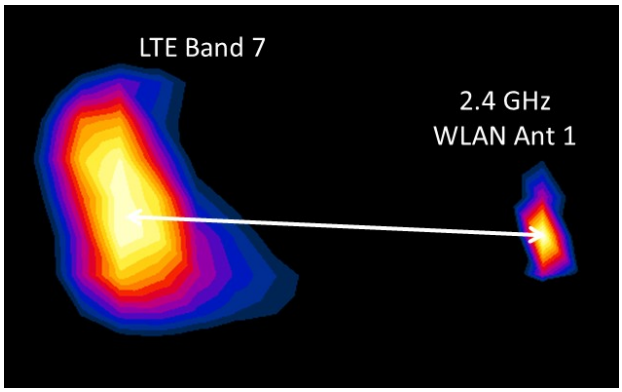

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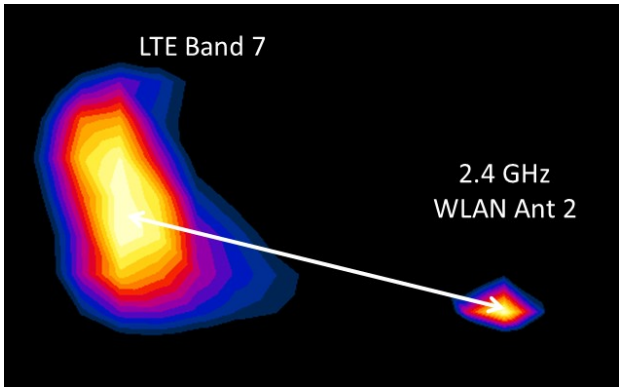

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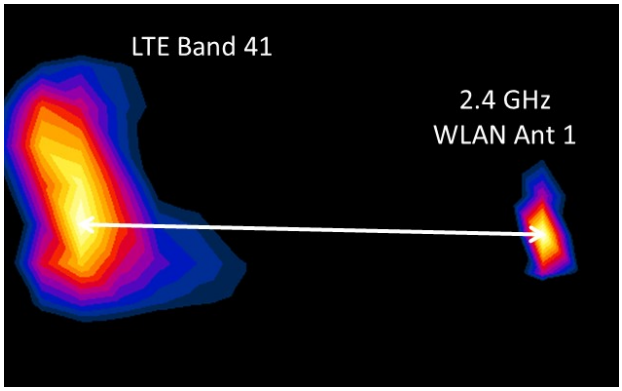

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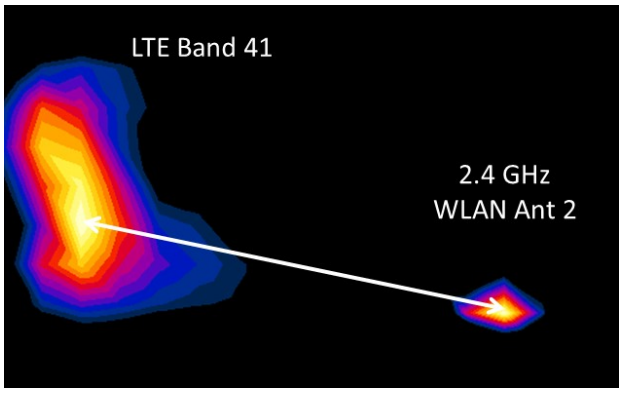

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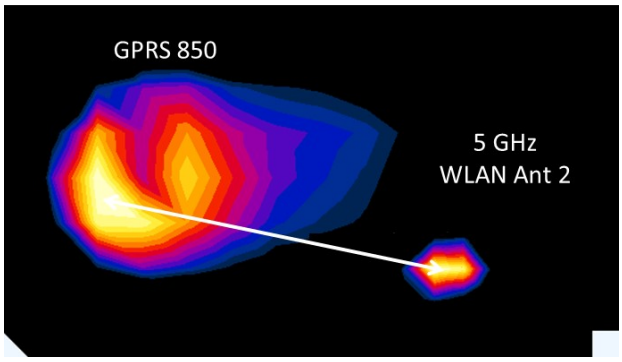

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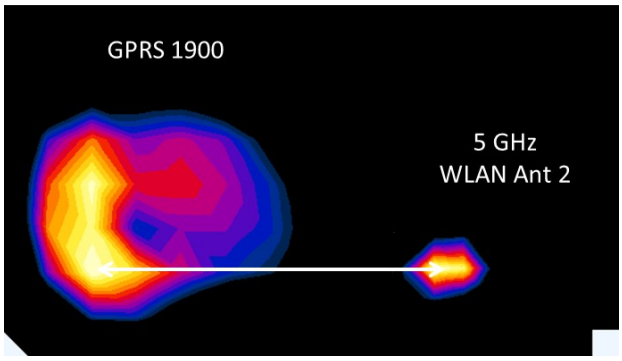

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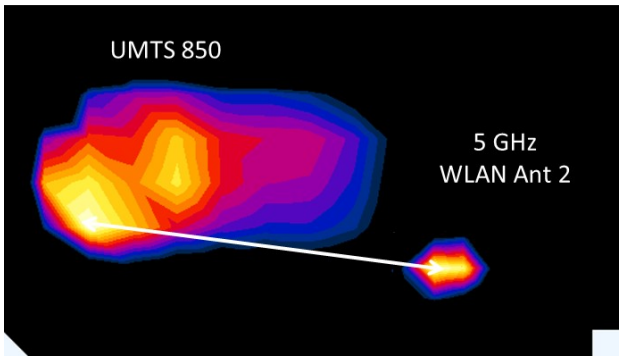

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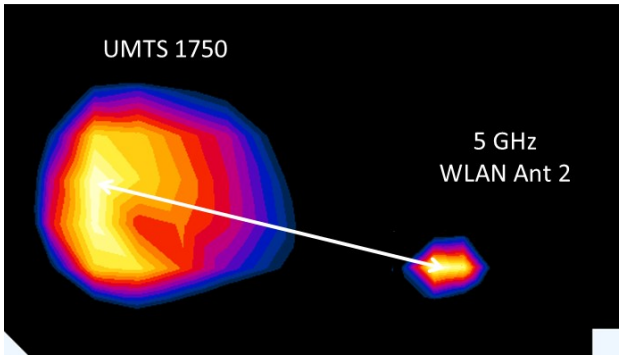

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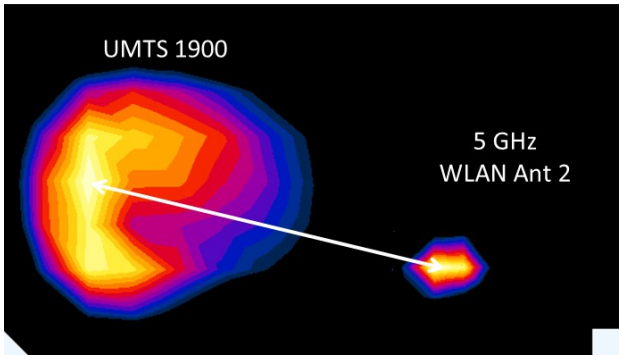

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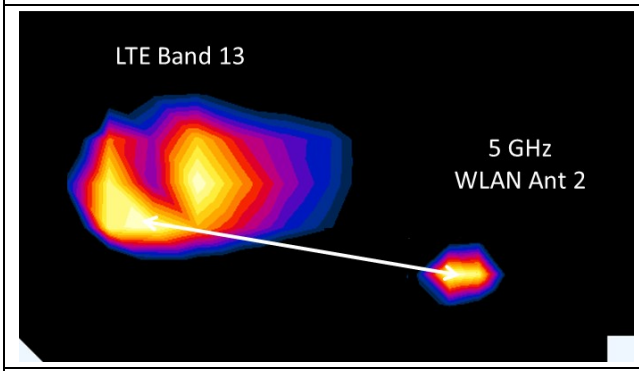

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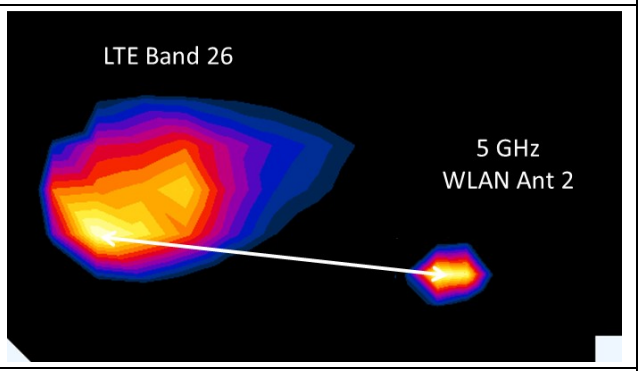

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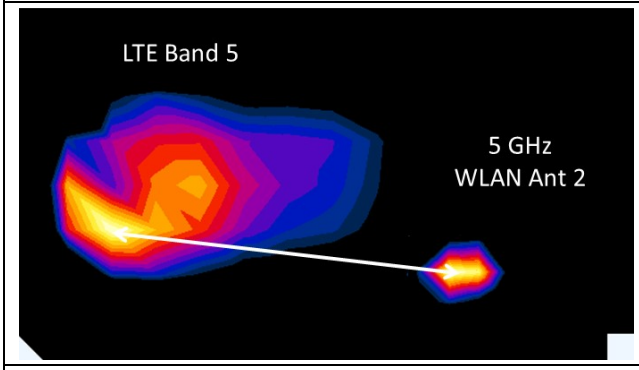

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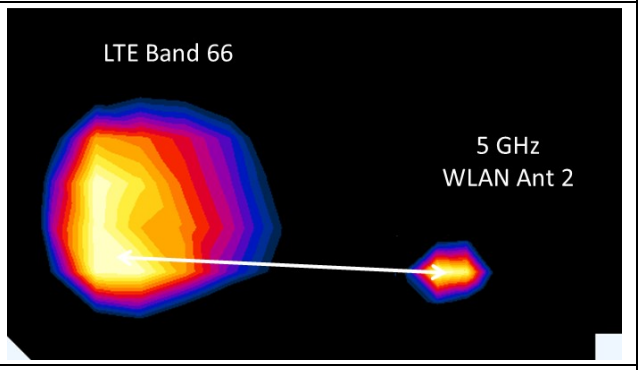

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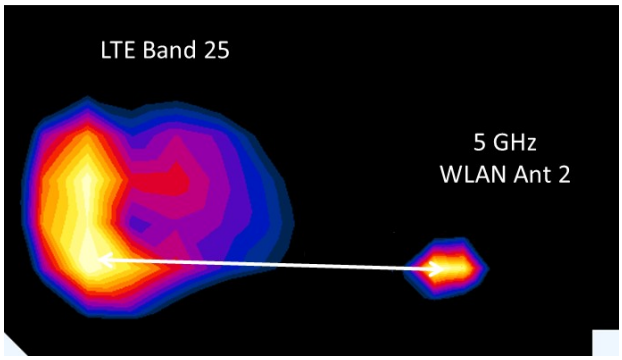

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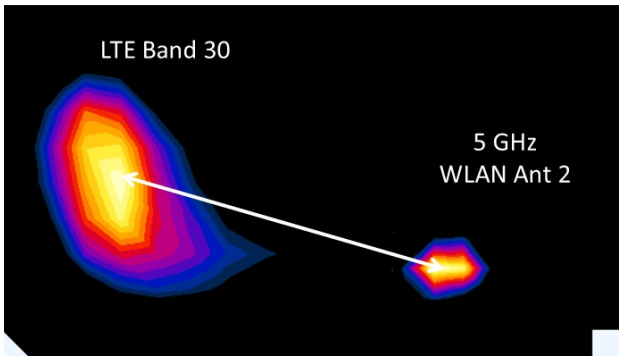

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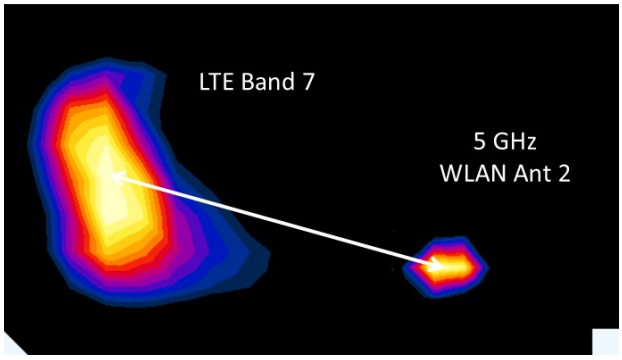

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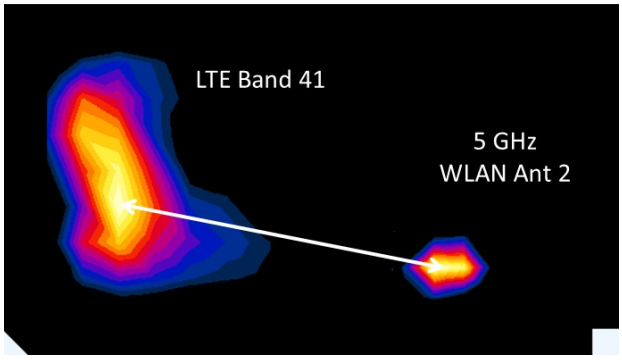

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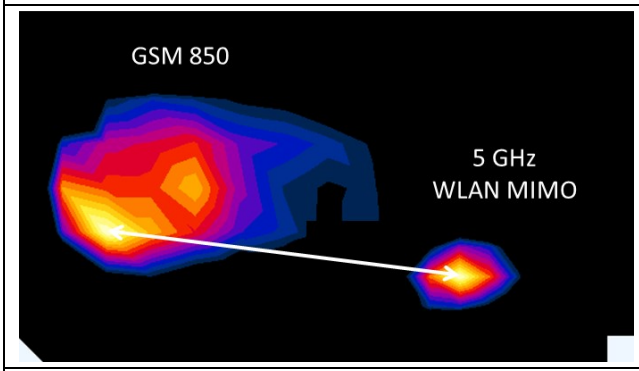

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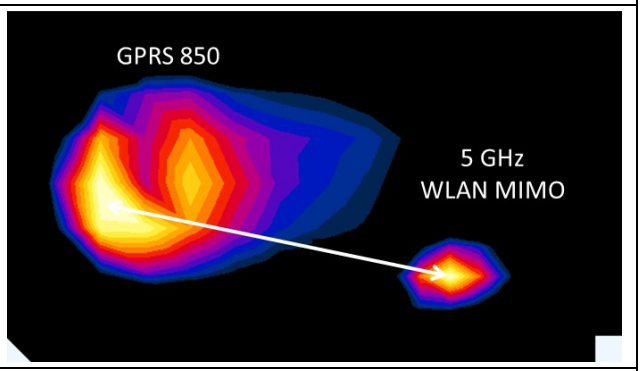

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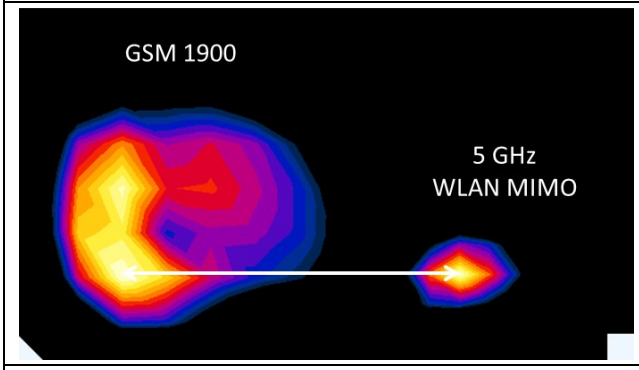

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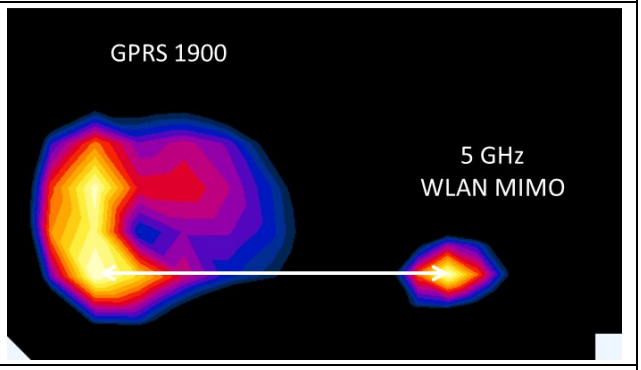

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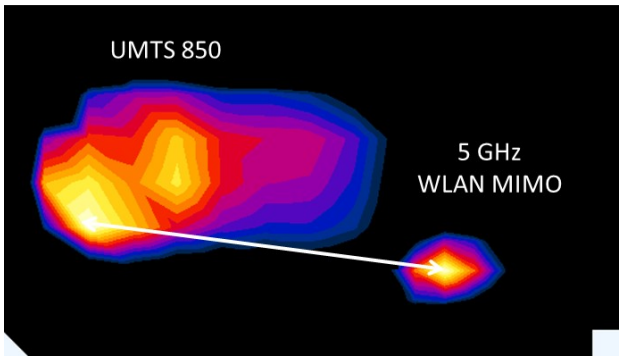

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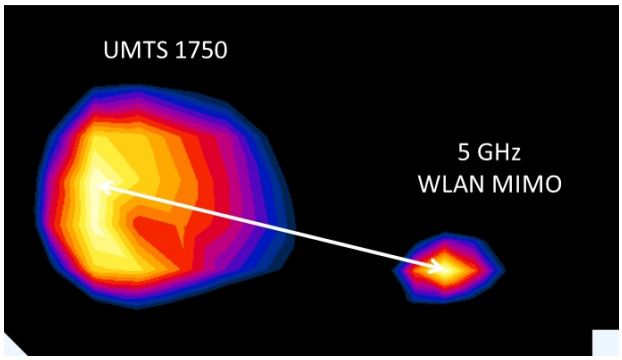

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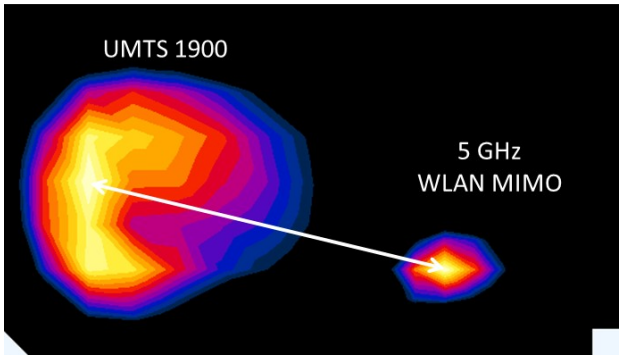

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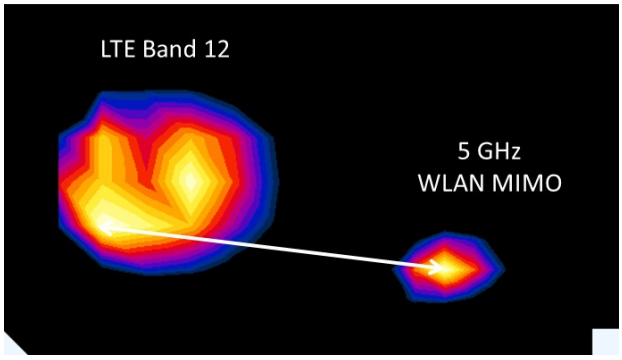

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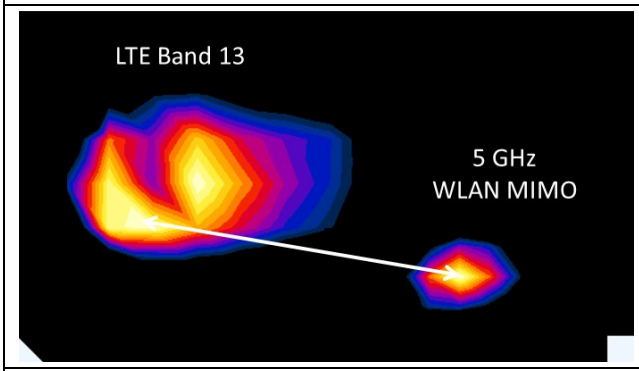

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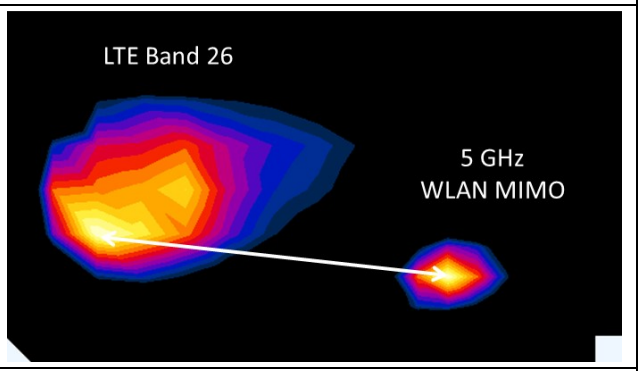

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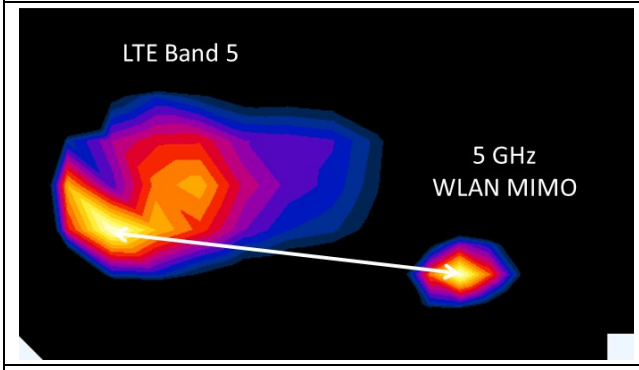

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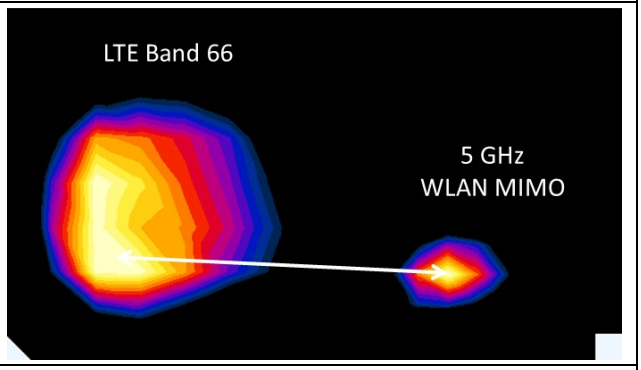

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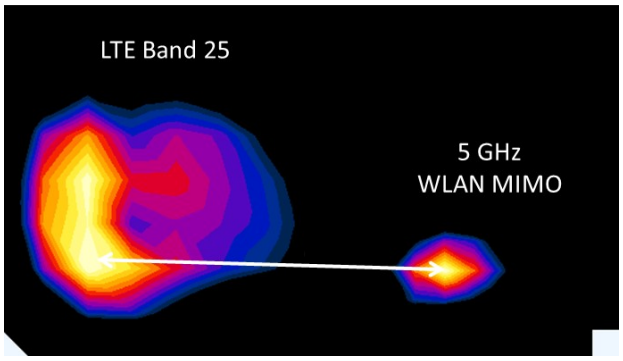

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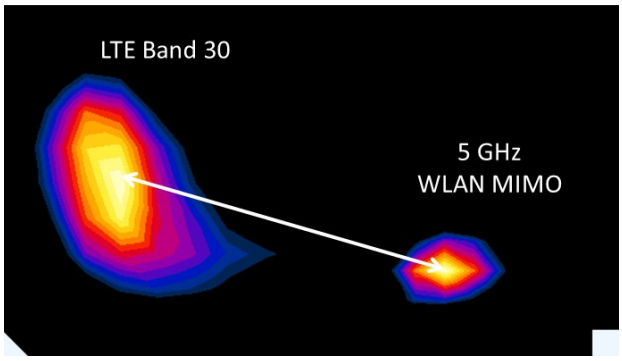

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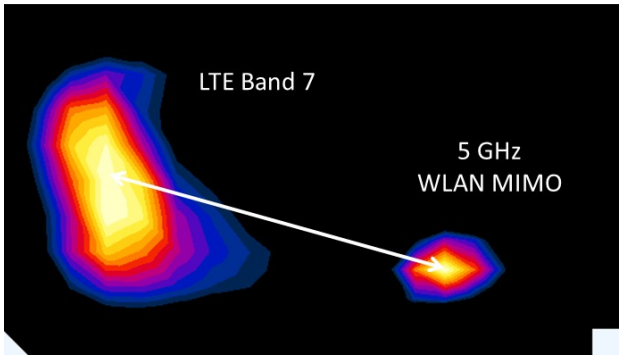

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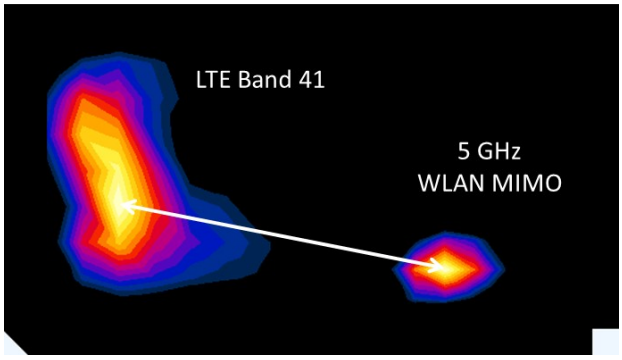

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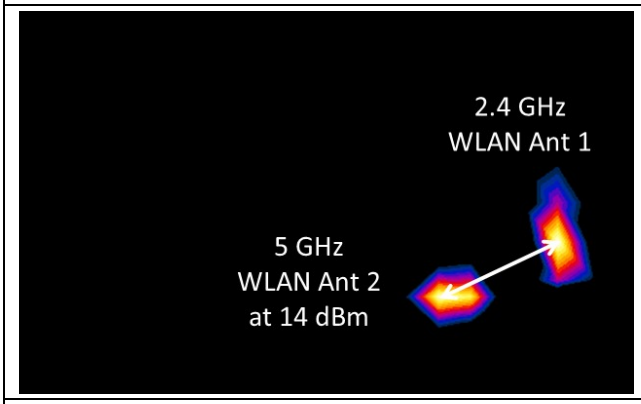

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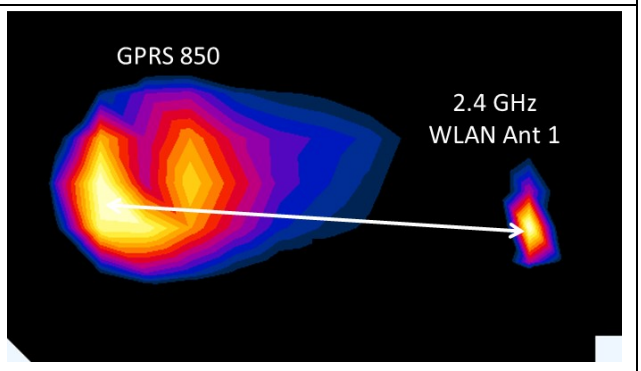

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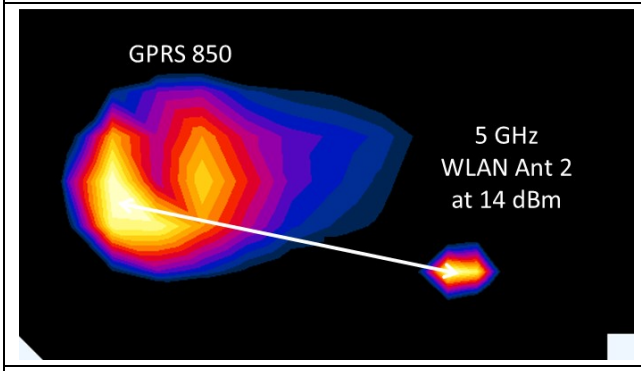

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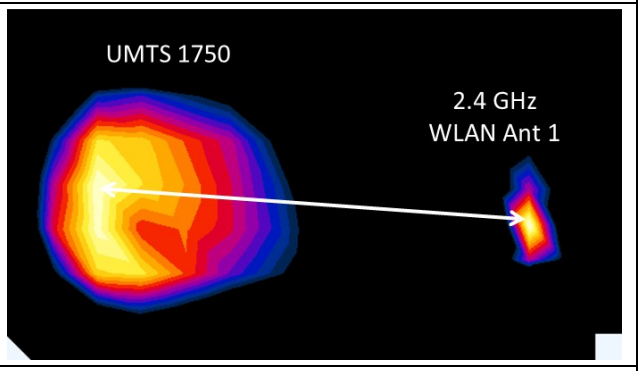

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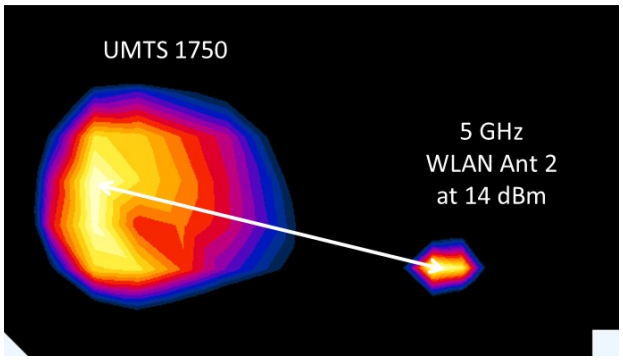

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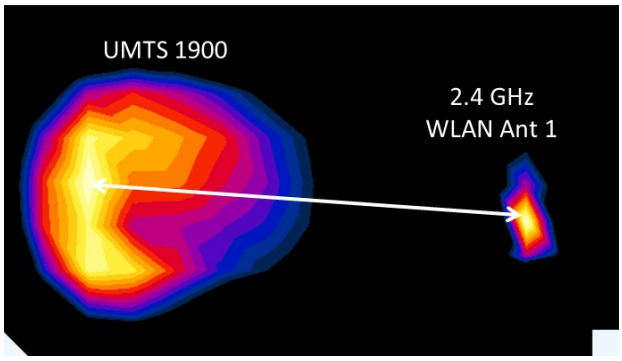

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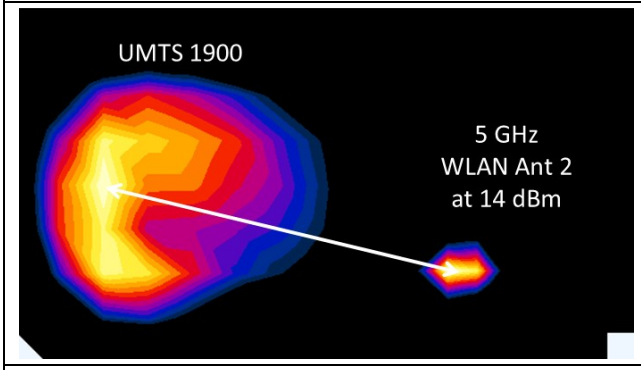

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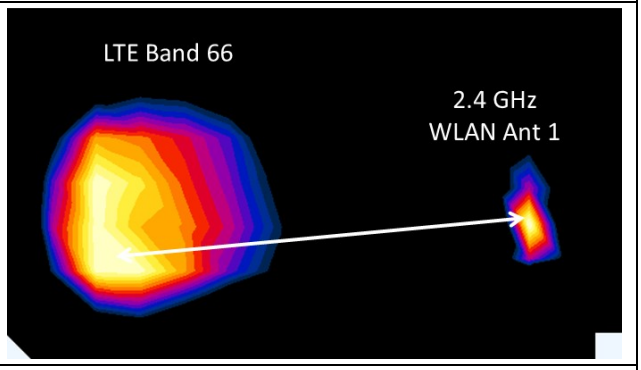

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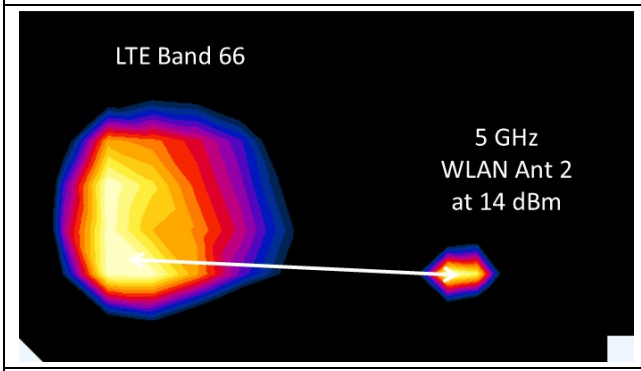

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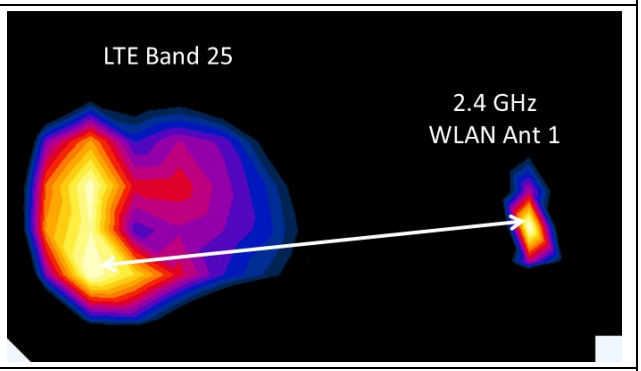

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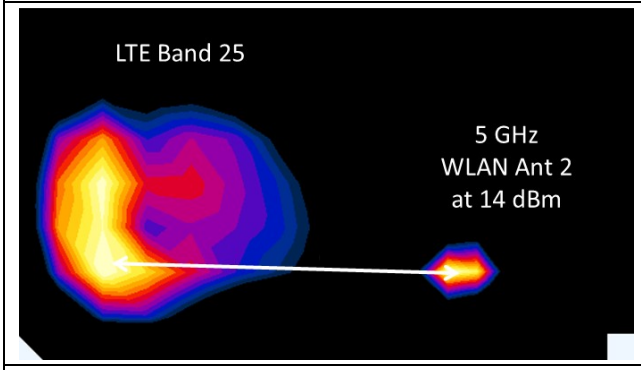

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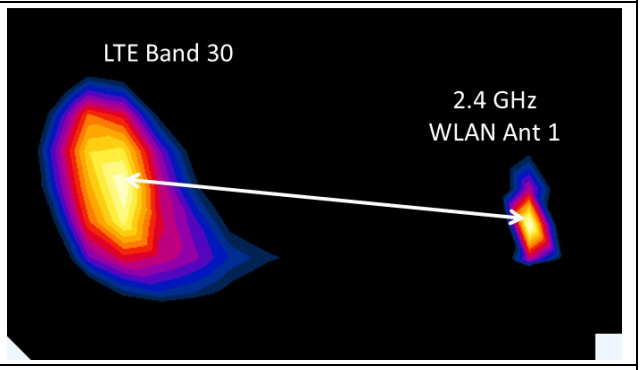

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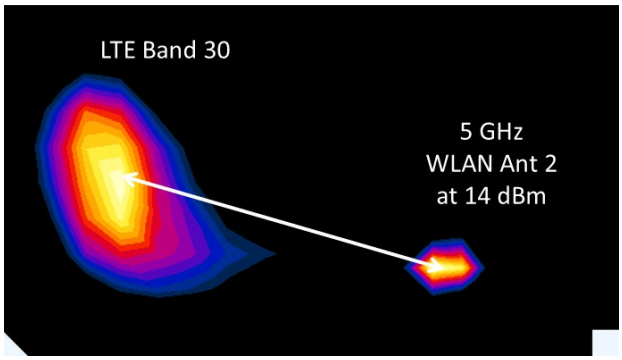

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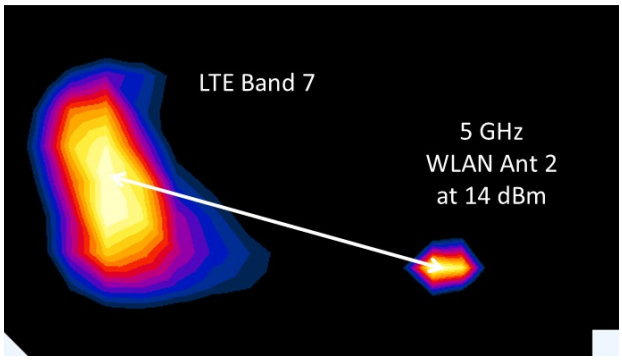

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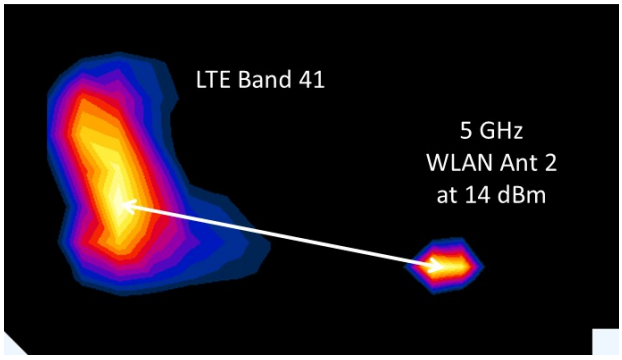

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12.7.2 Hotspot Back Side SPLSR Evaluation and Analysis

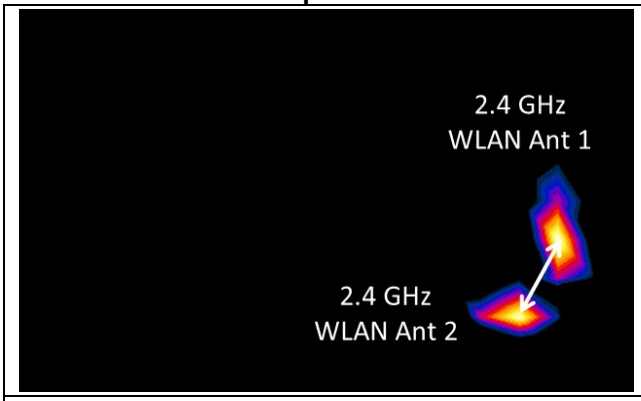
Table 12-20
Peak SAR Locations for Hotspot Back Side

Mode/Band	x (mm)	y (mm)
2.4 GHz WLAN Ant 1	-8.00	72.00
2.4 GHz WLAN Ant 2	8.60	58.80
5 GHz WLAN Ant 2	13.00	44.00
5 GHz WLAN Ant 2 at 14 dBm	12.00	46.00
5 GHz WLAN MIMO	12.00	45.00
GPRS 850	-14.50	-72.00
UMTS 1750	-9.00	-80.00
UMTS 1900	-26.50	-73.50
LTE Band 66 (AWS)	-7.50	-80.00
LTE Band 25 (PCS)	-14.00	-81.50
LTE Band 7	-17.80	-65.40
LTE Band 41	-21.70	-64.80

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	0.341	0.243	0.584	21.21	0.02	1
LTE Band 7	2.4 GHz WLAN Ant 1	1.180	0.341	1.521	137.75	0.01	2
LTE Band 7	2.4 GHz WLAN Ant 2	1.180	0.243	1.423	126.97	0.01	3
LTE Band 41	2.4 GHz WLAN Ant 1	1.108	0.341	1.449	137.48	0.01	4
LTE Band 41	2.4 GHz WLAN Ant 2	1.108	0.243	1.351	127.26	0.01	5
LTE Band 66 (AWS)	5 GHz WLAN Ant 2	0.843	0.762	1.605	125.68	0.02	6
LTE Band 25 (PCS)	5 GHz WLAN Ant 2	0.982	0.762	1.744	128.37	0.02	7
LTE Band 7	5 GHz WLAN Ant 2	1.180	0.762	1.942	113.65	0.02	8
LTE Band 41	5 GHz WLAN Ant 2	1.108	0.762	1.870	114.20	0.02	9
GPRS 850	5 GHz WLAN MIMO	0.759	0.854	1.613	119.96	0.02	10
UMTS 1750	5 GHz WLAN MIMO	0.787	0.854	1.641	126.75	0.02	11
UMTS 1900	5 GHz WLAN MIMO	0.751	0.854	1.605	124.60	0.02	12
LTE Band 66 (AWS)	5 GHz WLAN MIMO	0.843	0.854	1.697	126.51	0.02	13
LTE Band 25 (PCS)	5 GHz WLAN MIMO	0.982	0.854	1.836	129.14	0.02	14
LTE Band 7	5 GHz WLAN MIMO	1.180	0.854	2.034	114.35	0.03	15
LTE Band 41	5 GHz WLAN MIMO	1.108	0.854	1.962	114.86	0.02	16
2.4 GHz WLAN Ant 1	5 GHz WLAN Ant 2 at 14 dBm	0.341	0.490	0.831	32.80	0.02	17
UMTS 1750	2.4 GHz WLAN Ant 1	0.787	0.341	1.128	152.00	0.01	18
UMTS 1750	5 GHz WLAN Ant 2 at 14 dBm	0.787	0.490	1.277	127.74	0.01	19
LTE Band 66 (AWS)	2.4 GHz WLAN Ant 1	0.843	0.341	1.184	152.00	0.01	20
LTE Band 66 (AWS)	5 GHz WLAN Ant 2 at 14 dBm	0.843	0.490	1.333	127.50	0.01	21
LTE Band 25 (PCS)	2.4 GHz WLAN Ant 1	0.982	0.341	1.323	153.62	0.01	22
LTE Band 25 (PCS)	5 GHz WLAN Ant 2 at 14 dBm	0.982	0.490	1.472	130.12	0.01	23
LTE Band 7	5 GHz WLAN Ant 2 at 14 dBm	1.180	0.490	1.670	115.32	0.02	24
LTE Band 41	5 GHz WLAN Ant 2 at 14 dBm	1.108	0.490	1.598	115.81	0.02	25

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



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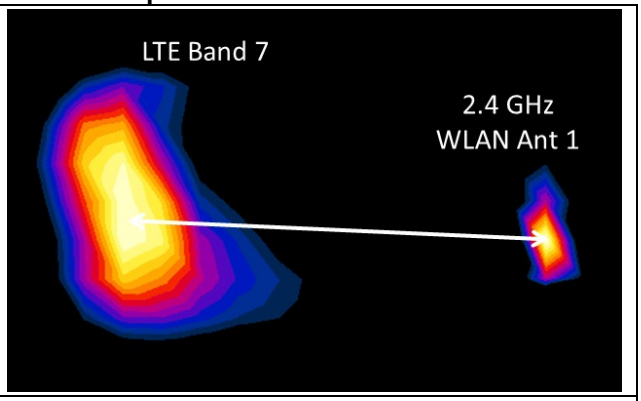

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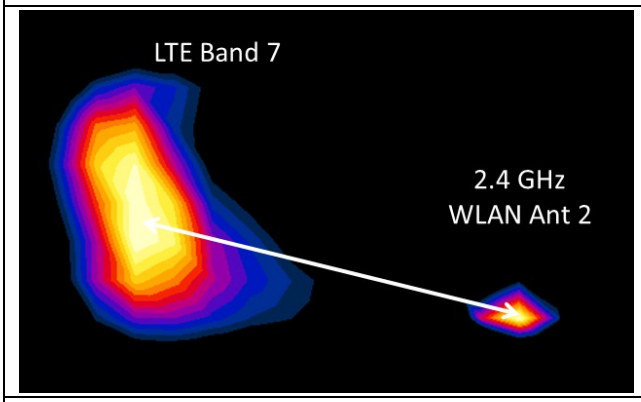

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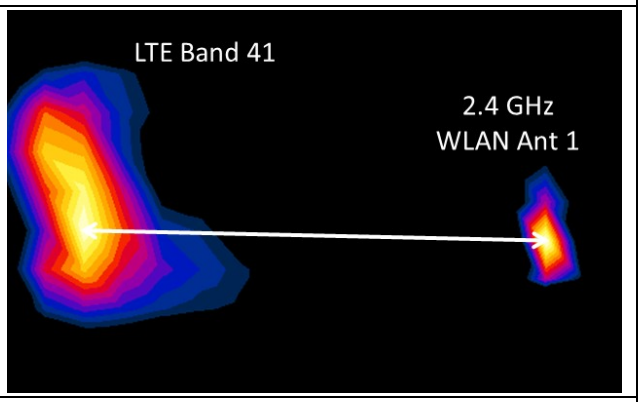

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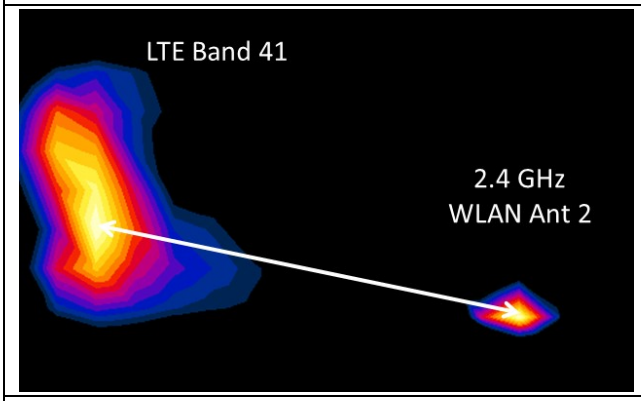

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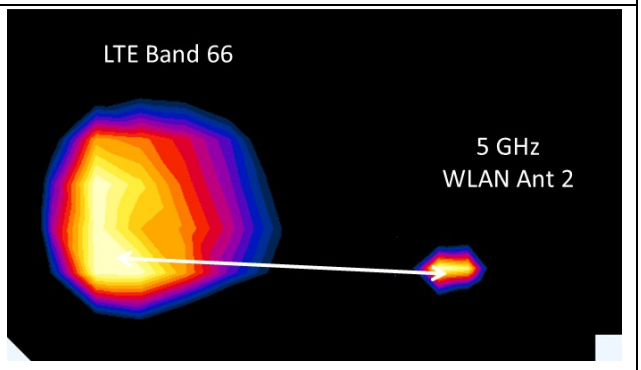

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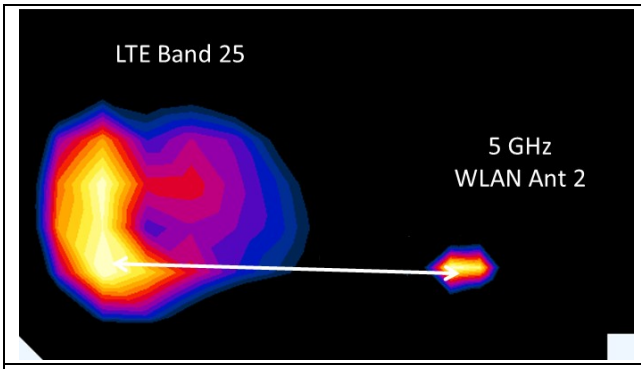

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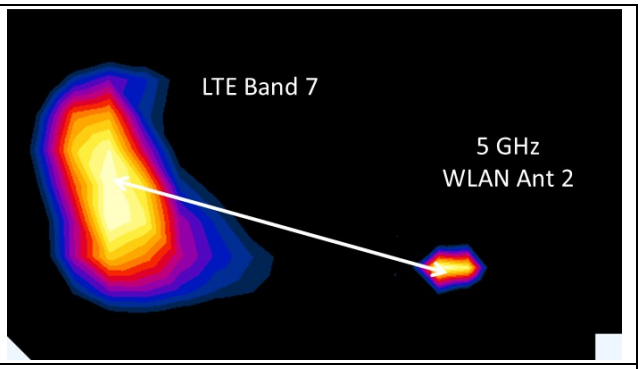

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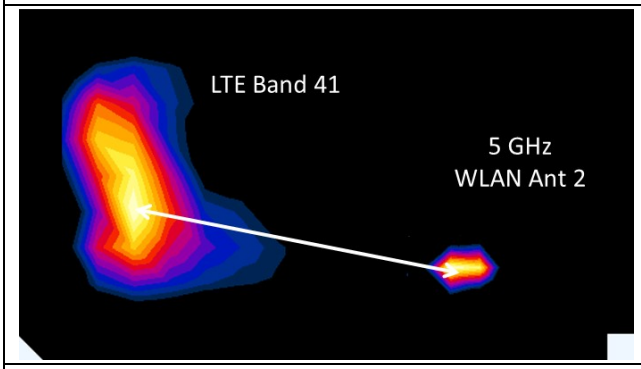

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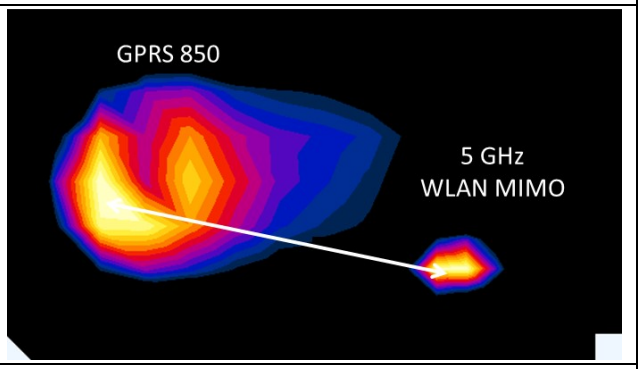

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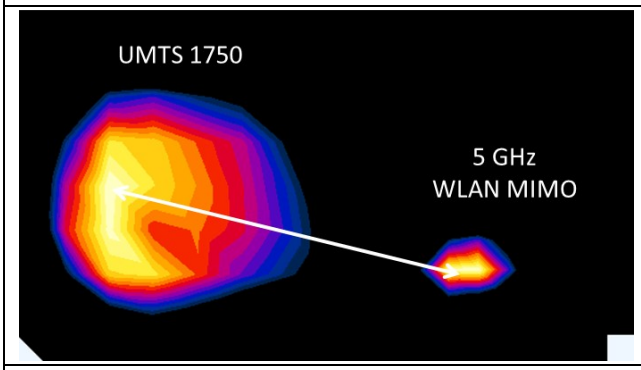

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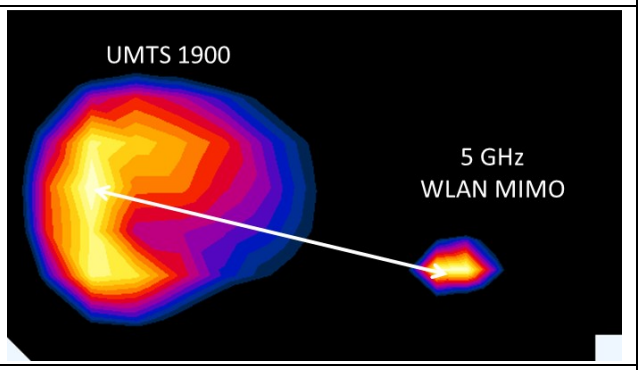

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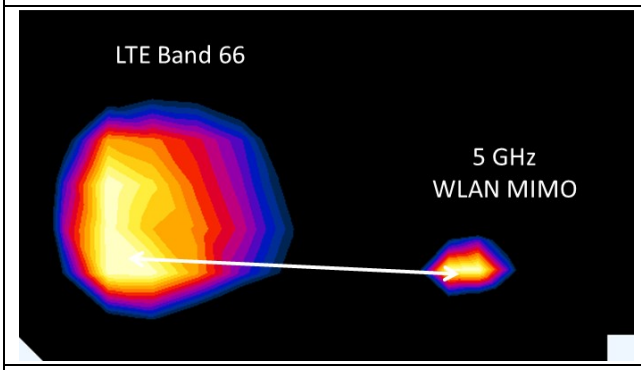

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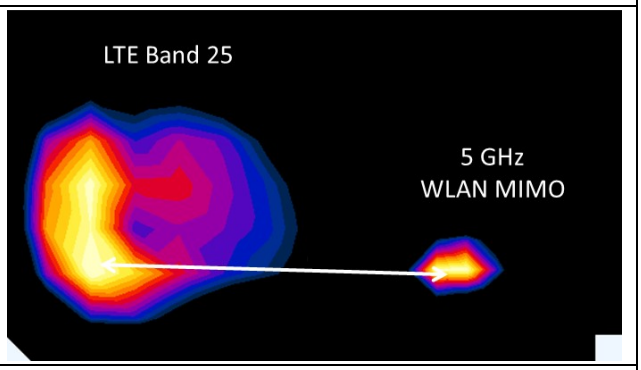

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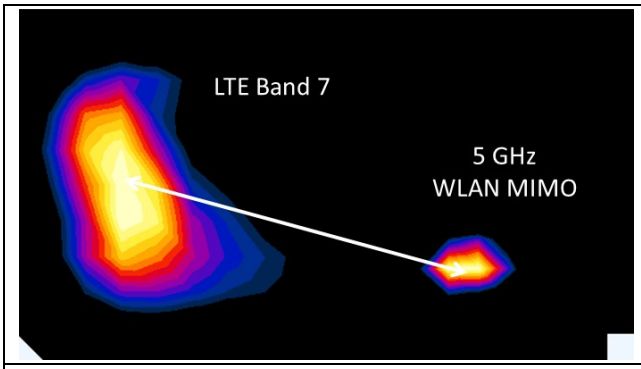

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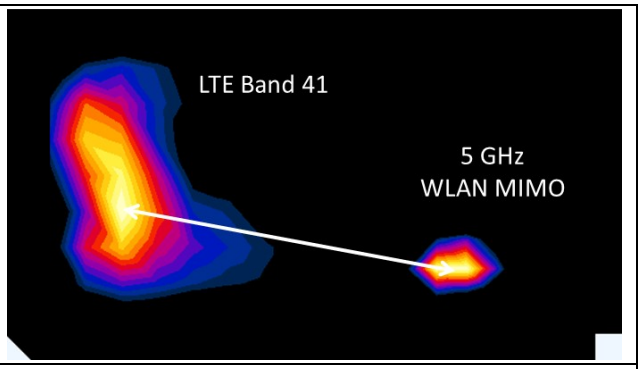

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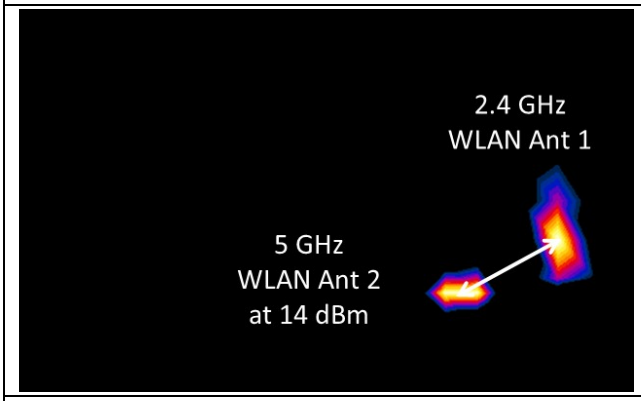

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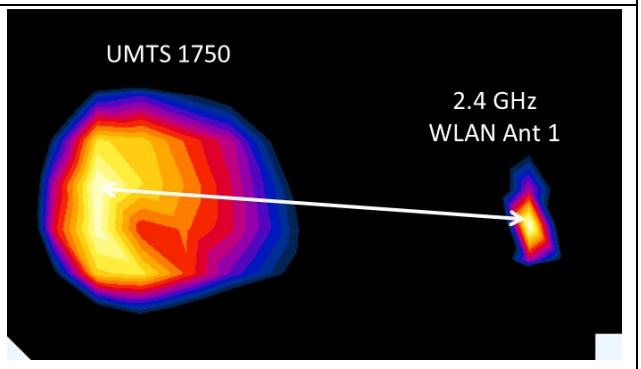

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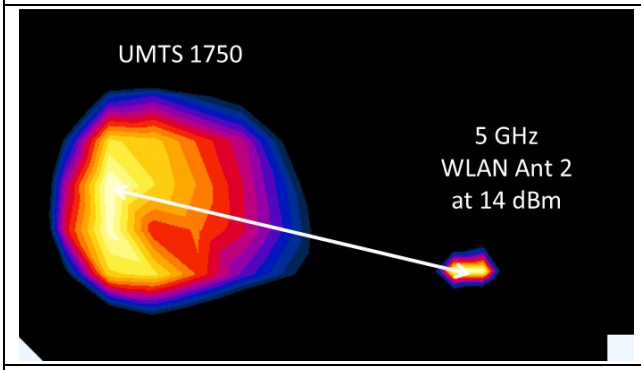

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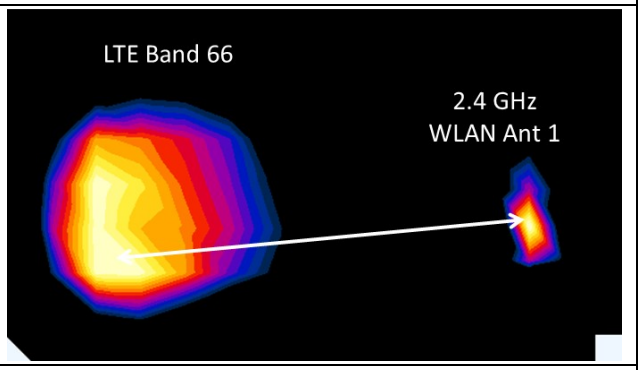

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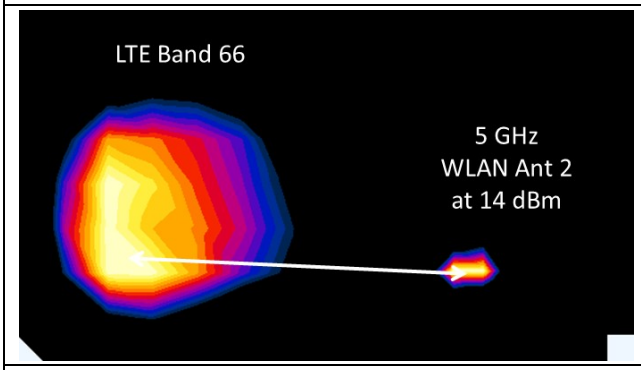

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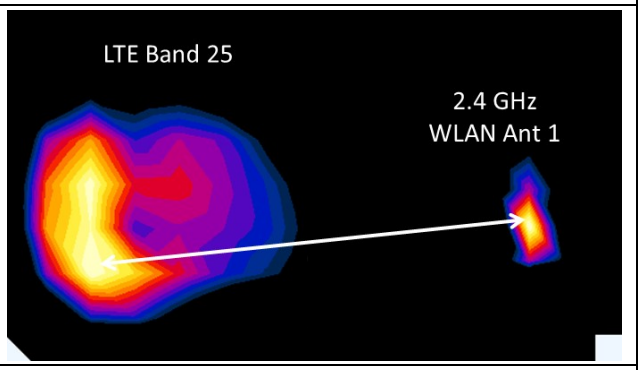

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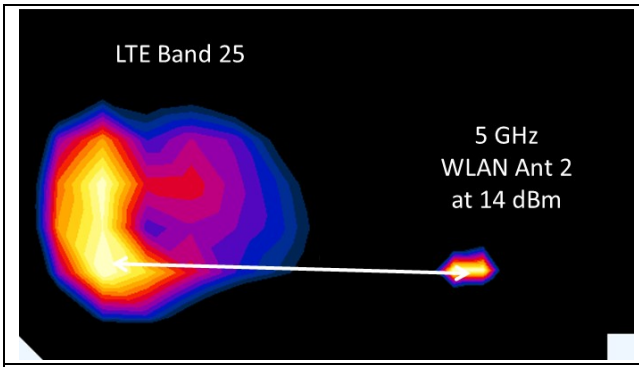

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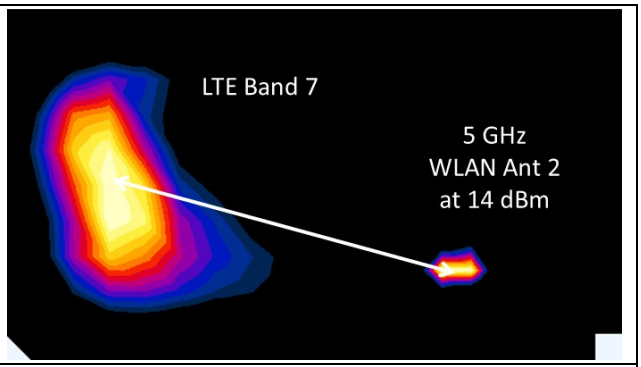

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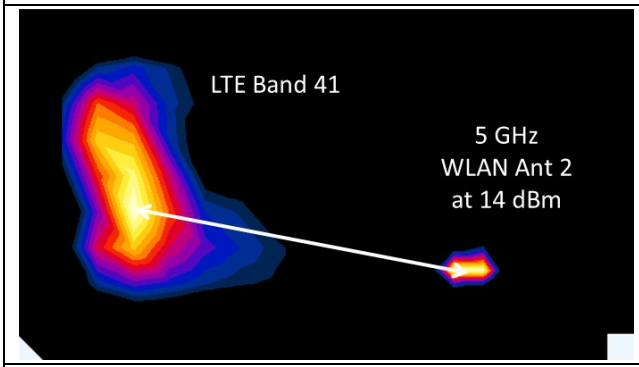

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12.7.3 Phablet Back Side SPLSR Evaluation and Analysis

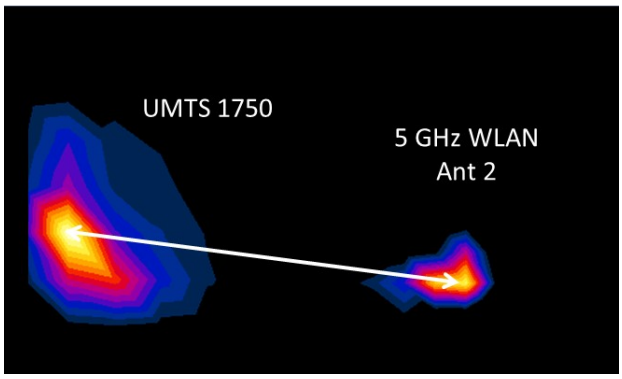
Table 12-23
Phablet Peak SAR Locations for Body Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 2	10.00	47.00
5 GHz WLAN MIMO	11.00	52.00
UMTS 1750	-0.50	-73.50
UMTS 1900	-2.00	-80.00
LTE Band 66 (AWS)	-1.00	-80.00
LTE Band 25 (PCS)	-2.00	-72.00

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}	$(a+b)^{1.5}/D_{a-b}$	
UMTS 1750	5 GHz WLAN Ant 2	1.809	2.614	4.423	120.96	0.08	1
UMTS 1900	5 GHz WLAN Ant 2	1.681	2.614	4.295	127.57	0.07	2
LTE Band 66 (AWS)	5 GHz WLAN Ant 2	1.857	2.614	4.471	127.48	0.07	3
LTE Band 25 (PCS)	5 GHz WLAN Ant 2	1.957	2.614	4.571	119.60	0.08	4
UMTS 1750	5 GHz WLAN MIMO	1.809	2.742	4.551	126.03	0.08	5
UMTS 1900	5 GHz WLAN MIMO	1.681	2.742	4.423	132.64	0.07	6
LTE Band 66 (AWS)	5 GHz WLAN MIMO	1.857	2.742	4.599	132.54	0.07	7
LTE Band 25 (PCS)	5 GHz WLAN MIMO	1.957	2.742	4.699	124.68	0.08	8

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



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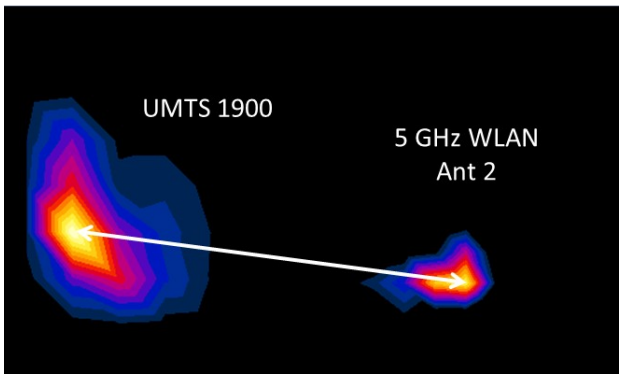

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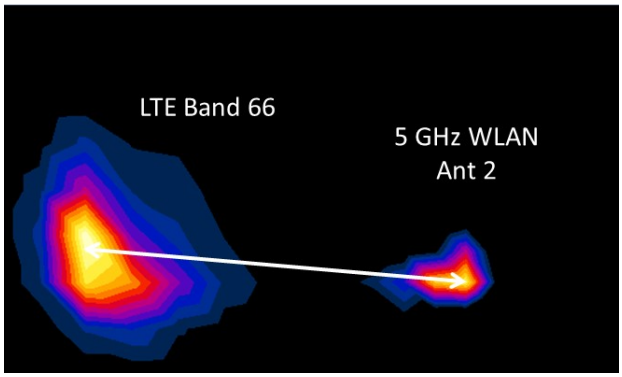

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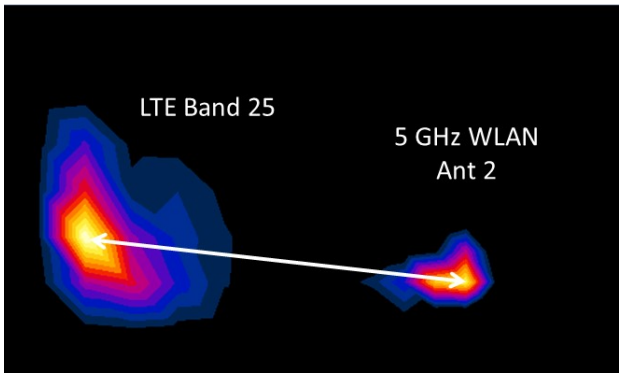

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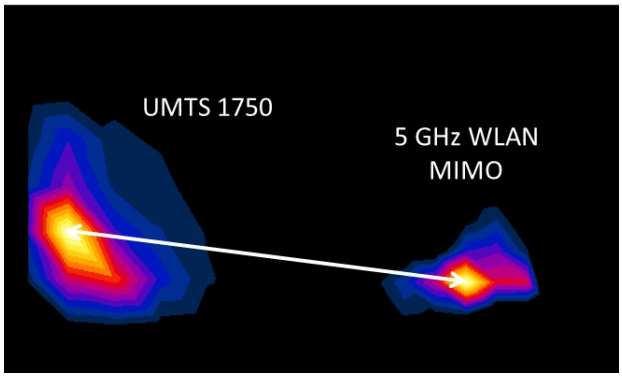

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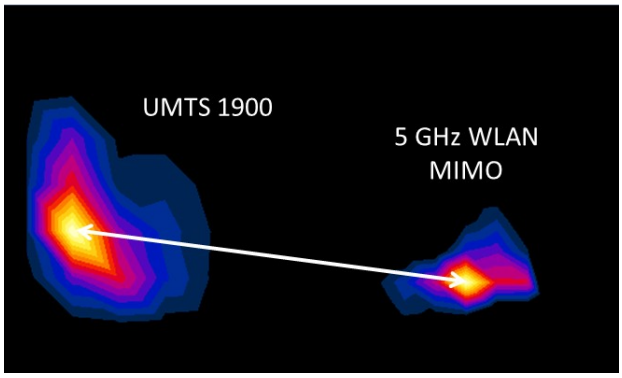

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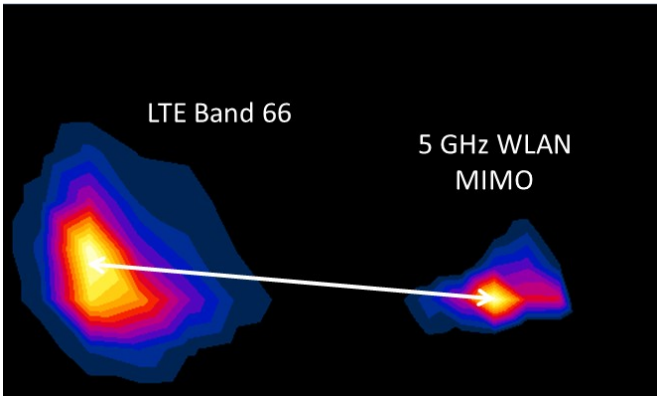

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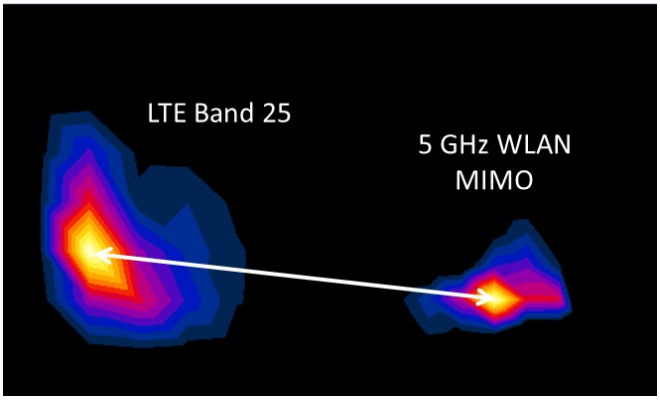

8

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

Table 13-1
Body SAR Measurement 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	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	10 mm	1.150	1.170	1.02	N/A	N/A	N/A	N/A
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	10 mm	1.170	1.230	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	1.240	1.230	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	1.300	1.220	1.07	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM , MIMO	13	back	10 mm	1.240	1.240	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	1745.00	132322	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	0 mm	2.740	2.580	1.06	N/A	N/A	N/A	N/A
1900	1905.00	26590	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	N/A	bottom	0 mm	2.790	2.750	1.01	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	0 mm	2.640	2.810	1.06	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	0 mm	2.560	2.630	1.03	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.680	2.620	1.02	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 Network Analyzer	7/30/2018	Annual	7/30/2019	MY40000670
Agilent	E4432B	ESG-D Series Signal Generator	4/19/2018	Annual	4/19/2019	US40053896
Agilent	E4438C	ESG Vector Signal Generator	3/24/2017	Biennial	3/24/2019	MY42082385
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	11/15/2017	Annual	11/15/2018	GB42230325
Agilent	E5515C	Wireless Communications Test Set	5/22/2018	Biennial	5/22/2020	GB43193563
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	N5182A	MXG Vector Signal Generator	11/1/2017	Annual	11/1/2018	MY47420603
Agilent	N9020A	MXA Signal Analyzer	1/24/2018	Annual	1/24/2019	US46470561
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	MA24106A	USB Power Sensor	6/5/2018	Annual	6/5/2019	1231535
Anritsu	MA24106A	USB Power Sensor	6/5/2018	Annual	6/5/2019	1231538
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	ML2495A	Power Meter	10/22/2017	Annual	10/22/2018	941001
Anritsu	ML2495A	Power Meter	11/28/2017	Annual	11/28/2018	1039008
Anritsu	MT8820C	Radio Communication Analyzer	3/20/2018	Annual	3/20/2019	6201144419
Anritsu	MT8821C	Radio Communication Analyzer	7/26/2018	Annual	7/26/2019	6201144418
Anritsu	MT8862A	Wireless Connectivity Test Set	7/3/2018	Annual	7/3/2019	6261782395
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
Control Company	4040	Therm./ Clock/ Humidity Monitor	3/1/2017	Biennial	3/1/2019	170152009
Control Company	4352	Ultra Long Stem Thermometer	3/3/2017	Biennial	3/3/2019	170155534
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini Circuits	PWR-4GHS	USB Power Sensor	1/22/2018	Annual	1/22/2019	11710030062
Mini Circuits	PWR-4GHS	USB Power Sensor	1/20/2018	Annual	1/20/2019	11710030063
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	4/18/2018	Annual	4/18/2019	1445
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	11/3/2017	Annual	11/3/2018	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	10/13/2017	Annual	10/13/2018	102060
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Annual	1/15/2019	1003
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	D835V2	835 MHz SAR Dipole	1/15/2018	Annual	1/15/2019	4d132
SPEAG	D1750V2	1750 MHz SAR Dipole	5/9/2017	Biennial	5/9/2019	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	7/14/2016	Triennial	7/14/2019	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	7/8/2016	Triennial	7/8/2019	5d080
SPEAG	D1900V2	1900 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	7/11/2017	Biennial	7/11/2019	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	11/8/2017	Annual	11/8/2018	1064
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Biennial	8/17/2019	719
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Annual	9/11/2018	797
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Biennial	9/13/2018	1071
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/16/2018	Annual	1/16/2019	1057
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/21/2016	Biennial	9/21/2018	1191
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/15/2018	Annual	2/15/2019	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/22/2018	Annual	5/22/2019	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2018	Annual	2/9/2019	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2018	Annual	7/11/2019	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
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
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/12/2017	Annual	9/12/2018	1091
SPEAG	ES3DV3	SAR Probe	2/13/2018	Annual	2/13/2019	3213
SPEAG	ES3DV3	SAR Probe	3/13/2018	Annual	3/13/2019	3319
SPEAG	ES3DV3	SAR Probe	3/27/2018	Annual	3/27/2019	3347
SPEAG	EX3DV4	SAR Probe	4/18/2018	Annual	4/18/2019	7357
SPEAG	EX3DV4	SAR Probe	5/22/2018	Annual	5/22/2019	7406
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7410

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]

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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

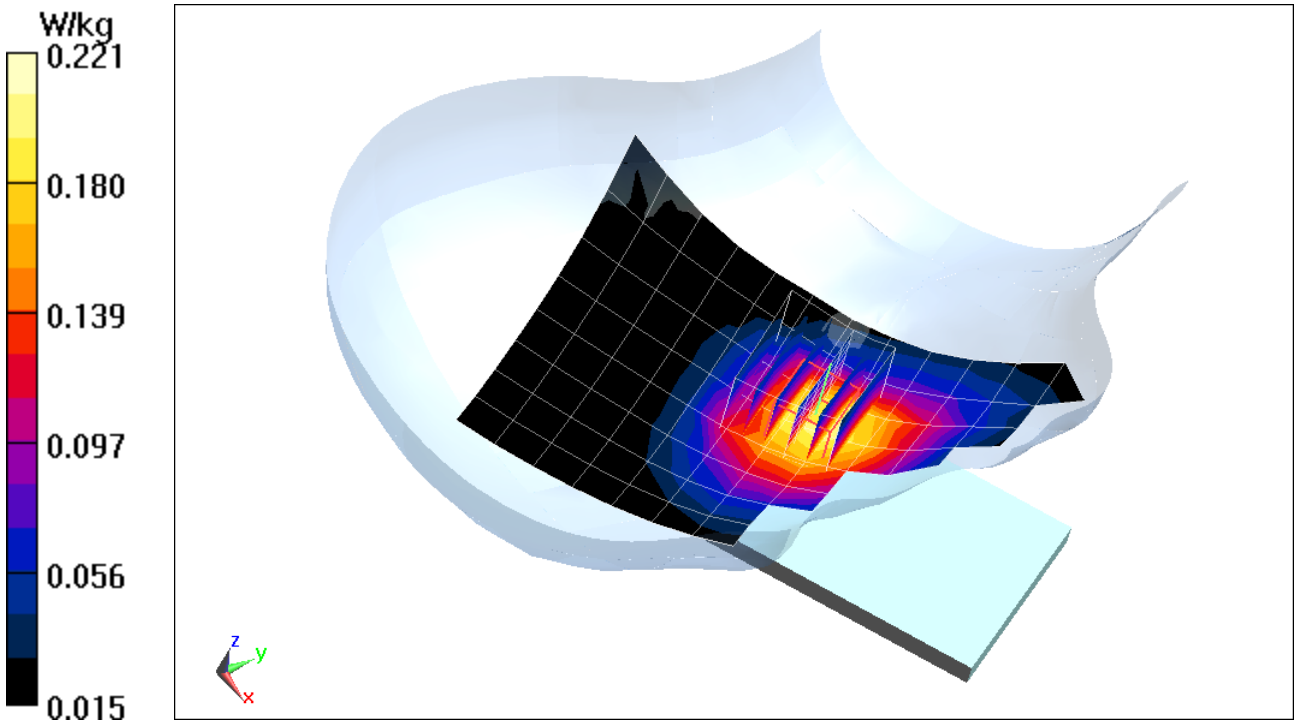
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 0.942$ S/m; $\varepsilon_r = 42.466$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 08-22-2018; Ambient Temp: 23.5°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.81, 9.81, 9.81); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.81 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.182 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

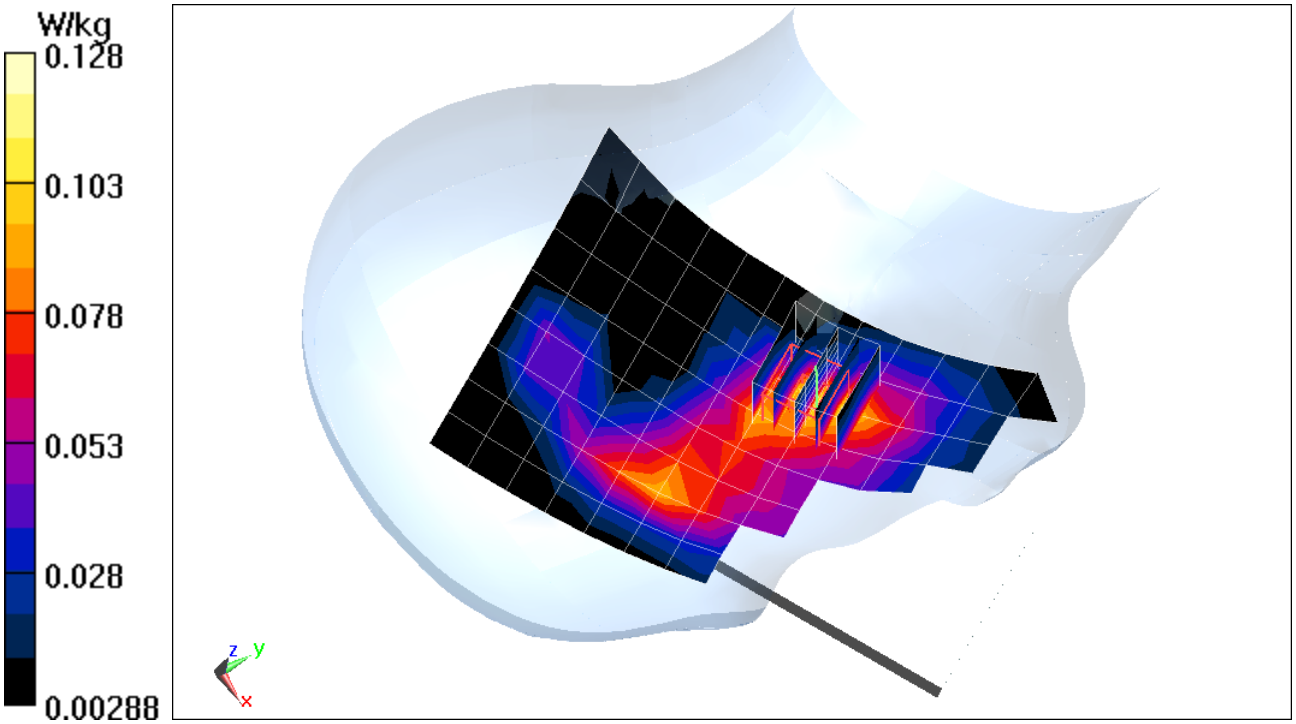
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.443 S/m; ε_r = 39.989; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-23-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(8.16, 8.16, 8.16); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 1900, 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 = 8.873 V/m; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.100 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

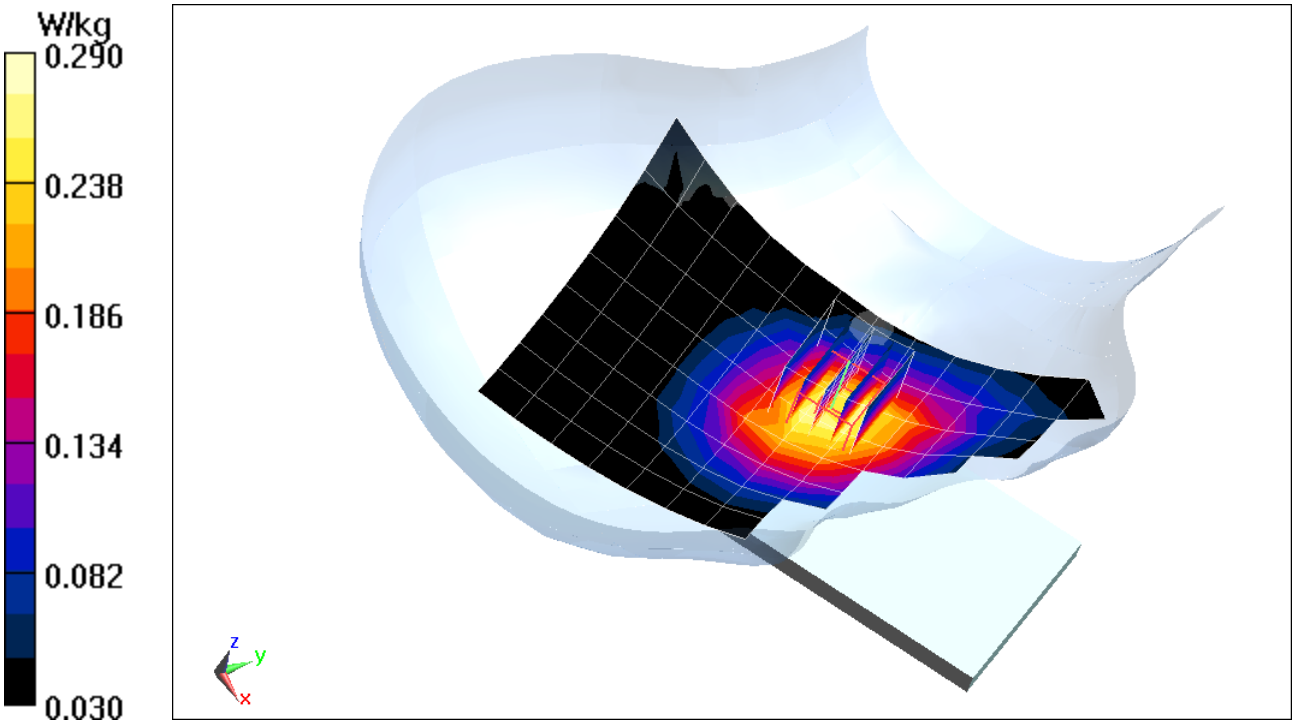
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.942 S/m; ε_r = 42.466; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-22-2018; Ambient Temp: 23.5°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.81, 9.81, 9.81); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
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 = 16.17 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.324 W/kg
SAR(1 g) = 0.234 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

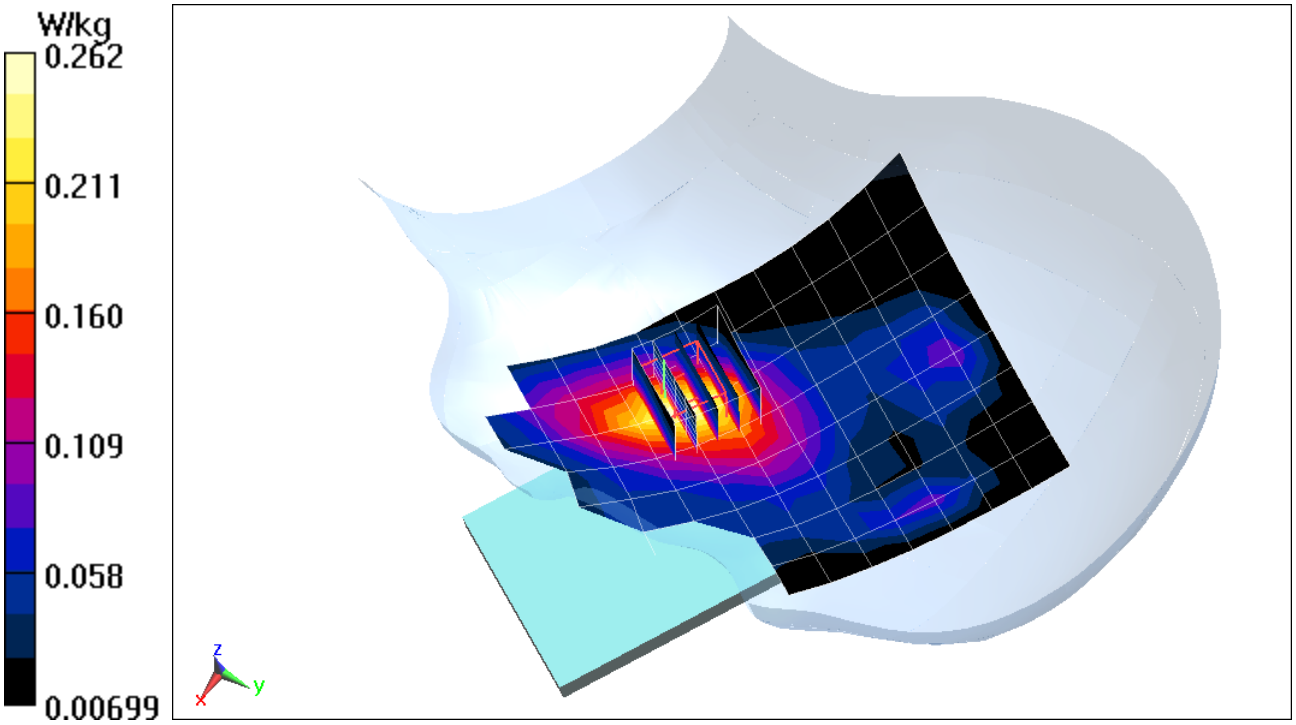
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.34 S/m; ε_r = 39.85; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-27-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7409; ConvF(8.43, 8.43, 8.43); 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 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 = 12.16 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.323 W/kg
SAR(1 g) = 0.195 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

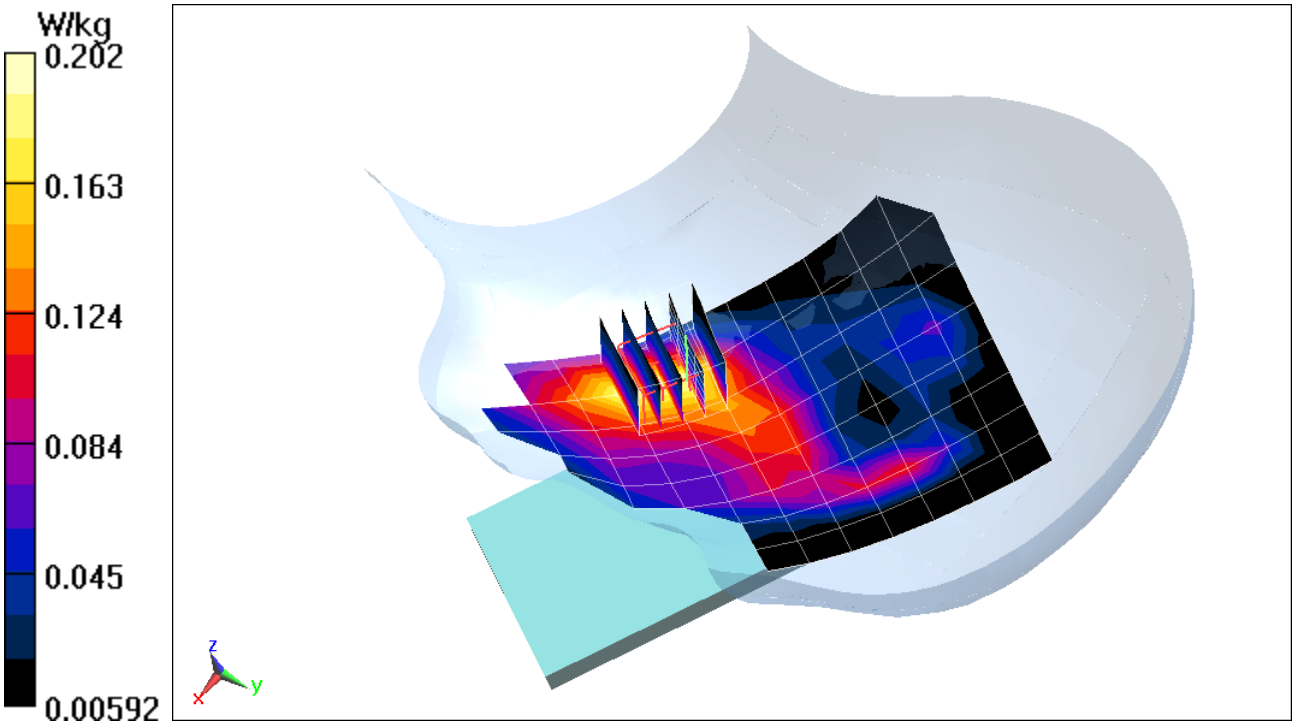
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.443 S/m; ε_r = 39.989; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-23-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(8.16, 8.16, 8.16); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
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 = 10.41 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.230 W/kg
SAR(1 g) = 0.144 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19736

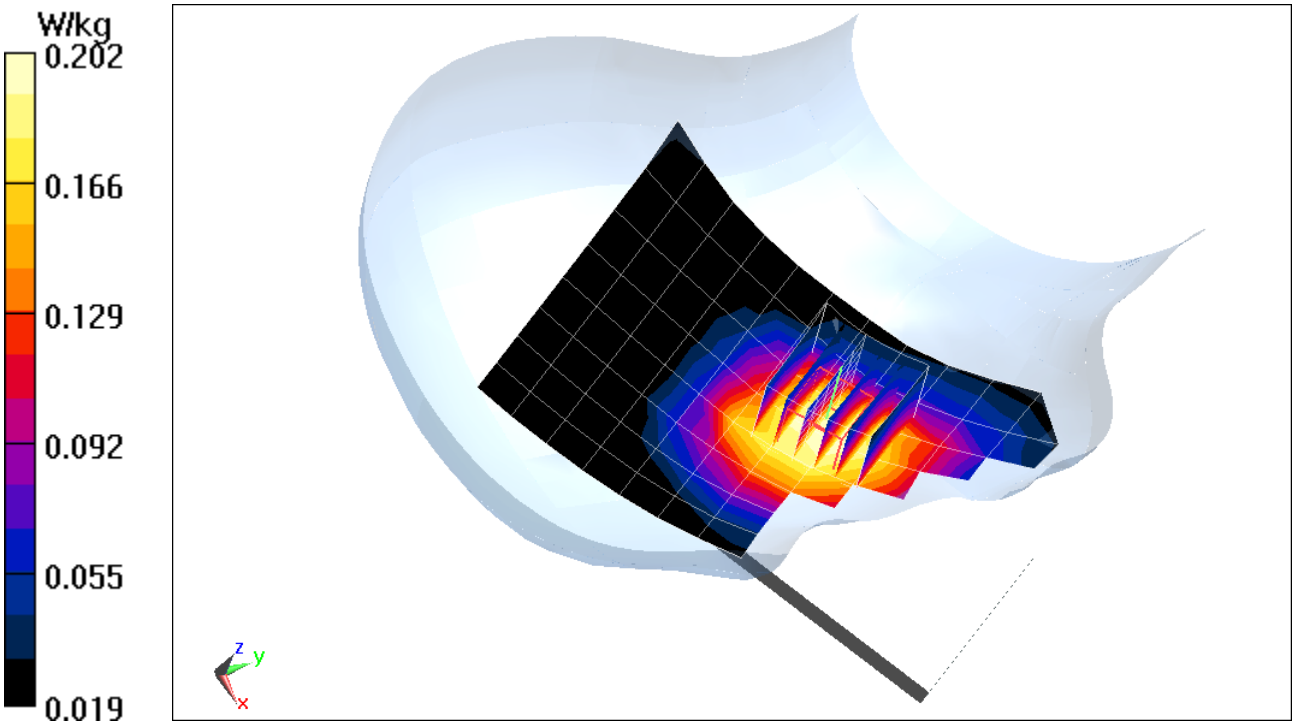
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 MHz Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.874 S/m; ε_r = 41.993; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-05-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(9.91, 9.91, 9.91); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (1);SEMCAD X Version 14.6.11 (7439)

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

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.93 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.230 W/kg
SAR(1 g) = 0.182 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19736

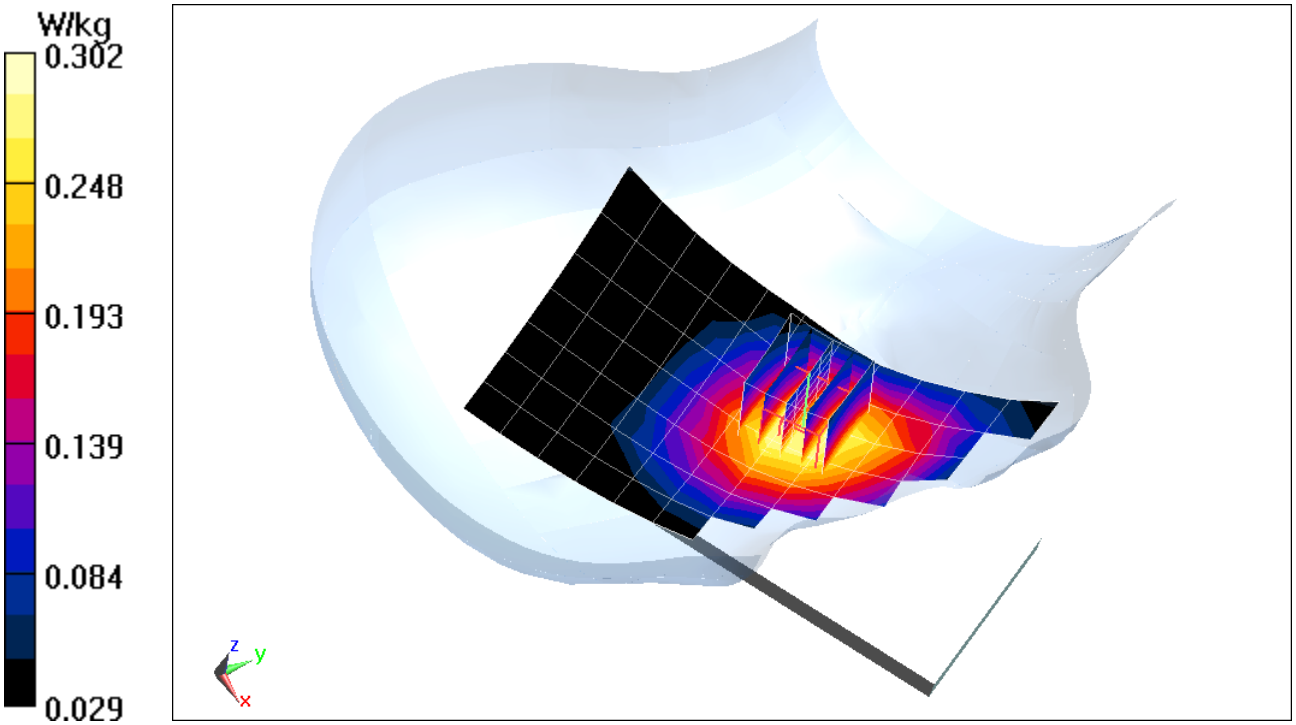
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 MHz Medium parameters used (interpolated):
f = 782 MHz; σ = 0.899 S/m; ε_r = 41.755; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-05-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(9.91, 9.91, 9.91); Calibrated: 6/25/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (1);SEMCAD X Version 14.6.11 (7439)

Mode: LTE Band 13, Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 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 = 17.17 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.315 W/kg
SAR(1 g) = 0.242 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19744

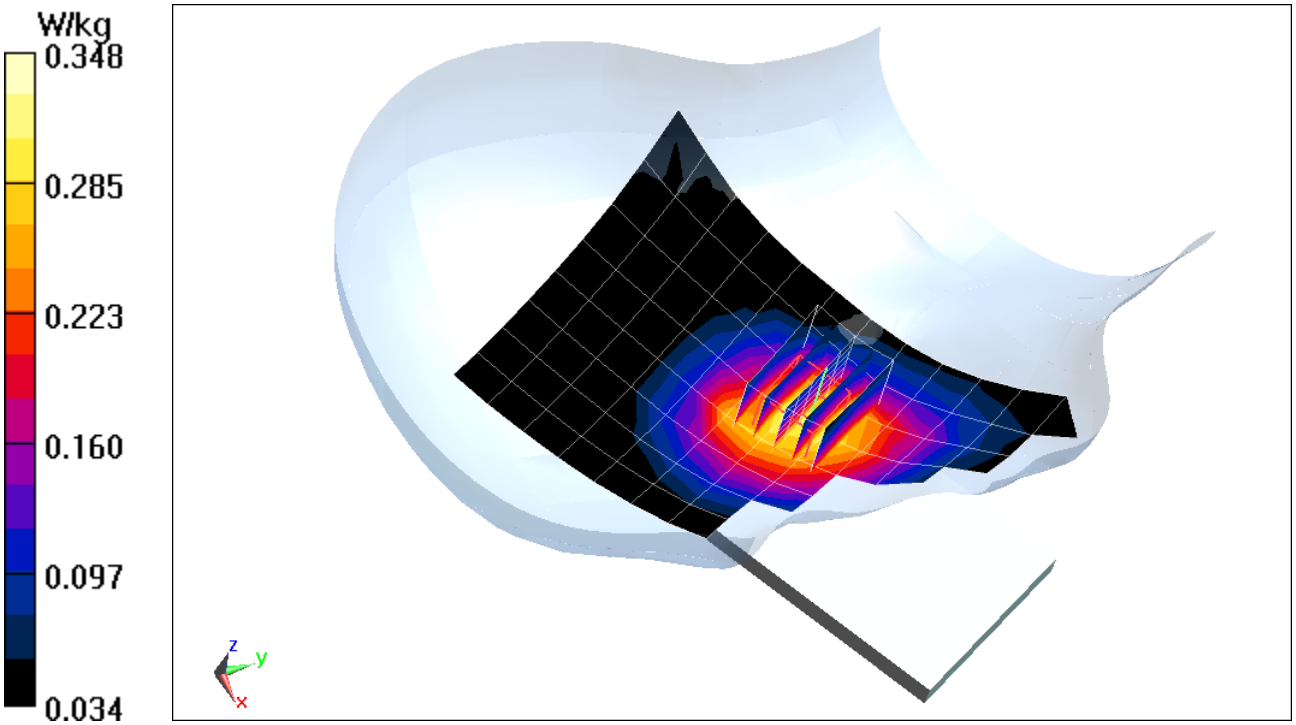
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 831.5$ MHz; $\sigma = 0.94$ S/m; $\varepsilon_r = 42.485$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 08-22-2018; Ambient Temp: 23.5°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.81, 9.81, 9.81); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
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, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.02 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.382 W/kg
SAR(1 g) = 0.274 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19744

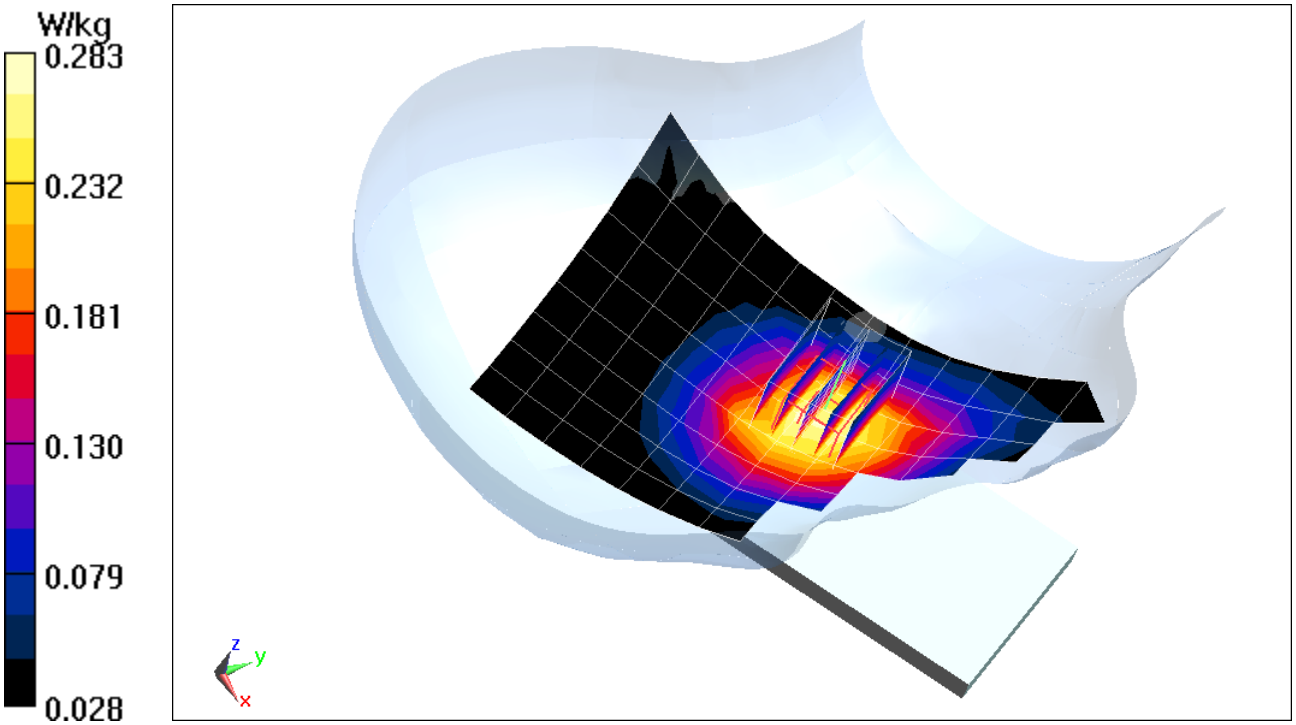
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.942 S/m; ε_r = 42.466; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-22-2018; Ambient Temp: 23.5°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.81, 9.81, 9.81); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
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, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.52 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.329 W/kg
SAR(1 g) = 0.235 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19736

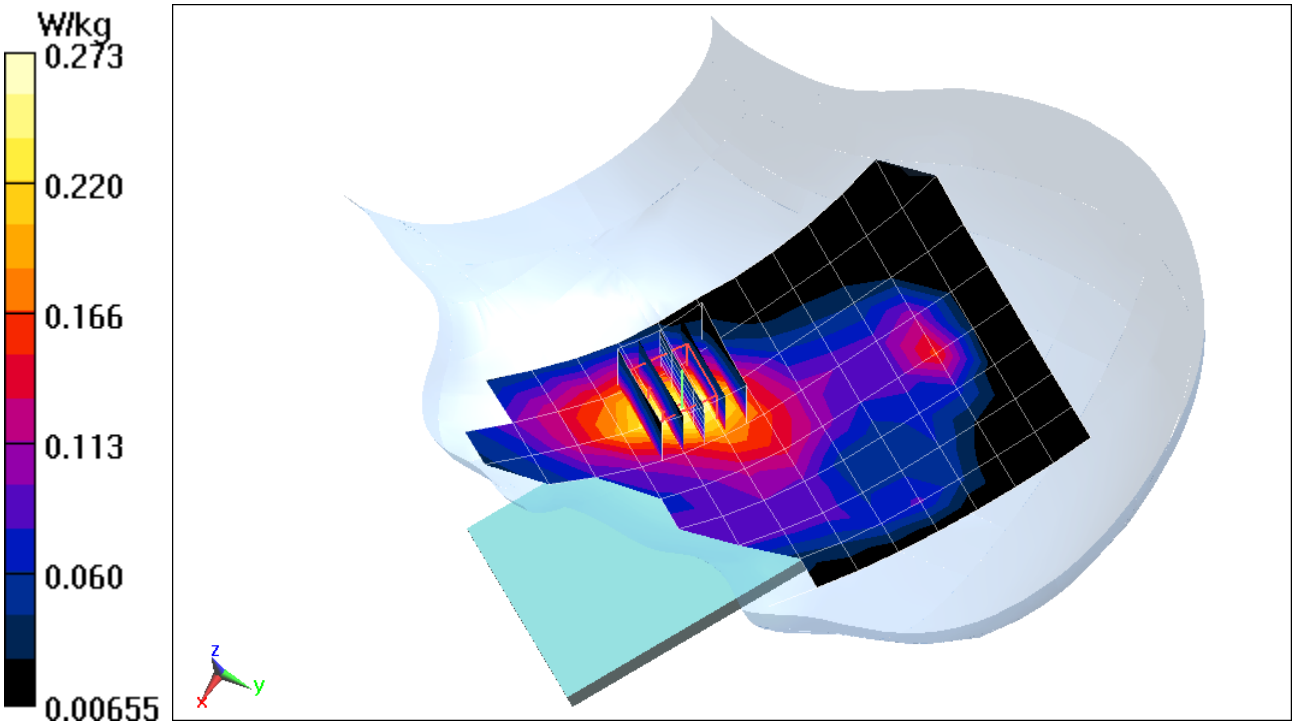
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1720 MHz; σ = 1.333 S/m; ε_r = 39.873; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-27-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7409; ConvF(8.43, 8.43, 8.43); 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 66 (AWS), Left Head, Cheek, Low.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 = 13.27 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.330 W/kg
SAR(1 g) = 0.207 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19827

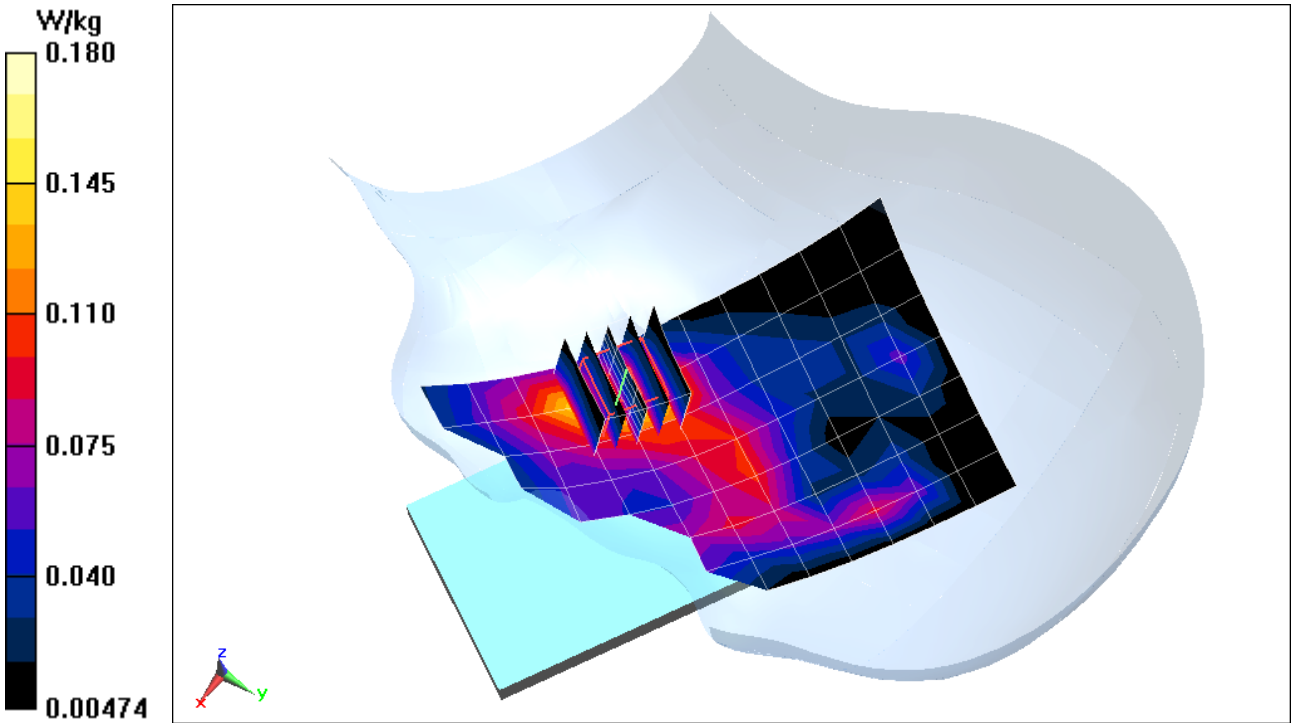
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.465 S/m; ε_r = 39.991; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-28-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.7°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, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.24 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.130 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19751

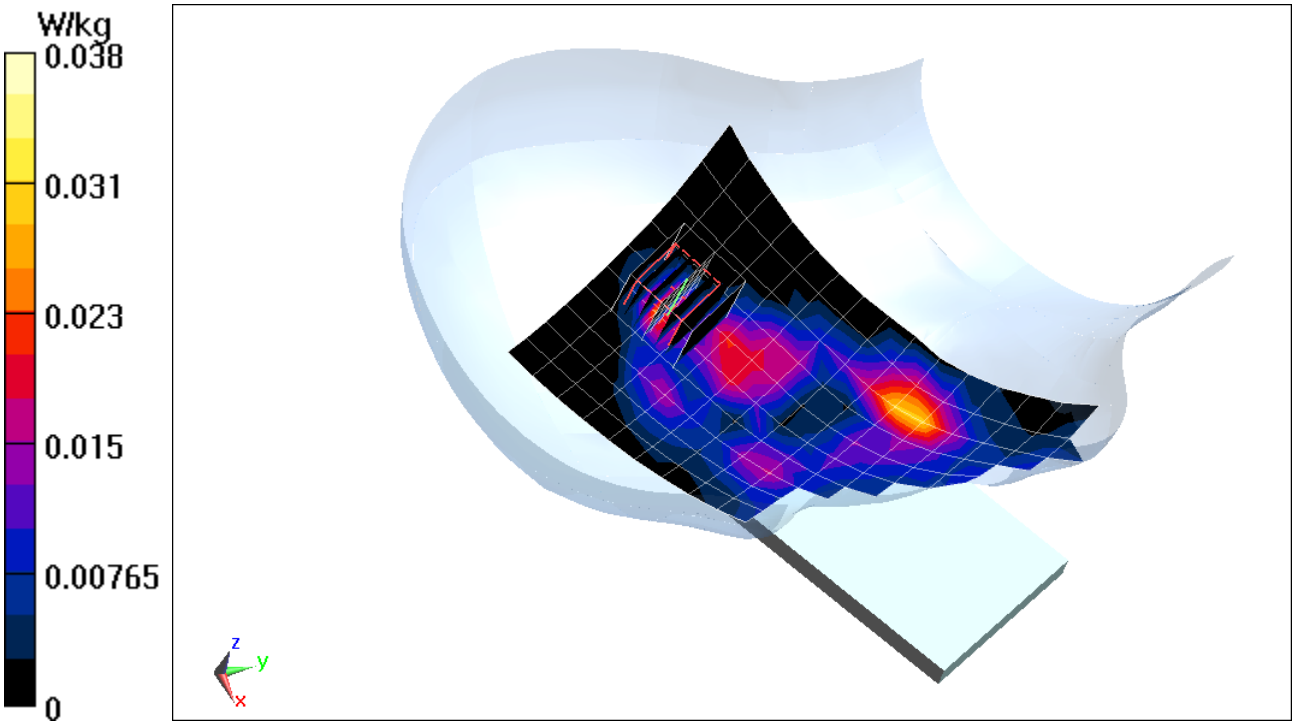
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2310 MHz; σ = 1.742 S/m; ε_r = 39.111; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-27-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
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, 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 = 4.292 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0520 W/kg
SAR(1 g) = 0.021 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19751

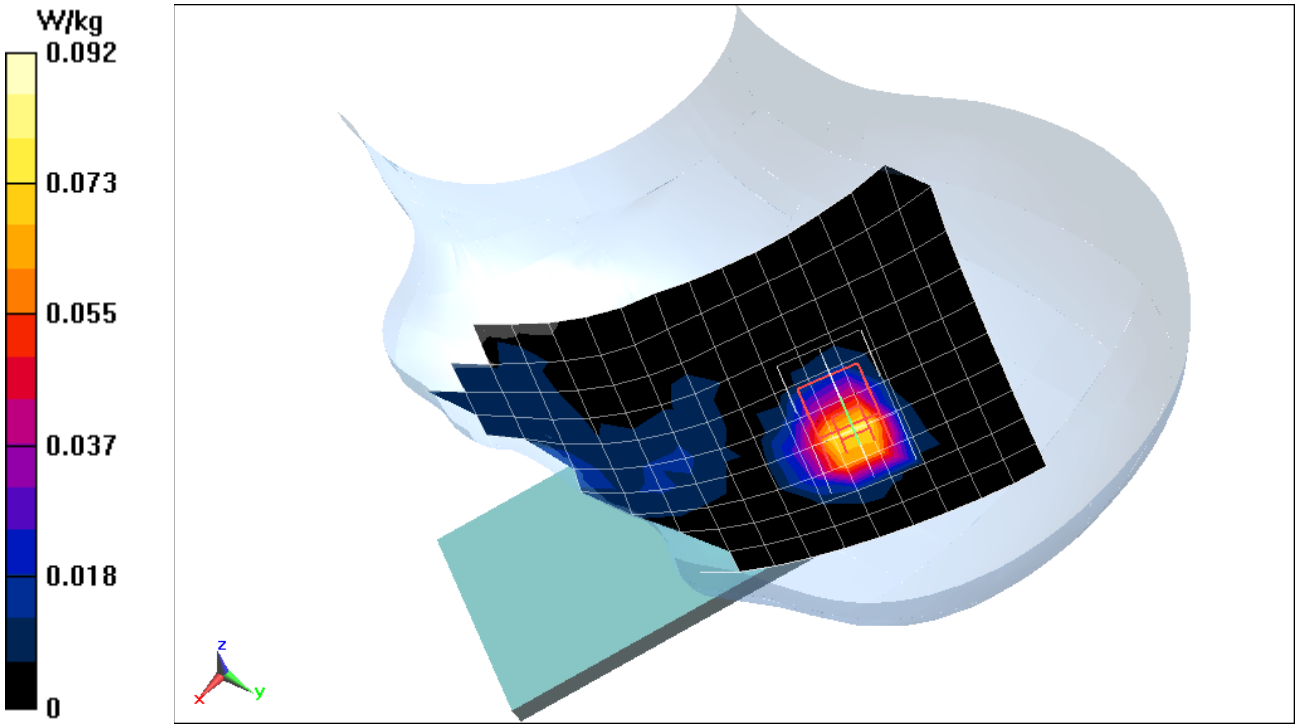
Communication System: UID 0, _LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 1.913$ S/m; $\varepsilon_r = 38.738$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 08-27-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(7.24, 7.24, 7.24); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
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 (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.365 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.112 W/kg
SAR(1 g) = 0.061 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19751

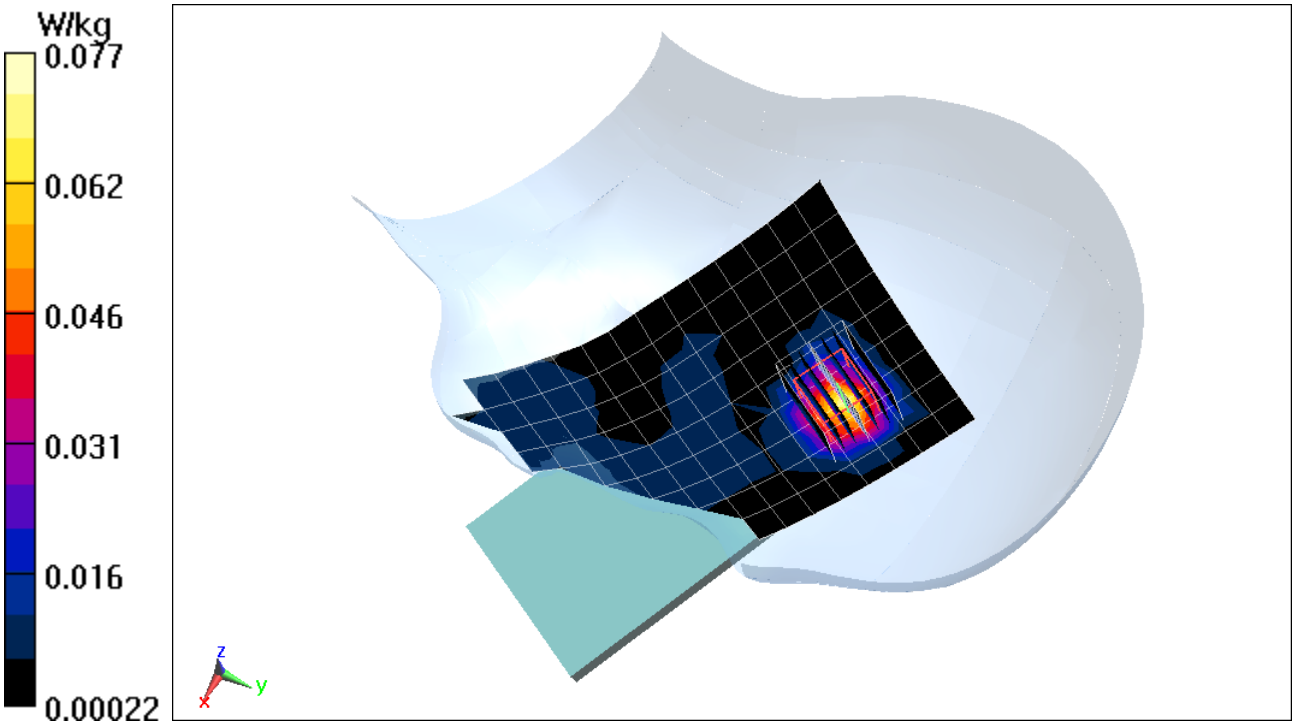
Communication System: UID 0, LTE Band 41; Frequency: 2593 MHz; Duty Cycle: 1:1.58
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2593$ MHz; $\sigma = 1.956$ S/m; $\varepsilon_r = 38.648$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 08-27-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(7.24, 7.24, 7.24); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 41, Left Head, Tilt, Mid.ch, QPSK,
20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.687 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0930 W/kg
SAR(1 g) = 0.050 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19868

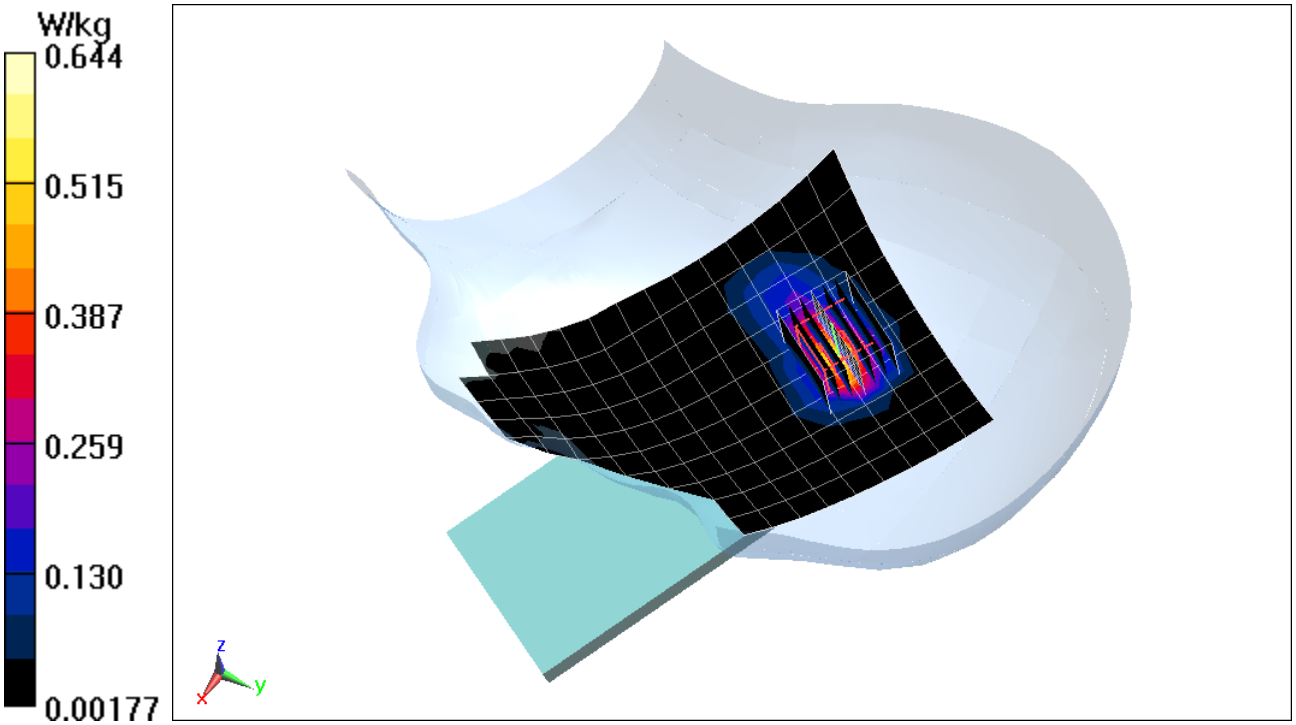
Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.838 S/m; ε_r = 38.905; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-27-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
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,
Left Head, Tilt, Ch 6, 1 Mbps, Antenna 1

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.22 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.795 W/kg
SAR(1 g) = 0.384 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19868

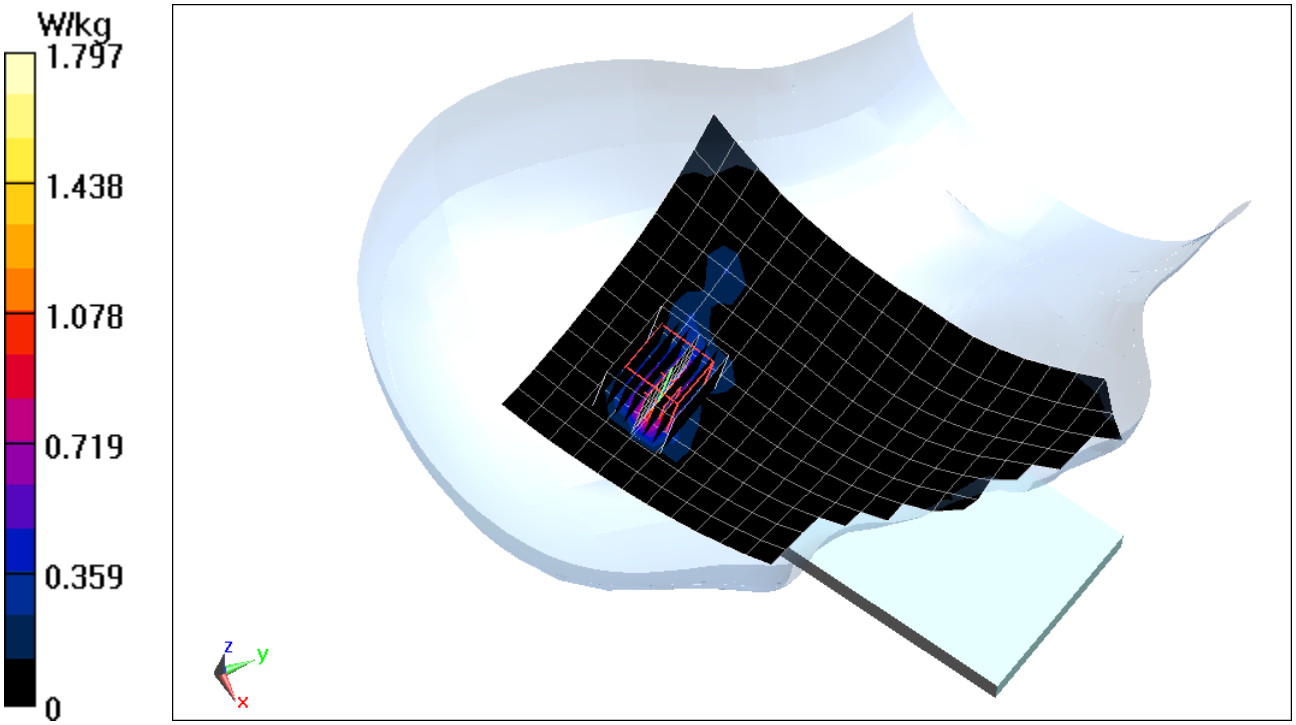
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.947 S/m; ε_r = 34.474; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-20-2018; Ambient Temp: 21.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7409; ConvF(4.77, 4.77, 4.77); 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-2C, 20 MHz Bandwidth,
Right Head, Cheek, Ch 120, 6 Mbps, Antenna 1

Area Scan (13x12x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 3.452 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 3.25 W/kg
SAR(1 g) = 0.642 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19868

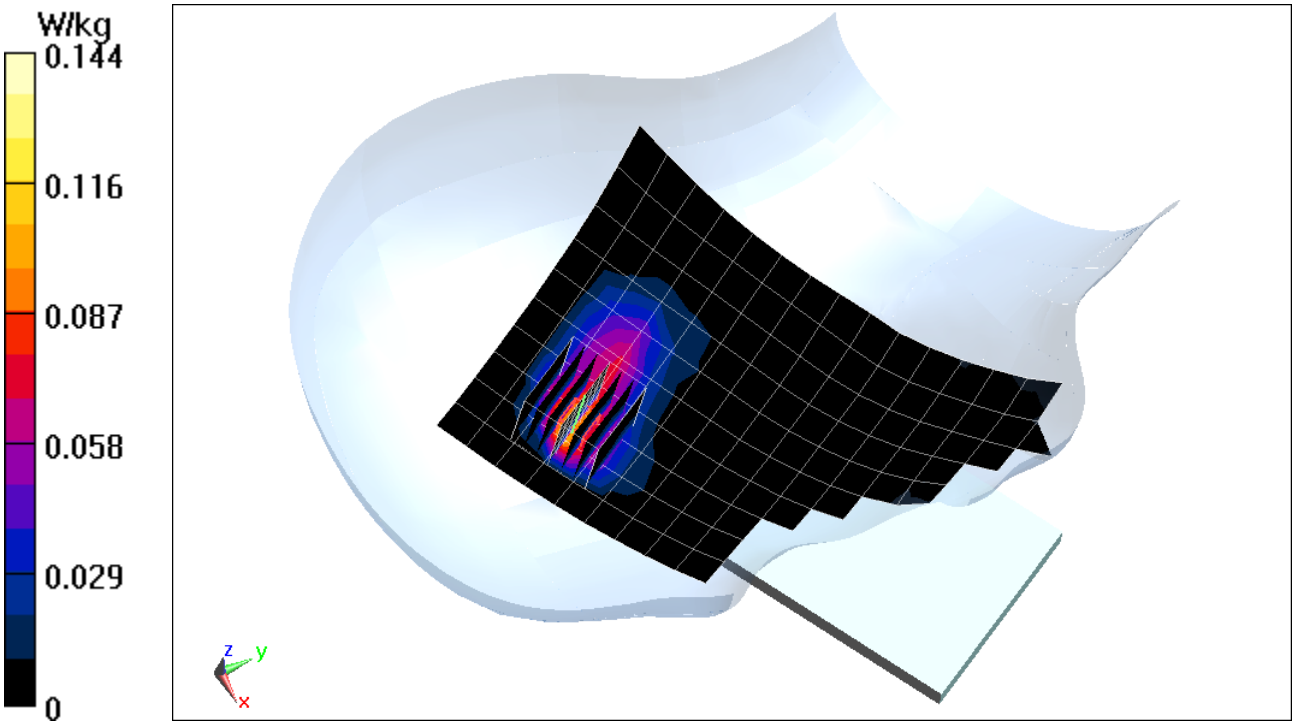
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297
Medium: 2450 Head Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.842 S/m; ε_r = 38.901; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-27-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (11x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.963 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.195 W/kg
SAR(1 g) = 0.081 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

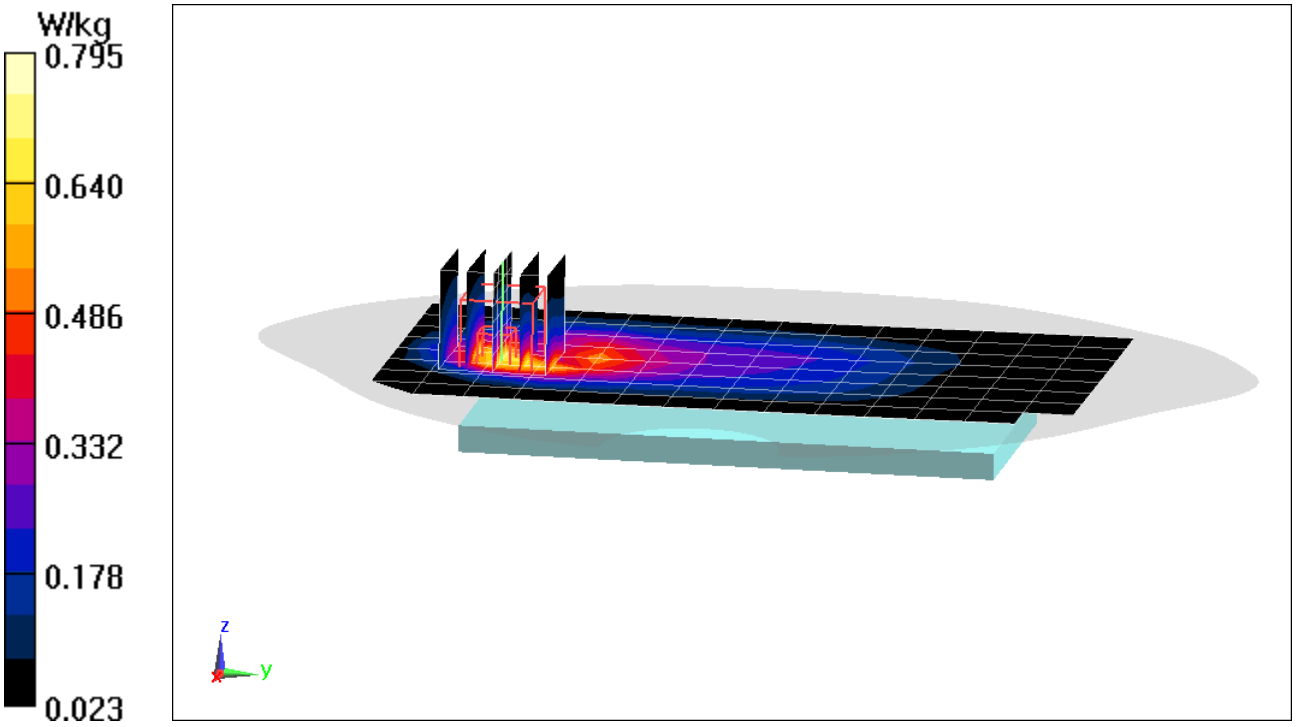
Communication System: UID 0, _GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.006 S/m; ε_r = 53.64; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-22-2018; Ambient Temp: 23.8°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 850, Body SAR, Back Side, 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 = 23.76 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.958 W/kg
SAR(1 g) = 0.520 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

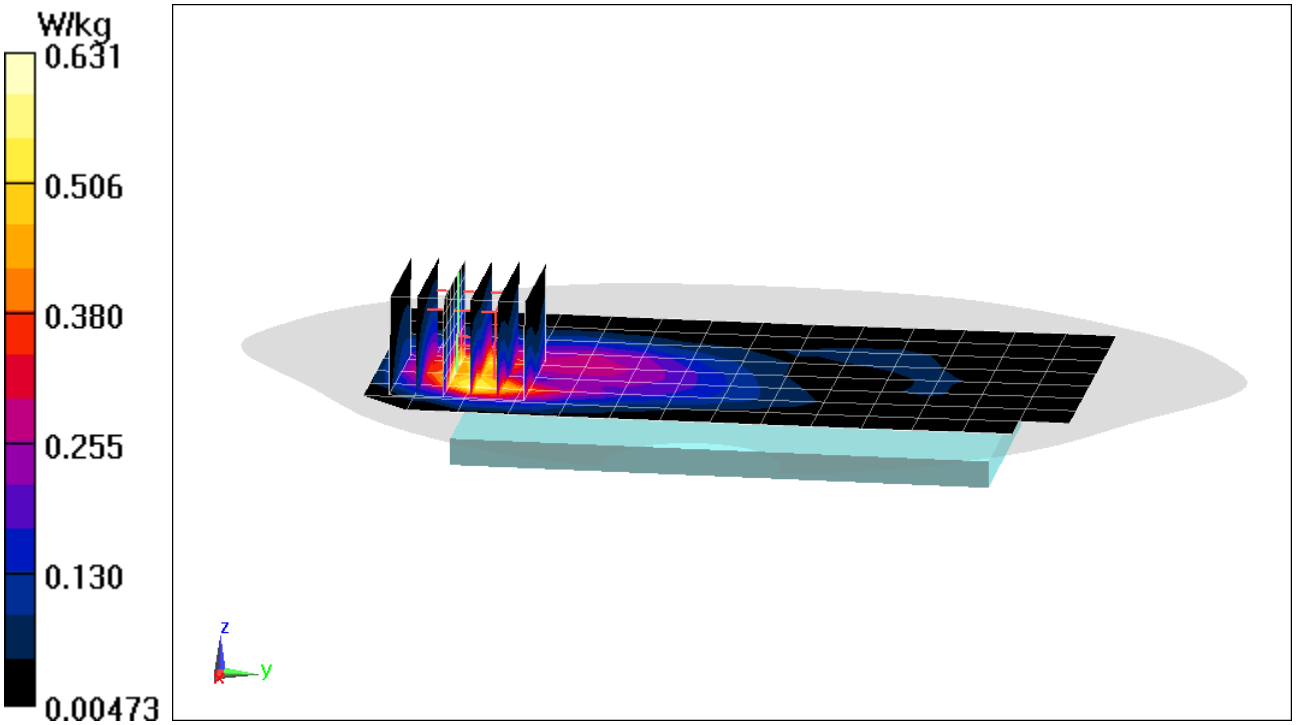
Communication System: UID 0, _GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.568 S/m; ε_r = 51.496; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7406; ConvF(7.74, 7.74, 7.74); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 1900, Body SAR, Back Side, Mid.ch, 3 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (7x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.40 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.734 W/kg
SAR(1 g) = 0.433 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

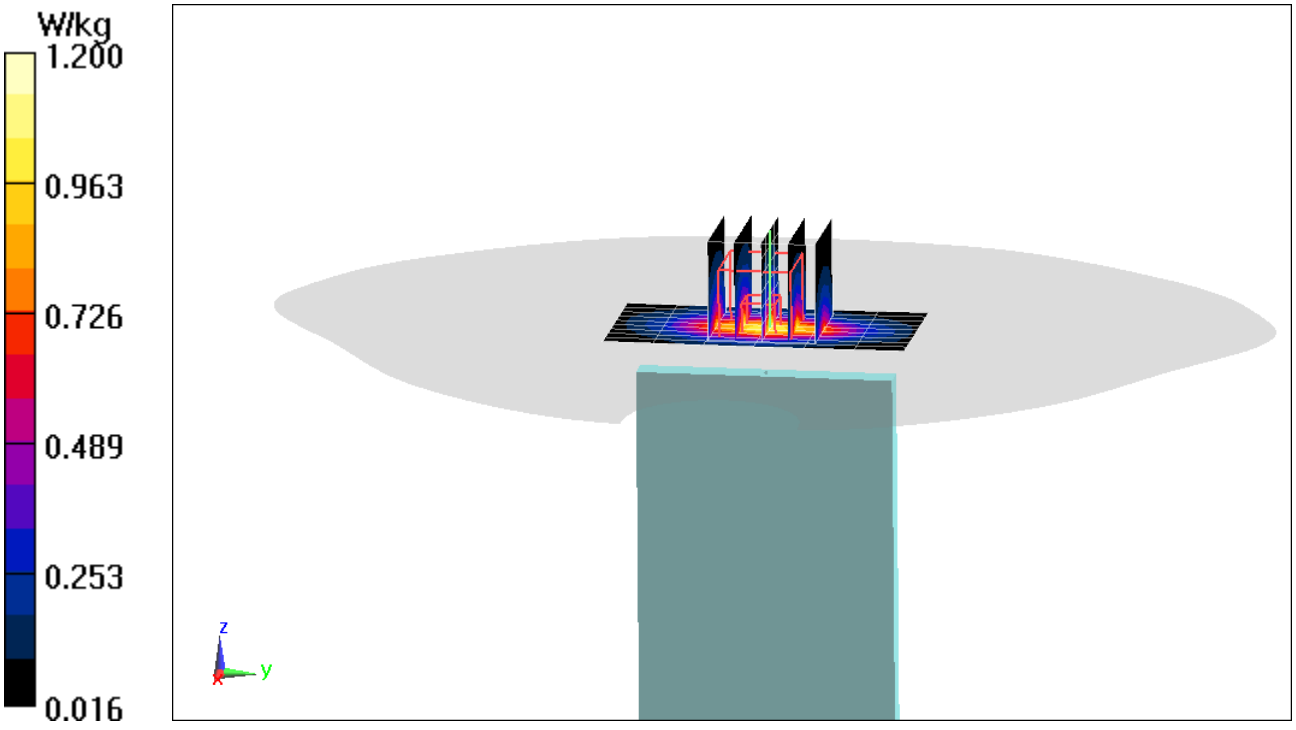
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used:
f = 1909.8 MHz; σ = 1.592 S/m; ε_r = 51.477; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7406; ConvF(7.74, 7.74, 7.74); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.81 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.812 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

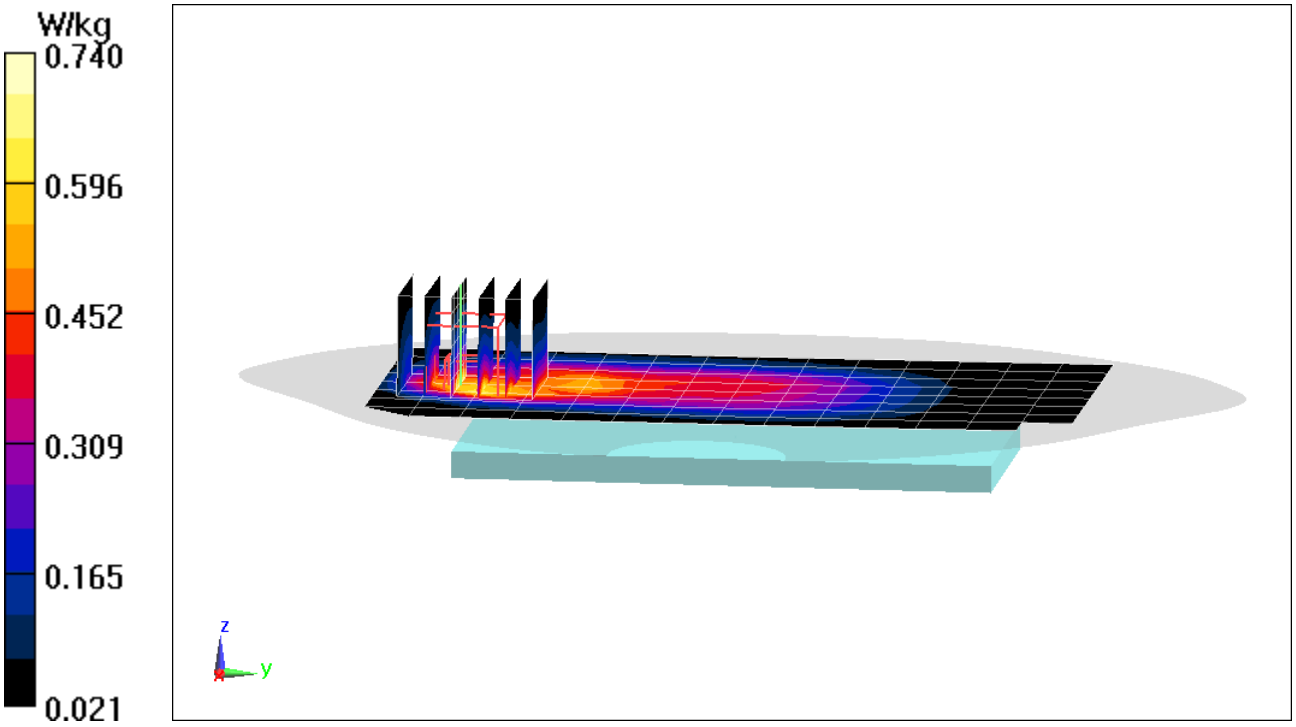
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.006 S/m; ε_r = 53.64; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-22-2018; Ambient Temp: 23.8°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.51 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.894 W/kg
SAR(1 g) = 0.488 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19710

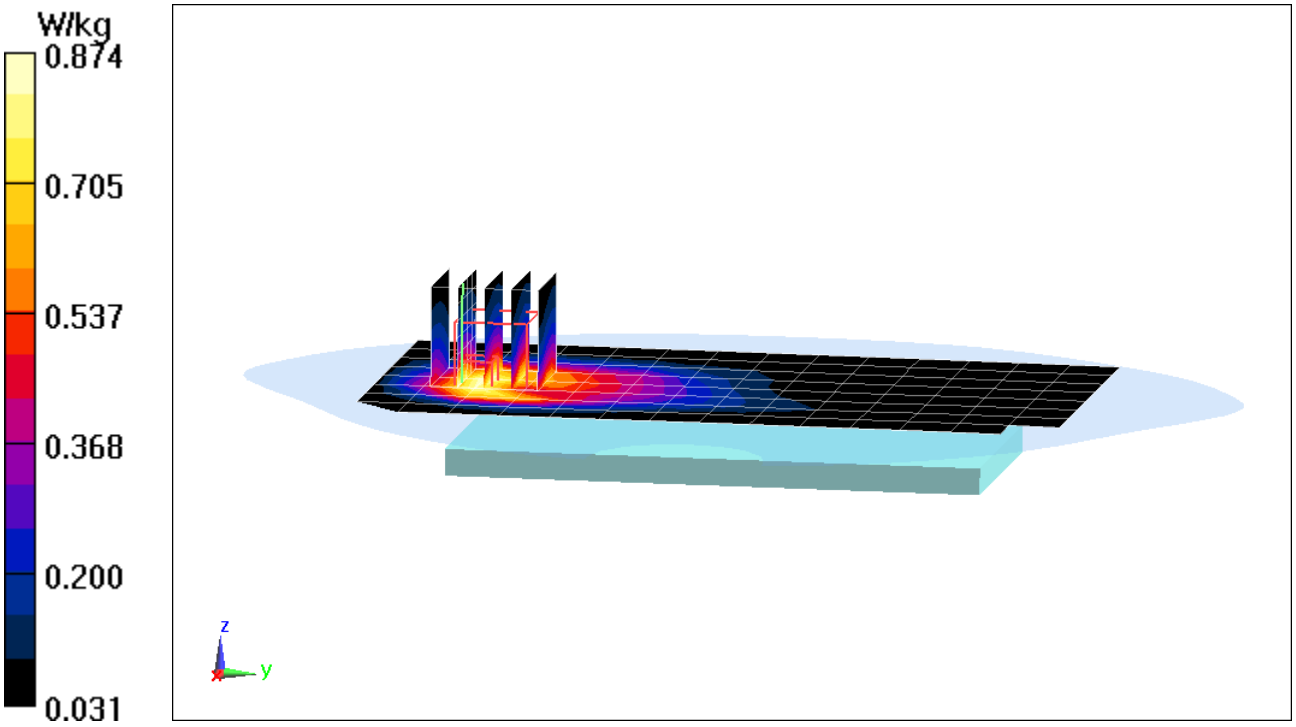
Communication System: UID 0, UMTS; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1712.4 MHz; σ = 1.449 S/m; ε_r = 51.973; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 22.9°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3213; ConvF(5.1, 5.1, 5.1); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: UMTS 1750, Body SAR, Back Side, Low.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.87 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.748 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19710

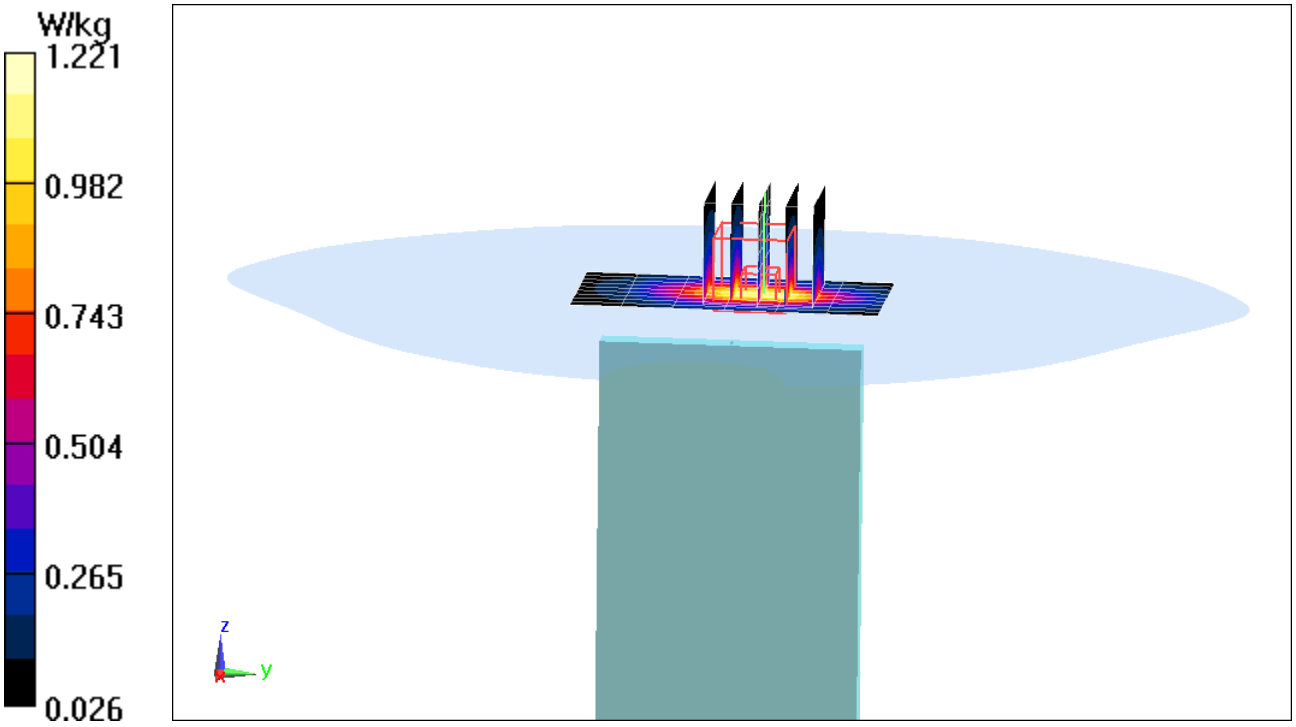
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.47 S/m; ε_r = 51.896; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 22.9°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3213; ConvF(5.1, 5.1, 5.1); Calibrated: 2/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/9/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.96 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.996 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

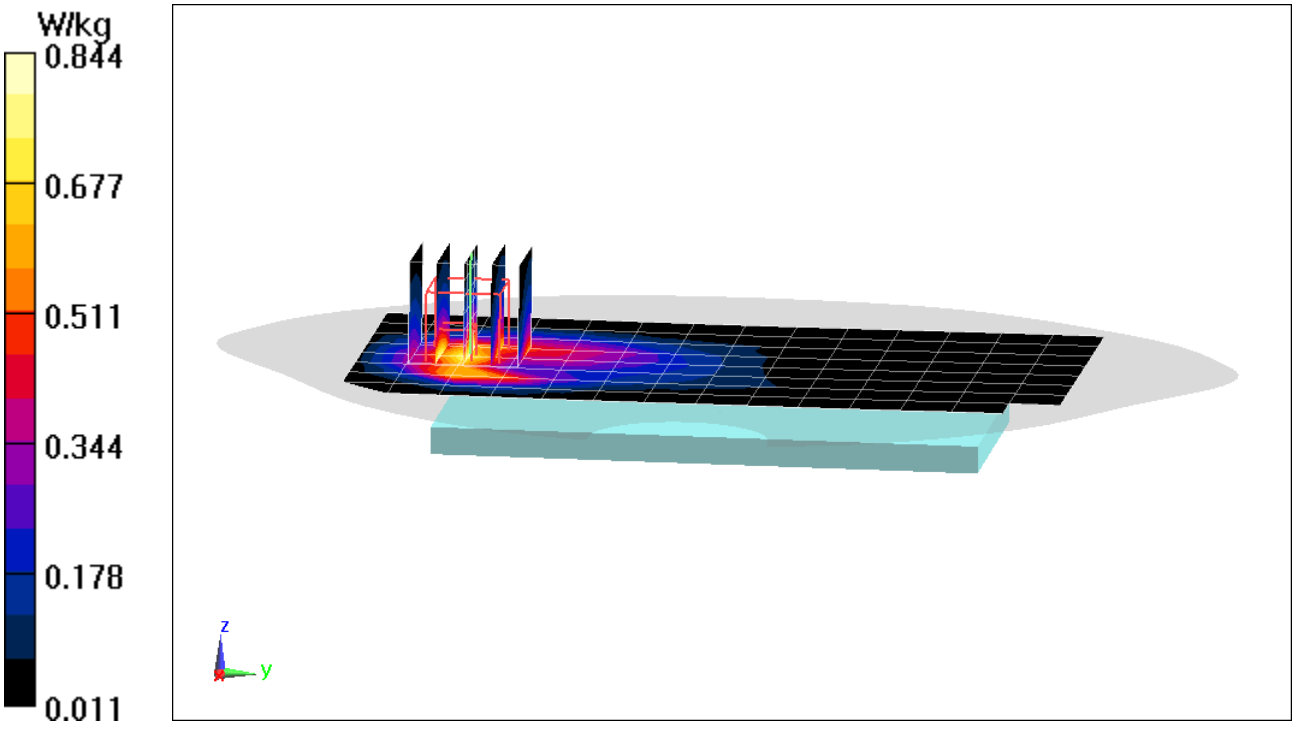
Communication System: UID 0, UMTS; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1852.4 MHz; σ = 1.548 S/m; ε_r = 51.506; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7406; ConvF(7.74, 7.74, 7.74); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: UMTS 1900, Body SAR, Back Side, Low.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.81 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.629 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19728

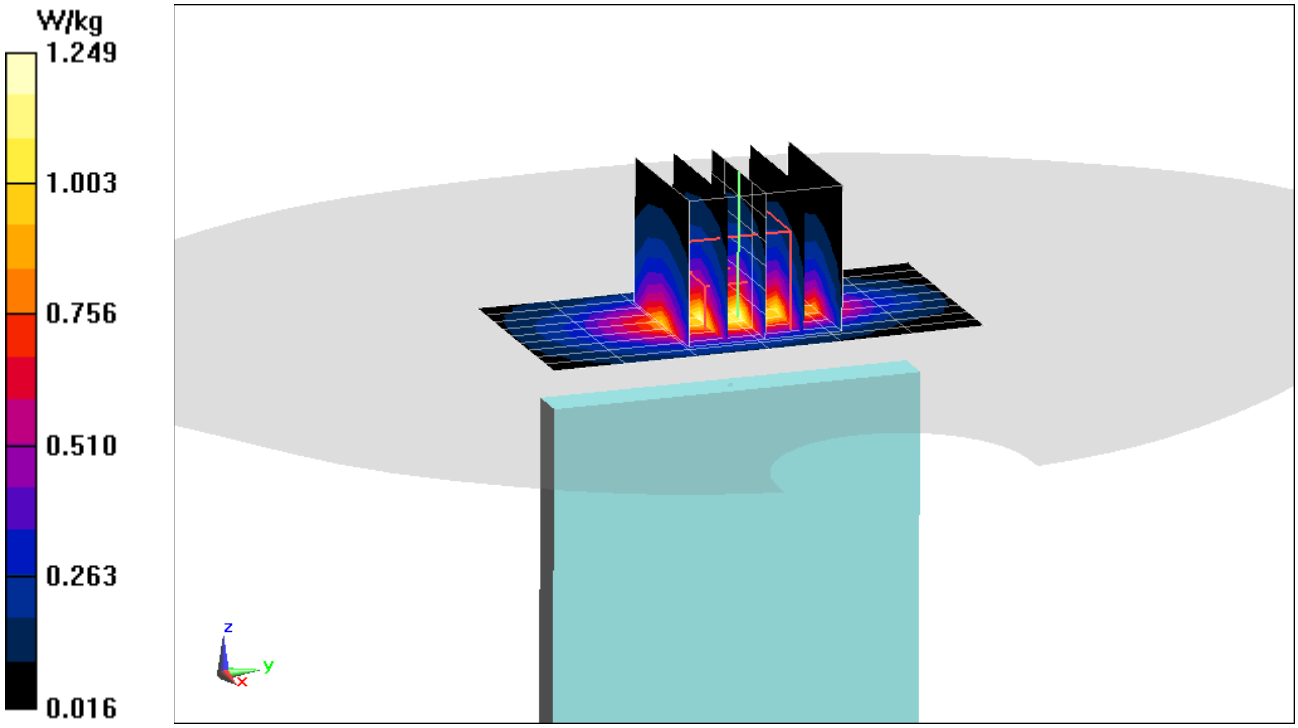
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.59 S/m; ε_r = 51.479; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-20-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7406; ConvF(7.74, 7.74, 7.74); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.22 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.854 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19736

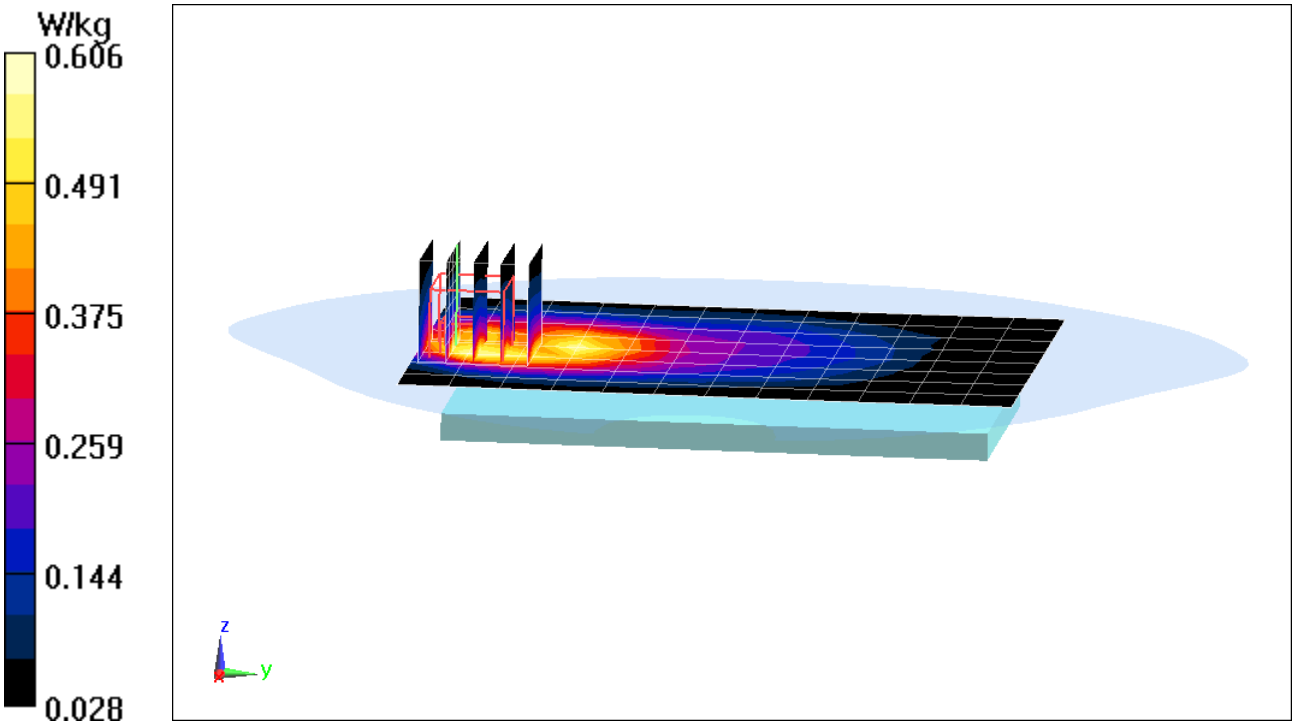
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.92 S/m; ε_r = 56.454; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2018; Ambient Temp: 22.0°C; Tissue Temp: 24.6°C

Probe: EX3DV4 - SN7410; ConvF(9.87, 9.87, 9.87); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.64 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.733 W/kg
SAR(1 g) = 0.407 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19736

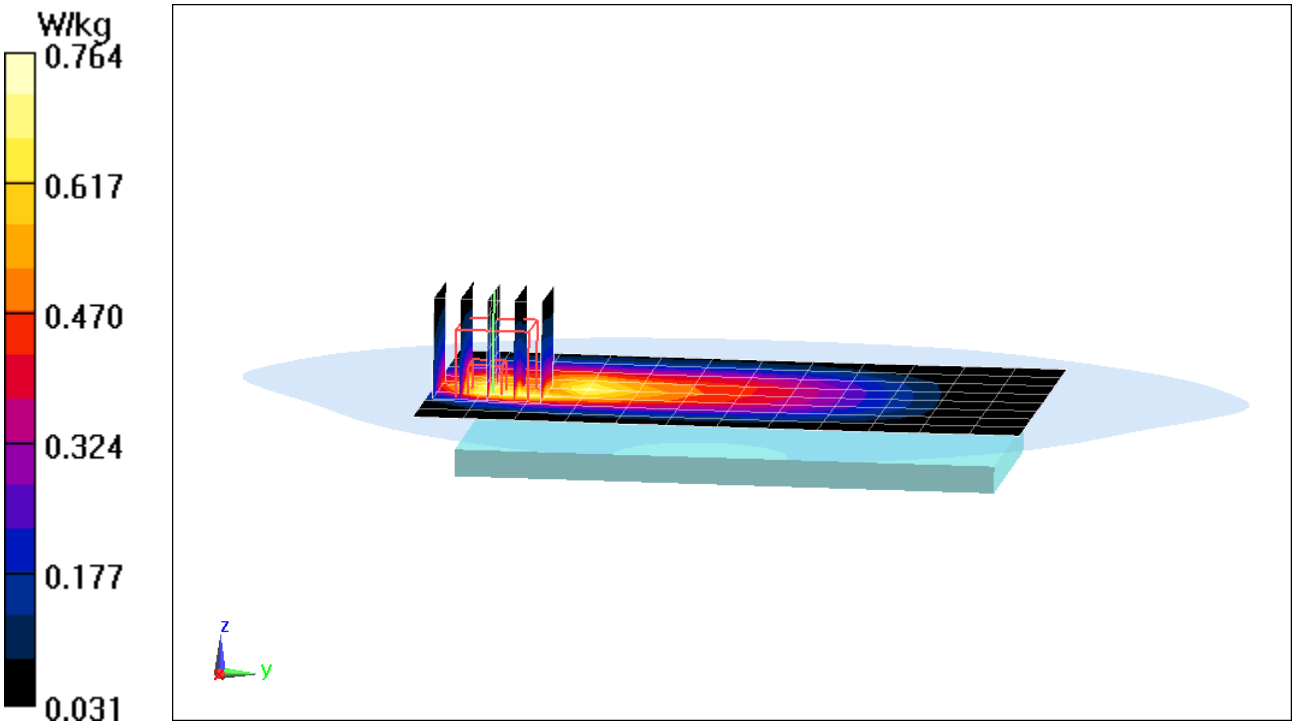
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.986 S/m; ε_r = 55.82; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2018; Ambient Temp: 22.0°C; Tissue Temp: 24.6°C

Probe: EX3DV4 - SN7410; ConvF(9.87, 9.87, 9.87); Calibrated: 7/20/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.86 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.907 W/kg
SAR(1 g) = 0.512 W/kg



DUT: ZNFQ910QM; Type: Portable Handset; Serial: 19769

Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 1.004 S/m; ε_r = 53.654; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-22-2018; Ambient Temp: 23.8°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61); Calibrated: 5/22/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/22/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: LTE Band 26 (Cell.), Body SAR, Back Side, Mid.ch,
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.15 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.911 W/kg
SAR(1 g) = 0.502 W/kg