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SAR EVALUATION REPORT

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

Date of Testing:
09/16/19 - 10/16/19
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1909120153-01-R1.ZNF

FCC ID: **ZNFQ620WA**

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-Q620WA
Additional Model(s): LMQ620WA, Q620WA, LM-Q620VA, LMQ620VA, Q620VA, LM-Q620VL, LMQ620VL, Q620VL, LM-Q620QM6, LMQ620QM6, Q620QM6, LM-Q620QM, LMQ620QM, Q620QM

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	0.13	0.53	0.53	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.10	0.28	0.40	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.18	0.54	0.54	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.14	0.75	0.99	2.65
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.12	0.68	0.84	2.26
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.17	0.51	0.50	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.18	0.59	0.56	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.13	0.76	1.17	2.41
PCE	LTE Band 71	665.5 - 695.5 MHz	0.10	0.54	0.54	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.15	0.50	0.50	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	0.16	0.60	0.60	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.17	0.57	0.57	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.19	0.64	0.64	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.14	0.68	0.92	2.68
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	0.15	0.82	0.96	2.33
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	< 0.1	0.82	1.16	2.80
CBE	LTE Band 48	3552.5 - 3697.5 MHz	< 0.1	0.24	0.43	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.57	0.93	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.17	0.29	0.29	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	0.29	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.71	0.25	N/A	1.85
NII	U-NII-2C	5500 - 5720 MHz	0.88	0.28	N/A	2.29
NII	U-NII-3	5745 - 5825 MHz	0.67	0.22	0.74	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.17	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.35	1.13	1.58	3.96

Note: This revised Test Report (S/N: 1M1907250129-01-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

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 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 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 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 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**	**31.7**	**29.7**	**28.2**	**26.7**	**26.7**	**25.7**	**24.7**
	Nominal	**33.2**	**33.2**	**31.2**	**29.2**	**27.7**	**26.2**	**26.2**	**25.2**	**24.2**
GSM/GPRS/EDGE 1900	Maximum	**30.2**	**30.2**	**28.2**	**26.7**	**25.7**	**25.7**	**25.7**	**24.7**	**23.7**
	Nominal	**29.7**	**29.7**	**27.7**	**26.2**	**25.2**	**25.2**	**25.2**	**24.2**	**23.2**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 5 (850 MHz)	Maximum	**25.0**	**25.0**	**25.0**	**25.0**
	Nominal	**24.5**	**24.5**	**24.5**	**24.5**
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	**24.7**	**24.7**	**24.7**	**24.7**
	Nominal	**24.2**	**24.2**	**24.2**	**24.2**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.2**
	Nominal	**24.7**
CDMA/EVDO BC0 (§22H)	Maximum	**25.2**
	Nominal	**24.7**
PCS CDMA/EVDO	Maximum	**24.7**
	Nominal	**24.2**

Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 12	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 17	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 13	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 26 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 5 (Cell)	Maximum	**25.5**
	Nominal	**25.0**
LTE Band 66 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 4 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 25 (PCS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 2 (PCS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 7	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 48	Maximum	**23.7**
	Nominal	**23.2**
LTE Band 41	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 41 PC2	Maximum	**27.2**
	Nominal	**26.7**

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b	Maximum	**21.5**		
	Nominal	**20.5**		
IEEE 802.11g	Maximum	**20.0**	**21.0**	**19.5**
	Nominal	**19.0**	**20.0**	**18.5**
IEEE 802.11n	Maximum	**19.0**	**20.0**	**18.5**
	Nominal	**18.0**	**19.0**	**17.5**
IEEE 802.11ac	Maximum	**19.0**	**20.0**	**18.5**
	Nominal	**18.0**	**19.0**	**17.5**

Mode / Band		Modulated Average - Single Tx Chain (dBm)																					
		20 MHz Bandwidth									40 MHz Bandwidth								80 MHz Bandwidth				
	Channel	36	40-60	64	100	104-140	144	149	153-161	165	38	46-54	62	102	110-134	142	151	159	42	58	106	122	138	155
IEEE 802.11a (5 GHz)	Maximum	**19.5**																					
	Nominal	**18.5**																					
IEEE 802.11n (5 GHz)	Maximum	**18.5**									**16.5**												
	Nominal	**17.5**									**15.5**												
IEEE 802.11ac (5 GHz)	Maximum	**18.5**									**16.5**								**14.5**				
	Nominal	**17.5**									**15.5**								**13.5**				

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	**12.0**
	Nominal	**11.0**
Bluetooth EDR	Maximum	**10.0**
	Nominal	**9.0**
Bluetooth LE	Maximum	**8.0**
	Nominal	**7.0**

1.3.2 Reduced 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	**23.7**	**23.7**	**23.7**	**23.7**
	Nominal	**23.2**	**23.2**	**23.2**	**23.2**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**23.7**
	Nominal	**23.2**

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	**23.2**
	Nominal	**22.7**
LTE Band 2 (PCS)	Maximum	**23.2**
	Nominal	**22.7**
LTE Band 7	Maximum	**23.2**
	Nominal	**22.7**

Mode / Band		Modulated Average (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b	Maximum	**19.5**		
	Nominal	**18.5**		
IEEE 802.11g	Maximum	**19.5**		
	Nominal	**18.5**		
IEEE 802.11n	Maximum	**19.0**	**19.5**	**18.5**
	Nominal	**18.0**	**18.5**	**17.5**
IEEE 802.11ac	Maximum	**19.0**	**19.5**	**18.5**
	Nominal	**18.0**	**18.5**	**17.5**

Mode / Band		Modulated Average - Single Tx Chain (dBm)																					
		20 MHz Bandwidth									40 MHz Bandwidth								80 MHz Bandwidth				
	Channel	36	40-60	64	100	104-140	144	149	153-165	165	38	46-54	62	102	110-134	142	151	159	42	58	106	122	138	155
IEEE 802.11a (5 GHz)	Maximum	**16.5**																					
	Nominal	**15.5**																					
IEEE 802.11n (5 GHz)	Maximum	**16.5**									**16.5**												
	Nominal	**15.5**									**15.5**												
IEEE 802.11ac (5 GHz)	Maximum	**16.5**									**16.5**								**14.5**				
	Nominal	**15.5**									**15.5**								**13.5**				

1.4 DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 cm. The overall diagonal dimension of the device is ≤160 mm and the diagonal display is ≤150 mm. A diagram showing the location of the device antennas can be found in Appendix E. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a “phablet.”

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	No
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	No
UMTS 1750	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	No
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	No
PCS EVDO	Yes	Yes	No	Yes	No	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	No
LTE Band 12	Yes	Yes	No	Yes	Yes	No
LTE Band 13	Yes	Yes	No	Yes	Yes	No
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	No
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS)	Yes	Yes	No	Yes	No	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 7	Yes	Yes	No	Yes	No	Yes
LTE Band 48	Yes	Yes	No	Yes	No	No
LTE Band 41	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN	Yes	Yes	Yes	No	Yes	No
5 GHz WLAN	Yes	Yes	Yes	No	Yes	No
Bluetooth	Yes	Yes	Yes	No	Yes	No

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

1.5 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 E.

1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

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

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

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A and 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.

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

This device supports IEEE 802.11ac with the following features:

a) Up to 80 MHz Bandwidth only
b) No aggregate channel configurations
c) 1 Tx antenna output
d) 256 QAM is supported
e) TDWR and Band gap channels are supported

(B) Licensed Transmitter(s)

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

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

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

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

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

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when

wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

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

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

LTE band 5 was additionally tested/evaluated per manufacturer's request

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)
- May 2017 TCB Workshop Notes (LTE Band 41 Power Class 2/3)
- 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					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 48: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 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 48: 5 MHz	3552.5 (55265)	3600.8 (55748)	N/A	3649.2 (56232)	3697.5 (56715)
LTE Band 48: 10 MHz	3555 (55290)	3601.7 (55757)	N/A	3648.3 (56223)	3695 (56690)
LTE Band 48: 15 MHz	3557.5 (55315)	3602.5 (55765)	N/A	3647.5 (56215)	3692.5 (56665)
LTE Band 48: 20 MHz	3560 (55340)	3603.3 (55773)	N/A	3646.7 (56207)	3690 (56640)
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 11, UL UE Cat 5				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 12. It supports carrier aggregation features as shown in Appendix F. 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, WIFI Offloading, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

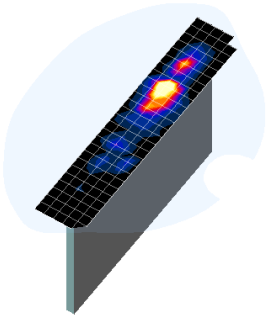

Figure 4-1
Sample SAR Area Scan

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

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

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

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

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

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

*Also compliant to IEEE 1528-2013 Table 6

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

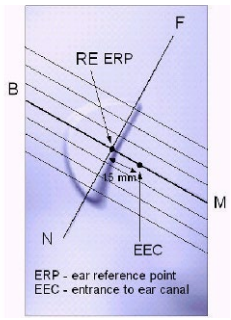

Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

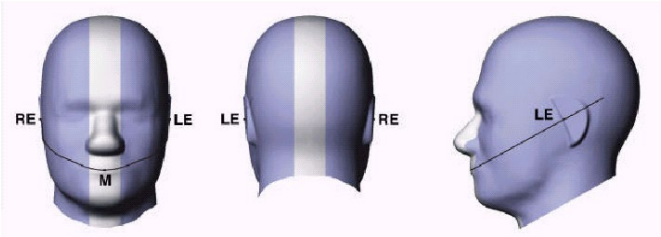

Figure 5-2
Front, back and side view of SAM Twin Phantom

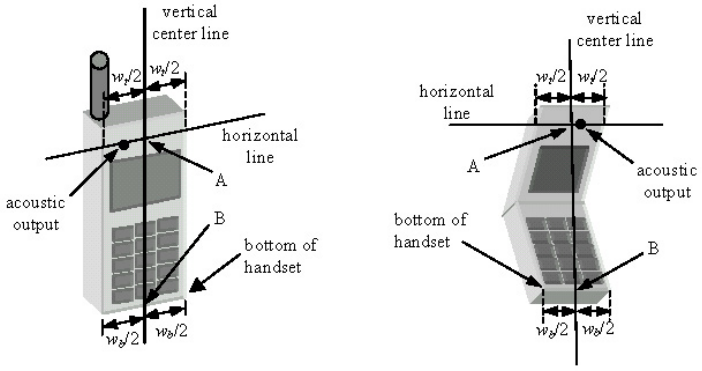

Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

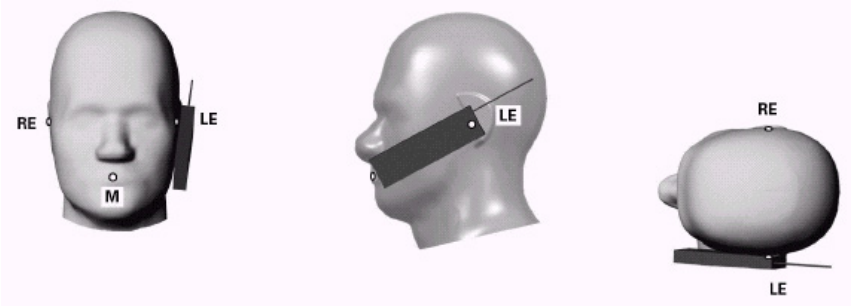

Figure 6-1 Front, Side and Top View of Cheek Position

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

6.3 Positioning for Ear / 15º Tilt

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

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

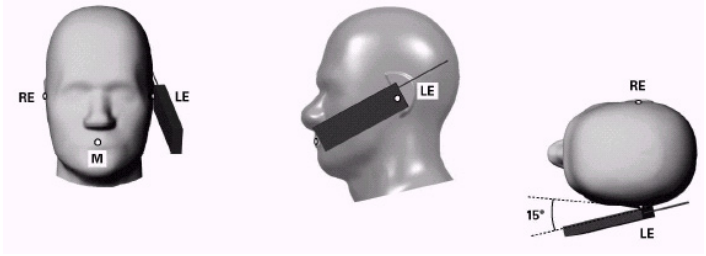

Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

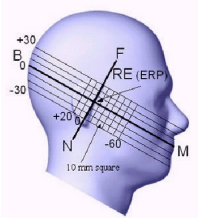

Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

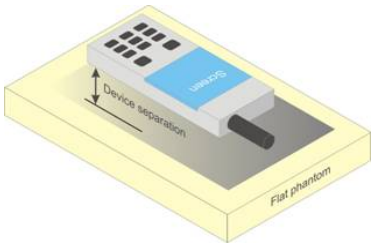

Figure 6-4
Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that

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

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

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

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

6.8 Phablet Configurations

For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

6.9 Proximity Sensor Considerations

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

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

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

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

8 FCC MEASUREMENT PROCEDURES

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.4.6 CDMA2000 1x Advanced

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

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

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

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

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR

measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the

remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.7.7 Initial Test Configuration Procedure

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

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

8.7.8 Subsequent Test Configuration Procedures

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.18	25.18	25.19	25.18	25.17	25.14	25.19
Cellular	1013	22H	824.7	25.13	25.08	25.14	25.15	25.14	25.16	25.16
	384	22H	836.52	25.18	25.17	25.19	25.19	25.15	25.18	25.20
	777	22H	848.31	24.59	24.75	24.60	24.57	24.49	24.80	24.75
PCS	25	24E	1851.25	24.52	24.53	23.52	24.52	24.44	24.51	24.55
	600	24E	1880	24.36	24.32	23.35	24.24	24.24	24.30	24.35
	1175	24E	1908.75	24.22	24.24	23.31	24.15	24.18	24.26	24.25

Table 9-2
Reduced Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	23.48	23.51	23.52	23.48	23.49	23.56	23.55
	600	24E	1880	23.29	23.28	23.35	23.28	23.26	23.32	23.34
	1175	24E	1908.75	23.19	23.18	23.31	23.19	23.18	23.31	23.28

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

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

Table 9-3
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	33.38	33.43	31.51	**29.09**	27.74	26.70	26.69	25.09	23.71
	190	33.55	33.62	31.70	**29.21**	27.95	26.68	26.59	24.98	23.66
	251	33.57	33.60	31.68	**29.16**	27.73	26.62	26.60	24.75	23.59
GSM 1900	512	30.00	29.99	27.98	25.91	**25.05**	25.65	25.19	24.11	22.91
	661	30.16	30.13	28.14	26.27	**25.51**	25.70	25.36	24.45	23.09
	810	30.20	30.18	28.16	26.42	**25.60**	25.68	25.19	24.24	23.13

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	24.35	24.40	25.49	**24.83**	24.73	17.67	20.67	20.83	20.70
	190	24.52	24.59	25.68	**24.95**	24.94	17.65	20.57	20.72	20.65
	251	24.54	24.57	25.66	**24.90**	24.72	17.59	20.58	20.49	20.58
GSM 1900	512	20.97	20.96	21.96	21.65	**22.04**	16.62	19.17	19.85	19.90
	661	21.13	21.10	22.12	22.01	**22.50**	16.67	19.34	20.19	20.08
	810	21.17	21.15	22.14	22.16	**22.59**	16.65	19.17	19.98	20.12

GSM 850	**Frame Avg.Targets:**	24.17	24.17	25.18	**24.94**	24.69	17.17	20.18	20.94	21.19
GSM 1900		20.67	20.67	21.68	21.94	**22.19**	16.17	19.18	19.94	20.19

Note:

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

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

Figure 9-2
Power Measurement Setup

9.3 UMTS Conducted Powers

Table 9-4
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	24.65	24.67	24.68	24.35	24.28	24.32	24.31	24.34	24.33	-
99		12.2 kbps AMR	24.55	24.53	24.50	24.40	24.35	24.41	24.36	24.30	24.35	-
6	HSDPA	Subtest 1	23.80	23.68	23.61	23.40	23.31	23.51	23.49	23.29	23.45	0
6		Subtest 2	23.83	23.72	23.60	23.39	23.26	23.53	23.49	23.26	23.40	0
6		Subtest 3	23.29	23.18	23.11	22.91	22.80	22.98	23.01	22.79	22.92	0.5
6		Subtest 4	23.31	23.22	23.14	22.97	22.83	22.98	22.99	22.80	22.84	0.5
6	HSUPA	Subtest 1	23.75	23.67	23.60	23.39	23.35	23.51	23.51	23.26	23.41	0
6		Subtest 2	21.90	21.89	21.81	21.41	21.33	21.50	21.38	21.22	21.28	2
6		Subtest 3	22.99	22.89	22.83	22.38	22.30	22.51	22.51	22.29	22.49	1
6		Subtest 4	21.77	21.70	21.62	21.35	21.29	21.50	21.49	21.26	21.42	2
6		Subtest 5	23.82	23.71	23.61	23.38	23.34	23.48	23.53	23.29	23.43	0
8	DC-HSDPA	Subtest 1	23.80	23.70	23.66	23.39	23.32	23.51	23.52	23.26	23.43	0
8		Subtest 2	23.79	23.68	23.63	23.40	23.34	23.51	23.53	23.28	23.42	0
8		Subtest 3	23.28	23.17	23.12	22.84	22.82	23.02	23.04	22.82	22.95	0.5
8		Subtest 4	23.30	23.18	23.08	22.85	22.80	23.01	23.00	22.77	22.89	0.5

Table 9-5
Reduced Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.34	23.29	23.40	23.42	23.41	23.36	-
99		12.2 kbps AMR	23.39	23.37	23.42	23.30	23.20	23.26	-
6	HSDPA	Subtest 1	22.42	22.32	22.46	22.48	22.30	22.40	0
6		Subtest 2	22.39	22.32	22.46	22.55	22.26	22.45	0
6		Subtest 3	21.91	21.83	21.98	22.04	21.81	21.93	0.5
6		Subtest 4	21.89	21.80	21.99	21.94	21.80	21.90	0.5
6	HSUPA	Subtest 1	22.39	22.33	22.52	22.50	22.26	22.35	0
6		Subtest 2	20.39	20.34	20.53	20.50	20.27	20.41	2
6		Subtest 3	21.38	21.30	21.48	21.54	21.25	21.42	1
6		Subtest 4	20.37	20.29	20.48	20.51	20.25	20.44	2
6		Subtest 5	22.37	22.31	22.51	22.50	22.29	22.43	0
8	DC-HSDPA	Subtest 1	22.39	22.34	22.49	22.49	22.26	22.43	0
8		Subtest 2	22.37	22.34	22.51	22.51	22.24	22.38	0
8		Subtest 3	21.80	21.83	21.96	21.98	21.72	21.92	0.5
8		Subtest 4	21.87	21.79	22.00	22.02	21.76	21.88	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

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 71

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

LTE Band 71 20 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	**25.23**	0	0
	1	50	25.19		0
	1	99	25.10		0
	50	0	**24.30**	0-1	1
	50	25	24.26		1
	50	50	24.15		1
	100	0	24.29		1
16QAM	1	0	24.50	0-1	1
	1	50	24.41		1
	1	99	24.28		1
	50	0	23.35	0-2	2
	50	25	23.30		2
	50	50	23.25		2
	100	0	23.28		2
64QAM	1	0	23.42	0-2	2
	1	50	23.49		2
	1	99	23.42		2
	50	0	22.39	0-3	3
	50	25	22.32		3
	50	50	22.29		3
	100	0	22.33		3

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

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

LTE Band 71 15 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **133297 (680.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.28	0	0
	1	36	25.31		0
	1	74	25.19		0
	36	0	24.25	0-1	1
	36	18	24.22		1
	36	37	24.14		1
	75	0	24.18		1
16QAM	1	0	24.34	0-1	1
	1	36	24.41		1
	1	74	24.26		1
	36	0	23.45	0-2	2
	36	18	23.41		2
	36	37	23.30		2
	75	0	23.27		2
64QAM	1	0	23.47	0-2	2
	1	36	23.38		2
	1	74	23.31		2
	36	0	22.41	0-3	3
	36	18	22.36		3
	36	37	22.27		3
	75	0	22.35		3

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

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

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.26	25.23	25.31	0	0
	1	25	25.17	25.27	25.32		0
	1	49	25.16	25.25	25.19		0
	25	0	24.34	24.39	24.37	0-1	1
	25	12	24.46	24.39	24.30		1
	25	25	24.36	24.29	24.33		1
	50	0	24.44	24.38	24.32		1
16QAM	1	0	24.45	24.03	24.49	0-1	1
	1	25	24.43	24.03	24.38		1
	1	49	24.39	24.00	24.42		1
	25	0	23.47	23.47	23.46	0-2	2
	25	12	23.50	23.44	23.41		2
	25	25	23.43	23.41	23.46		2
	50	0	23.44	23.42	23.42		2
64QAM	1	0	23.38	23.23	23.50	0-2	2
	1	25	23.33	23.25	23.41		2
	1	49	23.32	23.24	23.33		2
	25	0	22.39	22.36	22.44	0-3	3
	25	12	22.46	22.38	22.41		3
	25	25	22.45	22.25	22.46		3
	50	0	22.34	22.41	22.42		3

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.35	25.35	25.25	0	0
	1	12	25.30	25.30	25.19		0
	1	24	25.30	25.29	25.16		0
	12	0	24.40	24.36	24.39	0-1	1
	12	6	24.39	24.38	24.39		1
	12	13	24.31	24.34	24.33		1
	25	0	24.32	24.33	24.35		1
16QAM	1	0	24.32	24.46	24.42	0-1	1
	1	12	24.26	24.39	24.39		1
	1	24	24.29	24.50	24.33		1
	12	0	23.49	23.41	23.47	0-2	2
	12	6	23.45	23.49	23.47		2
	12	13	23.39	23.45	23.41		2
	25	0	23.40	23.45	23.40		2
64QAM	1	0	23.47	23.29	23.41	0-2	2
	1	12	23.30	23.45	23.42		2
	1	24	23.33	23.42	23.40		2
	12	0	22.46	22.49	22.44	0-3	3
	12	6	22.35	22.46	22.44		3
	12	13	22.41	22.45	22.38		3
	25	0	22.42	22.36	22.40		3

9.4.2 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23095 (707.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.08	0	0
	1	25	25.10		0
	1	49	**25.18**		0
	25	0	**24.25**	0-1	1
	25	12	24.24		1
	25	25	24.12		1
	50	0	24.22		1
16QAM	1	0	24.20	0-1	1
	1	25	24.23		1
	1	49	24.30		1
	25	0	23.25	0-2	2
	25	12	23.26		2
	25	25	23.19		2
	50	0	23.25		2
64QAM	1	0	23.28	0-2	2
	1	25	23.18		2
	1	49	23.30		2
	25	0	22.34	0-3	3
	25	12	22.27		3
	25	25	22.23		3
	50	0	22.28		3

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

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

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.09	25.24	25.13	0	0
	1	12	25.03	25.37	25.14		0
	1	24	25.09	25.25	25.13		0
	12	0	24.11	24.33	24.10	0-1	1
	12	6	24.13	24.31	24.17		1
	12	13	24.16	24.25	24.13		1
	25	0	24.07	24.20	24.06		1
16QAM	1	0	23.96	24.04	24.21	0-1	1
	1	12	24.07	24.02	24.28		1
	1	24	24.10	24.01	24.18		1
	12	0	23.19	23.32	23.23	0-2	2
	12	6	23.21	23.30	23.34		2
	12	13	23.23	23.25	23.30		2
	25	0	23.16	23.26	23.21		2
64QAM	1	0	23.02	23.46	23.19	0-2	2
	1	12	23.11	23.46	23.27		2
	1	24	23.17	23.43	23.15		2
	12	0	22.18	22.37	22.32	0-3	3
	12	6	22.19	22.36	22.41		3
	12	13	22.27	22.31	22.35		3
	25	0	22.19	22.31	22.36		3

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.07	25.23	25.04	0	0
	1	7	25.16	25.33	25.11		0
	1	14	25.06	25.29	25.02		0
	8	0	24.16	24.25	24.11	0-1	1
	8	4	24.14	24.27	24.13		1
	8	7	24.09	24.23	24.05		1
	15	0	24.13	24.20	24.11		1
16QAM	1	0	24.12	24.13	24.13	0-1	1
	1	7	24.23	24.25	24.23		1
	1	14	24.13	24.17	24.04		1
	8	0	23.01	23.11	23.24	0-2	2
	8	4	23.06	23.14	23.29		2
	8	7	23.14	23.05	23.23		2
	15	0	23.17	23.20	23.35		2
64QAM	1	0	23.11	23.15	23.50	0-2	2
	1	7	23.22	23.10	23.44		2
	1	14	23.09	22.99	23.41		2
	8	0	22.15	22.37	22.38	0-3	3
	8	4	22.23	22.40	22.44		3
	8	7	22.15	22.34	22.35		3
	15	0	22.26	22.37	22.35		3

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.13	25.22	24.90	0	0
	1	2	25.17	25.27	24.96		0
	1	5	25.11	25.19	24.93		0
	3	0	25.11	24.91	25.04		0
	3	2	25.17	24.98	25.12		0
	3	3	25.25	24.96	25.04		0
	6	0	24.32	24.16	24.14	0-1	1
16QAM	1	0	24.24	23.76	24.06	0-1	1
	1	2	24.13	23.79	24.10		1
	1	5	24.22	23.76	24.05		1
	3	0	24.19	24.07	24.13		1
	3	2	24.10	24.20	24.20		1
	3	3	24.19	24.13	24.12		1
	6	0	23.45	23.12	23.02	0-2	2
64QAM	1	0	23.26	23.29	23.24	0-2	2
	1	2	23.40	23.08	23.13		2
	1	5	23.23	23.17	23.11		2
	3	0	23.07	23.20	23.17		2
	3	2	23.10	23.28	23.29		2
	3	3	23.00	23.22	23.20		2
	6	0	21.97	22.15	22.10	0-3	3

9.4.3 LTE Band 13

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

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.30	0	0
	1	25	**25.31**		0
	1	49	25.28		0
	25	0	**24.46**	0-1	1
	25	12	24.45		1
	25	25	24.39		1
	50	0	24.40		1
16QAM	1	0	24.36	0-1	1
	1	25	24.50		1
	1	49	24.46		1
	25	0	23.47	0-2	2
	25	12	23.49		2
	25	25	23.40		2
	50	0	23.46		2
64QAM	1	0	23.47	0-2	2
	1	25	23.46		2
	1	49	23.39		2
	25	0	22.48	0-3	3
	25	12	22.50		3
	25	25	22.41		3
	50	0	22.49		3

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

LTE Band 13 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23230 (782.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.26	0	0
	1	12	25.32		0
	1	24	25.32		0
	12	0	24.36	0-1	1
	12	6	24.23		1
	12	13	24.27		1
	25	0	24.15		1
16QAM	1	0	24.28	0-1	1
	1	12	24.31		1
	1	24	24.36		1
	12	0	23.15	0-2	2
	12	6	23.16		2
	12	13	23.10		2
	25	0	23.13		2
64QAM	1	0	23.41	0-2	2
	1	12	23.50		2
	1	24	23.44		2
	12	0	22.41	0-3	3
	12	6	22.47		3
	12	13	22.44		3
	25	0	22.46		3

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

9.4.4 LTE Band 26 (Cell)

Table 9-16
LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**25.29**	0	0
	1	36	25.08		0
	1	74	25.07		0
	36	0	24.13	0-1	1
	36	18	**24.16**		1
	36	37	24.09		1
	75	0	24.15		1
16QAM	1	0	24.41	0-1	1
	1	36	24.35		1
	1	74	24.09		1
	36	0	23.31	0-2	2
	36	18	23.22		2
	36	37	23.22		2
	75	0	23.21		2
64QAM	1	0	23.50	0-2	2
	1	36	23.38		2
	1	74	23.27		2
	36	0	22.26	0-3	3
	36	18	22.26		3
	36	37	22.23		3
	75	0	22.18		3

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

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

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.98	25.03	25.24	0	0
	1	25	24.93	25.04	25.14		0
	1	49	24.94	25.03	24.99		0
	25	0	24.10	24.21	24.17	0-1	1
	25	12	24.18	24.17	24.18		1
	25	25	24.13	24.13	24.11		1
	50	0	24.18	24.15	24.15		1
16QAM	1	0	24.20	23.75	24.26	0-1	1
	1	25	24.13	23.82	24.19		1
	1	49	24.13	23.68	24.06		1
	25	0	23.26	23.36	23.24	0-2	2
	25	12	23.35	23.33	23.26		2
	25	25	23.22	23.30	23.24		2
	50	0	23.32	23.29	23.28		2
64QAM	1	0	23.11	22.96	23.41	0-2	2
	1	25	23.09	23.01	23.39		2
	1	49	23.02	22.94	23.47		2
	25	0	22.43	22.46	22.31	0-3	3
	25	12	22.49	22.47	22.31		3
	25	25	22.40	22.38	22.30		3
	50	0	22.34	22.39	22.29		3

Table 9-18
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.09	25.16	25.09	0	0
	1	12	25.06	25.15	25.04		0
	1	24	25.05	25.13	25.07		0
	12	0	24.15	24.20	24.12	0-1	1
	12	6	24.13	24.20	24.14		1
	12	13	24.07	24.14	24.10		1
	25	0	24.10	24.19	24.11		1
16QAM	1	0	24.04	24.34	24.11	0-1	1
	1	12	24.04	24.35	24.08		1
	1	24	24.03	24.27	24.01		1
	12	0	23.26	23.33	23.22	0-2	2
	12	6	23.29	23.34	23.23		2
	12	13	23.24	23.27	23.15		2
	25	0	23.24	23.30	23.19		2
64QAM	1	0	23.46	23.31	23.18	0-2	2
	1	12	23.43	23.28	23.15		2
	1	24	23.41	23.21	23.07		2
	12	0	22.34	22.35	22.24	0-3	3
	12	6	22.33	22.36	22.25		3
	12	13	22.24	22.30	22.18		3
	25	0	22.25	22.41	22.25		3

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

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.01	25.11	25.14	0	0
	1	7	25.05	25.15	25.24		0
	1	14	24.95	25.03	25.09		0
	8	0	24.10	24.10	24.18	0-1	1
	8	4	24.12	24.13	24.20		1
	8	7	24.02	24.05	24.13		1
	15	0	24.13	24.12	24.15		1
16QAM	1	0	24.24	23.86	24.13	0-1	1
	1	7	24.25	23.90	24.20		1
	1	14	24.18	23.73	24.04		1
	8	0	23.08	23.02	23.22	0-2	2
	8	4	23.13	23.08	23.21		2
	8	7	23.00	23.04	23.18		2
	15	0	23.27	23.24	23.25		2
64QAM	1	0	23.15	22.99	23.44	0-2	2
	1	7	23.22	23.14	23.39		2
	1	14	23.09	22.99	23.44		2
	8	0	22.24	22.29	22.31	0-3	3
	8	4	22.26	22.36	22.33		3
	8	7	22.17	22.28	22.29		3
	15	0	22.31	22.38	22.23		3

Table 9-20
LTE Band 26 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.16	25.28	25.28	0	0
	1	2	25.24	25.37	25.34		0
	1	5	25.17	25.29	25.25		0
	3	0	25.31	25.30	25.17		0
	3	2	25.40	25.38	25.27		0
	3	3	25.32	25.33	25.19		0
	6	0	24.24	24.20	24.40	0-1	1
16QAM	1	0	24.37	24.02	24.37	0-1	1
	1	2	24.45	24.08	24.41		1
	1	5	24.43	24.07	24.36		1
	3	0	24.47	24.35	24.19		1
	3	2	24.49	24.26	24.27		1
	3	3	24.42	24.35	24.17		1
	6	0	23.37	23.30	23.28	0-2	2
64QAM	1	0	23.32	23.21	23.21	0-2	2
	1	2	23.37	23.30	23.24		2
	1	5	23.33	23.19	23.18		2
	3	0	23.43	23.36	23.30		2
	3	2	23.35	23.31	23.37		2
	3	3	23.47	23.34	23.34		2
	6	0	22.41	22.38	22.29	0-3	3

9.4.1 LTE Band 5 (Cell)

Table 9-21
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	25.04	0	0
	1	25	25.06		0
	1	49	**25.14**		0
	25	0	23.64	0-1	1
	25	12	**23.67**		1
	25	25	23.60		1
	50	0	23.65		1
16QAM	1	0	23.90	0-1	1
	1	25	23.83		1
	1	49	23.88		1
	25	0	22.82	0-2	2
	25	12	22.78		2
	25	25	22.76		2
	50	0	22.78		2
64QAM	1	0	23.24	0-2	2
	1	25	23.19		2
	1	49	23.20		2
	25	0	21.75	0-3	3
	25	12	21.80		3
	25	25	21.74		3
	50	0	21.72		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 9-22
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	25.08	25.02	24.91	0	0
	1	12	25.11	25.09	24.94		0
	1	24	25.08	25.18	24.96		0
	12	0	23.75	23.62	23.71	0-1	1
	12	6	23.72	23.62	23.62		1
	12	13	23.70	23.58	23.67		1
	25	0	23.67	23.60	23.66		1
16QAM	1	0	23.64	23.79	23.49	0-1	1
	1	12	23.59	23.74	23.60		1
	1	24	23.58	23.79	23.48		1
	12	0	22.85	22.79	22.63	0-2	2
	12	6	22.84	22.79	22.76		2
	12	13	22.80	22.72	22.69		2
	25	0	22.80	22.71	22.69		2
64QAM	1	0	23.04	22.72	22.79	0-2	2
	1	12	22.99	22.73	22.72		2
	1	24	22.94	22.74	22.65		2
	12	0	21.88	21.81	21.60	0-3	3
	12	6	21.84	21.79	21.76		3
	12	13	21.86	21.76	21.67		3
	25	0	21.77	21.82	21.65		3

Table 9-23
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	25.04	25.00	25.05	0	0
	1	7	25.09	25.12	25.11		0
	1	14	25.01	24.99	25.04		0
	8	0	23.65	23.67	23.56	0-1	1
	8	4	23.66	23.66	23.58		1
	8	7	23.57	23.69	23.52		1
	15	0	23.68	23.65	23.59		1
16QAM	1	0	23.80	23.77	23.62	0-1	1
	1	7	23.84	23.69	23.69		1
	1	14	23.75	23.74	23.49		1
	8	0	22.63	22.87	22.68	0-2	2
	8	4	22.66	22.66	22.74		2
	8	7	22.75	22.77	22.70		2
	15	0	22.79	22.65	22.77		2
64QAM	1	0	22.75	22.77	23.09	0-2	2
	1	7	22.78	22.64	23.15		2
	1	14	22.68	22.87	22.98		2
	8	0	21.75	21.72	21.77	0-3	3
	8	4	21.83	21.78	21.79		3
	8	7	21.75	21.73	21.72		3
	15	0	21.82	21.77	21.75		3

Table 9-24
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	25.20	24.94	25.12	0	0
	1	2	25.24	24.98	25.17		0
	1	5	25.17	24.92	25.13		0
	3	0	25.10	24.98	24.93		0
	3	2	25.16	25.05	24.97		0
	3	3	25.08	24.95	24.93		0
	6	0	23.52	23.67	23.47	0-1	1
16QAM	1	0	23.71	23.81	23.53	0-1	1
	1	2	23.77	23.77	23.60		1
	1	5	23.73	23.71	23.65		1
	3	0	23.75	23.74	23.59		1
	3	2	23.81	23.76	23.66		1
	3	3	23.79	23.73	23.61		1
	6	0	22.71	22.78	22.64	0-2	2
64QAM	1	0	23.03	23.01	22.86	0-2	2
	1	2	23.17	22.97	22.94		2
	1	5	22.99	22.69	22.79		2
	3	0	22.75	22.71	22.68		2
	3	2	22.79	22.80	22.72		2
	3	3	22.72	22.71	22.67		2
	6	0	21.70	21.60	21.58	0-3	3

9.4.2 LTE Band 66 (AWS)

Table 9-25
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	**24.01**	23.95	23.83	0	0
	1	50	23.98	23.94	23.92		0
	1	99	24.00	23.92	23.89		0
	50	0	**23.10**	22.96	22.94	0-1	1
	50	25	23.03	23.02	23.00		1
	50	50	23.06	22.99	22.97		1
	100	0	23.08	22.98	22.96		1
16QAM	1	0	22.89	22.75	22.60	0-1	1
	1	50	22.86	22.85	22.86		1
	1	99	22.75	22.81	22.72		1
	50	0	21.90	21.81	21.76	0-2	2
	50	25	21.92	21.84	21.84		2
	50	50	21.90	21.79	21.80		2
	100	0	21.91	21.81	21.76		2
64QAM	1	0	21.63	21.63	21.55	0-2	2
	1	50	21.66	21.68	21.72		2
	1	99	21.60	21.55	21.60		2
	50	0	20.89	20.75	20.80	0-3	3
	50	25	20.94	20.82	20.86		3
	50	50	20.88	20.81	20.86		3
	100	0	20.90	20.82	20.78		3

Table 9-26
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.15	24.00	23.89	0	0
	1	36	23.88	24.05	23.96		0
	1	74	24.10	23.93	23.83		0
	36	0	23.15	23.03	23.01	0-1	1
	36	18	23.17	23.07	23.05		1
	36	37	23.16	23.03	23.00		1
	75	0	23.15	23.05	23.00		1
16QAM	1	0	22.71	22.77	22.67	0-1	1
	1	36	22.84	22.76	22.83		1
	1	74	22.62	22.61	22.66		1
	36	0	22.02	21.88	21.88	0-2	2
	36	18	22.04	21.90	21.90		2
	36	37	22.02	21.86	21.84		2
	75	0	21.96	21.92	21.85		2
64QAM	1	0	21.87	21.81	21.83	0-2	2
	1	36	21.99	21.70	22.01		2
	1	74	21.80	21.94	21.82		2
	36	0	20.97	20.97	20.97	0-3	3
	36	18	21.02	21.00	20.99		3
	36	37	20.95	20.95	20.95		3
	75	0	21.00	20.89	20.79		3

Table 9-27
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.98	23.94	23.83	0	0
	1	25	23.94	23.92	23.83		0
	1	49	23.91	23.89	23.82		0
	25	0	23.10	23.01	22.96	0-1	1
	25	12	23.11	23.00	22.95		1
	25	25	23.10	22.97	22.93		1
	50	0	23.13	22.97	22.95		1
16QAM	1	0	23.01	22.73	23.15	0-1	1
	1	25	23.20	22.69	23.12		1
	1	49	23.14	22.65	23.03		1
	25	0	22.11	22.18	22.15	0-2	2
	25	12	22.13	22.10	22.14		2
	25	25	22.20	22.13	22.13		2
	50	0	22.12	22.15	22.15		2
64QAM	1	0	22.10	21.93	21.78	0-2	2
	1	25	22.13	21.90	21.85		2
	1	49	22.02	21.85	21.67		2
	25	0	20.88	20.78	21.16	0-3	3
	25	12	21.01	20.71	21.12		3
	25	25	20.74	21.20	21.11		3
	50	0	20.77	21.19	21.11		3

Table 9-28
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.06	23.99	23.73	0	0
	1	12	24.04	23.98	23.79		0
	1	24	24.03	23.96	23.79		0
	12	0	23.13	23.02	22.96	0-1	1
	12	6	23.16	23.02	23.00		1
	12	13	23.06	22.98	22.95		1
	25	0	23.08	22.99	22.98		1
16QAM	1	0	23.01	22.78	22.99	0-1	1
	1	12	23.04	22.93	23.03		1
	1	24	22.98	23.17	22.94		1
	12	0	22.08	22.15	22.11	0-2	2
	12	6	21.93	22.19	22.13		2
	12	13	22.02	22.10	22.04		2
	25	0	22.19	22.10	22.07		2
64QAM	1	0	22.14	21.96	22.08	0-2	2
	1	12	21.98	22.07	22.03		2
	1	24	22.10	22.13	22.01		2
	12	0	20.86	20.78	20.69	0-3	3
	12	6	20.90	20.78	20.70		3
	12	13	20.84	20.73	20.63		3
	25	0	20.81	20.78	20.73		3

Table 9-29
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.95	23.88	23.83	0	0
	1	7	24.05	23.98	23.96		0
	1	14	23.89	23.88	23.80		0
	8	0	23.08	22.92	22.91	0-1	1
	8	4	23.06	22.94	22.96		1
	8	7	23.04	22.89	22.90		1
	15	0	23.05	22.93	22.96		1
16QAM	1	0	23.19	22.72	23.03	0-1	1
	1	7	22.99	22.79	23.16		1
	1	14	23.14	22.64	22.99		1
	8	0	22.01	21.89	22.10	0-2	2
	8	4	22.09	21.97	22.12		2
	8	7	22.01	21.89	22.07		2
	15	0	22.20	22.08	22.13		2
64QAM	1	0	22.10	21.87	21.79	0-2	2
	1	7	22.20	21.99	22.01		2
	1	14	22.06	21.85	22.04		2
	8	0	20.76	20.79	20.77	0-3	3
	8	4	20.82	20.83	20.81		3
	8	7	20.74	20.75	20.75		3
	15	0	20.87	20.82	20.71		3

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.06	23.85	24.04	0	0
	1	2	24.12	23.89	24.07		0
	1	5	24.04	23.85	24.01		0
	3	0	24.05	24.03	23.98		0
	3	2	24.15	24.10	24.03		0
	3	3	24.09	24.01	23.98		0
	6	0	22.69	22.71	22.63	0-1	1
16QAM	1	0	22.91	22.94	22.91	0-1	1
	1	2	22.96	23.00	23.02		1
	1	5	22.94	23.05	22.92		1
	3	0	22.95	22.61	22.58		1
	3	2	22.82	22.69	22.69		1
	3	3	22.78	22.64	22.62		1
	6	0	21.58	21.56	21.49	0-2	2
64QAM	1	0	21.85	21.92	21.87	0-2	2
	1	2	22.03	21.88	22.06		2
	1	5	21.99	21.94	21.87		2
	3	0	21.77	21.91	21.63		2
	3	2	21.88	21.59	21.68		2
	3	3	21.79	21.56	21.60		2
	6	0	20.70	20.59	20.57	0-3	3

Table 9-31
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	22.81	22.87	22.84	0	0
	1	50	22.92	**22.93**	22.89		0
	1	99	22.87	22.84	22.84		0
	50	0	22.49	22.50	22.46	0-1	0
	50	25	22.51	**22.58**	22.48		0
	50	50	22.45	22.44	22.42		0
	100	0	22.42	22.41	22.41		0
16QAM	1	0	22.85	22.50	22.80	0-1	0
	1	50	22.98	22.87	22.96		0
	1	99	22.84	22.97	22.84		0
	50	0	21.56	21.60	21.50	0-2	1
	50	25	21.58	21.64	21.58		1
	50	50	21.53	21.57	21.55		1
	100	0	21.53	21.54	21.55		1
64QAM	1	0	21.67	21.93	21.55	0-2	1
	1	50	21.75	22.05	21.75		1
	1	99	21.65	21.87	21.61		1
	50	0	20.66	20.57	20.58	0-3	2
	50	25	20.71	20.64	20.62		2
	50	50	20.61	20.54	20.61		2
	100	0	20.56	20.51	20.55		2

Table 9-32
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	22.86	22.67	22.72	0	0
	1	36	22.89	22.76	22.79		0
	1	74	22.78	22.62	22.66		0
	36	0	22.83	22.77	22.80	0-1	0
	36	18	22.87	22.85	22.86		0
	36	37	22.82	22.81	22.85		0
	75	0	22.79	22.79	22.82		0
16QAM	1	0	22.72	22.96	22.92	0-1	0
	1	36	22.80	23.01	22.85		0
	1	74	22.75	22.89	22.87		0
	36	0	21.83	21.64	21.73	0-2	1
	36	18	21.90	21.68	21.78		1
	36	37	21.85	21.63	21.74		1
	75	0	21.74	21.61	21.73		1
64QAM	1	0	21.64	21.71	21.66	0-2	1
	1	36	21.27	21.60	21.25		1
	1	74	21.19	21.50	21.19		1
	36	0	20.79	20.59	20.70	0-3	2
	36	18	20.82	20.62	20.75		2
	36	37	20.82	20.58	20.72		2
	75	0	20.78	20.71	20.73		2

Table 9-33
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	22.77	22.74	22.65	0	0
	1	25	22.75	22.74	22.63		0
	1	49	22.72	22.72	22.62		0
	25	0	22.92	22.82	22.76	0-1	0
	25	12	22.93	22.80	22.78		0
	25	25	22.88	22.81	22.77		0
	50	0	22.90	22.85	22.76		0
16QAM	1	0	23.04	23.09	23.01	0-1	0
	1	25	23.03	23.04	22.95		0
	1	49	22.94	22.96	22.85		0
	25	0	22.13	22.11	22.06	0-2	1
	25	12	22.17	22.11	22.08		1
	25	25	22.09	22.04	22.03		1
	50	0	22.14	22.04	22.08		1
64QAM	1	0	22.03	21.84	22.03	0-2	1
	1	25	22.06	21.85	22.03		1
	1	49	21.96	21.77	22.01		1
	25	0	20.78	21.09	21.10	0-3	2
	25	12	20.89	21.04	21.07		2
	25	25	21.01	21.01	21.05		2
	50	0	20.65	20.79	21.04		2

Table 9-34
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	22.83	22.76	23.05	0	0
	1	12	22.84	22.84	22.62		0
	1	24	22.84	22.76	22.57		0
	12	0	22.92	22.84	22.77	0-1	0
	12	6	22.93	22.82	22.79		0
	12	13	22.90	22.80	22.78		0
	25	0	22.93	22.85	22.81		0
16QAM	1	0	22.82	23.02	22.82	0-1	0
	1	12	22.89	23.06	22.85		0
	1	24	22.87	23.00	22.77		0
	12	0	22.12	22.08	22.02	0-2	1
	12	6	22.15	22.11	22.05		1
	12	13	22.10	22.03	21.98		1
	25	0	22.10	22.01	21.99		1
64QAM	1	0	22.12	22.04	22.01	0-2	1
	1	12	21.97	22.11	21.88		1
	1	24	22.14	22.03	21.92		1
	12	0	20.96	20.98	20.91	0-3	2
	12	6	21.11	21.05	21.02		2
	12	13	21.08	21.00	20.95		2
	25	0	20.89	20.98	21.04		2

Table 9-35
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	22.88	22.72	22.74	0	0
	1	7	23.00	22.87	22.84		0
	1	14	22.86	22.73	22.72		0
	8	0	22.90	22.81	22.85	0-1	0
	8	4	22.89	22.85	22.89		0
	8	7	22.86	22.78	22.85		0
	15	0	22.86	22.85	22.90		0
16QAM	1	0	23.01	22.96	22.84	0-1	0
	1	7	22.96	22.93	23.02		0
	1	14	22.94	22.88	22.96		0
	8	0	21.92	22.07	21.95	0-2	1
	8	4	21.99	22.11	21.95		1
	8	7	22.04	22.04	21.92		1
	15	0	21.92	22.03	21.89		1
64QAM	1	0	22.02	22.05	21.97	0-2	1
	1	7	21.96	22.13	22.11		1
	1	14	21.97	22.04	22.09		1
	8	0	20.96	21.00	20.91	0-3	2
	8	4	21.11	21.03	20.98		2
	8	7	20.89	20.98	20.93		2
	15	0	20.77	21.02	20.97		2

Table 9-36
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	22.70	22.79	22.88	0	0
	1	2	22.75	22.89	22.88		0
	1	5	22.68	22.81	22.81		0
	3	0	22.76	22.72	22.68		0
	3	2	22.76	22.73	22.72		0
	3	3	22.76	22.69	22.67		0
	6	0	22.40	22.35	22.47	0-1	0
16QAM	1	0	22.97	22.74	22.93	0-1	0
	1	2	23.03	22.81	23.05		0
	1	5	23.00	22.71	22.92		0
	3	0	22.52	22.41	22.60		0
	3	2	22.57	22.44	22.68		0
	3	3	22.55	22.42	22.61		0
	6	0	21.46	21.29	21.39	0-2	1
64QAM	1	0	21.92	21.83	22.12	0-2	1
	1	2	21.99	21.93	21.91		1
	1	5	21.91	21.85	21.96		1
	3	0	21.74	21.45	21.75		1
	3	2	21.73	21.53	21.82		1
	3	3	21.72	21.48	21.75		1
	6	0	20.54	20.57	20.36	0-3	2

9.4.3 LTE Band 25 (PCS)

Table 9-37
LTE Band 25 (PCS) 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	**24.58**	24.45	24.20	0	0
	1	50	24.30	24.13	24.04		0
	1	99	24.32	24.31	24.36		0
	50	0	**23.41**	23.33	23.30	0-1	1
	50	25	23.38	23.30	23.30		1
	50	50	23.36	23.34	23.35		1
	100	0	23.23	23.24	23.33		1
16QAM	1	0	23.00	23.47	23.35	0-1	1
	1	50	23.00	23.48	23.11		1
	1	99	23.58	23.12	23.47		1
	50	0	22.40	22.39	22.26	0-2	2
	50	25	22.31	22.35	22.35		2
	50	50	22.35	22.38	22.35		2
	100	0	22.30	22.31	22.30		2
64QAM	1	0	22.56	22.60	22.24	0-2	2
	1	50	22.33	22.33	22.08		2
	1	99	22.46	22.41	22.23		2
	50	0	21.02	21.37	21.52	0-3	3
	50	25	21.53	21.37	21.50		3
	50	50	21.37	21.36	21.42		3
	100	0	21.37	21.35	21.28		3

Table 9-38
LTE Band 25 (PCS) 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	24.59	24.40	24.46	0	0
	1	36	24.53	24.40	24.44		0
	1	74	24.44	24.46	24.42		0
	36	0	23.40	23.44	23.48	0-1	1
	36	18	23.43	23.45	23.53		1
	36	37	23.41	23.45	23.49		1
	75	0	23.42	23.44	23.50		1
16QAM	1	0	23.41	23.06	23.49	0-1	1
	1	36	23.34	23.05	23.47		1
	1	74	23.31	23.03	23.44		1
	36	0	22.54	22.53	22.58	0-2	2
	36	18	22.55	22.55	22.63		2
	36	37	22.49	22.55	22.51		2
	75	0	22.47	22.56	22.57		2
64QAM	1	0	22.39	22.26	22.49	0-2	2
	1	36	22.36	22.27	22.30		2
	1	74	22.50	22.23	22.34		2
	36	0	21.45	21.57	21.62	0-3	3
	36	18	21.46	21.61	21.65		3
	36	37	21.44	21.57	21.63		3
	75	0	21.50	21.53	21.52		3

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

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.48	24.63	24.45	0	0
	1	25	24.59	24.40	24.46		0
	1	49	24.52	24.51	24.45		0
	25	0	23.57	23.35	23.39	0-1	1
	25	12	23.52	23.39	23.41		1
	25	25	23.40	23.39	23.42		1
	50	0	23.46	23.41	23.42		1
16QAM	1	0	23.49	23.29	23.49	0-1	1
	1	25	23.67	23.02	23.42		1
	1	49	23.37	23.19	23.43		1
	25	0	22.53	22.49	22.49	0-2	2
	25	12	22.44	22.47	22.49		2
	25	25	22.47	22.41	22.45		2
	50	0	22.44	22.46	22.46		2
64QAM	1	0	22.68	22.48	22.49	0-2	2
	1	25	22.44	22.24	22.38		2
	1	49	22.54	22.45	22.39		2
	25	0	21.69	21.57	21.56	0-3	3
	25	12	21.61	21.58	21.50		3
	25	25	21.57	21.50	21.50		3
	50	0	21.47	21.55	21.49		3

Table 9-40
LTE Band 25 (PCS) 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	24.60	24.34	24.35	0	0
	1	12	24.55	24.34	24.29		0
	1	24	24.67	24.44	24.30		0
	12	0	23.50	23.28	23.31	0-1	1
	12	6	23.51	23.28	23.34		1
	12	13	23.46	23.26	23.30		1
	25	0	23.40	23.25	23.31		1
16QAM	1	0	23.29	23.41	23.29	0-1	1
	1	12	23.27	23.39	23.28		1
	1	24	23.33	23.40	23.27		1
	12	0	22.48	22.36	22.33	0-2	2
	12	6	22.46	22.32	22.36		2
	12	13	22.42	22.29	22.34		2
	25	0	22.43	22.31	22.34		2
64QAM	1	0	22.35	22.40	22.31	0-2	2
	1	12	22.65	22.32	22.26		2
	1	24	22.68	22.35	22.35		2
	12	0	21.49	21.38	21.33	0-3	3
	12	6	21.49	21.35	21.37		3
	12	13	21.49	21.38	21.34		3
	25	0	21.46	21.41	21.35		3

Table 9-41
LTE Band 25 (PCS) 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	24.37	24.25	24.36	0	0
	1	7	24.48	24.37	24.45		0
	1	14	24.43	24.29	24.26		0
	8	0	23.48	23.29	23.33	0-1	1
	8	4	23.51	23.29	23.37		1
	8	7	23.47	23.25	23.33		1
	15	0	23.43	23.23	23.32		1
16QAM	1	0	23.51	23.47	23.32	0-1	1
	1	7	23.55	22.97	23.41		1
	1	14	23.46	22.86	23.27		1
	8	0	22.35	22.14	22.40	0-2	2
	8	4	22.36	22.16	22.40		2
	8	7	22.33	22.11	22.35		2
	15	0	22.41	22.25	22.40		2
64QAM	1	0	22.35	22.47	22.54	0-2	2
	1	7	22.38	22.20	22.48		2
	1	14	22.28	22.05	22.37		2
	8	0	21.45	21.38	21.46	0-3	3
	8	4	21.47	21.42	21.48		3
	8	7	21.42	21.39	21.46		3
	15	0	21.49	21.39	21.37		3

Table 9-42
LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.49	24.12	24.37	0	0
	1	2	24.54	24.17	24.42		0
	1	5	24.52	24.12	24.38		0
	3	0	24.19	24.00	24.10		0
	3	2	24.24	24.09	24.17		0
	3	3	24.11	24.04	24.06		0
	6	0	23.45	23.10	23.31	0-1	1
16QAM	1	0	23.38	23.33	23.24	0-1	1
	1	2	23.41	22.78	23.31		1
	1	5	23.38	22.77	23.28		1
	3	0	23.19	23.12	23.13		1
	3	2	23.31	23.23	23.23		1
	3	3	23.28	23.12	23.20		1
	6	0	22.32	22.10	22.18	0-2	2
64QAM	1	0	22.62	22.32	22.55	0-2	2
	1	2	22.47	22.06	22.65		2
	1	5	22.58	21.93	22.51		2
	3	0	22.29	22.20	22.26		2
	3	2	22.38	22.28	22.32		2
	3	3	22.26	22.19	22.25		2
	6	0	21.37	21.12	21.29	0-3	3

Table 9-43
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	**22.99**	22.98	22.91	0	0
	1	50	22.69	22.57	22.84		0
	1	99	22.78	22.71	22.80		0
	50	0	22.89	22.89	22.83	0-1	0
	50	25	**22.90**	22.83	22.84		0
	50	50	22.87	22.78	22.80		0
	100	0	22.88	22.82	22.82		0
16QAM	1	0	22.94	22.74	22.95	0-1	0
	1	50	22.63	22.52	22.93		0
	1	99	22.70	22.59	22.92		0
	50	0	22.43	22.40	22.32	0-2	0.5
	50	25	22.44	22.39	22.33		0.5
	50	50	22.39	22.35	22.28		0.5
	100	0	22.40	22.36	22.33		0.5
64QAM	1	0	22.59	22.48	22.25	0-2	0.5
	1	50	22.32	22.30	22.27		0.5
	1	99	22.40	22.34	22.34		0.5
	50	0	21.46	21.45	21.43	0-3	1.5
	50	25	21.47	21.45	21.39		1.5
	50	50	21.45	21.40	21.38		1.5
	100	0	21.45	21.41	21.40		1.5

Table 9-44
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	22.97	22.76	22.79	0	0
	1	36	22.86	22.74	22.75		0
	1	74	22.80	22.76	22.73		0
	36	0	22.80	22.76	22.92	0-1	0
	36	18	22.81	22.83	22.91		0
	36	37	22.80	22.85	22.88		0
	75	0	22.82	22.83	22.85		0
16QAM	1	0	22.92	22.48	22.95	0-1	0
	1	36	22.81	22.44	22.91		0
	1	74	22.79	22.43	22.86		0
	36	0	22.42	22.40	22.47	0-2	0.5
	36	18	22.47	22.48	22.49		0.5
	36	37	22.42	22.42	22.42		0.5
	75	0	22.39	22.48	22.48		0.5
64QAM	1	0	22.32	22.18	22.41	0-2	0.5
	1	36	22.59	22.14	22.36		0.5
	1	74	22.57	22.12	22.47		0.5
	36	0	21.37	21.50	21.54	0-3	1.5
	36	18	21.38	21.53	21.57		1.5
	36	37	21.35	21.47	21.50		1.5
	75	0	21.43	21.45	21.39		1.5

Table 9-45
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	22.74	22.85	23.06	0	0
	1	25	22.87	23.06	23.01		0
	1	49	22.93	23.00	23.01		0
	25	0	22.72	23.05	23.09	0-1	0
	25	12	23.01	23.10	23.12		0
	25	25	22.86	23.04	23.10		0
	50	0	23.14	23.08	23.08		0
16QAM	1	0	22.69	22.98	23.01	0-1	0
	1	25	22.79	22.70	23.06		0
	1	49	22.88	22.90	23.14		0
	25	0	22.57	22.68	22.68	0-2	0.5
	25	12	22.67	22.66	22.68		0.5
	25	25	22.61	22.60	22.65		0.5
	50	0	22.63	22.66	22.67		0.5
64QAM	1	0	22.52	22.67	22.61	0-2	0.5
	1	25	22.46	22.42	22.55		0.5
	1	49	22.37	22.46	22.63		0.5
	25	0	21.44	21.45	21.67	0-3	1.5
	25	12	21.47	21.49	21.70		1.5
	25	25	21.29	21.46	21.68		1.5
	50	0	21.29	21.37	21.48		1.5

Table 9-46
LTE Band 25 (PCS) Reduced Conducted Powers -5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.79	22.80	22.74	0	0
	1	12	22.75	22.86	22.64		0
	1	24	22.84	22.79	22.66		0
	12	0	22.80	22.85	22.73	0-1	0
	12	6	22.78	22.82	22.71		0
	12	13	22.78	22.80	22.81		0
	25	0	22.74	22.83	22.73		0
16QAM	1	0	22.75	22.78	22.75	0-1	0
	1	12	22.71	22.76	22.95		0
	1	24	22.66	22.76	22.76		0
	12	0	22.64	22.39	22.53	0-2	0.5
	12	6	22.62	22.36	22.49		0.5
	12	13	22.22	22.40	22.44		0.5
	25	0	22.19	22.32	22.52		0.5
64QAM	1	0	22.52	22.21	22.62	0-2	0.5
	1	12	22.47	22.15	22.48		0.5
	1	24	22.51	22.35	22.47		0.5
	12	0	21.34	21.22	21.46	0-3	1.5
	12	6	21.30	21.28	21.39		1.5
	12	13	21.26	21.20	21.63		1.5
	25	0	21.25	21.24	21.16		1.5

Table 9-47
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	22.92	22.76	22.83	0	0
	1	7	23.02	22.89	22.89		0
	1	14	22.93	22.79	22.79		0
	8	0	23.05	22.85	22.91	0-1	0
	8	4	23.10	22.88	22.97		0
	8	7	23.05	22.84	22.90		0
	15	0	23.02	22.83	22.92		0
16QAM	1	0	23.12	22.52	22.94	0-1	0
	1	7	23.18	22.59	23.02		0
	1	14	23.07	22.46	22.91		0
	8	0	22.44	22.25	22.48	0-2	0.5
	8	4	22.48	22.26	22.50		0.5
	8	7	22.45	22.21	22.47		0.5
	15	0	22.52	22.34	22.49		0.5
64QAM	1	0	22.42	22.16	22.49	0-2	0.5
	1	7	22.45	22.29	22.42		0.5
	1	14	22.39	22.14	22.38		0.5
	8	0	21.53	21.47	21.54	0-3	1.5
	8	4	21.58	21.52	21.60		1.5
	8	7	21.54	21.48	21.54		1.5
	15	0	21.56	21.48	21.47		1.5

Table 9-48
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	22.87	22.70	22.74	0	0
	1	2	22.96	22.74	22.77		0
	1	5	22.85	22.71	22.85		0
	3	0	22.89	22.76	22.76		0
	3	2	22.96	22.69	22.70		0
	3	3	22.87	22.73	22.69		0
	6	0	22.98	22.70	22.75	0-1	0
16QAM	1	0	23.01	22.90	23.20	0-1	0
	1	2	23.08	23.03	23.01		0
	1	5	22.96	23.00	23.11		0
	3	0	23.04	22.72	22.76		0
	3	2	23.11	22.73	22.84		0
	3	3	23.02	22.75	22.80		0
	6	0	22.52	22.29	22.22	0-2	0.5
64QAM	1	0	22.56	22.66	22.70	0-2	0.5
	1	2	22.63	22.68	22.61		0.5
	1	5	22.59	22.61	22.70		0.5
	3	0	22.49	22.32	22.51		0.5
	3	2	22.44	22.31	22.51		0.5
	3	3	22.70	22.23	22.39		0.5
	6	0	21.69	21.29	21.36	0-3	1.5

9.4.4 LTE Band 7

Table 9-49
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	24.50	24.17	24.44	0	0
	1	50	24.26	24.32	24.37		0
	1	99	24.22	**24.59**	24.43		0
	50	0	23.56	23.44	23.66	0-1	1
	50	25	23.48	**23.67**	23.61		1
	50	50	23.40	23.55	23.65		1
	100	0	23.38	23.43	23.64		1
16QAM	1	0	23.55	23.49	23.43	0-1	1
	1	50	23.51	23.49	23.70		1
	1	99	23.52	23.27	23.70		1
	50	0	22.53	22.51	22.69	0-2	2
	50	25	22.58	22.58	22.68		2
	50	50	22.56	22.60	22.70		2
	100	0	22.52	22.54	22.66		2
64QAM	1	0	22.34	22.62	22.70	0-2	2
	1	50	22.64	22.53	22.68		2
	1	99	22.47	22.70	22.70		2
	50	0	21.57	21.57	21.69	0-3	3
	50	25	21.67	21.61	21.68		3
	50	50	21.59	21.63	21.69		3
	100	0	21.60	21.55	21.65		3

Table 9-50
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	24.42	24.23	24.22	0	0
	1	36	24.50	24.27	24.26		0
	1	74	24.33	24.47	24.31		0
	36	0	23.47	23.27	23.39	0-1	1
	36	18	23.37	23.28	23.37		1
	36	37	23.31	23.24	23.35		1
	75	0	23.38	23.25	23.33		1
16QAM	1	0	23.38	23.45	23.32	0-1	1
	1	36	23.45	23.44	23.37		1
	1	74	23.32	23.56	23.28		1
	36	0	22.56	22.63	22.45	0-2	2
	36	18	22.51	22.40	22.45		2
	36	37	22.50	22.35	22.45		2
	75	0	22.41	22.37	22.45		2
64QAM	1	0	22.47	22.35	22.55	0-2	2
	1	36	22.48	22.40	22.49		2
	1	74	22.70	22.32	22.69		2
	36	0	21.51	21.41	21.56	0-3	3
	36	18	21.48	21.46	21.57		3
	36	37	21.45	21.40	21.52		3
	75	0	21.53	21.35	21.43		3

Table 9-51
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	24.19	24.26	24.29	0	0
	1	25	24.23	24.24	24.27		0
	1	49	24.26	24.30	24.29		0
	25	0	23.39	23.20	23.25	0-1	1
	25	12	23.41	23.28	23.29		1
	25	25	23.32	23.36	23.27		1
	50	0	23.29	23.44	23.29		1
16QAM	1	0	23.26	23.23	23.36	0-1	1
	1	25	23.45	23.22	23.30		1
	1	49	23.33	23.39	23.31		1
	25	0	22.39	22.22	22.37	0-2	2
	25	12	22.45	22.29	22.37		2
	25	25	22.33	22.26	22.36		2
	50	0	22.35	22.23	22.38		2
64QAM	1	0	22.44	22.40	22.48	0-2	2
	1	25	22.27	22.39	22.34		2
	1	49	22.36	22.31	22.44		2
	25	0	21.55	21.36	21.44	0-3	3
	25	12	21.61	21.39	21.44		3
	25	25	21.55	21.34	21.41		3
	50	0	21.44	21.33	21.42		3

Table 9-52
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	24.06	24.34	24.20	0	0
	1	12	24.67	24.31	24.18		0
	1	24	24.35	24.38	24.22		0
	12	0	23.40	23.21	23.28	0-1	1
	12	6	23.43	23.28	23.30		1
	12	13	23.42	23.24	23.27		1
	25	0	23.34	23.22	23.25		1
16QAM	1	0	23.65	23.32	23.23	0-1	1
	1	12	23.43	23.34	23.24		1
	1	24	23.25	23.37	23.22		1
	12	0	22.42	22.25	22.31	0-2	2
	12	6	22.45	22.27	22.34		2
	12	13	22.42	22.23	22.32		2
	25	0	22.40	22.21	22.30		2
64QAM	1	0	22.35	22.26	22.24	0-2	2
	1	12	22.28	22.25	22.28		2
	1	24	22.67	22.25	22.28		2
	12	0	21.49	21.31	21.33	0-3	3
	12	6	21.51	21.33	21.36		3
	12	13	21.50	21.33	21.35		3
	25	0	21.44	21.38	21.36		3

Table 9-53
LTE Band 7 Reduced 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	**22.83**	22.70	22.40	0	0
	1	50	22.75	22.66	22.45		0
	1	99	22.67	22.56	22.76		0
	50	0	22.76	22.63	22.75	0-1	0
	50	25	22.77	22.69	**22.78**		0
	50	50	22.71	22.65	22.74		0
	100	0	22.73	22.64	22.74		0
16QAM	1	0	23.01	22.85	22.95	0-1	0
	1	50	22.97	22.82	22.97		0
	1	99	22.88	22.76	22.89		0
	50	0	22.35	22.17	22.33	0-2	0.5
	50	25	22.40	22.18	22.37		0.5
	50	50	22.32	22.13	22.31		0.5
	100	0	22.31	22.16	22.29		0.5
64QAM	1	0	22.44	22.35	22.36	0-2	0.5
	1	50	22.39	22.28	22.35		0.5
	1	99	22.29	22.39	22.46		0.5
	50	0	21.40	21.30	21.44	0-3	1.5
	50	25	21.42	21.31	21.46		1.5
	50	50	21.37	21.29	21.41		1.5
	100	0	21.39	21.26	21.41		1.5

Table 9-54
LTE Band 7 Reduced 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	22.59	22.22	22.37	0	0
	1	36	22.59	22.28	22.42		0
	1	74	22.48	22.24	22.40		0
	36	0	22.56	22.34	22.42	0-1	0
	36	18	22.50	22.38	22.48		0
	36	37	22.43	22.33	22.41		0
	75	0	22.41	22.32	22.43		0
16QAM	1	0	23.08	22.87	22.97	0-1	0
	1	36	22.88	22.90	23.05		0
	1	74	22.76	22.90	23.07		0
	36	0	22.43	22.11	22.26	0-2	0.5
	36	18	22.38	22.12	22.29		0.5
	36	37	22.33	22.09	22.27		0.5
	75	0	22.25	22.09	22.24		0.5
64QAM	1	0	22.52	22.56	22.33	0-2	0.5
	1	36	22.48	22.57	22.35		0.5
	1	74	22.38	22.54	22.23		0.5
	36	0	21.43	21.06	21.25	0-3	1.5
	36	18	21.40	21.10	21.31		1.5
	36	37	21.34	21.04	21.29		1.5
	75	0	21.28	21.18	21.21		1.5

Table 9-55
LTE Band 7 Reduced 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	22.66	22.27	22.42	0	0
	1	25	22.57	22.25	22.40		0
	1	49	22.55	22.28	22.42		0
	25	0	22.58	22.38	22.45	0-1	0
	25	12	22.61	22.37	22.47		0
	25	25	22.48	22.34	22.48		0
	50	0	22.44	22.40	22.45		0
16QAM	1	0	22.97	22.98	23.02	0-1	0
	1	25	23.02	22.92	23.00		0
	1	49	23.01	22.98	23.16		0
	25	0	22.40	22.09	22.25	0-2	0.5
	25	12	22.40	22.15	22.29		0.5
	25	25	22.29	22.12	22.31		0.5
	50	0	22.29	22.14	22.31		0.5
64QAM	1	0	22.66	22.68	22.37	0-2	0.5
	1	25	22.52	22.62	22.30		0.5
	1	49	22.51	22.58	22.38		0.5
	25	0	21.38	21.07	21.31	0-3	1.5
	25	12	21.41	21.12	21.37		1.5
	25	25	21.29	21.07	21.34		1.5
	50	0	21.23	21.16	21.29		1.5

Table 9-56
LTE Band 7 Reduced 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	22.42	22.30	22.37	0	0
	1	12	22.45	22.25	22.41		0
	1	24	22.41	22.28	22.39		0
	12	0	22.56	22.36	22.46	0-1	0
	12	6	22.58	22.38	22.46		0
	12	13	22.57	22.36	22.46		0
	25	0	22.56	22.39	22.48		0
16QAM	1	0	23.03	22.49	22.41	0-1	0
	1	12	23.11	22.39	22.41		0
	1	24	22.95	22.47	22.42		0
	12	0	22.42	22.22	22.29	0-2	0.5
	12	6	22.43	22.26	22.32		0.5
	12	13	22.45	22.23	22.32		0.5
	25	0	22.32	22.19	22.24		0.5
64QAM	1	0	22.65	22.54	22.69	0-2	0.5
	1	12	22.37	22.65	22.70		0.5
	1	24	22.51	22.67	22.70		0.5
	12	0	21.36	21.15	21.32	0-3	1.5
	12	6	21.40	21.18	21.37		1.5
	12	13	21.36	21.17	21.38		1.5
	25	0	21.26	21.08	21.23		1.5

Table 9-57
LTE Band 48 Conducted Powers - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 55340 (3560.0 MHz)	Low-Mid Channel 55773 (3603.3 MHz)	Mid-High Channel 56207 (3646.7 MHz)	High Channel 56640 (3690.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	23.12	23.20	23.17	23.10	0	0
	1	50	23.13	23.25	23.13	23.11		0
	1	99	23.20	**23.28**	23.17	23.08		0
	50	0	22.19	22.32	22.34	22.25	0-1	1
	50	25	22.30	**22.43**	22.32	22.23		1
	50	50	22.23	22.35	22.35	22.26		1
	100	0	22.29	22.40	22.30	22.21		1
16QAM	1	0	22.31	22.40	22.39	22.33	0-1	1
	1	50	22.33	22.44	22.34	22.32		1
	1	99	22.43	22.50	22.41	22.31		1
	50	0	21.24	21.38	21.39	21.32	0-2	2
	50	25	21.33	21.46	21.37	21.29		2
	50	50	21.30	21.41	21.42	21.34		2
	100	0	21.30	21.47	21.34	21.25		2
64QAM	1	0	21.58	21.66	21.62	21.58	0-2	2
	1	50	21.60	21.69	21.58	21.55		2
	1	99	21.69	21.70	21.65	21.55		2
	50	0	20.25	20.38	20.42	20.34	0-3	3
	50	25	20.35	20.49	20.37	20.30		3
	50	50	20.33	20.42	20.44	20.32		3
	100	0	20.30	20.42	20.20	20.23		3

Table 9-58
LTE Band 48 Conducted Powers - 15 MHz Bandwidth

LTE Band 48 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55315 (3557.5 MHz)	55765 (3602.5 MHz)	56215 (3647.5 MHz)	56665 (3692.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.05	23.20	23.11	23.12	0	0
	1	36	23.28	23.28	23.17	23.09		0
	1	74	23.24	23.22	23.17	23.03		0
	36	0	22.13	22.24	22.30	22.12	0-1	1
	36	18	22.14	22.31	22.36	22.17		1
	36	37	22.19	22.19	22.21	22.04		1
	75	0	22.11	22.26	22.33	22.15		1
16QAM	1	0	21.92	21.97	22.25	21.99	0-1	1
	1	36	22.12	22.06	22.28	21.96		1
	1	74	22.10	22.04	22.28	21.93		1
	36	0	21.27	21.29	21.33	21.28	0-2	2
	36	18	21.27	21.42	21.38	21.33		2
	36	37	21.30	21.30	21.25	21.18		2
	75	0	21.22	21.35	21.37	21.22		2
64QAM	1	0	21.15	20.92	21.66	21.25	0-2	2
	1	36	21.35	20.99	21.68	21.19		2
	1	74	21.35	20.97	21.66	21.16		2
	36	0	20.22	20.38	20.36	20.26	0-3	3
	36	18	20.26	20.43	20.42	20.32		3
	36	37	20.30	20.35	20.30	20.19		3
	75	0	20.25	20.38	20.40	20.26		3

Table 9-59
LTE Band 48 Conducted Powers - 10 MHz Bandwidth

LTE Band 48 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55290 (3555.0 MHz)	55757 (3601.7 MHz)	56223 (3648.3 MHz)	56690 (3695.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.17	23.27	23.18	23.13	0	0
	1	25	23.25	23.28	23.09	23.02		0
	1	49	23.20	23.33	23.09	23.00		0
	25	0	22.19	22.23	22.29	22.18	0-1	1
	25	12	22.27	22.29	22.35	22.08		1
	25	25	22.19	22.28	22.22	22.05		1
	50	0	22.13	22.27	22.33	22.16		1
16QAM	1	0	22.04	22.05	22.26	22.07	0-1	1
	1	25	22.12	22.01	22.23	21.95		1
	1	49	22.15	22.10	22.24	21.95		1
	25	0	21.21	21.21	21.36	21.19	0-2	2
	25	12	21.25	21.25	21.37	21.10		2
	25	25	21.21	21.26	21.23	21.08		2
	50	0	21.16	21.22	21.36	21.18		2
64QAM	1	0	21.10	20.97	21.70	21.12	0-2	2
	1	25	21.19	20.93	21.67	21.01		2
	1	49	21.22	21.04	21.69	21.01		2
	25	0	20.17	20.24	20.27	20.16	0-3	3
	25	12	20.25	20.31	20.31	20.06		3
	25	25	20.16	20.32	20.18	20.04		3
	50	0	20.17	20.30	20.35	20.20		3

Table 9-60
LTE Band 48 Conducted Powers – 5 MHz Bandwidth

LTE Band 48 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55265 (3552.5 MHz)	55748 (3600.8 MHz)	56232 (3649.2 MHz)	56715 (3697.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.25	23.27	23.16	23.16	0	0
	1	12	23.22	23.12	23.10	23.10		0
	1	24	23.30	23.20	23.14	23.13		0
	12	0	22.18	22.22	22.22	22.10	0-1	1
	12	6	22.22	22.28	22.23	22.12		1
	12	13	22.18	22.22	22.21	22.06		1
	25	0	22.20	22.22	22.22	22.12		1
16QAM	1	0	22.12	22.17	21.97	22.10	0-1	1
	1	12	22.15	22.08	21.97	22.09		1
	1	24	22.22	22.16	22.00	22.06		1
	12	0	21.16	21.23	21.23	21.13	0-2	2
	12	6	21.24	21.26	21.24	21.16		2
	12	13	21.19	21.25	21.20	21.12		2
	25	0	21.17	21.25	21.28	21.09		2
64QAM	1	0	21.47	21.16	21.64	21.41	0-2	2
	1	12	21.46	21.03	21.67	21.36		2
	1	24	21.49	21.10	21.68	21.35		2
	12	0	20.28	20.26	20.21	20.23	0-3	3
	12	6	20.31	20.27	20.26	20.26		3
	12	13	20.33	20.24	20.21	20.16		3
	25	0	20.13	20.34	20.21	20.05		3

Table 9-61
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	24.22	24.33	24.35	24.30	24.05	0	0
	1	50	24.26	24.37	24.35	24.23	24.14		0
	1	99	24.29	24.38	**24.39**	24.31	24.33		0
	50	0	23.31	23.44	23.23	23.31	23.12	0-1	1
	50	25	23.25	23.37	**23.49**	23.35	23.02		1
	50	50	23.18	23.40	23.19	23.36	23.10		1
	100	0	23.26	23.41	23.31	23.42	23.21		1
16QAM	1	0	23.38	23.40	23.40	23.45	23.30	0-1	1
	1	50	23.39	23.47	23.39	23.54	23.23		1
	1	99	23.40	23.48	23.42	23.31	23.51		1
	50	0	22.38	22.54	22.54	22.48	22.27	0-2	2
	50	25	22.36	22.48	22.41	22.41	22.48		2
	50	50	22.40	22.48	22.40	22.66	22.25		2
	100	0	22.35	22.47	22.43	22.56	22.35		2
64QAM	1	0	21.85	22.08	22.08	22.10	21.91	0-2	2
	1	50	21.99	22.10	22.10	22.17	21.88		2
	1	99	21.98	22.12	22.04	22.07	21.93		2
	50	0	21.42	21.42	21.46	21.48	21.33	0-3	3
	50	25	21.38	21.53	21.40	21.56	21.29		3
	50	50	21.46	21.46	21.41	21.46	21.32		3
	100	0	21.33	21.40	21.43	21.52	21.38		3

Table 9-62
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	24.66	24.61	24.55	24.33	24.19	0	0
	1	36	24.70	24.68	24.66	24.37	24.31		0
	1	74	24.62	24.57	24.52	24.31	24.15		0
	36	0	22.92	22.88	22.92	22.77	22.48	0-1	1
	36	18	22.89	22.84	22.88	22.77	22.63		1
	36	37	22.87	22.73	22.82	22.73	22.64		1
	75	0	22.84	22.79	22.85	22.77	22.62		1
16QAM	1	0	22.82	22.87	22.81	22.89	22.43	0-1	1
	1	36	22.96	22.93	22.94	22.93	22.60		1
	1	74	22.74	22.83	22.77	22.84	22.49		1
	36	0	22.04	22.01	22.05	21.82	21.71	0-2	2
	36	18	22.02	21.88	21.98	21.86	21.76		2
	36	37	21.97	21.89	21.99	21.84	21.76		2
	75	0	21.90	21.81	21.91	21.86	21.65		2
64QAM	1	0	22.09	21.76	21.97	22.35	21.68	0-2	2
	1	36	22.14	21.91	22.10	22.34	21.85		2
	1	74	22.02	21.75	22.02	22.24	21.73		2
	36	0	21.03	21.00	21.02	20.84	20.67	0-3	3
	36	18	20.94	20.90	20.94	20.89	20.75		3
	36	37	20.99	20.92	20.92	20.81	20.80		3
	75	0	20.96	20.88	20.90	20.89	20.74		3

Table 9-63
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	24.62	24.65	24.57	24.38	24.22	0	0
	1	25	24.69	24.61	24.62	24.36	24.26		0
	1	49	24.59	24.62	24.55	24.37	24.17		0
	25	0	22.97	22.92	22.97	22.83	22.61	0-1	1
	25	12	22.87	22.78	22.87	22.79	22.61		1
	25	25	22.86	22.81	22.91	22.85	22.62		1
	50	0	22.85	22.81	22.84	22.85	22.62		1
16QAM	1	0	22.82	22.71	22.80	22.85	22.41	0-1	1
	1	25	22.83	22.70	22.86	22.87	22.42		1
	1	49	22.79	22.70	22.73	22.89	22.47		1
	25	0	22.01	21.94	21.99	21.88	21.66	0-2	2
	25	12	21.92	21.78	21.92	21.87	21.74		2
	25	25	21.91	21.84	21.85	21.91	21.71		2
	50	0	21.93	21.84	21.91	21.95	21.73		2
64QAM	1	0	21.92	21.78	21.84	22.36	21.51	0-2	2
	1	25	21.93	21.85	21.88	22.30	21.59		2
	1	49	21.85	21.77	21.83	22.38	21.58		2
	25	0	20.91	20.92	20.90	20.85	20.61	0-3	3
	25	12	20.84	20.81	20.88	20.77	20.68		3
	25	25	20.89	20.82	20.82	20.77	20.66		3
	50	0	20.88	20.81	20.88	20.92	20.66		3

Table 9-64
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	24.70	24.57	24.69	24.31	24.25	0	0
	1	12	24.70	24.58	24.70	24.34	24.29		0
	1	24	24.62	24.51	24.62	24.39	24.20		0
	12	0	22.90	22.90	22.93	22.74	22.57	0-1	1
	12	6	22.87	22.85	22.90	22.78	22.64		1
	12	13	22.84	22.81	22.86	22.76	22.63		1
	25	0	22.84	22.77	22.95	22.74	22.64		1
16QAM	1	0	22.89	22.84	22.91	22.44	22.55	0-1	1
	1	12	22.94	22.85	22.94	22.46	22.63		1
	1	24	22.86	22.81	22.86	22.56	22.56		1
	12	0	21.94	21.93	21.98	21.78	21.68	0-2	2
	12	6	21.89	21.86	21.95	21.85	21.77		2
	12	13	21.86	21.85	21.95	21.85	21.73		2
	25	0	21.84	21.86	21.90	21.89	21.70		2
64QAM	1	0	22.16	21.75	22.21	22.16	21.94	0-2	2
	1	12	22.18	21.72	22.22	22.19	21.94		2
	1	24	22.11	21.68	22.14	22.30	21.85		2
	12	0	21.01	20.91	21.11	20.74	20.78	0-3	3
	12	6	20.92	20.86	21.00	20.86	20.83		3
	12	13	20.90	20.84	21.01	20.82	20.83		3
	25	0	20.77	20.89	20.83	20.78	20.60		3

Table 9-65
LTE Band 41 PC2 Conducted Powers – 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.59	26.71	**26.80**	26.69	26.33	0	0
	1	50	26.69	26.72	26.79	26.60	26.40		0
	1	99	26.65	26.76	26.72	26.52	26.44		0
	50	0	25.78	25.87	25.89	25.86	25.53	0-1	1
	50	25	25.73	25.84	25.81	**25.94**	25.58		1
	50	50	25.75	25.87	25.79	25.83	25.61		1
	100	0	25.69	25.85	25.81	25.93	25.61		1
16QAM	1	0	25.61	25.77	25.85	25.78	25.46	0-1	1
	1	50	25.76	25.83	25.85	25.73	25.47		1
	1	99	25.73	25.83	25.79	25.66	25.70		1
	50	0	24.85	24.98	24.98	24.97	24.67	0-2	2
	50	25	24.80	24.94	24.93	25.02	24.64		2
	50	50	24.84	24.96	24.92	24.93	24.74		2
	100	0	24.77	24.91	24.90	25.01	24.70		2
64QAM	1	0	24.41	24.45	24.54	24.51	24.30	0-2	2
	1	50	24.39	24.52	24.56	24.42	24.28		2
	1	99	24.39	24.49	24.49	24.39	24.21		2
	50	0	23.88	23.97	24.04	23.98	23.67	0-3	3
	50	25	23.82	23.94	23.94	24.02	23.74		3
	50	50	23.82	23.95	23.96	23.94	23.87		3
	100	0	23.76	23.87	23.89	23.98	23.69		3

Table 9-66
LTE Band 41 PC2 Conducted Powers – 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.15	27.05	26.89	26.84	26.60	0	0
	1	36	27.18	27.12	27.02	26.84	26.72		0
	1	74	27.10	27.02	26.91	26.76	26.65		0
	36	0	25.38	25.32	25.36	25.24	25.00	0-1	1
	36	18	25.37	25.31	25.30	25.23	25.10		1
	36	37	25.36	25.33	25.28	25.22	25.12		1
	75	0	25.32	25.31	25.29	25.30	25.04		1
16QAM	1	0	25.55	25.52	25.64	25.20	25.08	0-1	1
	1	36	25.69	25.62	25.77	25.25	25.04		1
	1	74	25.55	25.53	25.63	25.13	25.14		1
	36	0	24.54	24.49	24.40	24.36	24.11	0-2	2
	36	18	24.47	24.47	24.35	24.37	24.20		2
	36	37	24.46	24.43	24.35	24.36	24.20		2
	75	0	24.37	24.35	24.35	24.39	24.14		2
64QAM	1	0	24.62	24.57	25.02	24.09	24.02	0-2	2
	1	36	24.70	24.64	25.13	24.13	24.00		2
	1	74	24.57	24.55	25.04	24.06	24.11		2
	36	0	23.51	23.45	23.46	23.44	23.18	0-3	3
	36	18	23.44	23.43	23.38	23.41	23.30		3
	36	37	23.42	23.43	23.34	23.40	23.28		3
	75	0	23.41	23.39	23.32	23.41	23.16		3

Table 9-67
LTE Band 41 PC2 Conducted Powers – 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.97	26.96	27.04	26.88	26.64	0	0
	1	25	27.01	26.97	27.06	26.80	26.68		0
	1	49	27.03	26.93	26.98	26.85	26.63		0
	25	0	25.45	25.40	25.45	25.32	25.00	0-1	1
	25	12	25.36	25.33	25.37	25.27	25.04		1
	25	25	25.33	25.34	25.35	25.30	25.10		1
	50	0	25.33	25.28	25.38	25.36	25.08		1
16QAM	1	0	25.41	25.39	25.47	25.55	24.99	0-1	1
	1	25	25.48	25.41	25.51	25.55	25.04		1
	1	49	25.42	25.35	25.44	25.60	24.99		1
	25	0	24.46	24.37	24.51	24.43	24.13	0-2	2
	25	12	24.40	24.29	24.39	24.38	24.19		2
	25	25	24.37	24.33	24.39	24.39	24.18		2
	50	0	24.42	24.34	24.38	24.48	24.18		2
64QAM	1	0	24.41	24.28	24.45	25.03	23.92	0-2	2
	1	25	24.47	24.25	24.54	24.96	23.97		2
	1	49	24.40	24.20	24.45	25.00	23.88		2
	25	0	23.39	23.41	23.44	23.37	23.13	0-3	3
	25	12	23.30	23.35	23.35	23.32	23.19		3
	25	25	23.35	23.38	23.35	23.29	23.22		3
	50	0	23.33	23.34	23.38	23.46	23.21		3

Table 9-68
LTE Band 41 PC2 Conducted Powers – 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.13	26.95	26.98	26.85	26.65	0	0
	1	12	27.15	26.95	27.01	26.89	26.67		0
	1	24	27.07	26.88	26.92	26.95	26.55		0
	12	0	25.40	25.37	25.41	25.18	25.01	0-1	1
	12	6	25.34	25.29	25.34	25.29	25.03		1
	12	13	25.34	25.34	25.33	25.23	25.03		1
	25	0	25.35	25.33	25.30	25.19	24.99		1
16QAM	1	0	25.54	25.31	25.36	25.46	24.94	0-1	1
	1	12	25.55	25.33	25.37	25.50	24.96		1
	1	24	25.51	25.22	25.26	25.50	24.88		1
	12	0	24.48	24.43	24.47	24.31	24.11	0-2	2
	12	6	24.40	24.39	24.39	24.33	24.21		2
	12	13	24.40	24.34	24.38	24.36	24.23		2
	25	0	24.30	24.41	24.45	24.35	24.26		2
64QAM	1	0	24.79	25.00	25.03	24.40	24.69	0-2	2
	1	12	24.77	25.03	25.09	24.46	24.71		2
	1	24	24.68	24.94	24.96	24.50	24.68		2
	12	0	23.51	23.39	23.45	23.32	23.15	0-3	3
	12	6	23.46	23.39	23.35	23.38	23.21		3
	12	13	23.46	23.35	23.36	23.38	23.19		3
	25	0	23.28	23.32	23.35	23.39	23.10		3

9.5 WLAN Conducted Powers

Table 9-69
2.4 GHz WLAN Maximum Average RF Power

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	20.81	19.40	18.31	18.29
2417	2	N/A	20.61	18.61	18.86
2437	6	21.01	20.29	19.02	18.84
2457	10	N/A	20.42	18.64	18.97
2462	11	21.03	19.19	17.91	18.20

Table 9-70
5 GHz WLAN Maximum Average RF Power

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	19.03	17.74	17.78
5200	40	19.19	17.75	17.87
5220	44	18.98	17.82	17.81
5240	48	19.02	17.82	17.90
5260	52	19.11	17.70	17.83
5280	56	19.16	17.93	17.93
5300	60	19.17	17.76	17.84
5320	64	18.97	17.68	17.75
5500	100	19.33	17.88	17.98
5600	120	19.25	17.77	17.87
5620	124	19.40	18.00	18.03
5720	144	19.45	18.26	18.27
5745	149	19.46	18.48	18.30
5785	157	19.48	18.39	18.42
5825	165	19.33	17.93	17.94

Table 9-71
2.4 GHz WLAN Reduced Average RF Power

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	18.87	19.05	18.25	18.19
2437	6	19.06	19.00	18.77	18.76
2462	11	19.13	19.16	17.88	18.18

Table 9-72
5 GHz WLAN Reduced Average RF Power

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	15.65	15.64
5230	46	15.73	15.80
5270	54	15.84	15.81
5310	62	15.78	15.86
5510	102	15.80	15.82
5590	118	15.86	15.87
5630	126	15.94	15.97
5710	142	16.19	16.17
5755	151	16.15	16.18
5795	159	16.13	16.11

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

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

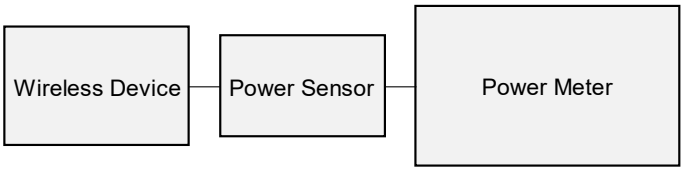

Figure 9-4
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-73
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	11.10	12.888
2441	1.0	39	11.76	14.991
2480	1.0	78	11.29	13.466
2402	2.0	0	9.45	8.819
2441	2.0	39	9.99	9.967
2480	2.0	78	9.31	8.540
2402	3.0	0	9.50	8.912
2441	3.0	39	9.95	9.886
2480	3.0	78	9.20	8.327

Figure 9-5
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\textbf{\textit{Duty Cycle}} = \frac{\textbf{\textit{Pulse Width}}}{\textbf{\textit{Period}}} * \mathbf{100\%} = \frac{\mathbf{2.90ms}}{\mathbf{3.75ms}} * \mathbf{100\%} = \mathbf{77.3\%}$$

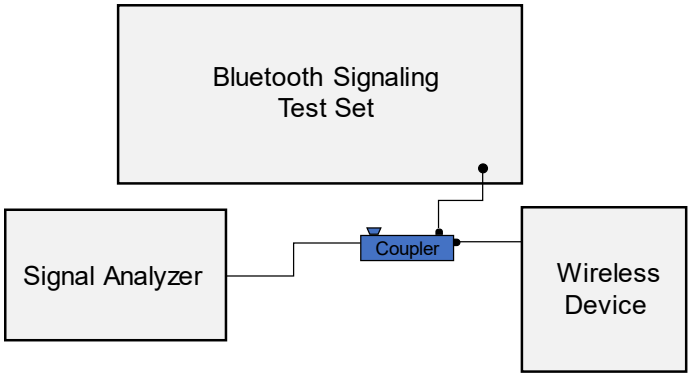

Figure 9-6
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties - Head

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
09/20/2019	750H	20.8	680	0.855	42.774	0.888	42.305	-3.72%	1.11%
			695	0.861	42.762	0.889	42.227	-3.15%	1.27%
			700	0.862	42.699	0.889	42.201	-3.04%	1.18%
			710	0.867	42.673	0.890	42.149	-2.58%	1.24%
			750	0.881	42.582	0.894	41.942	-1.45%	1.53%
			770	0.889	42.485	0.895	41.838	-0.67%	1.55%
			785	0.892	42.447	0.896	41.760	-0.45%	1.65%
09/20/2019	835H	20.9	820	0.906	43.482	0.899	41.578	0.78%	4.58%
			835	0.912	43.450	0.900	41.500	1.33%	4.70%
			850	0.917	43.407	0.916	41.500	0.11%	4.60%
09/23/2019	835H	19.9	820	0.890	42.663	0.899	41.578	-1.00%	2.61%
			835	0.896	42.630	0.900	41.500	-0.44%	2.72%
			850	0.901	42.595	0.916	41.500	-1.64%	2.64%
9/16/2019	1750H	20.2	1710	1.325	41.491	1.348	40.142	-1.71%	3.36%
			1750	1.349	41.416	1.371	40.079	-1.60%	3.34%
			1790	1.375	41.351	1.394	40.016	-1.36%	3.34%
9/16/2019	1900H	20.2	1850	1.412	41.254	1.400	40.000	0.86%	3.13%
			1880	1.432	41.211	1.400	40.000	2.29%	3.03%
			1910	1.450	41.164	1.400	40.000	3.57%	2.91%
09/23/2019	1900H	19.9	1850	1.406	40.693	1.400	40.000	0.43%	1.73%
			1880	1.426	40.650	1.400	40.000	1.86%	1.63%
			1910	1.446	40.606	1.400	40.000	3.29%	1.52%
9/16/2019	2450H	19.9	2400	1.801	40.989	1.756	39.289	2.56%	4.33%
			2450	1.842	40.894	1.800	39.200	2.33%	4.32%
			2500	1.885	40.843	1.855	39.136	1.62%	4.36%
09/18/2019	2450H	21.6	2400	1.839	41.089	1.756	39.289	4.73%	4.58%
			2450	1.879	41.014	1.800	39.200	4.39%	4.63%
			2500	1.917	40.933	1.855	39.136	3.34%	4.59%
			2550	1.960	40.866	1.909	39.073	2.67%	4.59%
			2600	2.001	40.802	1.964	39.009	1.88%	4.60%
09/30/2019	2450H	20.1	2400	1.793	40.792	1.756	39.289	2.11%	3.83%
			2450	1.831	40.703	1.800	39.200	1.72%	3.83%
			2500	1.872	40.653	1.855	39.136	0.92%	3.88%
09/17/2019	3600H	20.2	3500	2.796	38.091	2.913	37.929	-4.02%	0.43%
			3550	2.846	38.002	2.964	37.871	-3.98%	0.35%
			3600	2.891	37.916	3.015	37.814	-4.11%	0.27%
			3645	2.933	37.847	3.061	37.763	-4.18%	0.22%
			3685	2.969	37.742	3.102	37.717	-4.29%	0.07%
			3725	3.007	37.689	3.143	37.671	-4.33%	0.05%
10/07/2019	5200H-5800H	20.5	5180	4.420	35.419	4.635	36.009	-4.64%	-1.64%
			5190	4.433	35.413	4.645	35.998	-4.56%	-1.63%
			5200	4.443	35.405	4.655	35.986	-4.55%	-1.61%
			5210	4.453	35.390	4.666	35.975	-4.56%	-1.63%
			5220	4.462	35.366	4.676	35.963	-4.58%	-1.66%
			5240	4.481	35.322	4.696	35.940	-4.58%	-1.72%
			5250	4.493	35.298	4.706	35.929	-4.53%	-1.76%
			5260	4.507	35.272	4.717	35.917	-4.45%	-1.80%
			5270	4.520	35.244	4.727	35.906	-4.38%	-1.84%
			5280	4.533	35.230	4.737	35.894	-4.31%	-1.85%
			5290	4.544	35.225	4.748	35.883	-4.30%	-1.83%
			5300	4.556	35.217	4.758	35.871	-4.25%	-1.82%
			5310	4.564	35.206	4.768	35.860	-4.28%	-1.82%
			5320	4.571	35.182	4.778	35.849	-4.33%	-1.86%
			5500	4.779	34.807	4.963	35.643	-3.71%	-2.35%
			5510	4.793	34.796	4.973	35.632	-3.62%	-2.35%
			5520	4.804	34.789	4.983	35.620	-3.59%	-2.33%
			5530	4.814	34.776	4.994	35.609	-3.60%	-2.34%
			5540	4.823	34.751	5.004	35.597	-3.62%	-2.38%
			5550	4.834	34.723	5.014	35.586	-3.59%	-2.43%
			5560	4.846	34.692	5.024	35.574	-3.54%	-2.48%
			5580	4.878	34.638	5.045	35.551	-3.31%	-2.57%
			5600	4.907	34.614	5.065	35.529	-3.12%	-2.58%
			5610	4.919	34.605	5.076	35.518	-3.09%	-2.57%
			5620	4.932	34.594	5.086	35.506	-3.03%	-2.57%
			5640	4.956	34.557	5.106	35.483	-2.94%	-2.61%
			5660	4.969	34.505	5.127	35.460	-3.08%	-2.69%
			5670	4.980	34.486	5.137	35.449	-3.06%	-2.72%
			5680	4.993	34.462	5.147	35.437	-2.99%	-2.75%
			5690	5.011	34.448	5.158	35.426	-2.85%	-2.76%
			5700	5.027	34.432	5.168	35.414	-2.73%	-2.77%
			5710	5.041	34.430	5.178	35.403	-2.65%	-2.75%
			5720	5.054	34.433	5.188	35.391	-2.58%	-2.71%
			5745	5.076	34.412	5.214	35.363	-2.65%	-2.69%
			5750	5.079	34.402	5.219	35.357	-2.68%	-2.70%
			5755	5.083	34.391	5.224	35.351	-2.70%	-2.72%
			5765	5.091	34.373	5.234	35.340	-2.73%	-2.74%
			5775	5.098	34.351	5.245	35.329	-2.80%	-2.77%
			5785	5.110	34.320	5.255	35.317	-2.76%	-2.82%
			5795	5.125	34.288	5.265	35.305	-2.66%	-2.88%
			5800	5.133	34.275	5.270	35.300	-2.60%	-2.90%
			5805	5.141	34.262	5.275	35.294	-2.54%	-2.92%
			5825	5.173	34.236	5.296	35.271	-2.32%	-2.93%

Table 10-2
Measured Tissue Properties - Body

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
9/16/2019	750B	23.5	680	0.920	55.023	0.958	55.804	-3.97%	-1.40%
			695	0.925	54.986	0.959	55.745	-3.55%	-1.36%
			740	0.941	54.887	0.963	55.570	-2.28%	-1.23%
			755	0.946	54.860	0.964	55.512	-1.87%	-1.17%
09/18/2019	750B	24.5	700	0.933	53.962	0.959	55.726	-2.71%	-3.17%
			710	0.937	53.932	0.960	55.687	-2.40%	-3.15%
			750	0.951	53.838	0.964	55.531	-1.35%	-3.05%
			770	0.958	53.791	0.965	55.453	-0.73%	-3.00%
			785	0.963	53.748	0.966	55.395	-0.31%	-2.97%
09/23/2019	835B	21.3	820	0.929	53.455	0.969	55.258	-4.13%	-3.26%
			835	0.946	53.318	0.970	55.200	-2.47%	-3.41%
			850	0.963	53.152	0.988	55.154	-2.53%	-3.63%
09/23/2019	1750B	20.4	1710	1.467	51.731	1.463	53.537	0.41%	-3.37%
			1750	1.501	51.533	1.488	53.432	0.87%	-3.55%
			1790	1.545	51.414	1.514	53.326	2.05%	-3.59%
09/25/2019	1750B	20.1	1710	1.487	52.259	1.463	53.537	1.64%	-2.39%
			1720	1.499	52.217	1.469	53.511	2.04%	-2.42%
			1745	1.527	52.121	1.485	53.445	2.83%	-2.48%
			1750	1.533	52.102	1.488	53.432	3.02%	-2.49%
			1770	1.554	52.026	1.501	53.379	3.53%	-2.53%
			1790	1.575	51.948	1.514	53.326	4.03%	-2.58%
9/16/2019	1900B	21.9	1850	1.509	53.669	1.520	53.300	-0.72%	0.69%
			1880	1.543	53.576	1.520	53.300	1.51%	0.52%
			1910	1.577	53.468	1.520	53.300	3.75%	0.32%
09/19/2019	1900B	21.4	1850	1.520	53.325	1.520	53.300	0.00%	0.05%
			1880	1.554	53.219	1.520	53.300	2.24%	-0.15%
			1910	1.587	53.103	1.520	53.300	4.41%	-0.37%
09/23/2019	1900B	21.5	1850	1.514	52.948	1.520	53.300	-0.39%	-0.66%
			1880	1.551	52.834	1.520	53.300	2.04%	-0.87%
			1910	1.587	52.758	1.520	53.300	4.41%	-1.02%
09/30/2019	1900B	23	1850	1.517	52.620	1.520	53.300	-0.20%	-1.28%
			1860	1.528	52.586	1.520	53.300	0.53%	-1.34%
			1880	1.551	52.517	1.520	53.300	2.04%	-1.47%
			1900	1.574	52.447	1.520	53.300	3.55%	-1.60%
			1905	1.579	52.429	1.520	53.300	3.88%	-1.63%
			1910	1.585	52.412	1.520	53.300	4.28%	-1.67%
10/14/2019	1900B	21.5	1850	1.521	52.978	1.520	53.300	0.07%	-0.60%
			1860	1.532	52.939	1.520	53.300	0.79%	-0.68%
			1880	1.555	52.867	1.520	53.300	2.30%	-0.81%
			1900	1.576	52.794	1.520	53.300	3.68%	-0.95%
			1905	1.581	52.776	1.520	53.300	4.01%	-0.98%
			1910	1.587	52.756	1.520	53.300	4.41%	-1.02%
10/16/2019	1900B	20.6	1850	1.521	52.549	1.520	53.300	0.07%	-1.41%
			1860	1.531	52.518	1.520	53.300	0.72%	-1.47%
			1880	1.555	52.448	1.520	53.300	2.30%	-1.60%
			1900	1.580	52.371	1.520	53.300	3.95%	-1.74%
			1905	1.586	52.348	1.520	53.300	4.34%	-1.79%
			1910	1.592	52.328	1.520	53.300	4.74%	-1.82%
9/16/2019	2450B	22.7	2400	1.951	51.944	1.902	52.767	2.58%	-1.56%
			2450	2.011	51.809	1.950	52.700	3.13%	-1.69%
			2500	2.069	51.660	2.021	52.636	2.38%	-1.85%
09/19/2019	2450B	21.2	2450	1.980	50.529	1.950	52.700	1.54%	-4.12%
			2500	2.037	50.367	2.021	52.636	0.79%	-4.27%
			2510	2.049	50.358	2.035	52.623	0.69%	-4.30%
			2550	2.096	50.265	2.092	52.573	0.19%	-4.39%
			2560	2.108	50.243	2.106	52.560	0.09%	-4.41%
			2600	2.155	50.122	2.163	52.509	-0.37%	-4.55%
09/22/2019	2450B	23.2	2450	2.036	50.852	1.950	52.700	4.41%	-3.51%
			2500	2.094	50.694	2.021	52.636	3.61%	-3.69%
			2550	2.152	50.554	2.092	52.573	2.87%	-3.84%
			2560	2.165	50.529	2.106	52.560	2.80%	-3.86%
			2600	2.212	50.411	2.163	52.509	2.27%	-4.00%
09/24/2019	2450B	21	2400	1.980	51.766	1.902	52.767	4.10%	-1.90%
			2450	2.026	51.666	1.950	52.700	3.90%	-1.96%
			2500	2.071	51.612	2.021	52.636	2.47%	-1.95%
			2510	2.079	51.598	2.035	52.623	2.16%	-1.95%
			2550	2.115	51.502	2.092	52.573	1.10%	-2.04%
			2560	2.126	51.479	2.106	52.560	0.95%	-2.06%
			2600	2.166	51.432	2.163	52.509	0.14%	-2.05%
09/25/2019	2450B	22.2	2500	2.077	50.566	2.021	52.636	2.77%	-3.93%
			2510	2.089	50.537	2.035	52.623	2.65%	-3.96%
			2550	2.139	50.434	2.092	52.573	2.25%	-4.07%
			2560	2.150	50.410	2.106	52.560	2.09%	-4.09%
			2600	2.196	50.304	2.163	52.509	1.53%	-4.20%
09/19/2019	3600B	18.6	3500	3.149	49.852	3.310	51.320	-4.86%	-2.86%
			3550	3.210	49.767	3.370	51.250	-4.75%	-2.89%
			3560	3.220	49.752	3.382	51.238	-4.79%	-2.90%
			3600	3.268	49.692	3.430	51.190	-4.72%	-2.93%
			3650	3.329	49.602	3.489	51.118	-4.59%	-2.97%
			3690	3.375	49.519	3.536	51.063	-4.55%	-3.02%
			3700	3.391	49.514	3.548	51.050	-4.43%	-3.01%
09/17/2019	5200B-5800B	22.5	5200	5.442	48.993	5.299	49.014	2.70%	-0.04%
			5220	5.444	48.940	5.323	48.987	2.27%	-0.10%
			5240	5.463	48.972	5.346	48.960	2.19%	0.02%
			5260	5.497	48.976	5.369	48.933	2.38%	0.09%
			5280	5.544	48.898	5.393	48.906	2.80%	-0.02%
			5300	5.566	48.812	5.416	48.879	2.77%	-0.14%
			5320	5.576	48.802	5.439	48.851	2.52%	-0.10%
			5500	5.820	48.536	5.650	48.607	3.01%	-0.15%
			5520	5.838	48.559	5.673	48.580	2.91%	-0.04%
			5540	5.888	48.529	5.696	48.553	3.37%	-0.05%
			5560	5.928	48.436	5.720	48.526	3.64%	-0.19%
			5580	5.943	48.373	5.743	48.499	3.48%	-0.26%
			5600	5.959	48.374	5.766	48.471	3.35%	-0.20%
			5620	5.996	48.370	5.790	48.444	3.56%	-0.15%
			5640	6.027	48.335	5.813	48.417	3.68%	-0.17%
			5660	6.054	48.280	5.837	48.390	3.72%	-0.23%
			5680	6.080	48.256	5.860	48.363	3.75%	-0.22%
			5700	6.112	48.239	5.883	48.336	3.89%	-0.20%
			5745	6.173	48.141	5.936	48.275	3.99%	-0.28%
			5765	6.191	48.121	5.959	48.248	3.89%	-0.26%
			5785	6.225	48.095	5.982	48.220	4.06%	-0.26%
			5800	6.253	48.080	6.000	48.200	4.22%	-0.25%
			5805	6.262	48.068	6.006	48.193	4.26%	-0.26%
			5825	6.288	47.993	6.029	48.166	4.30%	-0.36%
10/14/2019	5200B-5800B	22.2	5670	6.092	48.913	5.848	48.376	4.17%	1.11%
			5680	6.106	48.916	5.860	48.363	4.20%	1.14%
			5690	6.120	48.917	5.872	48.349	4.22%	1.17%
			5700	6.132	48.906	5.883	48.336	4.23%	1.18%
			5710	6.144	48.878	5.895	48.322	4.22%	1.15%
			5720	6.157	48.842	5.907	48.309	4.23%	1.10%
			5745	6.190	48.765	5.936	48.275	4.28%	1.02%
			5750	6.198	48.764	5.942	48.268	4.27%	1.03%
			5755	6.205	48.765	5.947	48.261	4.34%	1.04%
			5765	6.225	48.758	5.959	48.248	4.46%	1.06%
			5775	6.246	48.744	5.971	48.234	4.61%	1.06%
			5785	6.262	48.726	5.982	48.220	4.68%	1.05%
			5795	6.276	48.723	5.994	48.207	4.70%	1.07%
			5800	6.283	48.725	6.000	48.200	4.72%	1.09%

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

10.2 Test System Verification

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

Table 10-3
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
G	750	HEAD	09/20/2019	22.0	20.8	0.200	1003	7409	1.680	8.280	8.400	1.45%
E	835	HEAD	09/20/2019	22.5	20.9	0.200	4d132	7417	1.880	9.590	9.400	-1.98%
H	835	HEAD	09/23/2019	20.1	19.9	0.200	4d132	7406	1.990	9.590	9.950	3.75%
O	1750	HEAD	09/16/2019	20.7	20.2	0.100	1148	7538	3.550	37.000	35.500	-4.05%
O	1900	HEAD	09/16/2019	20.4	20.2	0.100	5d148	7538	3.990	39.100	39.900	2.05%
H	1900	HEAD	09/23/2019	20.1	19.9	0.100	5d149	7406	4.100	39.300	41.000	4.33%
E	2450	HEAD	09/16/2019	21.2	19.9	0.100	719	7417	5.070	53.100	50.700	-4.52%
E	2450	HEAD	09/18/2019	22.8	21.6	0.100	719	7417	5.430	53.100	54.300	2.26%
E	2450	HEAD	09/30/2019	20.1	20.3	0.100	719	7417	5.170	53.100	51.700	-2.64%
E	2600	HEAD	09/18/2019	22.8	21.6	0.100	1126	7417	5.520	56.500	55.200	-2.30%
H	3500	HEAD	09/17/2019	20.9	20.2	0.100	1059	3589	6.670	64.600	66.700	3.25%
H	3700	HEAD	09/17/2019	20.9	20.2	0.100	1018	3589	6.820	65.800	68.200	3.65%
H	5250	HEAD	10/07/2019	20.1	20.5	0.050	1191	7406	3.860	80.800	77.200	-4.46%
H	5600	HEAD	10/07/2019	20.1	20.5	0.050	1191	7406	3.900	82.700	78.000	-5.68%
H	5750	HEAD	10/07/2019	20.1	20.5	0.050	1191	7406	3.700	80.200	74.000	-7.73%
J	750	BODY	09/16/2019	21.5	21.7	0.200	1161	7488	1.690	8.430	8.450	0.24%
J	750	BODY	09/18/2019	20.5	22.6	0.200	1161	7488	1.730	8.430	8.650	2.61%
D	835	BODY	09/23/2019	21.8	21.3	0.200	4d047	3914	2.040	9.470	10.200	7.71%
I	1750	BODY	09/23/2019	20.9	20.4	0.100	1150	7357	3.830	36.600	38.300	4.64%
D	1900	BODY	09/16/2019	22.1	20.9	0.100	5d149	3914	4.250	39.400	42.500	7.87%
D	1900	BODY	09/19/2019	22.0	21.6	0.100	5d149	3914	4.200	39.400	42.000	6.60%
J	1900	BODY	09/23/2019	21.5	19.8	0.100	5d149	7488	4.230	39.400	42.300	7.36%
K	1900	BODY	09/30/2019	23.0	21.7	0.100	5d148	7547	3.980	39.100	39.800	1.79%
K	2450	BODY	09/16/2019	22.9	22.7	0.100	981	7547	5.080	50.900	50.800	-0.20%
K	2450	BODY	09/19/2019	23.4	21.7	0.100	719	7547	5.070	50.800	50.700	-0.20%
P	2450	BODY	09/24/2019	20.9	21.0	0.100	797	3288	5.210	51.100	52.100	1.96%
K	2600	BODY	09/19/2019	23.4	21.7	0.100	1126	7547	5.300	54.300	53.000	-2.39%
K	2600	BODY	09/25/2019	22.7	22.2	0.100	1126	7547	5.410	54.300	54.100	-0.37%
P	3500	BODY	09/19/2019	21.1	19.6	0.100	1059	3589	6.630	65.100	66.300	1.84%
P	3700	BODY	09/19/2019	21.1	19.6	0.100	1018	3589	6.690	64.300	66.900	4.04%
L	5250	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	3.580	75.900	71.600	-5.67%
L	5600	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	3.760	79.900	75.200	-5.88%
L	5750	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	3.490	76.700	69.800	-9.00%
G	5750	BODY	10/14/2019	22.0	22.2	0.050	1237	7409	3.620	75.900	72.400	-4.61%

Table 10-4
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
I	1750	BODY	09/25/2019	21.8	20.1	0.100	1148	7357	2.020	19.800	20.200	2.02%
D	1900	BODY	09/16/2019	22.1	20.9	0.100	5d149	3914	2.190	20.700	21.900	5.80%
J	1900	BODY	09/23/2019	21.5	19.8	0.100	5d149	7488	2.140	20.700	21.400	3.38%
K	1900	BODY	09/30/2019	23.0	21.7	0.100	5d148	7547	2.040	20.500	20.400	-0.49%
H	1900	BODY	10/14/2019	21.5	22.1	0.100	5d080	7406	2.160	20.600	21.600	4.85%
H	1900	BODY	10/16/2019	20.6	22.1	0.100	5d149	7406	2.150	20.700	21.500	3.86%
K	2450	BODY	09/22/2019	21.2	21.4	0.100	719	7547	2.420	24.000	24.200	0.83%
K	2600	BODY	09/22/2019	21.2	21.4	0.100	1126	7547	2.440	24.300	24.400	0.41%
L	5250	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	0.988	21.100	19.760	-6.35%
L	5600	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	1.030	22.300	20.600	-7.62%
L	5750	BODY	09/17/2019	21.3	21.5	0.050	1057	7410	0.972	21.200	19.440	-8.30%

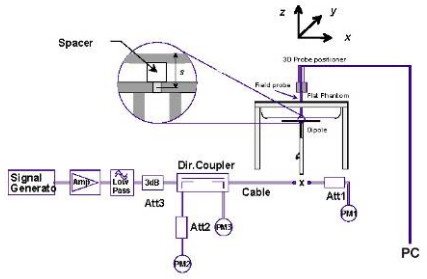

Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.55	0.12	Right	Cheek	08626	1	1:8.3	0.086	1.035	0.089	
836.60	190	GSM 850	GSM	33.7	33.55	0.09	Right	Tilt	08626	1	1:8.3	0.057	1.035	0.059	
836.60	190	GSM 850	GSM	33.7	33.55	-0.07	Left	Cheek	08626	1	1:8.3	0.120	1.035	0.124	A1
836.60	190	GSM 850	GSM	33.7	33.55	0.00	Left	Tilt	08626	1	1:8.3	0.058	1.035	0.060	
836.60	190	GSM 850	GPRS	29.7	29.21	0.01	Right	Cheek	08626	3	1:2.76	0.095	1.119	0.106	
836.60	190	GSM 850	GPRS	29.7	29.21	0.13	Right	Tilt	08626	3	1:2.76	0.047	1.119	0.053	
836.60	190	GSM 850	GPRS	29.7	29.21	0.06	Left	Cheek	08626	3	1:2.76	0.119	1.119	0.133	
836.60	190	GSM 850	GPRS	29.7	29.21	0.19	Left	Tilt	08626	3	1:2.76	0.051	1.119	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.2	30.16	0.05	Right	Cheek	08642	1	1:8.3	0.078	1.009	0.079	
1880.00	661	GSM 1900	GSM	30.2	30.16	-0.06	Right	Tilt	08642	1	1:8.3	0.048	1.009	0.048	
1880.00	661	GSM 1900	GSM	30.2	30.16	0.19	Left	Cheek	08642	1	1:8.3	0.053	1.009	0.053	
1880.00	661	GSM 1900	GSM	30.2	30.16	0.10	Left	Tilt	08642	1	1:8.3	0.067	1.009	0.068	
1909.80	810	GSM 1900	GPRS	25.7	25.60	0.10	Right	Cheek	08642	4	1:2.076	0.096	1.023	0.098	A2
1909.80	810	GSM 1900	GPRS	25.7	25.60	0.00	Right	Tilt	08642	4	1:2.076	0.055	1.023	0.056	
1909.80	810	GSM 1900	GPRS	25.7	25.60	0.08	Left	Cheek	08642	4	1:2.076	0.066	1.023	0.068	
1909.80	810	GSM 1900	GPRS	25.7	25.60	0.04	Left	Tilt	08642	4	1:2.076	0.071	1.023	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.0	24.67	0.01	Right	Cheek	08667	1:1	0.142	1.079	0.153	
836.60	4183	UMTS 850	RMC	25.0	24.67	0.04	Right	Tilt	08667	1:1	0.081	1.079	0.087	
836.60	4183	UMTS 850	RMC	25.0	24.67	-0.03	Left	Cheek	08667	1:1	0.164	1.079	0.177	A3
836.60	4183	UMTS 850	RMC	25.0	24.67	0.01	Left	Tilt	08667	1:1	0.072	1.079	0.078	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.17	Right	Cheek	08659	1:1	0.123	1.102	0.136	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	-0.06	Right	Tilt	08659	1:1	0.088	1.102	0.097	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.03	Left	Cheek	08659	1:1	0.125	1.102	0.138	A4
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.01	Left	Tilt	08659	1:1	0.110	1.102	0.121	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.05	Right	Cheek	08626	1:1	0.093	1.086	0.101	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.05	Right	Tilt	08626	1:1	0.074	1.086	0.080	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.06	Left	Cheek	08626	1:1	0.112	1.086	0.122	A5
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.11	Left	Tilt	08626	1:1	0.079	1.086	0.086	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.18	0.10	Right	Cheek	08667	1:1	0.111	1.005	0.112	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.18	0.17	Right	Tilt	08667	1:1	0.071	1.005	0.071	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.18	0.04	Left	Cheek	08667	1:1	0.154	1.005	0.155	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.2	25.18	0.12	Left	Tilt	08667	1:1	0.068	1.005	0.068	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.19	0.03	Right	Cheek	08667	1:1	0.120	1.002	0.120	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.19	0.10	Right	Tilt	08667	1:1	0.072	1.002	0.072	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.19	0.13	Left	Cheek	08667	1:1	0.169	1.002	0.169	A6
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.2	25.19	-0.02	Left	Tilt	08667	1:1	0.073	1.002	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	25.17	0.09	Right	Cheek	08667	1:1	0.146	1.007	0.147	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	25.17	-0.01	Right	Tilt	08667	1:1	0.075	1.007	0.076	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	25.17	0.06	Left	Cheek	08667	1:1	0.158	1.007	0.159	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.2	25.17	0.16	Left	Tilt	08667	1:1	0.062	1.007	0.062	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.20	0.01	Right	Cheek	08667	1:1	0.159	1.000	0.159	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.20	0.02	Right	Tilt	08667	1:1	0.088	1.000	0.088	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.20	0.06	Left	Cheek	08667	1:1	0.175	1.000	0.175	A7
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.2	25.20	-0.04	Left	Tilt	08667	1:1	0.080	1.000	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							

Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.32	0.02	Right	Cheek	08659	1:1	0.107	1.091	0.117	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.32	0.09	Right	Tilt	08659	1:1	0.078	1.091	0.085	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.32	0.13	Left	Cheek	08659	1:1	0.106	1.091	0.116	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.32	0.13	Left	Tilt	08659	1:1	0.096	1.091	0.105	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.35	0.13	Right	Cheek	08659	1:1	0.118	1.084	0.128	A8
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.35	0.18	Right	Tilt	08659	1:1	0.070	1.084	0.076	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.35	0.10	Left	Cheek	08659	1:1	0.112	1.084	0.121	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.35	-0.06	Left	Tilt	08659	1:1	0.100	1.084	0.108	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	0.05	0	Right	Cheek	QPSK	1	0	08642	1:1	0.092	1.064	0.098	A9
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	0.05	1	Right	Cheek	QPSK	50	0	08642	1:1	0.066	1.047	0.069	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	0.14	0	Right	Tilt	QPSK	1	0	08642	1:1	0.046	1.064	0.049	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.03	1	Right	Tilt	QPSK	50	0	08642	1:1	0.033	1.047	0.035	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	0.13	0	Left	Cheek	QPSK	1	0	08642	1:1	0.085	1.064	0.090	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	0.13	1	Left	Cheek	QPSK	50	0	08642	1:1	0.057	1.047	0.060	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	0.04	0	Left	Tilt	QPSK	1	0	08642	1:1	0.035	1.064	0.037	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	0.15	1	Left	Tilt	QPSK	50	0	08642	1:1	0.023	1.047	0.024	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	0.00	0	Right	Cheek	QPSK	1	49	08642	1:1	0.122	1.076	0.131	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.12	1	Right	Cheek	QPSK	25	0	08642	1:1	0.102	1.059	0.108	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	-0.06	0	Right	Tilt	QPSK	1	49	08642	1:1	0.061	1.076	0.066	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.12	1	Right	Tilt	QPSK	25	0	08642	1:1	0.053	1.059	0.056	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	0.07	0	Left	Cheek	QPSK	1	49	08642	1:1	0.136	1.076	0.146	A10
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.13	1	Left	Cheek	QPSK	25	0	08642	1:1	0.094	1.059	0.100	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	-0.09	0	Left	Tilt	QPSK	1	49	08642	1:1	0.051	1.076	0.055	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.15	1	Left	Tilt	QPSK	25	0	08642	1:1	0.042	1.059	0.044	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																		Head 1.6 W/kg (mW/g) averaged over 1 gram	

Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	0.08	0	Right	Cheek	QPSK	1	25	08642	1:1	0.133	1.045	0.139	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.11	1	Right	Cheek	QPSK	25	0	08642	1:1	0.093	1.009	0.094	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	0.12	0	Right	Tilt	QPSK	1	25	08642	1:1	0.085	1.045	0.089	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.20	1	Right	Tilt	QPSK	25	0	08642	1:1	0.055	1.009	0.055	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	-0.02	0	Left	Cheek	QPSK	1	25	08642	1:1	0.149	1.045	0.156	A11
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	-0.10	1	Left	Cheek	QPSK	25	0	08642	1:1	0.106	1.009	0.107	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	0.14	0	Left	Tilt	QPSK	1	25	08642	1:1	0.070	1.045	0.073	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.05	1	Left	Tilt	QPSK	25	0	08642	1:1	0.050	1.009	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																		Head 1.6 W/kg (mW/g) averaged over 1 gram	

Table 11-12
LTE Band 26 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.03	0	Right	Cheek	QPSK	1	0	08667	1:1	0.149	1.050	0.156	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.05	1	Right	Cheek	QPSK	36	18	08667	1:1	0.094	1.081	0.102	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.09	0	Right	Tilt	QPSK	1	0	08667	1:1	0.086	1.050	0.090	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.08	1	Right	Tilt	QPSK	36	18	08667	1:1	0.057	1.081	0.062	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.00	0	Left	Cheek	QPSK	1	0	08667	1:1	0.166	1.050	0.174	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.03	1	Left	Cheek	QPSK	36	18	08667	1:1	0.123	1.081	0.133	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.04	0	Left	Tilt	QPSK	1	0	08667	1:1	0.076	1.050	0.080	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.09	1	Left	Tilt	QPSK	36	18	08667	1:1	0.057	1.081	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																		Head 1.6 W/kg (mW/g) averaged over 1 gram	

Table 11-13
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	25.14	0.04	0	Right	Cheek	QPSK	1	49	08642	1:1	0.142	1.086	0.154	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.08	1	Right	Cheek	QPSK	25	12	08642	1:1	0.104	1.211	0.126	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	0.10	0	Right	Tilt	QPSK	1	49	08642	1:1	0.088	1.086	0.096	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.09	1	Right	Tilt	QPSK	25	12	08642	1:1	0.067	1.211	0.081	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	-0.05	0	Left	Cheek	QPSK	1	49	08642	1:1	0.173	1.086	**0.188**	A13
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.03	1	Left	Cheek	QPSK	25	12	08642	1:1	0.118	1.211	0.143	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	-0.01	0	Left	Tilt	QPSK	1	49	08642	1:1	0.070	1.086	0.076	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.04	1	Left	Tilt	QPSK	25	12	08642	1:1	0.051	1.211	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**																		**Head** **1.6 W/kg (mW/g)** averaged over 1 gram		

Table 11-14
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	24.01	0.19	0	Right	Cheek	QPSK	1	0	08626	1:1	0.129	1.045	0.135	A14
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.05	1	Right	Cheek	QPSK	50	0	08626	1:1	0.109	1.023	0.112	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	-0.02	0	Right	Tilt	QPSK	1	0	08626	1:1	0.095	1.045	0.099	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.00	1	Right	Tilt	QPSK	50	0	08626	1:1	0.080	1.023	0.082	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.04	0	Left	Cheek	QPSK	1	0	08626	1:1	0.115	1.045	0.120	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.09	1	Left	Cheek	QPSK	50	0	08626	1:1	0.110	1.023	0.113	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.05	0	Left	Tilt	QPSK	1	0	08626	1:1	0.091	1.045	0.095	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.12	1	Left	Tilt	QPSK	50	0	08626	1:1	0.082	1.023	0.084	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**																		**Head** **1.6 W/kg (mW/g)** averaged over 1 gram	

Table 11-15
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.08	0	Right	Cheek	QPSK	1	0	08626	1:1	0.130	1.028	0.134	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.07	1	Right	Cheek	QPSK	50	0	08626	1:1	0.113	1.069	0.121	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.08	0	Right	Tilt	QPSK	1	0	08626	1:1	0.099	1.028	0.102	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.11	1	Right	Tilt	QPSK	50	0	08626	1:1	0.081	1.069	0.087	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.13	0	Left	Cheek	QPSK	1	0	08626	1:1	0.147	1.028	0.151	A15
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.01	1	Left	Cheek	QPSK	50	0	08626	1:1	0.134	1.069	0.143	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.13	0	Left	Tilt	QPSK	1	0	08626	1:1	0.088	1.028	0.090	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.20	1	Left	Tilt	QPSK	50	0	08626	1:1	0.083	1.069	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 11-16
LTE Band 7 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.14	0	Right	Cheek	QPSK	1	99	08626	1:1	0.026	1.026	0.027	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.18	1	Right	Cheek	QPSK	50	25	08626	1:1	0.022	1.007	0.022	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.15	0	Right	Tilt	QPSK	1	99	08626	1:1	0.038	1.026	0.039	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.14	1	Right	Tilt	QPSK	50	25	08626	1:1	0.036	1.007	0.036	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.13	0	Left	Cheek	QPSK	1	99	08626	1:1	0.044	1.026	0.045	A16
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.15	1	Left	Cheek	QPSK	50	25	08626	1:1	0.037	1.007	0.037	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.17	0	Left	Tilt	QPSK	1	99	08626	1:1	0.017	1.026	0.017	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.09	1	Left	Tilt	QPSK	50	25	08626	1:1	0.016	1.007	0.016	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-17
LTE Band 48 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)	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.16	0	Right	Cheek	QPSK	1	99	08659	1:1.58	0.045	1.102	0.050	A17
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.16	1	Right	Cheek	QPSK	50	25	08659	1:1.58	0.028	1.064	0.030	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.13	0	Right	Tilt	QPSK	1	99	08659	1:1.58	0.012	1.102	0.013	
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.17	1	Right	Tilt	QPSK	50	25	08659	1:1.58	0.005	1.064	0.005	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.01	0	Left	Cheek	QPSK	1	99	08659	1:1.58	0.027	1.102	0.030	
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.17	1	Left	Cheek	QPSK	50	25	08659	1:1.58	0.012	1.064	0.013	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.17	0	Left	Tilt	QPSK	1	99	08659	1:1.58	0.024	1.102	0.026	
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.15	1	Left	Tilt	QPSK	50	25	08659	1:1.58	0.017	1.064	0.018	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-18
LTE Band 41 Head SAR

MEASUREMENT RESULTS																				
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.19	0	Right	Cheek	QPSK	1	99	08626	1:1.58	0.030	1.074	0.032	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.16	1	Right	Cheek	QPSK	50	25	08626	1:1.58	0.021	1.050	0.022	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.13	0	Right	Tilt	QPSK	1	99	08626	1:1.58	0.018	1.074	0.019	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.17	1	Right	Tilt	QPSK	50	25	08626	1:1.58	0.011	1.050	0.012	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.13	0	Left	Cheek	QPSK	1	99	08626	1:1.58	0.039	1.074	0.042	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.16	1	Left	Cheek	QPSK	50	25	08626	1:1.58	0.032	1.050	0.034	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	27.2	26.72	0.15	0	Left	Cheek	QPSK	1	99	08626	1:2.31	0.044	1.117	0.049	A18
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.17	0	Left	Tilt	QPSK	1	99	08626	1:1.58	0.015	1.074	0.016	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.20	1	Left	Tilt	QPSK	50	25	08626	1:1.58	0.010	1.050	0.011	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-19
DTS Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	19.5	19.13	-0.19	Right	Cheek	08766	1	98.7	0.728	0.498	1.089	1.013	0.549	
2462	11	802.11b	DSSS	22	19.5	19.13	-0.13	Right	Tilt	08766	1	98.7	0.606	-	1.089	1.013	-	
2412	1	802.11b	DSSS	22	19.5	18.87	0.12	Left	Cheek	08766	1	98.7	1.023	0.819	1.156	1.013	0.959	
2437	6	802.11b	DSSS	22	19.5	19.06	0.18	Left	Cheek	08766	1	98.7	1.289	1.040	1.107	1.013	**1.166**	A19
2462	11	802.11b	DSSS	22	19.5	19.13	0.14	Left	Cheek	08766	1	98.7	0.995	0.798	1.089	1.013	0.880	
2437	6	802.11b	DSSS	22	19.5	19.06	0.09	Left	Tilt	08766	1	98.7	1.176	0.985	1.107	1.013	1.105	
2462	11	802.11b	DSSS	22	19.5	19.13	0.19	Left	Tilt	08766	1	98.7	0.933	0.757	1.089	1.013	0.835	
2437	6	802.11b	DSSS	22	19.5	19.06	-0.12	Left	Cheek	08766	1	98.7	1.483	0.915	1.107	1.013	1.026	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram										

Note: Blue entry represents variability measurement.

Table 11-20
NII Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	16.5	15.84	0.15	Right	Cheek	08766	13.5	97.3	1.153	-	1.164	1.028	-	
5270	54	802.11n	OFDM	40	16.5	15.84	0.07	Right	Tilt	08766	13.5	97.3	1.449	0.438	1.164	1.028	0.524	
5270	54	802.11n	OFDM	40	16.5	15.84	0.13	Left	Cheek	08766	13.5	97.3	1.053	-	1.164	1.028	-	
5270	54	802.11n	OFDM	40	16.5	15.84	0.16	Left	Tilt	08766	13.5	97.3	1.832	0.592	1.164	1.028	0.708	
5710	142	802.11n	OFDM	40	16.5	16.19	0.17	Right	Cheek	08766	13.5	97.3	1.123	-	1.074	1.028	-	
5710	142	802.11n	OFDM	40	16.5	16.19	0.16	Right	Tilt	08766	13.5	97.3	1.301	0.570	1.074	1.028	0.629	
5710	142	802.11n	OFDM	40	16.5	16.19	0.14	Left	Cheek	08766	13.5	97.3	1.171	-	1.074	1.028	-	
5510	102	802.11n	OFDM	40	16.5	15.80	-0.14	Left	Tilt	08766	13.5	97.3	1.990	0.728	1.175	1.028	**0.879**	A20
5630	126	802.11n	OFDM	40	16.5	15.94	-0.17	Left	Tilt	08766	13.5	97.3	1.456	0.694	1.138	1.028	0.812	
5710	142	802.11n	OFDM	40	16.5	16.19	0.12	Left	Tilt	08766	13.5	97.3	1.327	0.721	1.074	1.028	0.796	
5755	151	802.11n	OFDM	40	16.5	16.15	0.17	Right	Cheek	08766	13.5	97.3	0.965	-	1.084	1.028	-	
5755	151	802.11n	OFDM	40	16.5	16.15	0.17	Right	Tilt	08766	13.5	97.3	1.117	0.421	1.084	1.028	0.469	
5755	151	802.11n	OFDM	40	16.5	16.15	0.15	Left	Cheek	08766	13.5	97.3	1.022	-	1.084	1.028	-	
5755	151	802.11n	OFDM	40	16.5	16.15	0.18	Left	Tilt	08766	13.5	97.3	1.150	0.600	1.084	1.028	0.669	
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 11-21
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	11.76	0.02	Right	Cheek	08766	1	77.3	0.084	1.057	1.294	0.115	
2441.00	39	Bluetooth	FHSS	12.0	11.76	0.13	Right	Tilt	08766	1	77.3	0.062	1.057	1.294	0.085	
2441.00	39	Bluetooth	FHSS	12.0	11.76	0.15	Left	Cheek	08766	1	77.3	0.124	1.057	1.294	**0.170**	A21
2441.00	39	Bluetooth	FHSS	12.0	11.76	0.12	Left	Tilt	08766	1	77.3	0.100	1.057	1.294	0.137	
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 11-22
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.55	0.01	10 mm	08634	1	1:8.3	back	0.435	1.035	0.450	
836.60	190	GSM 850	GPRS	29.7	29.21	-0.10	10 mm	08634	3	1:2.76	back	0.472	1.119	0.528	A22
1880.00	661	GSM 1900	GSM	30.2	30.16	-0.01	10 mm	08626	1	1:8.3	back	0.274	1.009	0.276	
1909.80	810	GSM 1900	GPRS	25.7	25.60	-0.09	10 mm	08626	4	1:2.076	back	0.276	1.023	0.282	A23
836.60	4183	UMTS 850	RMC	25.0	24.67	0.02	10 mm	08634	N/A	1:1	back	0.499	1.079	0.538	A25
1712.40	1312	UMTS 1750	RMC	24.7	24.35	0.04	10 mm	08642	N/A	1:1	back	0.648	1.084	0.702	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.04	10 mm	08642	N/A	1:1	back	0.684	1.102	0.754	A26
1752.60	1513	UMTS 1750	RMC	24.7	24.32	0.04	10 mm	08642	N/A	1:1	back	0.664	1.091	0.724	
1852.40	9262	UMTS 1900	RMC	24.7	24.31	0.02	10 mm	08667	N/A	1:1	back	0.607	1.094	0.664	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.02	10 mm	08667	N/A	1:1	back	0.619	1.086	0.672	
1907.60	9538	UMTS 1900	RMC	24.7	24.33	-0.01	10 mm	08667	N/A	1:1	back	0.622	1.089	0.677	A28
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.2	25.17	0.02	10 mm	08634	N/A	1:1	back	0.510	1.007	0.514	A30
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.2	25.15	0.01	10 mm	08634	N/A	1:1	back	0.586	1.012	0.593	A32
1851.25	25	PCS CDMA	TDSO / SO32	24.7	24.44	-0.04	10 mm	08626	N/A	1:1	back	0.686	1.062	0.729	A34
1880.00	600	PCS CDMA	TDSO / SO32	24.7	24.24	-0.02	10 mm	08626	N/A	1:1	back	0.683	1.112	0.759	
1908.75	1175	PCS CDMA	TDSO / SO32	24.7	24.18	-0.01	10 mm	08626	N/A	1:1	back	0.641	1.127	0.722	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-23
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	-0.13	0	08667	QPSK	1	0	10 mm	back	1:1	0.510	1.064	0.543	A36
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.06	1	08667	QPSK	50	0	10 mm	back	1:1	0.356	1.047	0.373	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	0.03	0	08659	QPSK	1	49	10 mm	back	1:1	0.463	1.076	0.498	A37
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.05	1	08659	QPSK	25	0	10 mm	back	1:1	0.324	1.059	0.343	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	-0.04	0	08659	QPSK	1	25	10 mm	back	1:1	0.575	1.045	0.601	A38
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	-0.04	1	08659	QPSK	25	0	10 mm	back	1:1	0.392	1.009	0.396	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.01	0	08634	QPSK	1	0	10 mm	back	1:1	0.539	1.050	0.566	A39
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	-0.01	1	08634	QPSK	36	18	10 mm	back	1:1	0.385	1.081	0.416	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	0.00	0	08634	QPSK	1	49	10 mm	back	1:1	0.585	1.086	0.635	A40
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.06	1	08634	QPSK	25	12	10 mm	back	1:1	0.409	1.211	0.495	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.05	0	08642	QPSK	1	0	10 mm	back	1:1	0.627	1.045	0.655	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.95	-0.01	0	08642	QPSK	1	0	10 mm	back	1:1	0.643	1.059	0.681	A41
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.92	-0.02	0	08642	QPSK	1	50	10 mm	back	1:1	0.556	1.067	0.593	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	-0.01	1	08642	QPSK	50	0	10 mm	back	1:1	0.508	1.023	0.520	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.09	0	08667	QPSK	1	0	10 mm	back	1:1	0.796	1.028	**0.818**	A43
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.45	-0.03	0	08667	QPSK	1	0	10 mm	back	1:1	0.769	1.059	0.814	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.36	-0.18	0	08667	QPSK	1	99	10 mm	back	1:1	0.613	1.081	0.663	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	-0.06	1	08667	QPSK	50	0	10 mm	back	1:1	0.685	1.069	0.732	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.33	0.03	1	08667	QPSK	100	0	10 mm	back	1:1	0.599	1.089	0.652	
2510.00	20850	Low	LTE Band 7	20	24.7	24.50	0.00	0	08634	QPSK	1	0	10 mm	back	1:1	0.786	1.047	**0.823**	A45
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.01	0	08634	QPSK	1	99	10 mm	back	1:1	0.756	1.026	0.776	
2560.00	21350	High	LTE Band 7	20	24.7	24.44	-0.02	0	08634	QPSK	1	0	10 mm	back	1:1	0.653	1.062	0.693	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.11	1	08634	QPSK	50	25	10 mm	back	1:1	0.692	1.007	0.697	
2560.00	21350	High	LTE Band 7	20	23.7	23.64	0.12	1	08634	QPSK	100	0	10 mm	back	1:1	0.529	1.014	0.536	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.00	0	08667	QPSK	1	99	10 mm	back	1:1.58	0.215	1.102	**0.237**	A47
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	-0.05	1	08667	QPSK	50	25	10 mm	back	1:1.58	0.159	1.064	0.169	

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 11-24
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.05	0	08634	QPSK	1	99	10 mm	back	1:1.58	0.407	1.074	0.437	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.04	1	08634	QPSK	50	25	10 mm	back	1:1.58	0.340	1.050	0.357	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	27.2	26.72	0.00	0	08634	QPSK	1	99	10 mm	back	1:2.31	0.513	1.117	0.573	A49

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 11-25
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	21.5	21.03	-0.02	10 mm	08766	1	back	98.7	0.379	0.257	1.114	1.013	**0.290**	A51
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram										

Table 11-26
NII Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	19.5	19.17	0.19	10 mm	08758	6	back	98.2	0.493	0.223	1.079	1.018	0.245	
5720	144	802.11a	OFDM	20	19.5	19.45	0.08	10 mm	08758	6	back	98.2	0.610	0.267	1.012	1.018	0.275	A52
5785	157	802.11a	OFDM	20	19.5	19.48	-0.15	10 mm	08758	6	back	98.2	0.505	0.215	1.005	1.018	0.220	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram										

Table 11-27
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.0	11.76	0.14	10 mm	08766	1	back	77.3	0.026	1.057	1.294	**0.036**	A54
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Body** **1.6 W/kg (mW/g)** averaged over 1 gram									

11.3 Standalone Hotspot SAR Data

Table 11-28
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	29.7	29.21	-0.10	10 mm	08634	3	1:2.76	back	0.472	1.119	0.528	A22
836.60	190	GSM 850	GPRS	29.7	29.21	0.00	10 mm	08634	3	1:2.76	front	0.317	1.119	0.355	
836.60	190	GSM 850	GPRS	29.7	29.21	0.01	10 mm	08634	3	1:2.76	bottom	0.134	1.119	0.150	
836.60	190	GSM 850	GPRS	29.7	29.21	-0.06	10 mm	08634	3	1:2.76	right	0.096	1.119	0.107	
1909.80	810	GSM 1900	GPRS	25.7	25.60	-0.09	10 mm	08626	4	1:2.076	back	0.276	1.023	0.282	
1909.80	810	GSM 1900	GPRS	25.7	25.60	0.04	10 mm	08626	4	1:2.076	front	0.163	1.023	0.167	
1909.80	810	GSM 1900	GPRS	25.7	25.60	-0.07	10 mm	08626	4	1:2.076	bottom	0.386	1.023	0.395	A24
1909.80	810	GSM 1900	GPRS	25.7	25.60	-0.06	10 mm	08626	4	1:2.076	left	0.089	1.023	0.091	
836.60	4183	UMTS 850	RMC	25.0	24.67	0.02	10 mm	08634	N/A	1:1	back	0.499	1.079	0.538	A25
836.60	4183	UMTS 850	RMC	25.0	24.67	0.01	10 mm	08634	N/A	1:1	front	0.390	1.079	0.421	
836.60	4183	UMTS 850	RMC	25.0	24.67	-0.05	10 mm	08634	N/A	1:1	bottom	0.166	1.079	0.179	
836.60	4183	UMTS 850	RMC	25.0	24.67	0.00	10 mm	08634	N/A	1:1	right	0.122	1.079	0.132	
1712.40	1312	UMTS 1750	RMC	24.7	24.35	0.04	10 mm	08642	N/A	1:1	back	0.648	1.084	0.702	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.04	10 mm	08642	N/A	1:1	back	0.684	1.102	0.754	
1752.60	1513	UMTS 1750	RMC	24.7	24.32	0.04	10 mm	08642	N/A	1:1	back	0.664	1.091	0.724	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.00	10 mm	08642	N/A	1:1	front	0.434	1.102	0.478	
1712.40	1312	UMTS 1750	RMC	24.7	24.35	0.01	10 mm	08642	N/A	1:1	bottom	0.855	1.084	0.927	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	-0.01	10 mm	08642	N/A	1:1	bottom	0.897	1.102	0.988	
1752.60	1513	UMTS 1750	RMC	24.7	24.32	0.02	10 mm	08642	N/A	1:1	bottom	0.902	1.091	0.984	A27
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.01	10 mm	08642	N/A	1:1	left	0.245	1.102	0.270	
1752.60	1513	UMTS 1750	RMC	24.7	24.32	-0.01	10 mm	08642	N/A	1:1	bottom	0.864	1.091	0.943	
1852.40	9262	UMTS 1900	RMC	24.7	24.31	0.02	10 mm	08667	N/A	1:1	back	0.607	1.094	0.664	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.02	10 mm	08667	N/A	1:1	back	0.619	1.086	0.672	
1907.60	9538	UMTS 1900	RMC	24.7	24.33	-0.01	10 mm	08667	N/A	1:1	back	0.622	1.089	0.677	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.03	10 mm	08667	N/A	1:1	front	0.360	1.086	0.391	
1852.40	9262	UMTS 1900	RMC	24.7	24.31	0.02	10 mm	08667	N/A	1:1	bottom	0.769	1.094	0.841	A29
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.01	10 mm	08667	N/A	1:1	bottom	0.758	1.086	0.823	
1907.60	9538	UMTS 1900	RMC	24.7	24.33	-0.06	10 mm	08667	N/A	1:1	bottom	0.749	1.089	0.816	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.03	10 mm	08667	N/A	1:1	left	0.163	1.086	0.177	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.14	-0.01	10 mm	08634	N/A	1:1	back	0.491	1.014	0.498	A31
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.14	0.00	10 mm	08634	N/A	1:1	front	0.389	1.014	0.394	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.14	-0.02	10 mm	08634	N/A	1:1	bottom	0.164	1.014	0.166	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.2	25.14	0.07	10 mm	08634	N/A	1:1	right	0.176	1.014	0.178	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.18	0.00	10 mm	08634	N/A	1:1	back	0.552	1.005	0.555	A33
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.18	0.00	10 mm	08634	N/A	1:1	front	0.438	1.005	0.440	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.18	0.06	10 mm	08634	N/A	1:1	bottom	0.206	1.005	0.207	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.2	25.18	0.00	10 mm	08634	N/A	1:1	right	0.174	1.005	0.175	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.07	10 mm	08626	N/A	1:1	back	0.727	1.096	0.797	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	0.05	10 mm	08626	N/A	1:1	front	0.446	1.096	0.489	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.51	-0.05	10 mm	08626	N/A	1:1	bottom	0.944	1.045	0.986	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.01	10 mm	08626	N/A	1:1	bottom	0.974	1.096	1.068	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.26	-0.05	10 mm	08626	N/A	1:1	bottom	0.951	1.107	1.053	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.05	10 mm	08626	N/A	1:1	left	0.192	1.096	0.210	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.04	10 mm	08626	N/A	1:1	bottom	1.070	1.096	**1.173**	A35
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram				

Note: Blue entry represents variability measurement.

Table 11-29
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	-0.13	0	08667	QPSK	1	0	10 mm	back	1:1	0.510	1.064	0.543	A36
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.06	1	08667	QPSK	50	0	10 mm	back	1:1	0.356	1.047	0.373	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	0.00	0	08667	QPSK	1	0	10 mm	front	1:1	0.387	1.064	0.412	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.02	1	08667	QPSK	50	0	10 mm	front	1:1	0.276	1.047	0.289	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	-0.09	0	08667	QPSK	1	0	10 mm	bottom	1:1	0.182	1.064	0.194	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.04	1	08667	QPSK	50	0	10 mm	bottom	1:1	0.122	1.047	0.128	
680.50	133297	Mid	LTE Band 71	20	25.5	25.23	-0.05	0	08667	QPSK	1	0	10 mm	right	1:1	0.218	1.064	0.232	
680.50	133297	Mid	LTE Band 71	20	24.5	24.30	-0.08	1	08667	QPSK	50	0	10 mm	right	1:1	0.156	1.047	0.163	
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 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	25.18	0.03	0	08659	QPSK	1	49	10 mm	back	1:1	0.463	1.076	0.498	A37
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	0.05	1	08659	QPSK	25	0	10 mm	back	1:1	0.324	1.059	0.343	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	-0.01	0	08659	QPSK	1	49	10 mm	front	1:1	0.440	1.076	0.473	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	-0.06	1	08659	QPSK	25	0	10 mm	front	1:1	0.309	1.059	0.327	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	0.04	0	08659	QPSK	1	49	10 mm	bottom	1:1	0.158	1.076	0.170	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	-0.01	1	08659	QPSK	25	0	10 mm	bottom	1:1	0.109	1.059	0.115	
707.50	23095	Mid	LTE Band 12	10	25.5	25.18	-0.06	0	08659	QPSK	1	49	10 mm	right	1:1	0.223	1.076	0.240	
707.50	23095	Mid	LTE Band 12	10	24.5	24.25	-0.03	1	08659	QPSK	25	0	10 mm	right	1:1	0.162	1.059	0.172	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-31
LTE Band 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	25.31	-0.04	0	08659	QPSK	1	25	10 mm	back	1:1	0.575	1.045	0.601	A38
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	-0.04	1	08659	QPSK	25	0	10 mm	back	1:1	0.392	1.009	0.396	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	0.01	0	08659	QPSK	1	25	10 mm	front	1:1	0.420	1.045	0.439	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.00	1	08659	QPSK	25	0	10 mm	front	1:1	0.288	1.009	0.291	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	0.01	0	08659	QPSK	1	25	10 mm	bottom	1:1	0.155	1.045	0.162	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.06	1	08659	QPSK	25	0	10 mm	bottom	1:1	0.113	1.009	0.114	
782.00	23230	Mid	LTE Band 13	10	25.5	25.31	-0.03	0	08659	QPSK	1	25	10 mm	right	1:1	0.207	1.045	0.216	
782.00	23230	Mid	LTE Band 13	10	24.5	24.46	0.05	1	08659	QPSK	25	0	10 mm	right	1:1	0.137	1.009	0.138	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-32
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	-0.01	0	08634	QPSK	1	0	10 mm	back	1:1	0.539	1.050	0.566	A39
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	-0.01	1	08634	QPSK	36	18	10 mm	back	1:1	0.385	1.081	0.416	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.02	0	08634	QPSK	1	0	10 mm	front	1:1	0.399	1.050	0.419	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.02	1	08634	QPSK	36	18	10 mm	front	1:1	0.291	1.081	0.315	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.05	0	08634	QPSK	1	0	10 mm	bottom	1:1	0.164	1.050	0.172	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.06	1	08634	QPSK	36	18	10 mm	bottom	1:1	0.116	1.081	0.125	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.29	0.02	0	08634	QPSK	1	0	10 mm	right	1:1	0.130	1.050	0.137	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.16	0.00	1	08634	QPSK	36	18	10 mm	right	1:1	0.089	1.081	0.096	
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 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	25.14	0.00	0	08634	QPSK	1	49	10 mm	back	1:1	0.585	1.086	0.635	A40
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.06	1	08634	QPSK	25	12	10 mm	back	1:1	0.409	1.211	0.495	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	-0.01	0	08634	QPSK	1	49	10 mm	front	1:1	0.425	1.086	0.462	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	-0.02	1	08634	QPSK	25	12	10 mm	front	1:1	0.295	1.211	0.357	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	0.01	0	08634	QPSK	1	49	10 mm	bottom	1:1	0.190	1.086	0.206	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.01	1	08634	QPSK	25	12	10 mm	bottom	1:1	0.125	1.211	0.151	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	25.14	0.01	0	08634	QPSK	1	49	10 mm	right	1:1	0.148	1.086	0.161	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.67	0.00	1	08634	QPSK	25	12	10 mm	right	1:1	0.094	1.211	0.114	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-34
LTE Band 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	24.01	0.05	0	08642	QPSK	1	0	10 mm	back	1:1	0.627	1.045	0.655	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.95	-0.01	0	08642	QPSK	1	0	10 mm	back	1:1	0.643	1.059	0.681	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.92	-0.02	0	08642	QPSK	1	50	10 mm	back	1:1	0.556	1.067	0.593	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	-0.01	1	08642	QPSK	50	0	10 mm	back	1:1	0.508	1.023	0.520	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.04	0	08642	QPSK	1	0	10 mm	front	1:1	0.426	1.045	0.445	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.05	1	08642	QPSK	50	0	10 mm	front	1:1	0.351	1.023	0.359	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.02	0	08642	QPSK	1	0	10 mm	bottom	1:1	0.825	1.045	0.862	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.2	23.95	0.01	0	08642	QPSK	1	0	10 mm	bottom	1:1	0.868	1.059	0.919	A42
1770.00	132572	High	LTE Band 66 (AWS)	20	24.2	23.92	0.04	0	08642	QPSK	1	50	10 mm	bottom	1:1	0.829	1.067	0.885	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.01	1	08642	QPSK	50	0	10 mm	bottom	1:1	0.662	1.023	0.677	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.08	0.00	1	08642	QPSK	100	0	10 mm	bottom	1:1	0.668	1.028	0.687	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	-0.02	0	08642	QPSK	1	0	10 mm	left	1:1	0.227	1.045	0.237	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.12	1	08642	QPSK	50	0	10 mm	left	1:1	0.184	1.023	0.188	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-35
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.09	0	08667	QPSK	1	0	10 mm	back	1:1	0.796	1.028	0.818	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.45	-0.03	0	08667	QPSK	1	0	10 mm	back	1:1	0.769	1.059	0.814	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.36	-0.18	0	08667	QPSK	1	99	10 mm	back	1:1	0.613	1.081	0.663	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	-0.06	1	08667	QPSK	50	0	10 mm	back	1:1	0.685	1.069	0.732	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.33	0.03	1	08667	QPSK	100	0	10 mm	back	1:1	0.599	1.089	0.652	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.05	0	08667	QPSK	1	0	10 mm	front	1:1	0.545	1.028	0.560	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.05	1	08667	QPSK	50	0	10 mm	front	1:1	0.464	1.069	0.496	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.05	0	08667	QPSK	1	0	10 mm	bottom	1:1	0.935	1.028	0.961	A44
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.45	-0.04	0	08667	QPSK	1	0	10 mm	bottom	1:1	0.881	1.059	0.933	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.36	-0.03	0	08667	QPSK	1	99	10 mm	bottom	1:1	0.841	1.081	0.909	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	-0.04	1	08667	QPSK	50	0	10 mm	bottom	1:1	0.805	1.069	0.861	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.34	0.00	1	08667	QPSK	50	50	10 mm	bottom	1:1	0.764	1.086	0.830	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.35	-0.07	1	08667	QPSK	50	50	10 mm	bottom	1:1	0.752	1.084	0.815	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.33	0.08	1	08667	QPSK	100	0	10 mm	bottom	1:1	0.793	1.089	0.864	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.04	0	08667	QPSK	1	0	10 mm	left	1:1	0.225	1.028	0.231	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.03	1	08667	QPSK	50	0	10 mm	left	1:1	0.203	1.069	0.217	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-36
LTE Band 7 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2510.00	20850	Low	LTE Band 7	20	24.7	24.50	0.00	0	08634	QPSK	1	0	10 mm	back	1:1	0.786	1.047	0.823	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.01	0	08634	QPSK	1	99	10 mm	back	1:1	0.756	1.026	0.776	
2560.00	21350	High	LTE Band 7	20	24.7	24.44	-0.02	0	08634	QPSK	1	0	10 mm	back	1:1	0.653	1.062	0.693	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.11	1	08634	QPSK	50	25	10 mm	back	1:1	0.692	1.007	0.697	
2560.00	21350	High	LTE Band 7	20	23.7	23.64	0.12	1	08634	QPSK	100	0	10 mm	back	1:1	0.529	1.014	0.536	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.01	0	08634	QPSK	1	99	10 mm	front	1:1	0.534	1.026	0.548	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	-0.01	1	08634	QPSK	50	25	10 mm	front	1:1	0.474	1.007	0.477	
2510.00	20850	Low	LTE Band 7	20	24.7	24.50	-0.08	0	08634	QPSK	1	0	10 mm	bottom	1:1	1.010	1.047	1.057	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.11	0	08634	QPSK	1	99	10 mm	bottom	1:1	1.130	1.026	1.159	A46
2560.00	21350	High	LTE Band 7	20	24.7	24.44	-0.06	0	08634	QPSK	1	0	10 mm	bottom	1:1	0.765	1.062	0.812	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	-0.06	1	08634	QPSK	50	25	10 mm	bottom	1:1	0.696	1.007	0.701	
2560.00	21350	High	LTE Band 7	20	23.7	23.64	-0.04	1	08634	QPSK	100	0	10 mm	bottom	1:1	0.714	1.014	0.724	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.00	0	08634	QPSK	1	99	10 mm	left	1:1	0.079	1.026	0.081	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.05	1	08634	QPSK	50	25	10 mm	left	1:1	0.058	1.007	0.058	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.17	0	08634	QPSK	1	99	10 mm	bottom	1:1	1.090	1.026	1.118	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Blue entry represents variability measurement.

Table 11-37
LTE Band 48 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)	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.00	0	08667	QPSK	1	99	10 mm	back	1:1.58	0.215	1.102	0.237	
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	-0.05	1	08667	QPSK	50	25	10 mm	back	1:1.58	0.159	1.064	0.169	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	-0.01	0	08667	QPSK	1	99	10 mm	front	1:1.58	0.166	1.102	0.183	
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.07	1	08667	QPSK	50	25	10 mm	front	1:1.58	0.125	1.064	0.133	
3603.30	55773	Low-Mid	LTE Band 48	20	23.7	23.28	0.03	0	08667	QPSK	1	99	10 mm	bottom	1:1.58	0.390	1.102	0.430	A48
3603.30	55773	Low-Mid	LTE Band 48	20	22.7	22.43	0.00	1	08667	QPSK	50	25	10 mm	bottom	1:1.58	0.279	1.064	0.297	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-38
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
Power Class	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
	MHz	Ch.															(W/kg)		(W/kg)	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.05	0	08634	QPSK	1	99	10 mm	back	1:1.58	0.407	1.074	0.437	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.04	1	08634	QPSK	50	25	10 mm	back	1:1.58	0.340	1.050	0.357	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	27.2	26.72	0.00	0	08634	QPSK	1	99	10 mm	back	1:2.31	0.513	1.117	0.573	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	-0.06	0	08634	QPSK	1	99	10 mm	front	1:1.58	0.322	1.074	0.346	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	-0.04	1	08634	QPSK	50	25	10 mm	front	1:1.58	0.264	1.050	0.277	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.7	24.29	-0.10	0	08634	QPSK	1	99	10 mm	bottom	1:1.58	0.688	1.099	0.756	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.38	-0.09	0	08634	QPSK	1	99	10 mm	bottom	1:1.58	0.675	1.076	0.726	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	-0.12	0	08634	QPSK	1	99	10 mm	bottom	1:1.58	0.672	1.074	0.722	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.31	-0.01	0	08634	QPSK	1	99	10 mm	bottom	1:1.58	0.572	1.094	0.626	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.7	24.33	-0.02	0	08634	QPSK	1	99	10 mm	bottom	1:1.58	0.495	1.089	0.539	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	-0.08	1	08634	QPSK	50	25	10 mm	bottom	1:1.58	0.521	1.050	0.547	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	23.7	23.42	-0.04	1	08634	QPSK	100	0	10 mm	bottom	1:1.58	0.486	1.067	0.519	
Power Class 2	2506.00	39750	Low	LTE Band 41	20	27.2	26.65	-0.13	0	08634	QPSK	1	99	10 mm	bottom	1:2.31	0.818	1.135	0.928	A50
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.7	24.39	0.17	0	08634	QPSK	1	99	10 mm	left	1:1.58	0.044	1.074	0.047	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	23.7	23.49	0.16	1	08634	QPSK	50	25	10 mm	left	1:1.58	0.039	1.050	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 11-39
WLAN Hotspot SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	21.5	21.03	-0.02	10 mm	08766	1	back	98.7	0.379	0.257	1.114	1.013	**0.290**	A51
2462	11	802.11b	DSSS	22	21.5	21.03	0.16	10 mm	08766	1	front	98.7	0.244	-	1.114	1.013	-	
2462	11	802.11b	DSSS	22	21.5	21.03	0.11	10 mm	08766	1	top	98.7	0.383	0.242	1.114	1.013	0.273	
2462	11	802.11b	DSSS	22	21.5	21.03	0.16	10 mm	08766	1	right	98.7	0.243	-	1.114	1.013	-	
5200	40	802.11a	OFDM	20	19.5	19.19	0.05	10 mm	08758	6	back	98.2	0.339	-	1.074	1.018	-	
5200	40	802.11a	OFDM	20	19.5	19.19	0.13	10 mm	08758	6	front	98.2	0.211	-	1.074	1.018	-	
5200	40	802.11a	OFDM	20	19.5	19.19	-0.14	10 mm	08758	6	top	98.2	0.602	0.261	1.074	1.018	0.285	
5200	40	802.11a	OFDM	20	19.5	19.19	-0.13	10 mm	08758	6	right	98.2	0.110	-	1.074	1.018	-	
5785	157	802.11a	OFDM	20	19.5	19.48	-0.15	10 mm	08758	6	back	98.2	0.505	0.215	1.005	1.018	0.220	
5785	157	802.11a	OFDM	20	19.5	19.48	-0.12	10 mm	08758	6	front	98.2	0.415	-	1.005	1.018	-	
5745	149	802.11a	OFDM	20	19.5	19.46	-0.14	10 mm	08758	6	top	98.2	1.349	0.720	1.009	1.018	**0.740**	A53
5785	157	802.11a	OFDM	20	19.5	19.48	-0.09	10 mm	08758	6	top	98.2	1.436	0.617	1.005	1.018	0.631	
5825	165	802.11a	OFDM	20	19.5	19.33	-0.19	10 mm	08758	6	top	98.2	1.365	0.574	1.040	1.018	0.608	
5785	157	802.11a	OFDM	20	19.5	19.48	0.16	10 mm	08758	6	right	98.2	0.250	-	1.005	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					

Table 11-40
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	11.76	0.14	10 mm	08766	1	back	77.3	0.026	1.057	1.294	**0.036**	A54
2441	39	Bluetooth	FHSS	12.0	11.76	0.12	10 mm	08766	1	front	77.3	0.017	1.057	1.294	0.023	
2441	39	Bluetooth	FHSS	12.0	11.76	0.20	10 mm	08766	1	top	77.3	0.020	1.057	1.294	0.027	
2441	39	Bluetooth	FHSS	12.0	11.76	0.13	10 mm	08766	1	right	77.3	0.015	1.057	1.294	0.021	
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 11-41
UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	0.07	4 mm	08642	1:1	back	0.915	1.102	1.008	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	-0.05	2 mm	08642	1:1	front	0.860	1.102	0.948	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	-0.01	5 mm	08642	1:1	bottom	1.050	1.102	1.157	
1732.40	1412	UMTS 1750	RMC	24.7	24.28	-0.05	0 mm	08642	1:1	left	0.532	1.102	0.586	
1712.40	1312	UMTS 1750	RMC	23.7	23.34	0.01	0 mm	08642	1:1	back	2.370	1.086	2.574	
1732.40	1412	UMTS 1750	RMC	23.7	23.29	0.00	0 mm	08642	1:1	back	2.410	1.099	2.649	
1752.60	1513	UMTS 1750	RMC	23.7	23.40	0.00	0 mm	08642	1:1	back	2.420	1.072	2.594	A55
1732.40	1412	UMTS 1750	RMC	23.7	23.29	-0.02	0 mm	08642	1:1	front	1.510	1.099	1.659	
1712.40	1312	UMTS 1750	RMC	23.7	23.34	0.05	0 mm	08642	1:1	bottom	2.150	1.086	2.335	
1732.40	1412	UMTS 1750	RMC	23.7	23.29	0.02	0 mm	08642	1:1	bottom	2.220	1.099	2.440	
1752.60	1513	UMTS 1750	RMC	23.7	23.40	0.04	0 mm	08642	1:1	bottom	2.280	1.072	2.444	
1752.60	1513	UMTS 1750	RMC	23.7	23.40	0.09	0 mm	08642	1:1	back	2.380	1.072	2.551	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.02	4 mm	08667	1:1	back	1.010	1.086	1.097	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	0.10	2 mm	08667	1:1	front	0.893	1.086	0.970	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.04	5 mm	08667	1:1	bottom	0.916	1.086	0.995	
1880.00	9400	UMTS 1900	RMC	24.7	24.34	-0.12	0 mm	08667	1:1	left	0.391	1.086	0.425	
1852.40	9262	UMTS 1900	RMC	23.7	23.42	0.09	0 mm	08667	1:1	back	2.070	1.067	2.209	
1880.00	9400	UMTS 1900	RMC	23.7	23.41	0.06	0 mm	08667	1:1	back	2.110	1.069	2.256	A56
1907.60	9538	UMTS 1900	RMC	23.7	23.36	0.07	0 mm	08667	1:1	back	1.950	1.081	2.108	
1880.00	9400	UMTS 1900	RMC	23.7	23.41	0.02	0 mm	08667	1:1	front	1.150	1.069	1.229	
1852.40	9262	UMTS 1900	RMC	23.7	23.42	-0.04	0 mm	08667	1:1	bottom	2.050	1.067	2.187	
1880.00	9400	UMTS 1900	RMC	23.7	23.41	0.01	0 mm	08667	1:1	bottom	2.020	1.069	2.159	
1907.60	9538	UMTS 1900	RMC	23.7	23.36	0.02	0 mm	08667	1:1	bottom	1.930	1.081	2.086	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.06	4 mm	08626	1:1	back	1.050	1.096	1.151	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.04	2 mm	08626	1:1	front	0.944	1.096	1.035	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.03	5 mm	08626	1:1	bottom	1.110	1.096	1.217	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.30	-0.08	0 mm	08626	1:1	left	0.651	1.096	0.713	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.7	23.56	-0.06	0 mm	08626	1:1	back	2.110	1.033	2.180	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.7	23.32	-0.09	0 mm	08626	1:1	back	2.210	1.091	2.411	A57
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.7	23.31	-0.07	0 mm	08626	1:1	back	2.040	1.094	2.232	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.7	23.32	-0.08	0 mm	08626	1:1	front	1.120	1.091	1.222	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.7	23.56	0.00	0 mm	08626	1:1	bottom	2.040	1.033	2.107	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.7	23.32	0.01	0 mm	08626	1:1	bottom	1.960	1.091	2.138	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.7	23.31	0.01	0 mm	08626	1:1	bottom	1.850	1.094	2.024	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.7	23.32	0.03	0 mm	08626	1:1	back	2.070	1.091	2.258	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Note: Blue entry represents variability measurement.

Table 11-42
LTE Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																			
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	-0.05	0	08659	QPSK	1	0	4 mm	back	1:1	0.902	1.045	0.943	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	-0.08	1	08659	QPSK	50	0	4 mm	back	1:1	0.852	1.023	0.872	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	-0.03	0	08659	QPSK	1	0	2 mm	front	1:1	0.726	1.045	0.759	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.10	1	08659	QPSK	50	0	2 mm	front	1:1	0.711	1.023	0.727	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.03	0	08659	QPSK	1	0	5 mm	bottom	1:1	0.927	1.045	0.969	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.01	1	08659	QPSK	50	0	5 mm	bottom	1:1	0.841	1.023	0.860	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.2	24.01	0.06	0	08659	QPSK	1	0	0 mm	left	1:1	0.529	1.045	0.553	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	23.10	0.05	1	08659	QPSK	50	0	0 mm	left	1:1	0.505	1.023	0.517	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.92	0.12	0	08659	QPSK	1	50	0 mm	back	1:1	1.880	1.067	2.006	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.93	0.07	0	08659	QPSK	1	50	0 mm	back	1:1	1.860	1.064	1.979	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.89	0.10	0	08659	QPSK	1	50	0 mm	back	1:1	1.860	1.074	1.998	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.51	0.13	0	08659	QPSK	50	25	0 mm	back	1:1	1.910	1.172	2.239	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.58	0.13	0	08659	QPSK	50	25	0 mm	back	1:1	1.890	1.153	2.179	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.48	0.14	0	08659	QPSK	50	25	0 mm	back	1:1	1.950	1.180	2.301	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.42	0.12	0	08659	QPSK	100	0	0 mm	back	1:1	1.840	1.197	2.202	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.93	-0.01	0	08659	QPSK	1	50	0 mm	front	1:1	1.260	1.064	1.341	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.58	-0.10	0	08659	QPSK	50	25	0 mm	front	1:1	1.230	1.153	1.418	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.92	0.00	0	08659	QPSK	1	50	0 mm	bottom	1:1	1.990	1.067	2.123	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.93	0.04	0	08659	QPSK	1	50	0 mm	bottom	1:1	2.040	1.064	2.171	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.89	0.01	0	08659	QPSK	1	50	0 mm	bottom	1:1	2.060	1.074	2.212	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.51	0.16	0	08659	QPSK	50	25	0 mm	bottom	1:1	2.040	1.172	2.391	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.2	22.58	0.01	0	08659	QPSK	50	25	0 mm	bottom	1:1	2.050	1.153	2.364	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.2	22.48	0.03	0	08659	QPSK	50	25	0 mm	bottom	1:1	2.270	1.180	2.679	A58
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.2	22.42	0.02	0	08659	QPSK	100	0	0 mm	bottom	1:1	2.050	1.197	2.454	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.00	0	08667	QPSK	1	0	4 mm	back	1:1	1.100	1.028	1.131	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	-0.03	1	08667	QPSK	50	0	4 mm	back	1:1	0.954	1.069	1.020	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.06	0	08667	QPSK	1	0	2 mm	front	1:1	0.965	1.028	0.992	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.05	1	08667	QPSK	50	0	2 mm	front	1:1	0.828	1.069	0.885	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.03	0	08667	QPSK	1	0	5 mm	bottom	1:1	1.060	1.028	1.090	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	0.04	1	08667	QPSK	50	0	5 mm	bottom	1:1	0.917	1.069	0.980	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.15	0	08667	QPSK	1	0	0 mm	left	1:1	0.482	1.028	0.495	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.41	-0.08	1	08667	QPSK	50	0	0 mm	left	1:1	0.407	1.069	0.435	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.99	0.02	0	08667	QPSK	1	0	0 mm	back	1:1	2.030	1.050	2.132	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	22.98	0.06	0	08667	QPSK	1	0	0 mm	back	1:1	2.210	1.052	2.325	A59
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	22.91	0.01	0	08667	QPSK	1	0	0 mm	back	1:1	1.940	1.069	2.074	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.90	0.00	0	08667	QPSK	50	25	0 mm	back	1:1	1.900	1.072	2.037	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	22.89	0.01	0	08667	QPSK	50	0	0 mm	back	1:1	1.980	1.074	2.127	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	22.84	-0.02	0	08667	QPSK	50	25	0 mm	back	1:1	1.930	1.086	2.096	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.88	-0.03	0	08667	QPSK	100	0	0 mm	back	1:1	1.900	1.076	2.044	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.99	0.08	0	08667	QPSK	1	0	0 mm	front	1:1	1.090	1.050	1.145	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.90	0.10	0	08667	QPSK	50	25	0 mm	front	1:1	1.010	1.072	1.083	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.99	-0.06	0	08667	QPSK	1	0	0 mm	bottom	1:1	1.920	1.050	2.016	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	22.98	-0.06	0	08667	QPSK	1	0	0 mm	bottom	1:1	1.800	1.052	1.894	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	22.91	-0.06	0	08667	QPSK	1	0	0 mm	bottom	1:1	1.600	1.069	1.710	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.90	-0.05	0	08667	QPSK	50	25	0 mm	bottom	1:1	1.750	1.072	1.876	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	22.89	-0.08	0	08667	QPSK	50	0	0 mm	bottom	1:1	1.720	1.074	1.847	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.2	22.84	-0.12	0	08667	QPSK	50	25	0 mm	bottom	1:1	1.580	1.086	1.716	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	22.88	-0.02	0	08667	QPSK	100	0	0 mm	bottom	1:1	1.770	1.076	1.905	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.13	0	08634	QPSK	1	99	4 mm	back	1:1	1.150	1.026	1.180	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.11	1	08634	QPSK	50	25	4 mm	back	1:1	1.030	1.007	1.037	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	0.14	0	08634	QPSK	1	99	2 mm	front	1:1	1.210	1.026	1.241	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.16	1	08634	QPSK	50	25	2 mm	front	1:1	1.070	1.007	1.077	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.12	0	08634	QPSK	1	99	5 mm	bottom	1:1	1.260	1.026	1.293	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	-0.15	1	08634	QPSK	50	25	5 mm	bottom	1:1	1.120	1.007	1.128	
2535.00	21100	Mid	LTE Band 7	20	24.7	24.59	-0.21	0	08634	QPSK	1	99	0 mm	left	1:1	0.307	1.026	0.315	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.67	0.00	1	08634	QPSK	50	25	0 mm	left	1:1	0.257	1.007	0.259	
2510.00	20850	Low	LTE Band 7	20	23.2	22.83	0.17	0	08634	QPSK	1	0	0 mm	back	1:1	1.440	1.089	1.568	
2560.00	21350	High	LTE Band 7	20	23.2	22.78	-0.06	0	08634	QPSK	50	25	0 mm	back	1:1	1.410	1.102	1.554	
2510.00	20850	Low	LTE Band 7	20	23.2	22.83	-0.13	0	08634	QPSK	1	0	0 mm	front	1:1	1.170	1.089	1.274	
2560.00	21350	High	LTE Band 7	20	23.2	22.78	-0.13	0	08634	QPSK	50	25	0 mm	front	1:1	1.510	1.102	1.664	
2510.00	20850	Low	LTE Band 7	20	23.2	22.83	-0.14	0	08634	QPSK	1	0	0 mm	bottom	1:1	2.120	1.089	2.309	
2535.00	21100	Mid	LTE Band 7	20	23.2	22.70	-0.13	0	08634	QPSK	1	0	0 mm	bottom	1:1	2.210	1.122	2.480	
2560.00	21350	High	LTE Band 7	20	23.2	22.76	-0.08	0	08634	QPSK	1	99	0 mm	bottom	1:1	2.320	1.107	2.568	
2510.00	20850	Low	LTE Band 7	20	23.2	22.77	-0.20	0	08634	QPSK	50	25	0 mm	bottom	1:1	2.250	1.104	2.484	
2535.00	21100	Mid	LTE Band 7	20	23.2	22.69	-0.16	0	08634	QPSK	50	25	0 mm	bottom	1:1	2.490	1.125	**2.801**	A60
2560.00	21350	High	LTE Band 7	20	23.2	22.78	-0.16	0	08634	QPSK	50	25	0 mm	bottom	1:1	2.340	1.102	2.579	
2560.00	21350	High	LTE Band 7	20	23.2	22.74	-0.16	0	08634	QPSK	100	0	0 mm	bottom	1:1	2.330	1.112	2.591	
2535.00	21100	Mid	LTE Band 7	20	23.2	22.69	-0.12	0	08634	QPSK	50	25	0 mm	bottom	1:1	2.370	1.125	2.666	
2510.00	20850	Low	LTE Band 7	20	23.2	22.77	0.01	0	08634	QPSK	50	25	0 mm	bottom	1:1	2.290	1.104	2.528	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams				

Note: Blue entry represents variability measurement.

Table 11-43
WLAN Phablet SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (10g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g) (W/kg)	Plot #
MHz	Ch.																	
5300	60	802.11a	OFDM	20	19.5	19.17	0.21	0 mm	08758	6	back	98.2	8.307	0.777	1.079	1.018	0.853	
5300	60	802.11a	OFDM	20	19.5	19.17	0.00	0 mm	08758	6	front	98.2	4.962	-	1.079	1.018	-	
5300	60	802.11a	OFDM	20	19.5	19.17	-0.11	0 mm	08758	6	top	98.2	15.652	1.680	1.079	1.018	1.845	
5300	60	802.11a	OFDM	20	19.5	19.17	0.13	0 mm	08758	6	right	98.2	2.372	-	1.079	1.018	-	
5720	144	802.11a	OFDM	20	19.5	19.45	0.08	0 mm	08758	6	back	98.2	12.132	0.845	1.012	1.018	0.871	
5720	144	802.11a	OFDM	20	19.5	19.45	0.00	0 mm	08758	6	front	98.2	8.255	-	1.012	1.018	-	
5500	100	802.11a	OFDM	20	19.5	19.33	-0.20	0 mm	08758	6	top	98.2	30.038	1.810	1.040	1.018	1.916	
5620	124	802.11a	OFDM	20	19.5	19.40	-0.14	0 mm	08758	6	top	98.2	25.589	2.200	1.023	1.018	2.291	A61
5720	144	802.11a	OFDM	20	19.5	19.45	-0.12	0 mm	08758	6	top	98.2	22.629	1.880	1.012	1.018	1.937	
5720	144	802.11a	OFDM	20	19.5	19.45	-0.18	0 mm	08758	6	right	98.2	2.862	-	1.012	1.018	-	
5620	124	802.11a	OFDM	20	19.5	19.40	-0.14	0 mm	08758	6	top	98.2	29.959	2.180	1.023	1.018	2.270	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Phablet 4.0 W/kg (mW/g) averaged over 10 grams					

Note: Blue entry represents variability measurement.

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)
11. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.

GSM Test Notes:

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

CDMA Notes:

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

UMTS Notes:

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

LTE Notes:

1. LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

3. A-MPR was disabled for all SAR tests by setting NS=01 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 and LTE Band 48 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.

Bluetooth Notes

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

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.133	1.166	1.299
	GSM/GPRS 1900	0.098	1.166	1.264
	UMTS 850	0.177	1.166	1.343
	UMTS 1750	0.138	1.166	1.304
	UMTS 1900	0.122	1.166	1.288
	CDMA/EVDO BC10 (§90S)	0.169	1.166	1.335
	CDMA/EVDO BC0 (§22H)	0.175	1.166	1.341
	PCS CDMA/EVDO	0.128	1.166	1.294
	LTE Band 71	0.098	1.166	1.264
	LTE Band 12	0.146	1.166	1.312
	LTE Band 13	0.156	1.166	1.322
	LTE Band 26 (Cell)	0.174	1.166	1.340
	LTE Band 5 (Cell)	0.188	1.166	**1.354**
	LTE Band 66 (AWS)	0.135	1.166	1.301
	LTE Band 25 (PCS)	0.151	1.166	1.317
	LTE Band 7	0.045	1.166	1.211
	LTE Band 48	0.050	1.166	1.216
	LTE Band 41	0.049	1.166	1.215

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.133	0.879	1.012
	GSM/GPRS 1900	0.098	0.879	0.977
	UMTS 850	0.177	0.879	1.056
	UMTS 1750	0.138	0.879	1.017
	UMTS 1900	0.122	0.879	1.001
	CDMA/EVDO BC10 (§90S)	0.169	0.879	1.048
	CDMA/EVDO BC0 (§22H)	0.175	0.879	1.054
	PCS CDMA/EVDO	0.128	0.879	1.007
	LTE Band 71	0.098	0.879	0.977
	LTE Band 12	0.146	0.879	1.025
	LTE Band 13	0.156	0.879	1.035
	LTE Band 26 (Cell)	0.174	0.879	1.053
	LTE Band 5 (Cell)	0.188	0.879	**1.067**
	LTE Band 66 (AWS)	0.135	0.879	1.014
	LTE Band 25 (PCS)	0.151	0.879	1.030
	LTE Band 7	0.045	0.879	0.924
	LTE Band 48	0.050	0.879	0.929
	LTE Band 41	0.049	0.879	0.928

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.133	0.170	0.303
	GSM/GPRS 1900	0.098	0.170	0.268
	UMTS 850	0.177	0.170	0.347
	UMTS 1750	0.138	0.170	0.308
	UMTS 1900	0.122	0.170	0.292
	CDMA/EVDO BC10 (§90S)	0.169	0.170	0.339
	CDMA/EVDO BC0 (§22H)	0.175	0.170	0.345
	PCS CDMA/EVDO	0.128	0.170	0.298
	LTE Band 71	0.098	0.170	0.268
	LTE Band 12	0.146	0.170	0.316
	LTE Band 13	0.156	0.170	0.326
	LTE Band 26 (Cell)	0.174	0.170	0.344
	LTE Band 5 (Cell)	0.188	0.170	**0.358**
	LTE Band 66 (AWS)	0.135	0.170	0.305
	LTE Band 25 (PCS)	0.151	0.170	0.321
	LTE Band 7	0.045	0.170	0.215
	LTE Band 48	0.050	0.170	0.220
	LTE Band 41	0.049	0.170	0.219

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM/GPRS 850	0.133	0.170	0.879	1.182
	GSM/GPRS 1900	0.098	0.170	0.879	1.147
	UMTS 850	0.177	0.170	0.879	1.226
	UMTS 1750	0.138	0.170	0.879	1.187
	UMTS 1900	0.122	0.170	0.879	1.171
	CDMA/EVDO BC10 (§90S)	0.169	0.170	0.879	1.218
	CDMA/EVDO BC0 (§22H)	0.175	0.170	0.879	1.224
	PCS CDMA/EVDO	0.128	0.170	0.879	1.177
	LTE Band 71	0.098	0.170	0.879	1.147
	LTE Band 12	0.146	0.170	0.879	1.195
	LTE Band 13	0.156	0.170	0.879	1.205
	LTE Band 26 (Cell)	0.174	0.170	0.879	1.223
	LTE Band 5 (Cell)	0.188	0.170	0.879	**1.237**
	LTE Band 66 (AWS)	0.135	0.170	0.879	1.184
	LTE Band 25 (PCS)	0.151	0.170	0.879	1.200
	LTE Band 7	0.045	0.170	0.879	1.094
	LTE Band 48	0.050	0.170	0.879	1.099
	LTE Band 41	0.049	0.170	0.879	1.098

12.4 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.528	0.290	0.818
	GSM/GPRS 1900	0.282	0.290	0.572
	UMTS 850	0.538	0.290	0.828
	UMTS 1750	0.754	0.290	1.044
	UMTS 1900	0.677	0.290	0.967
	CDMA BC10 (§90S)	0.514	0.290	0.804
	CDMA BC0 (§22H)	0.593	0.290	0.883
	PCS CDMA	0.759	0.290	1.049
	LTE Band 71	0.543	0.290	0.833
	LTE Band 12	0.498	0.290	0.788
	LTE Band 13	0.601	0.290	0.891
	LTE Band 26 (Cell)	0.566	0.290	0.856
	LTE Band 5 (Cell)	0.635	0.290	0.925
	LTE Band 66 (AWS)	0.681	0.290	0.971
	LTE Band 25 (PCS)	0.818	0.290	1.108
	LTE Band 7	0.823	0.290	**1.113**
	LTE Band 48	0.237	0.290	0.527
	LTE Band 41	0.573	0.290	0.863

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.528	0.275	0.803
	GSM/GPRS 1900	0.282	0.275	0.557
	UMTS 850	0.538	0.275	0.813
	UMTS 1750	0.754	0.275	1.029
	UMTS 1900	0.677	0.275	0.952
	CDMA BC10 (§90S)	0.514	0.275	0.789
	CDMA BC0 (§22H)	0.593	0.275	0.868
	PCS CDMA	0.759	0.275	1.034
	LTE Band 71	0.543	0.275	0.818
	LTE Band 12	0.498	0.275	0.773
	LTE Band 13	0.601	0.275	0.876
	LTE Band 26 (Cell)	0.566	0.275	0.841
	LTE Band 5 (Cell)	0.635	0.275	0.910
	LTE Band 66 (AWS)	0.681	0.275	0.956
	LTE Band 25 (PCS)	0.818	0.275	1.093
	LTE Band 7	0.823	0.275	**1.098**
	LTE Band 48	0.237	0.275	0.512
	LTE Band 41	0.573	0.275	0.848

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.528	0.036	0.564
	GSM/GPRS 1900	0.282	0.036	0.318
	UMTS 850	0.538	0.036	0.574
	UMTS 1750	0.754	0.036	0.790
	UMTS 1900	0.677	0.036	0.713
	CDMA BC10 (§90S)	0.514	0.036	0.550
	CDMA BC0 (§22H)	0.593	0.036	0.629
	PCS CDMA	0.759	0.036	0.795
	LTE Band 71	0.543	0.036	0.579
	LTE Band 12	0.498	0.036	0.534
	LTE Band 13	0.601	0.036	0.637
	LTE Band 26 (Cell)	0.566	0.036	0.602
	LTE Band 5 (Cell)	0.635	0.036	0.671
	LTE Band 66 (AWS)	0.681	0.036	0.717
	LTE Band 25 (PCS)	0.818	0.036	0.854
	LTE Band 7	0.823	0.036	**0.859**
	LTE Band 48	0.237	0.036	0.273
	LTE Band 41	0.573	0.036	0.609

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	GSM/GPRS 850	0.528	0.036	0.275	0.839
	GSM/GPRS 1900	0.282	0.036	0.275	0.593
	UMTS 850	0.538	0.036	0.275	0.849
	UMTS 1750	0.754	0.036	0.275	1.065
	UMTS 1900	0.677	0.036	0.275	0.988
	CDMA BC10 (§90S)	0.514	0.036	0.275	0.825
	CDMA BC0 (§22H)	0.593	0.036	0.275	0.904
	PCS CDMA	0.759	0.036	0.275	1.070
	LTE Band 71	0.543	0.036	0.275	0.854
	LTE Band 12	0.498	0.036	0.275	0.809
	LTE Band 13	0.601	0.036	0.275	0.912
	LTE Band 26 (Cell)	0.566	0.036	0.275	0.877
	LTE Band 5 (Cell)	0.635	0.036	0.275	0.946
	LTE Band 66 (AWS)	0.681	0.036	0.275	0.992
	LTE Band 25 (PCS)	0.818	0.036	0.275	1.129
	LTE Band 7	0.823	0.036	0.275	**1.134**
	LTE Band 48	0.237	0.036	0.220	0.493
	LTE Band 41	0.573	0.036	0.220	0.829

12.5 Hotspot SAR Simultaneous Transmission Analysis

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

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

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.528	0.290	0.818
	GPRS 1900	0.395	0.290	0.685
	UMTS 850	0.538	0.290	0.828
	UMTS 1750	0.988	0.290	1.278
	UMTS 1900	0.841	0.290	1.131
	EVDO BC10 (§90S)	0.498	0.290	0.788
	EVDO BC0 (§22H)	0.555	0.290	0.845
	PCS EVDO	1.173	0.290	**1.463**
	LTE Band 71	0.543	0.290	0.833
	LTE Band 12	0.498	0.290	0.788
	LTE Band 13	0.601	0.290	0.891
	LTE Band 26 (Cell)	0.566	0.290	0.856
	LTE Band 5 (Cell)	0.635	0.290	0.925
	LTE Band 66 (AWS)	0.919	0.290	1.209
	LTE Band 25 (PCS)	0.961	0.290	1.251
	LTE Band 7	1.159	0.290	1.449
	LTE Band 48	0.430	0.290	0.720
	LTE Band 41	0.928	0.290	1.218

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.528	0.740	1.268
	GPRS 1900	0.395	0.740	1.135
	UMTS 850	0.538	0.740	1.278
	UMTS 1750	0.988	0.740	See Table Below
	UMTS 1900	0.841	0.740	**1.581**
	EVDO BC10 (§90S)	0.498	0.740	1.238
	EVDO BC0 (§22H)	0.555	0.740	1.295
	PCS EVDO	1.173	0.740	See Table Below
	LTE Band 71	0.543	0.740	1.283
	LTE Band 12	0.498	0.740	1.238
	LTE Band 13	0.601	0.740	1.341
	LTE Band 26 (Cell)	0.566	0.740	1.306
	LTE Band 5 (Cell)	0.635	0.740	1.375
	LTE Band 66 (AWS)	0.919	0.740	See Table Below
	LTE Band 25 (PCS)	0.961	0.740	See Table Below
	LTE Band 7	1.159	0.740	See Table Below
	LTE Band 48	0.430	0.740	1.170
	LTE Band 41	0.928	0.740	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.754	0.220	0.974
	Front	0.478	0.740*	**1.218**
	Top	-	0.740	0.740
	Bottom	0.988	-	0.988
	Right	-	0.740*	0.740
	Left	0.270	-	0.270

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.797	0.220	1.017
	Front	0.489	0.740*	**1.229**
	Top	-	0.740	0.740
	Bottom	1.173	-	1.173
	Right	-	0.740*	0.740
	Left	0.210	-	0.210

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.681	0.220	0.901
	Front	0.445	0.740*	**1.185**
	Top	-	0.740	0.740
	Bottom	0.919	-	0.919
	Right	-	0.740*	0.740
	Left	0.237	-	0.237

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.818	0.220	1.038
	Front	0.560	0.740*	**1.300**
	Top	-	0.740	0.740
	Bottom	0.961	-	0.961
	Right	-	0.740*	0.740
	Left	0.231	-	0.231

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.823	0.220	1.043
	Front	0.548	0.740*	**1.288**
	Top	-	0.740	0.740
	Bottom	1.159	-	1.159
	Right	-	0.740*	0.740
	Left	0.081	-	0.081

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.573	0.220	0.793
	Front	0.346	0.740*	**1.086**
	Top	-	0.740	0.740
	Bottom	0.928	-	0.928
	Right	-	0.740*	0.740
	Left	0.047	-	0.047

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.528	0.036	0.564
	GPRS 1900	0.395	0.036	0.431
	UMTS 850	0.538	0.036	0.574
	UMTS 1750	0.988	0.036	1.024
	UMTS 1900	0.841	0.036	0.877
	EVDO BC10 (§90S)	0.498	0.036	0.534
	EVDO BC0 (§22H)	0.555	0.036	0.591
	PCS EVDO	1.173	0.036	**1.209**
	LTE Band 71	0.543	0.036	0.579
	LTE Band 12	0.498	0.036	0.534
	LTE Band 13	0.601	0.036	0.637
	LTE Band 26 (Cell)	0.566	0.036	0.602
	LTE Band 5 (Cell)	0.635	0.036	0.671
	LTE Band 66 (AWS)	0.919	0.036	0.955
	LTE Band 25 (PCS)	0.961	0.036	0.997
	LTE Band 7	1.159	0.036	1.195
	LTE Band 48	0.430	0.036	0.466
	LTE Band 41	0.928	0.036	0.964

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.528	0.036	0.740	1.304
	GPRS 1900	0.395	0.036	0.740	1.171
	UMTS 850	0.538	0.036	0.740	1.314
	UMTS 1750	0.988	0.036	0.740	See Table Below
	UMTS 1900	0.841	0.036	0.740	See Table Below
	EVDO BC10 (§90S)	0.498	0.036	0.740	1.274
	EVDO BC0 (§22H)	0.555	0.036	0.740	1.331
	PCS EVDO	1.173	0.036	0.740	See Table Below
	LTE Band 71	0.543	0.036	0.740	1.319
	LTE Band 12	0.498	0.036	0.740	1.274
	LTE Band 13	0.601	0.036	0.740	1.377
	LTE Band 26 (Cell)	0.566	0.036	0.740	1.342
	LTE Band 5 (Cell)	0.635	0.036	0.740	**1.411**
	LTE Band 66 (AWS)	0.919	0.036	0.740	See Table Below
	LTE Band 25 (PCS)	0.961	0.036	0.740	See Table Below
	LTE Band 7	1.159	0.036	0.740	See Table Below
	LTE Band 48	0.430	0.036	0.740	1.206
	LTE Band 41	0.928	0.036	0.740	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.754	0.036	0.220	**1.010**
	Front	0.478	0.023	0.740*	1.132
	Top	-	0.027	0.740	0.767
	Bottom	0.988	-	-	0.988
	Right	-	0.021	0.740*	0.652
	Left	0.270	-	-	0.270

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.677	0.036	0.220	**0.933**
	Front	0.391	0.023	0.740*	1.045
	Top	-	0.027	0.740	0.767
	Bottom	0.841	-	-	0.841
	Right	-	0.021	0.740*	0.652
	Left	0.177	-	-	0.177

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.797	0.036	0.220	**1.053**
	Front	0.489	0.023	0.740*	1.143
	Top	-	0.027	0.740	0.767
	Bottom	1.173	-	-	1.173
	Right	-	0.021	0.740*	0.652
	Left	0.210	-	-	0.210

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.681	0.036	0.220	**0.937**
	Front	0.445	0.023	0.740*	1.099
	Top	-	0.027	0.740	0.767
	Bottom	0.919	-	-	0.919
	Right	-	0.021	0.740*	0.652
	Left	0.237	-	-	0.237

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.818	0.036	0.220	**1.074**
	Front	0.560	0.023	0.740*	1.214
	Top	-	0.027	0.740	0.767
	Bottom	0.961	-	-	0.961
	Right	-	0.021	0.740*	0.652
	Left	0.231	-	-	0.231

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.823	0.036	0.220	**1.079**
	Front	0.548	0.023	0.740*	1.202
	Top	-	0.027	0.740	0.767
	Bottom	1.159	-	-	1.159
	Right	-	0.021	0.740*	0.652
	Left	0.081	-	-	0.081

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.573	0.036	0.220	**0.829**
	Front	0.346	0.023	0.740*	1.000
	Top	-	0.027	0.740	0.767
	Bottom	0.928	-	-	0.928
	Right	-	0.021	0.740*	0.652
	Left	0.047	-	-	0.047

12.6 Phablet Simultaneous Transmission Analysis

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

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

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

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

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

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.649	0.871	3.520
	Front	1.659	2.291*	**3.950**
	Top	-	2.291	2.291
	Bottom	2.444	-	2.444
	Right	-	2.291*	2.291
	Left	0.586	-	0.586

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.256	0.871	3.127
	Front	1.229	2.291*	**3.520**
	Top	-	2.291	2.291
	Bottom	2.187	-	2.187
	Right	-	2.291*	2.291
	Left	0.425	-	0.425

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.411	0.871	3.282
	Front	1.222	2.291*	**3.513**
	Top	-	2.291	2.291
	Bottom	2.138	-	2.138
	Right	-	2.291*	2.291
	Left	0.713	-	0.713

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.301	0.871	3.172
	Front	1.418	2.291*	**3.709**
	Top	-	2.291	2.291
	Bottom	2.679	-	2.679
	Right	-	2.291*	2.291
	Left	0.553	-	0.553

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	2.325	0.871	3.196
	Front	1.145	2.291*	**3.436**
	Top	-	2.291	2.291
	Bottom	2.016	-	2.016
	Right	-	2.291*	2.291
	Left	0.495	-	0.495

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	1.568	0.871	2.439
	Front	1.664	2.291*	**3.955**
	Top	-	2.291	2.291
	Bottom	2.801	-	2.801
	Right	-	2.291*	2.291
	Left	0.315	-	0.315

12.7 Simultaneous Transmission Conclusion

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

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

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

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Test Position	Data Rate (Mbps)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2437.00	6	802.11b, 22 MHz Bandwidth	DSSS	Left	Cheek	1	1.040	0.915	1.14	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 13-2
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	bottom	10 mm	0.902	0.864	1.04	N/A	N/A	N/A	N/A
1900	1880.00	600	PCS CDMA	EVDO Rev. 0	bottom	10 mm	0.974	1.070	1.10	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, 20 MHz Bandwidth	QPSK, 1 RB, 99 RB Offset	bottom	10 mm	1.130	1.090	1.04	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 13-3
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Data Rate (Mbps)	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	N/A	back	0 mm	2.420	2.380	1.02	N/A	N/A	N/A	N/A
1900	1880.00	600	PCS CDMA	EVDO Rev. 0	N/A	back	0 mm	2.210	2.070	1.07	N/A	N/A	N/A	N/A
2450	2510.00	20850	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	N/A	bottom	0 mm	2.250	2.290	1.02	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	N/A	bottom	0 mm	2.490	2.370	1.05	N/A	N/A	N/A	N/A
5600	5620.00	124	802.11a, 20 MHz Bandwidth	OFDM	6	top	0 mm	2.200	2.180	1.01	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) averaged over 10 grams						

13.2 Measurement Uncertainty

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

14 ADDITIONAL TESTING PER FCC GUIDANCE

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

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

Table 14-1
LTE Band 41 Standalone Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.39	26.72
Measured SAR (W/kg)	0.039	0.044
Measured Power (mW)	274.79	469.89
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	173.94	203.46
% deviation from expected linearity		-3.55%

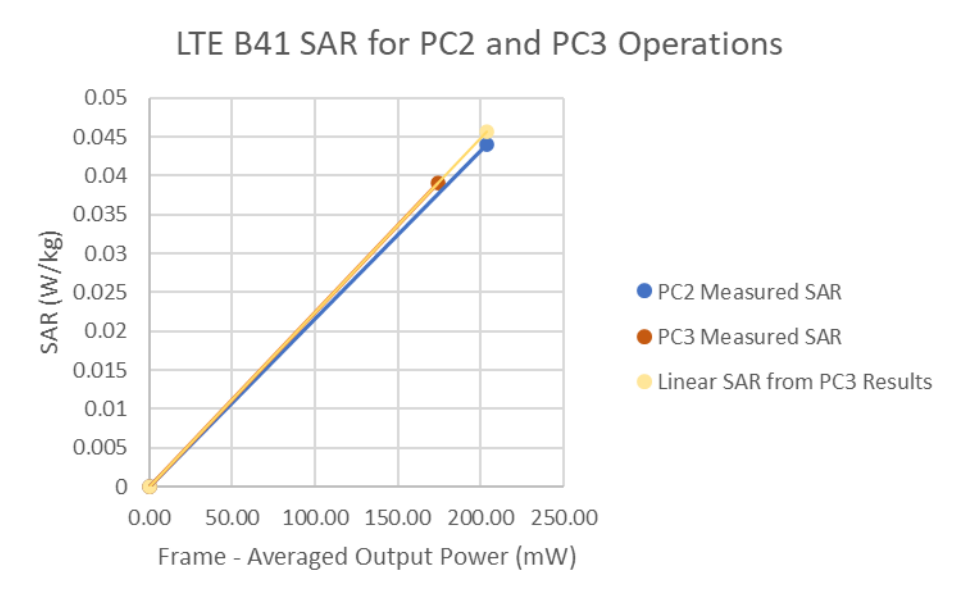

Figure 14-1
LTE Band 41 Standalone Head Linearity

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

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.39	26.72
Measured SAR (W/kg)	0.407	0.513
Measured Power (mW)	274.79	469.89
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	173.94	203.46
% deviation from expected linearity		7.76%

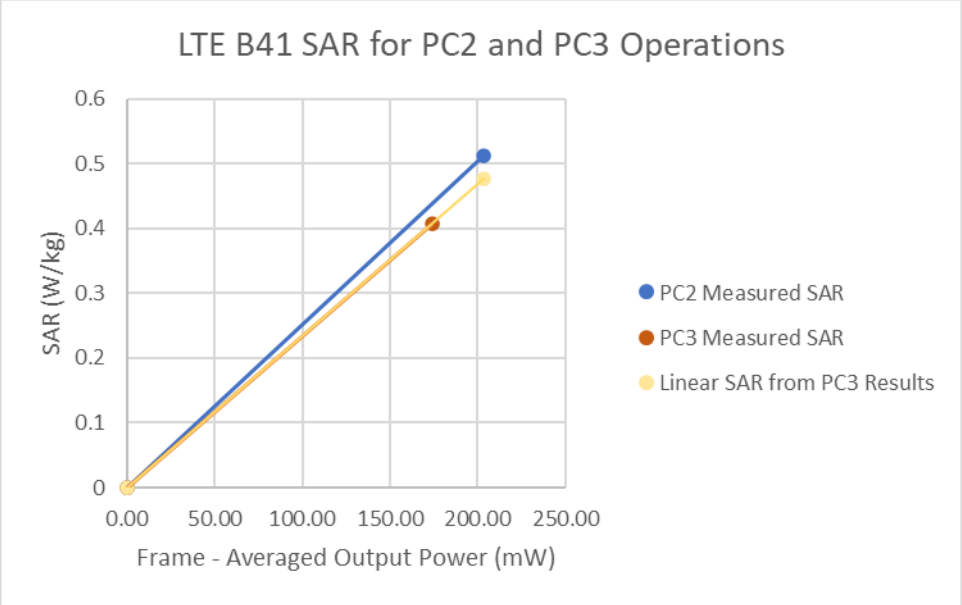

Figure 14-2
LTE Band 41 Standalone Body-Worn Linearity

Table 14-3
LTE Band 41 Standalone Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.29	26.65
Measured SAR (W/kg)	0.688	0.818
Measured Power (mW)	268.53	462.38
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	169.98	200.21
% deviation from expected linearity		0.94%

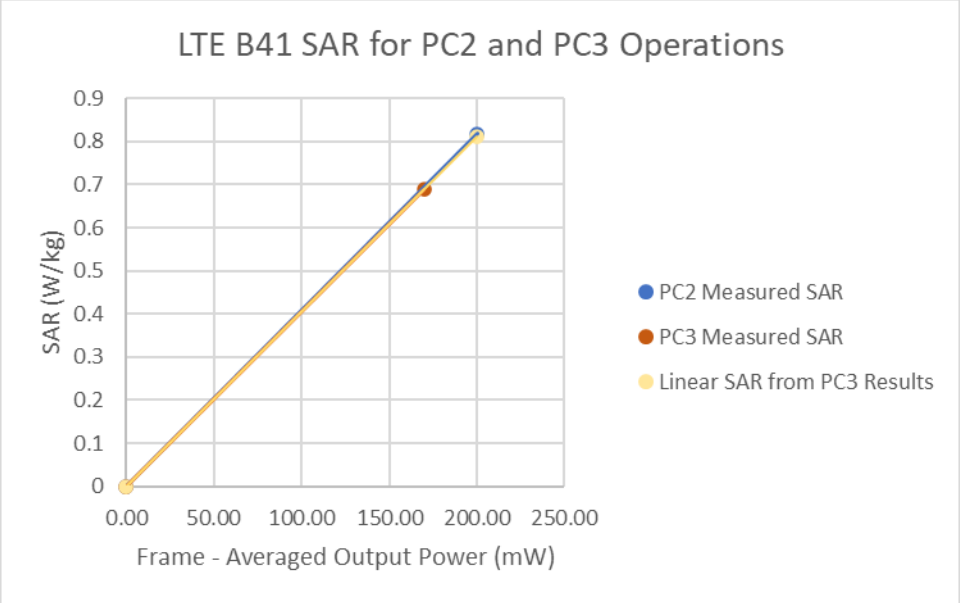

Figure 14-3
LTE Band 41 Standalone Hotspot Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	3/11/2019	Annual	3/11/2020	US39170122
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	N5182A	MXG Vector Signal Generator	11/28/2018	Annual	11/28/2019	MY47420603
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	12/18/2018	Annual	12/18/2019	GB42230325
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	E4438C	ESG Vector Signal Generator	5/22/2019	Annual	5/22/2020	MY45091346
Agilent	E4438C	ESG Vector Signal Generator	5/23/2019	Annual	5/23/2020	MY47270002
Agilent	E5515C	Wireless Communications Test Set	2/7/2018	Triennial	2/7/2021	GB43304447
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	150A100C	DC Amplifier	CBT	N/A	CBT	348812
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339008
Anritsu	MA24106A	USB Power Sensor	1/31/2019	Annual	1/31/2020	1244524
Anritsu	MA24106A	USB Power Sensor	3/5/2019	Annual	3/5/2020	1349501
Anritsu	MA2411B	Pulse Power Sensor	3/6/2019	Annual	3/6/2020	1339018
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	5/13/2019	Annual	5/13/2020	6201524637
Anritsu	ML2495A	Power Meter	10/5/2018	Annual	10/5/2019	1328004
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766816
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766817
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	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	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
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	11/1/2017	Biennial	11/1/2019	N/A
Pasternack	NC-100	Torque Wrench	11/7/2017	Biennial	11/7/2019	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	4/15/2019	Annual	4/15/2020	167283
Rohde & Schwarz	CMW500	Radio Communication Tester	4/19/2019	Annual	4/19/2020	128633
Rohde & Schwarz	CMW500	Radio Communication Tester	5/17/2019	Annual	5/17/2020	128635
Rohde & Schwarz	CMW500	Radio Communication Tester	6/6/2019	Annual	6/6/2020	140148
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	6/6/2019	Annual	6/6/2020	161662
SPEAG	EX3DV4	SAR Probe	1/24/2019	Annual	1/24/2020	7488
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7538
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	ES3DV3	SAR Probe	12/11/2018	Annual	12/11/2019	3288
SPEAG	EX3DV4	SAR Probe	1/25/2019	Annual	1/25/2020	3589
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	728
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/7/2018	Annual	12/7/2019	1533
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Biennial	1/15/2020	1003
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Annual	10/19/2019	1161
SPEAG	D835V2	835 MHz SAR Dipole	1/22/2019	Annual	1/22/2020	4d132
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Annual	3/13/2020	4d047
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Annual	10/22/2019	1150
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d080
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Annual	2/21/2020	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Biennial	8/16/2020	981
SPEAG	D2600V2	2600 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	1126
SPEAG	D3500V2	3500 MHz SAR Dipole	1/11/2018	Biennial	1/11/2020	1059
SPEAG	D3700V2	3700 MHz SAR Dipole	1/11/2018	Biennial	1/11/2020	1018
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/16/2018	Biennial	1/16/2020	1057
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/17/2019	Annual	9/17/2020	1191
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/10/2018	Biennial	8/10/2020	1237
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/7/2019	Annual	5/7/2020	1070

Note: Equipment was solely used during its calibration period

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

16 MEASUREMENT UNCERTAINTIES

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

17 CONCLUSION

17.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

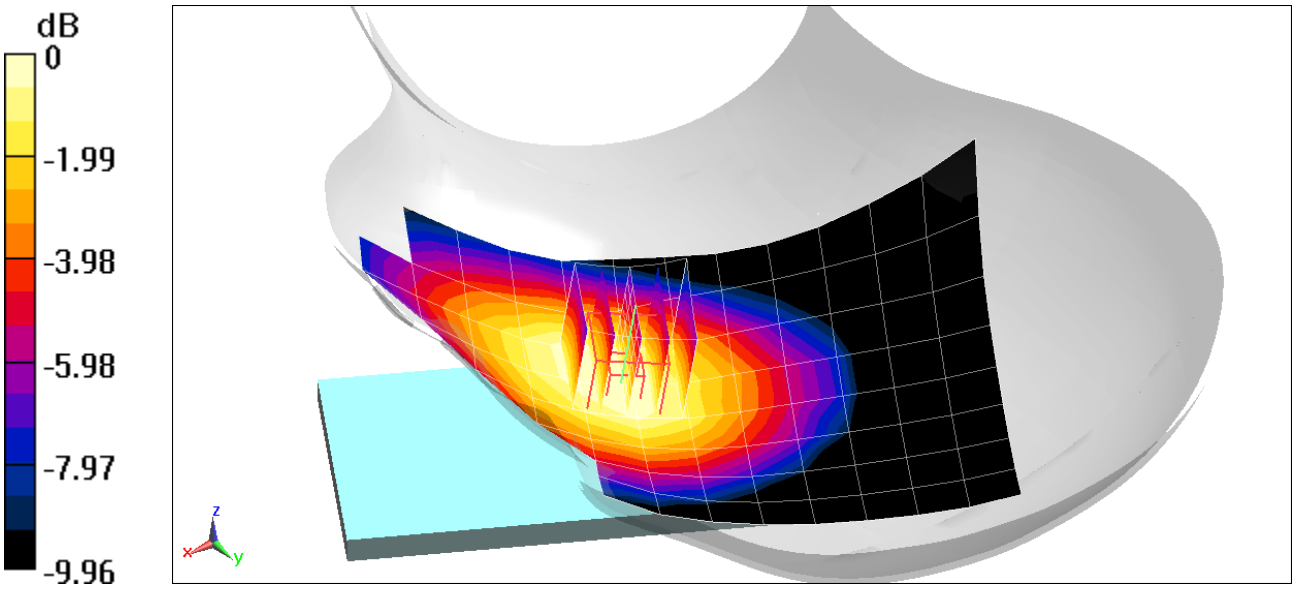
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.913 S/m; ε_r = 43.445; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-20-2019; Ambient Temp: 22.5°C; Tissue Temp: 20.9°C

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

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.89 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.120 W/kg



0 dB = 0.144 W/kg = -8.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

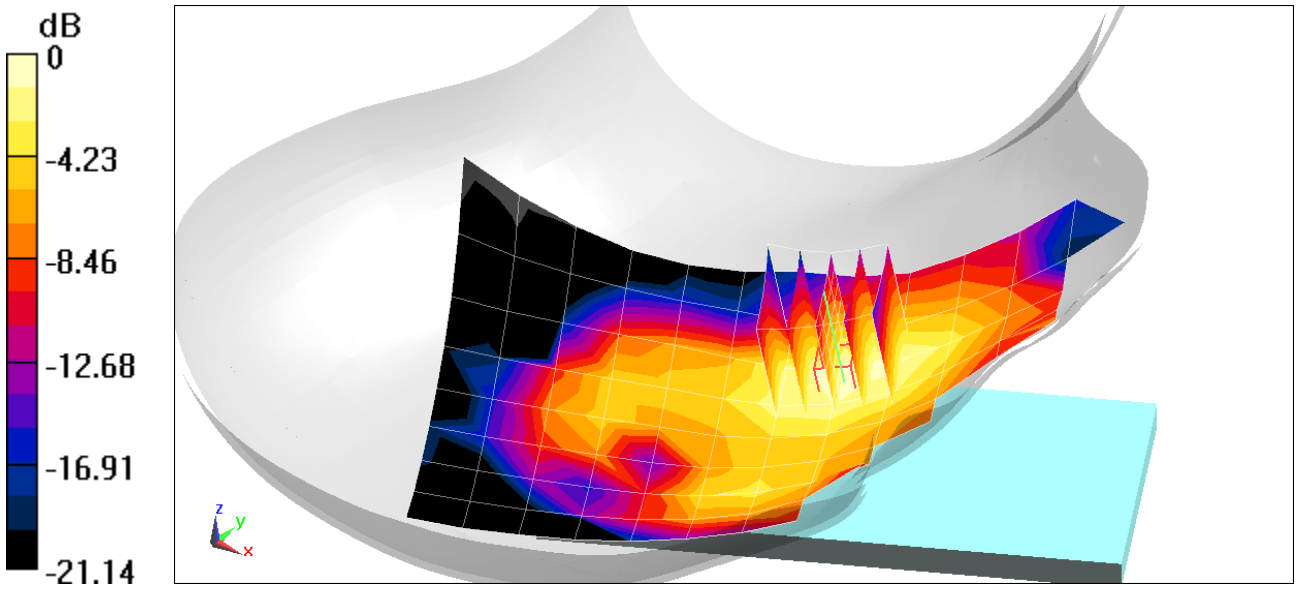
Communication System: UID 0, _GSM GPRS; 4 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.076
Medium: 1900 MHz Head Medium parameters used:
f = 1910 MHz; σ = 1.446 S/m; ε_r = 40.606; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(8.18, 8.18, 8.18) @ 1909.8 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.575 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.096 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

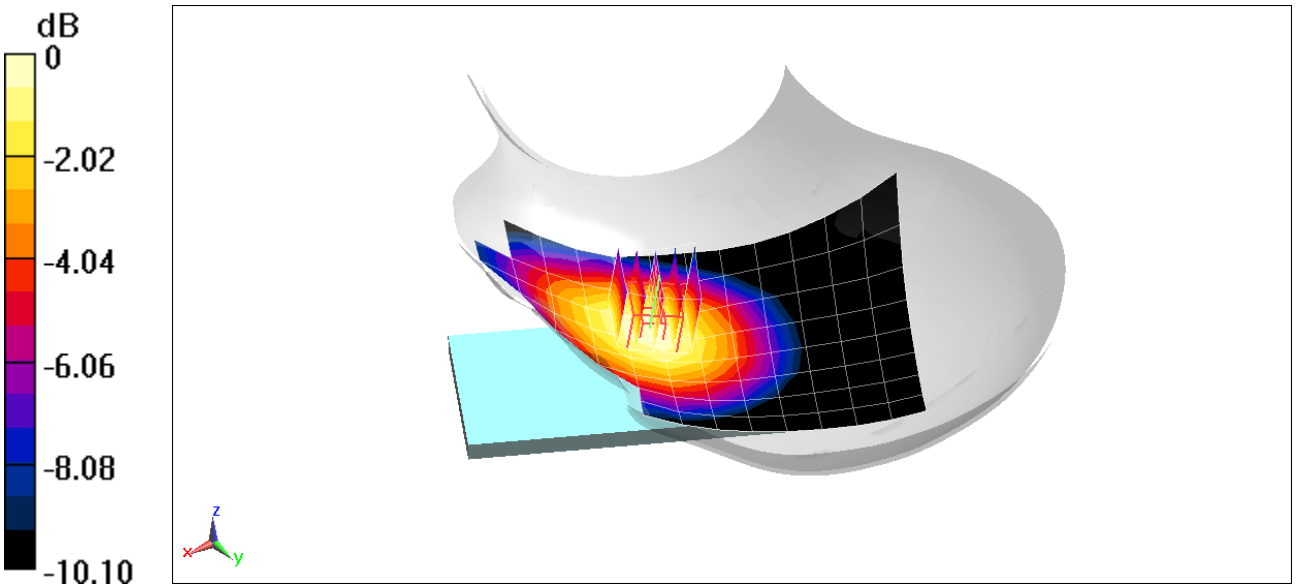
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.897 S/m; ε_r = 42.626; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 836.6 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.99 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.209 W/kg
SAR(1 g) = 0.164 W/kg



0 dB = 0.195 W/kg = -7.10 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

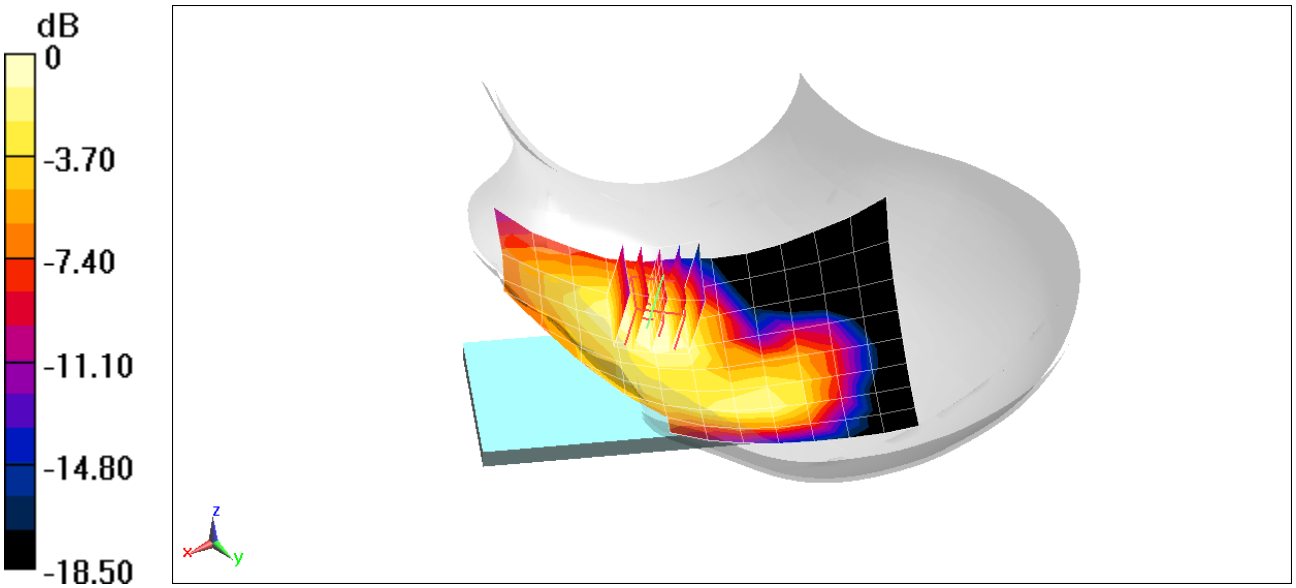
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.338 S/m; ε_r = 41.449; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-16-2019; Ambient Temp: 20.7°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.67, 8.67, 8.67) @ 1732.4 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.13 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.186 W/kg
SAR(1 g) = 0.125 W/kg



0 dB = 0.163 W/kg = -7.88 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

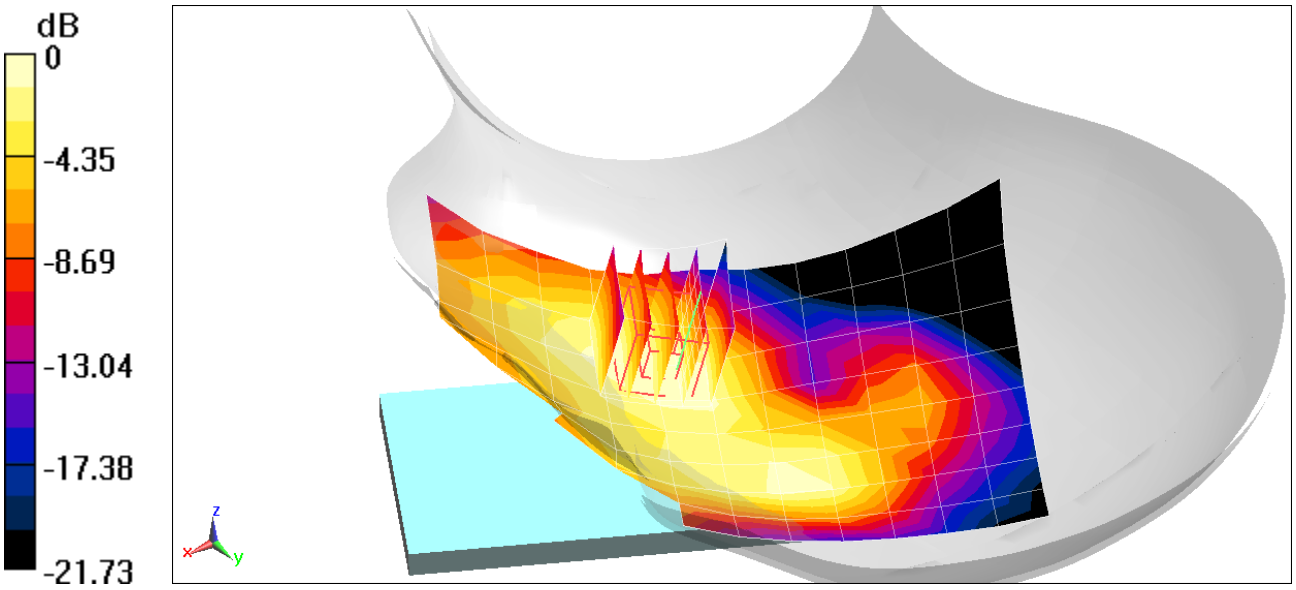
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.432 S/m; ε_r = 41.211; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-16-2019; Ambient Temp: 20.4°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.32, 8.32, 8.32) @ 1880 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.020 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.169 W/kg
SAR(1 g) = 0.112 W/kg



0 dB = 0.142 W/kg = -8.48 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

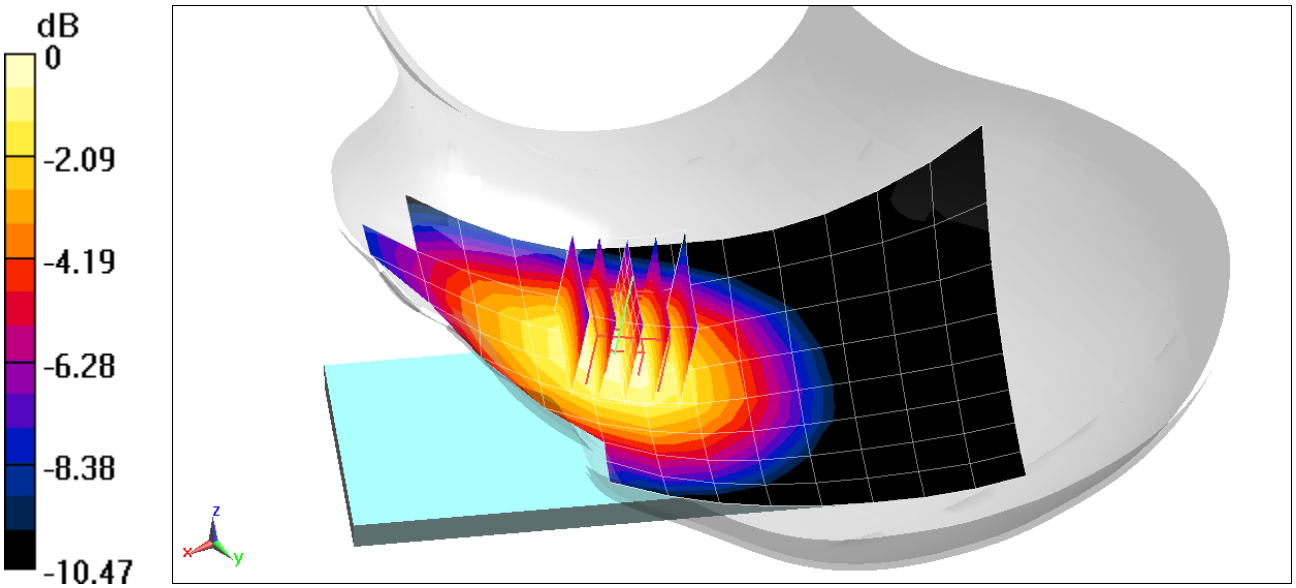
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
$f = 820.1$ MHz; $\sigma = 0.89$ S/m; $\varepsilon_r = 42.663$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 820.1 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. EVDO Rev. A, Rule Part 90S, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.09 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.218 W/kg
SAR(1 g) = 0.169 W/kg



0 dB = 0.201 W/kg = -6.97 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

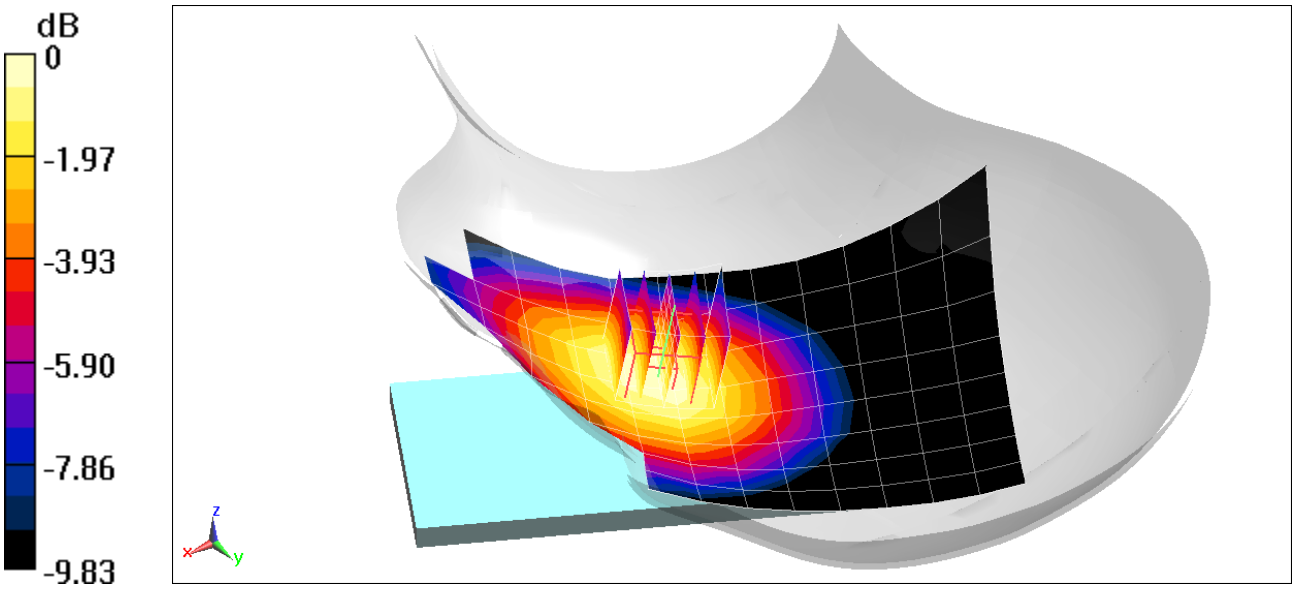
Communication System: UID 0, Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.897 S/m; ε_r = 42.626; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 836.52 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. EVDO Rev. A, Rule Part 22H, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.34 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.221 W/kg
SAR(1 g) = 0.175 W/kg



0 dB = 0.206 W/kg = -6.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

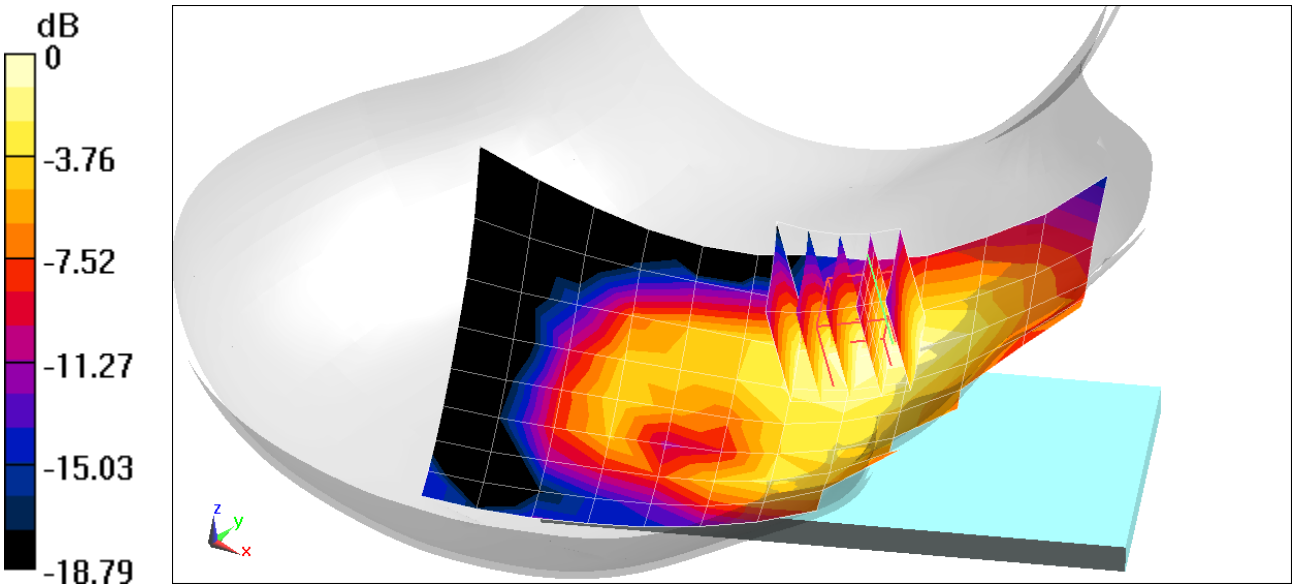
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.432 S/m; ε_r = 41.211; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-16-2019; Ambient Temp: 20.4°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.32, 8.32, 8.32) @ 1880 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO Rev A, 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 = 9.315 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.118 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

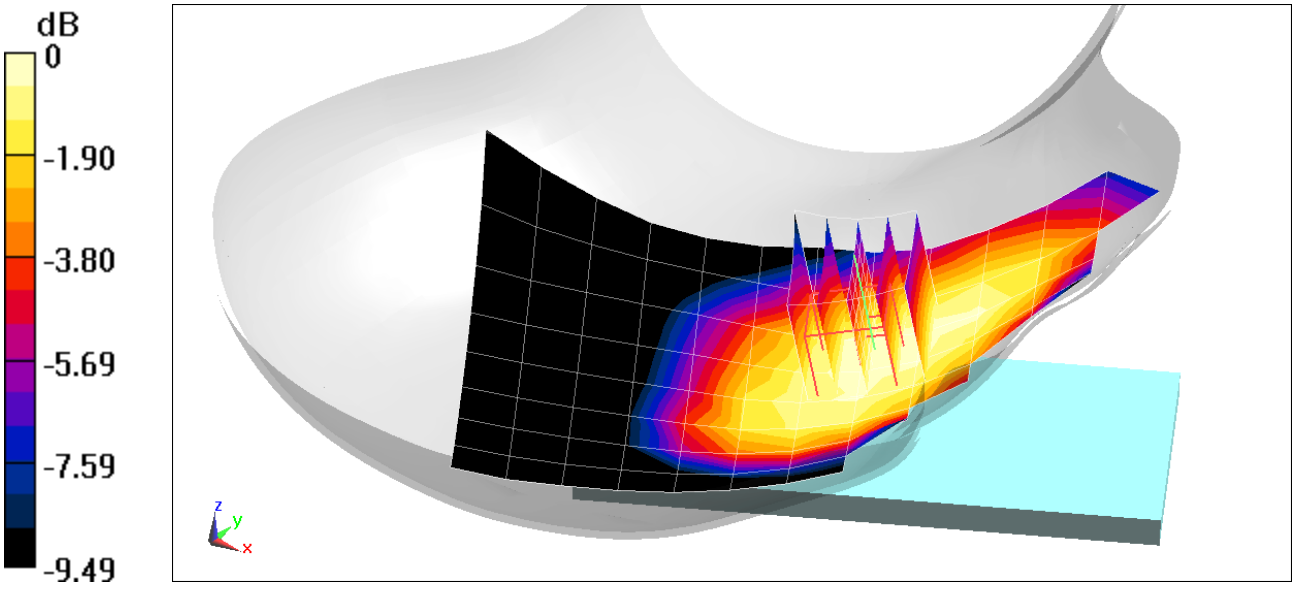
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.855 S/m; ε_r = 42.773; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-20-2019; Ambient Temp: 22.0°C; Tissue Temp: 20.8°C

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

Mode: LTE Band 71, Right Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK
1 RB, 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 = 10.86 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.122 W/kg
SAR(1 g) = 0.092 W/kg



0 dB = 0.109 W/kg = -9.63 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

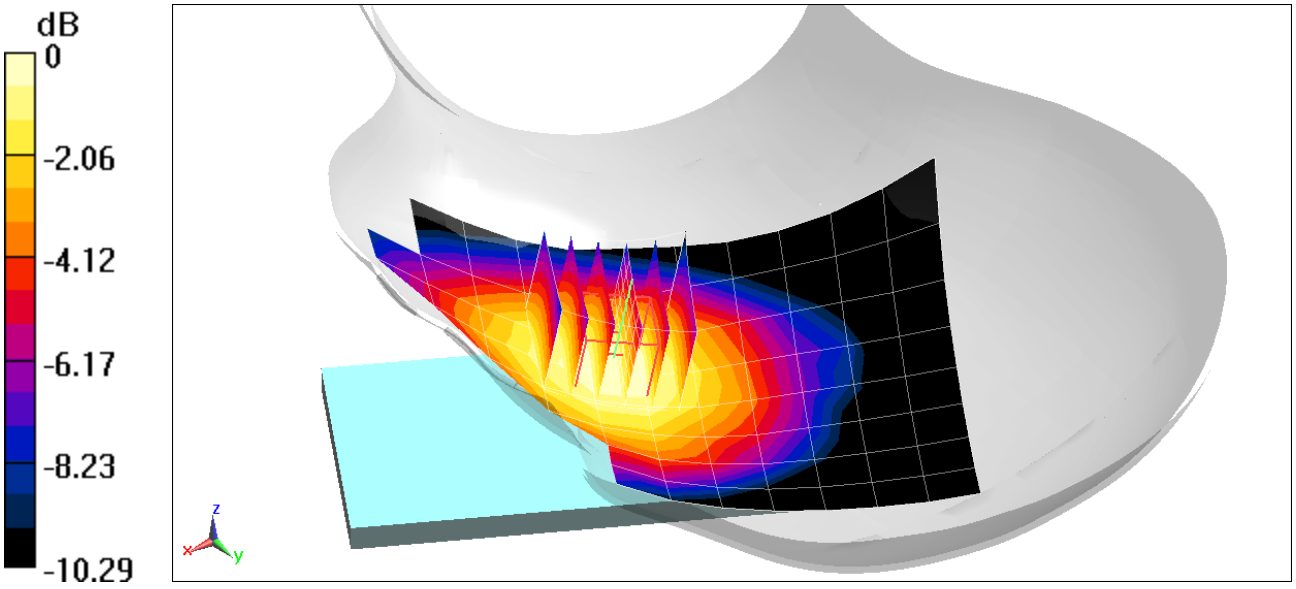
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.865 S/m; ε_r = 42.68; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-20-2019; Ambient Temp: 22.0°C; Tissue Temp: 20.8°C

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

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

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.84 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.174 W/kg
SAR(1 g) = 0.136 W/kg



0 dB = 0.160 W/kg = -7.96 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

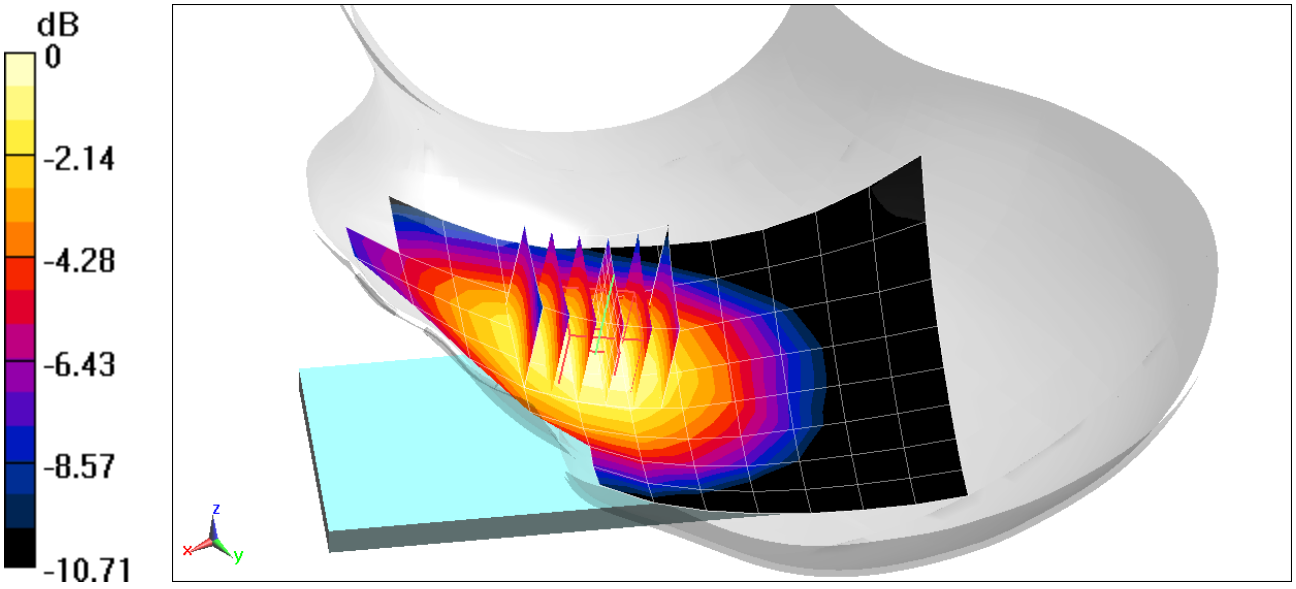
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.892 S/m; ε_r = 42.455; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-20-2019; Ambient Temp: 22.0°C; Tissue Temp: 20.8°C

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

Mode: LTE Band 13, Left Head, Cheek, Mid.ch, QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.58 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.192 W/kg
SAR(1 g) = 0.149 W/kg



0 dB = 0.176 W/kg = -7.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

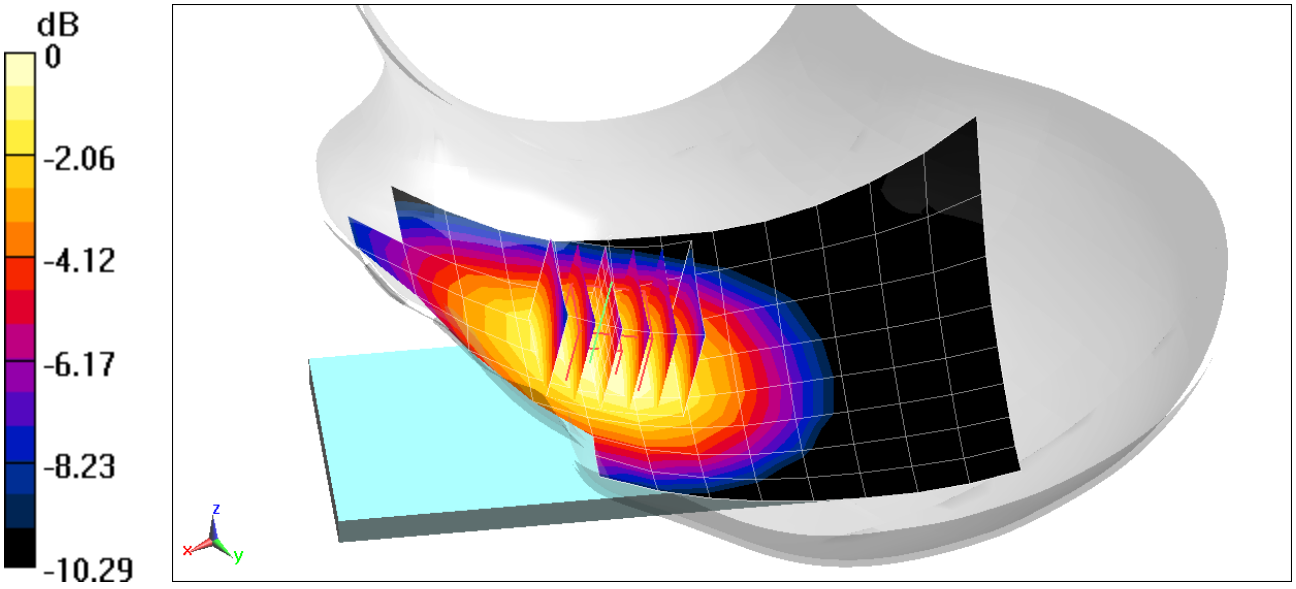
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.895 S/m; ε_r = 42.638; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 831.5 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 26 (Cell.), Left Head, Cheek, Mid.ch, 15 MHz Bandwidth, QPSK 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.25 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.166 W/kg



0 dB = 0.191 W/kg = -7.19 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

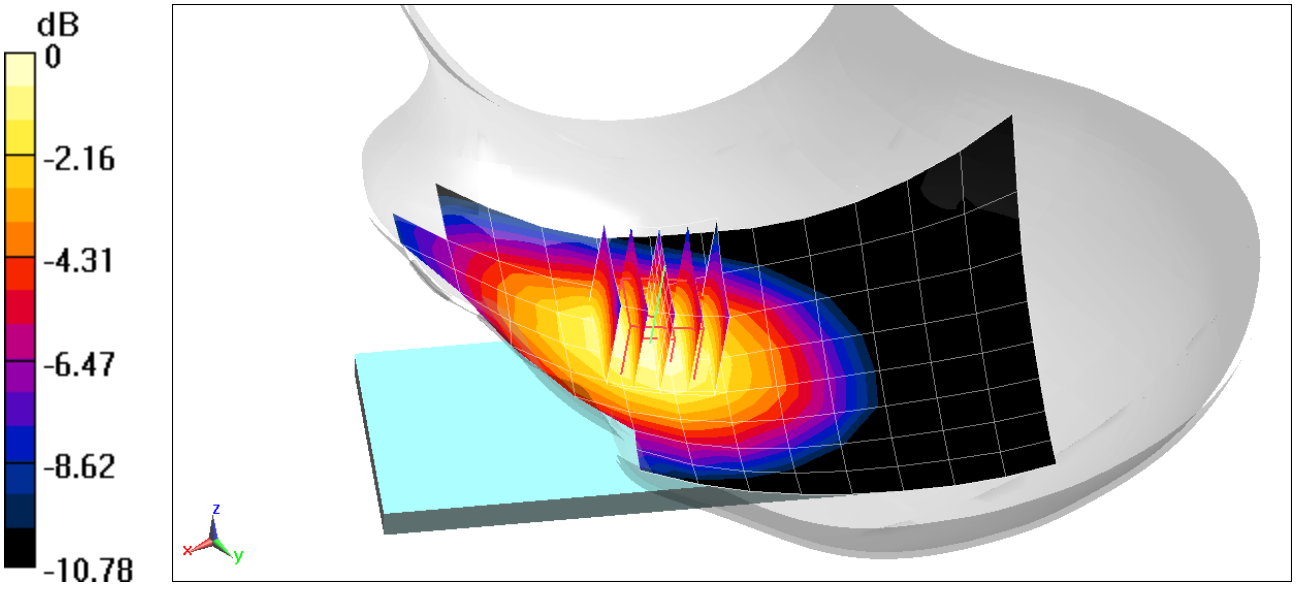
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.896$ S/m; $\varepsilon_r = 42.627$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 836.5 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 5 (Cell.), Left Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK 1 RB, 49 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 = 14.74 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.173 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

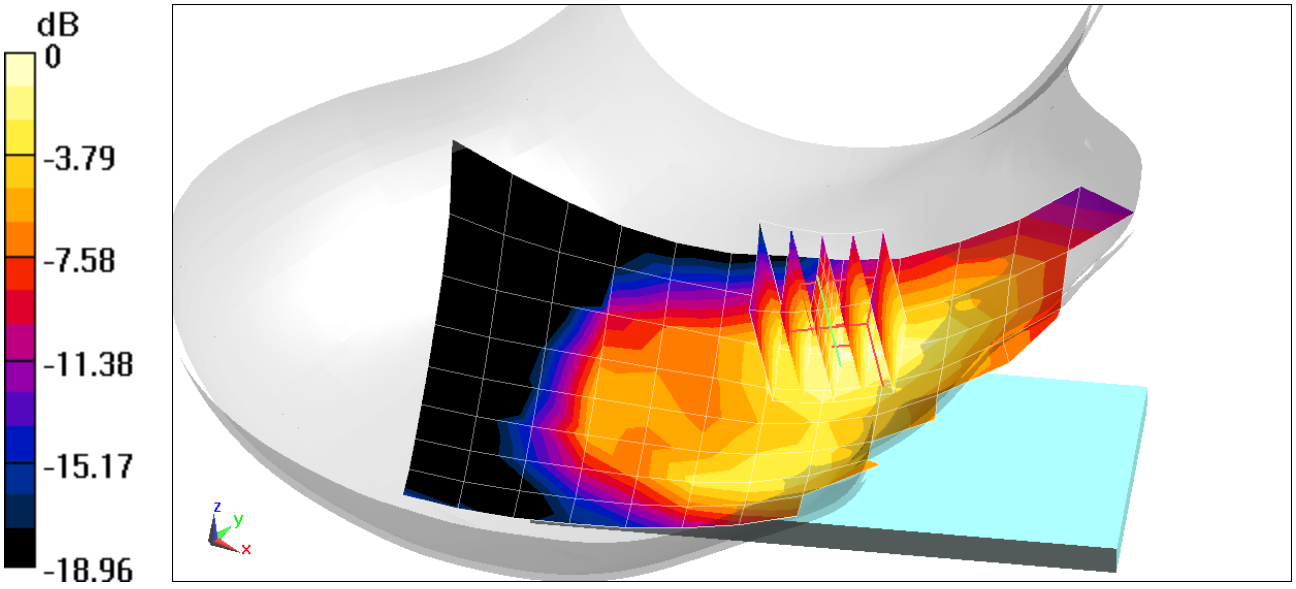
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1720 MHz; σ = 1.331 S/m; ε_r = 41.472; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-16-2019; Ambient Temp: 20.7°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.67, 8.67, 8.67) @ 1720 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Right 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 = 9.644 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.191 W/kg
SAR(1 g) = 0.129 W/kg



0 dB = 0.164 W/kg = -7.85 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

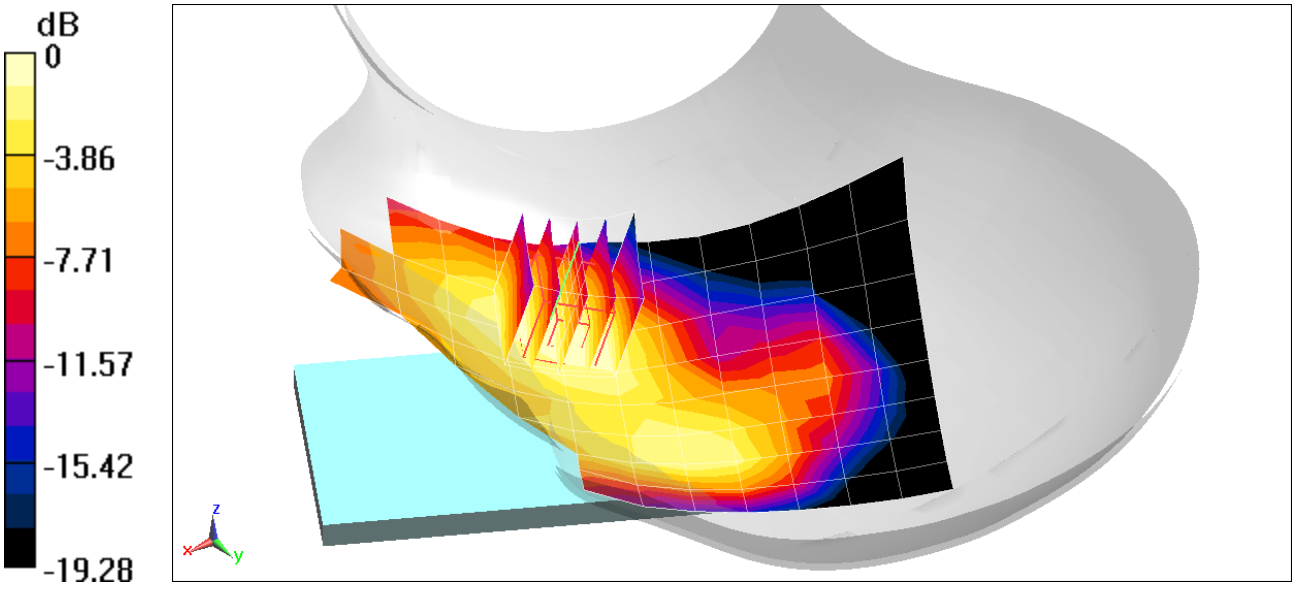
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
$f = 1860$ MHz; $\sigma = 1.419$ S/m; $\varepsilon_r = 41.24$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 09-16-2019; Ambient Temp: 20.4°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.32, 8.32, 8.32) @ 1860 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Left Head, Cheek, Low.ch, 20 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 = 10.55 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.147 W/kg



0 dB = 0.191 W/kg = -7.19 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

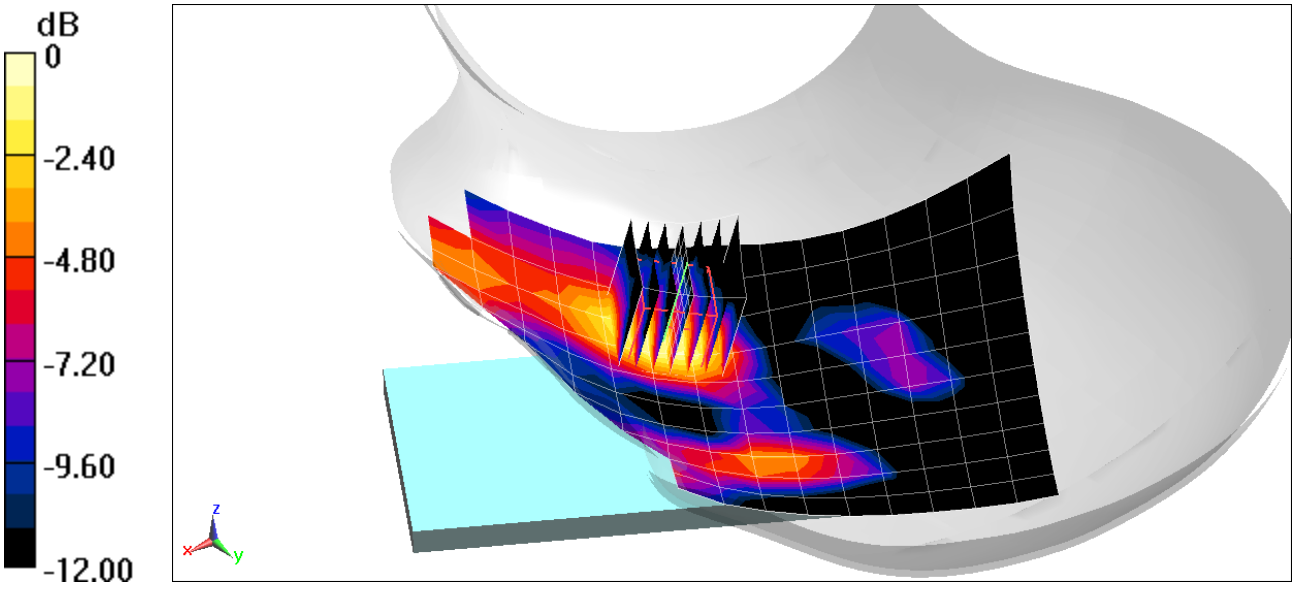
Communication System: UID 0, _LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 1.947$ S/m; $\varepsilon_r = 40.886$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 09-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7417; ConvF(7.17, 7.17, 7.17) @ 2535 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 7, Left Head, Cheek, Mid.ch, QPSK, 20 MHz Bandwidth
1 RB, 99 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.546 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0800 W/kg
SAR(1 g) = 0.044 W/kg



0 dB = 0.0658 W/kg = -11.82 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

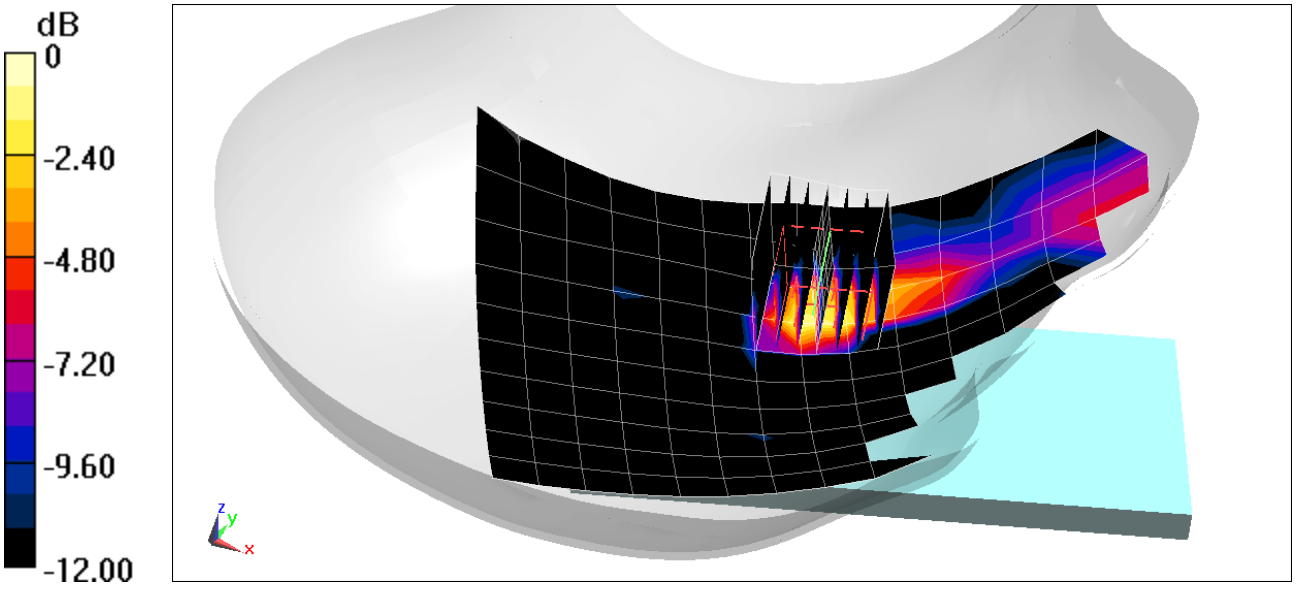
Communication System: UID 0, LTE Band 48; Frequency: 3603.3 MHz; Duty Cycle: 1:1.58
Medium: 3500-3700 MHz Head Medium parameters used (interpolated):
f = 3603.3 MHz; σ = 2.894 S/m; ε_r = 37.911; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 09-17-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3589; ConvF(6.02, 6.02, 6.02) @ 3603.3 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 20; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 48, Right Head, Cheek, Low-Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 4.799 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.103 W/kg
SAR(1 g) = 0.045 W/kg



0 dB = 0.0799 W/kg = -10.97 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

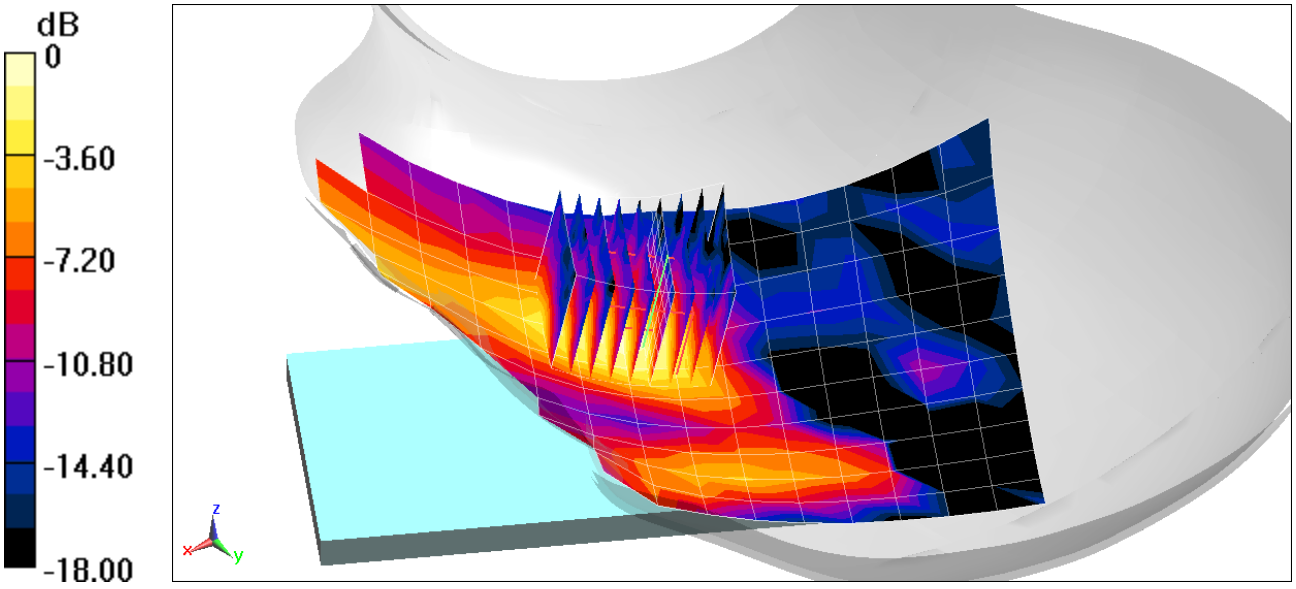
Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2593 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head Medium parameters used (interpolated):
f = 2593 MHz; σ = 1.995 S/m; ε_r = 40.811; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7417; ConvF(7.17, 7.17, 7.17) @ 2593 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 Power Class 2, Left Head, Cheek, Mid.ch, QPSK, 20 MHz Bandwidth 1 RB, 99 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.280 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0830 W/kg
SAR(1 g) = 0.044 W/kg



0 dB = 0.0670 W/kg = -11.74 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08766

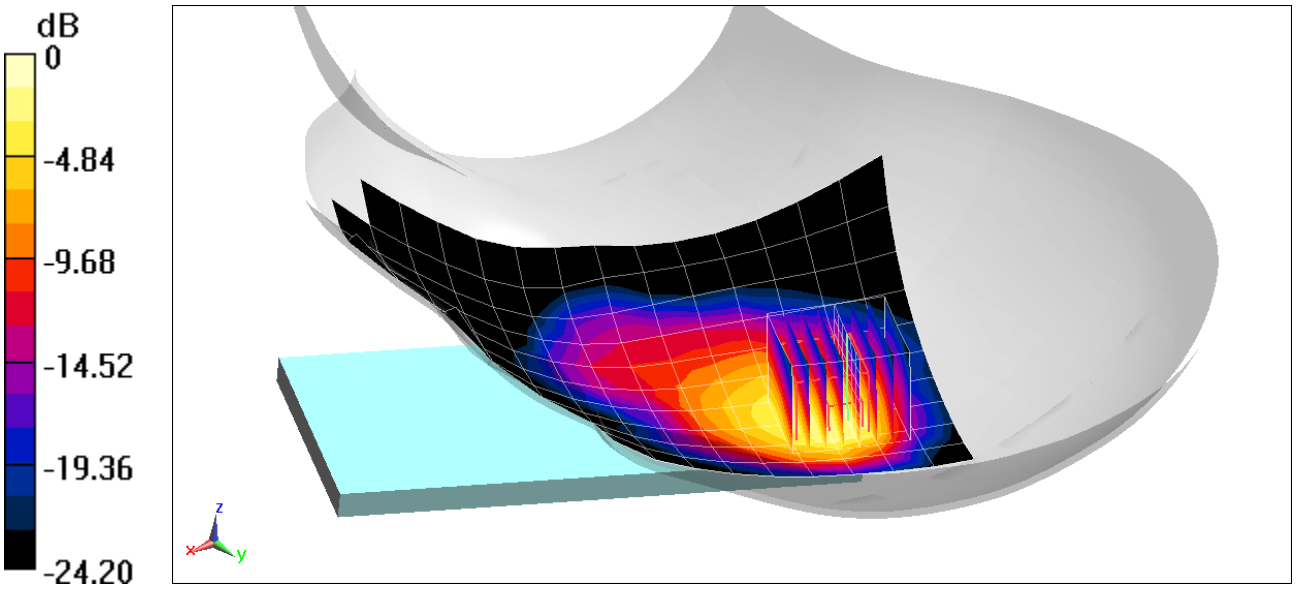
Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.831 S/m; ε_r = 40.919; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-16-2019; Ambient Temp: 21.2°C; Tissue Temp: 19.9°C

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

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

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.38 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 2.47 W/kg
SAR(1 g) = 1.04 W/kg



0 dB = 1.94 W/kg = 2.88 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08766

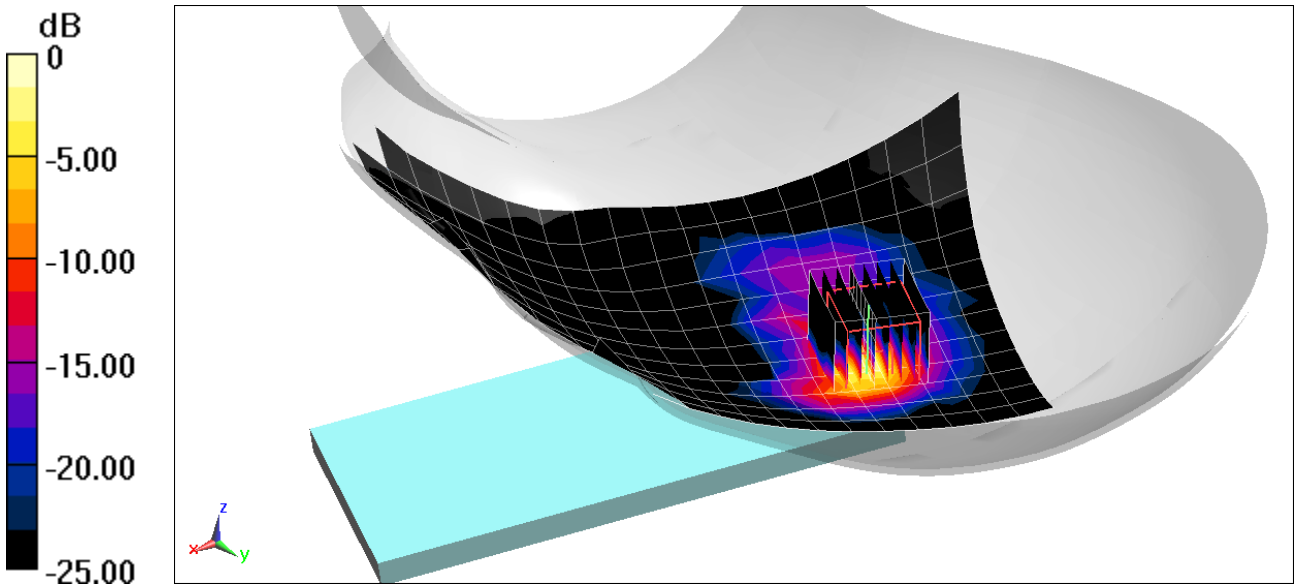
Communication System: UID 0, _IEEE 802.11n; Frequency: 5510 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5510 MHz; σ = 4.793 S/m; ε_r = 34.796; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 10/07/2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(4.94, 4.94, 4.94) @ 5510 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11n, U-NII-2C, 40 MHz Bandwidth, Left Head, Tilt, Ch 102, 13.5 Mbps

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 7.171 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 3.74 W/kg
SAR(1 g) = 0.728 W/kg



0 dB = 1.98 W/kg = 2.97 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08766

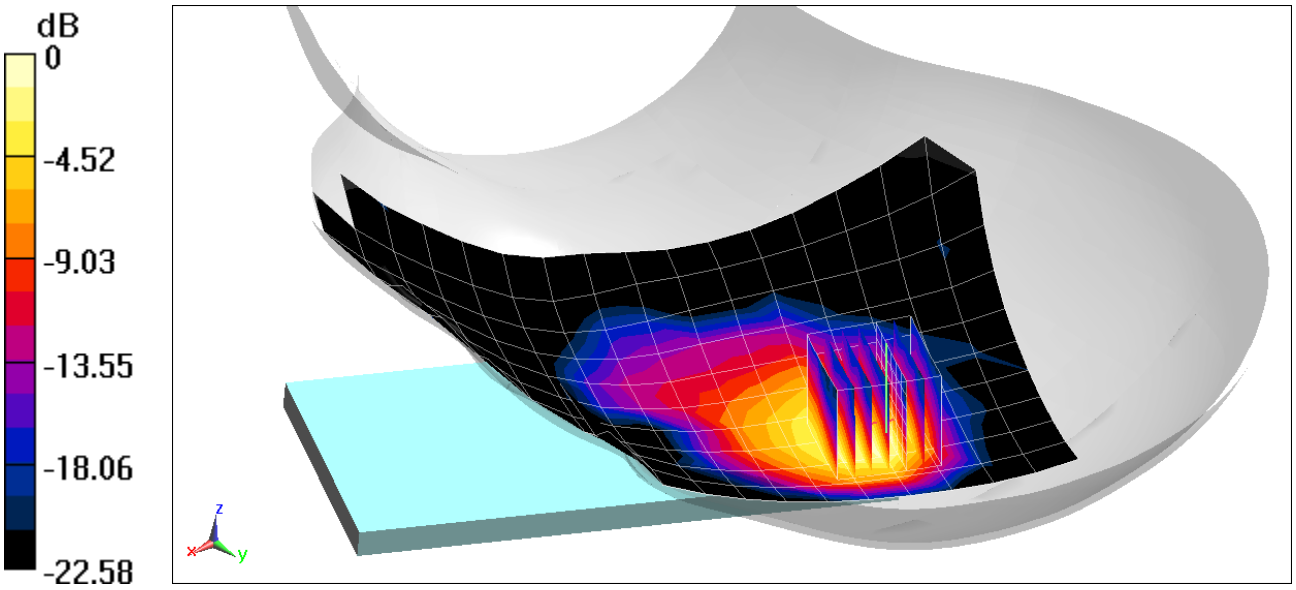
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.294
Medium: 2450 Head Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.872 S/m; ε_r = 41.028; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 09-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2441 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (11x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.382 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.294 W/kg
SAR(1 g) = 0.124 W/kg



0 dB = 0.226 W/kg = -6.46 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

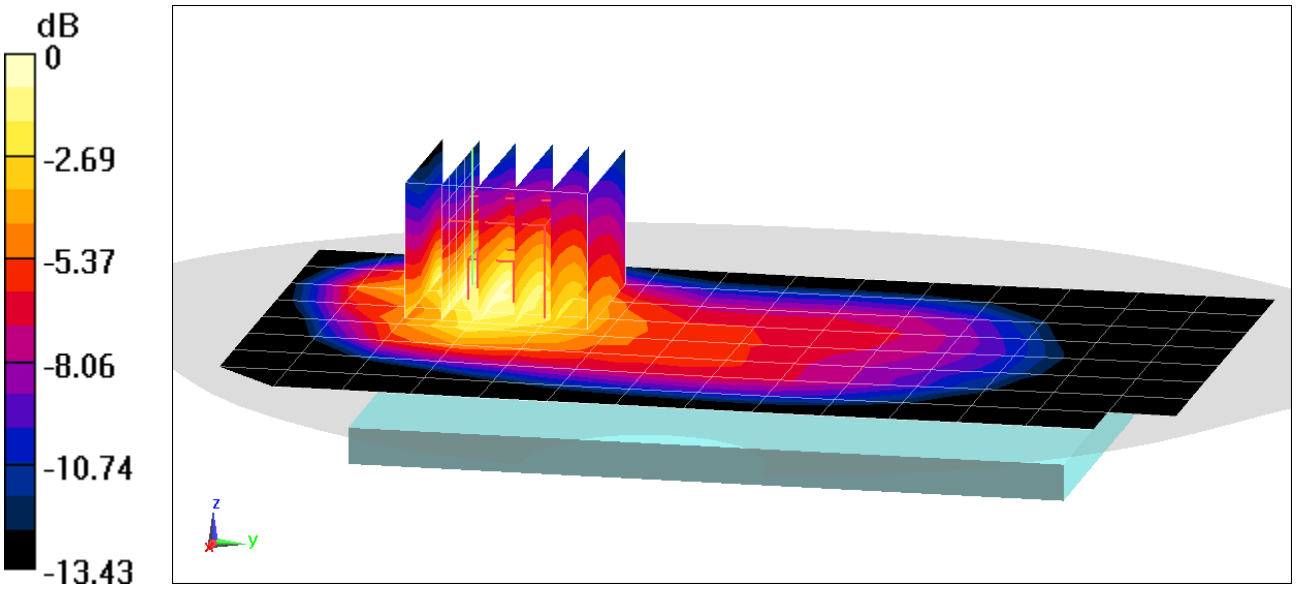
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.948 S/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: GPRS 850, Body SAR, Back side, 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 = 21.54 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.788 W/kg
SAR(1 g) = 0.472 W/kg



0 dB = 0.640 W/kg = -1.94 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

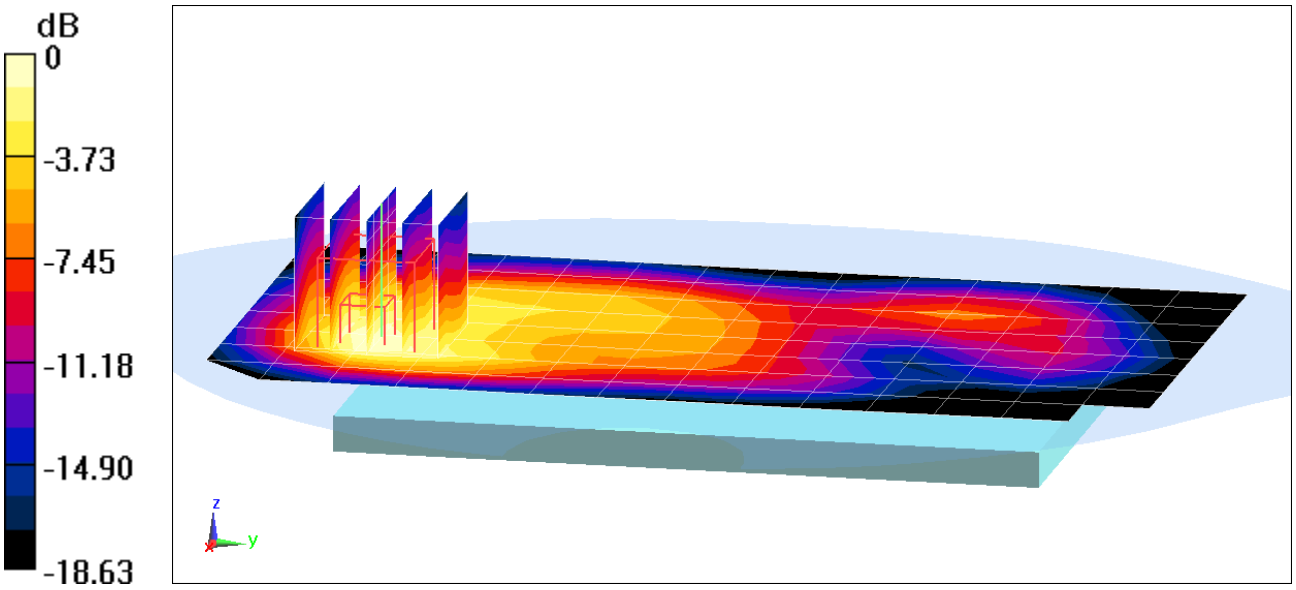
Communication System: UID 0, _GSM GPRS; 4 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1910 MHz; σ = 1.587 S/m; ε_r = 52.758; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.5°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1909.8 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.55 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.276 W/kg



0 dB = 0.386 W/kg = -4.13 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

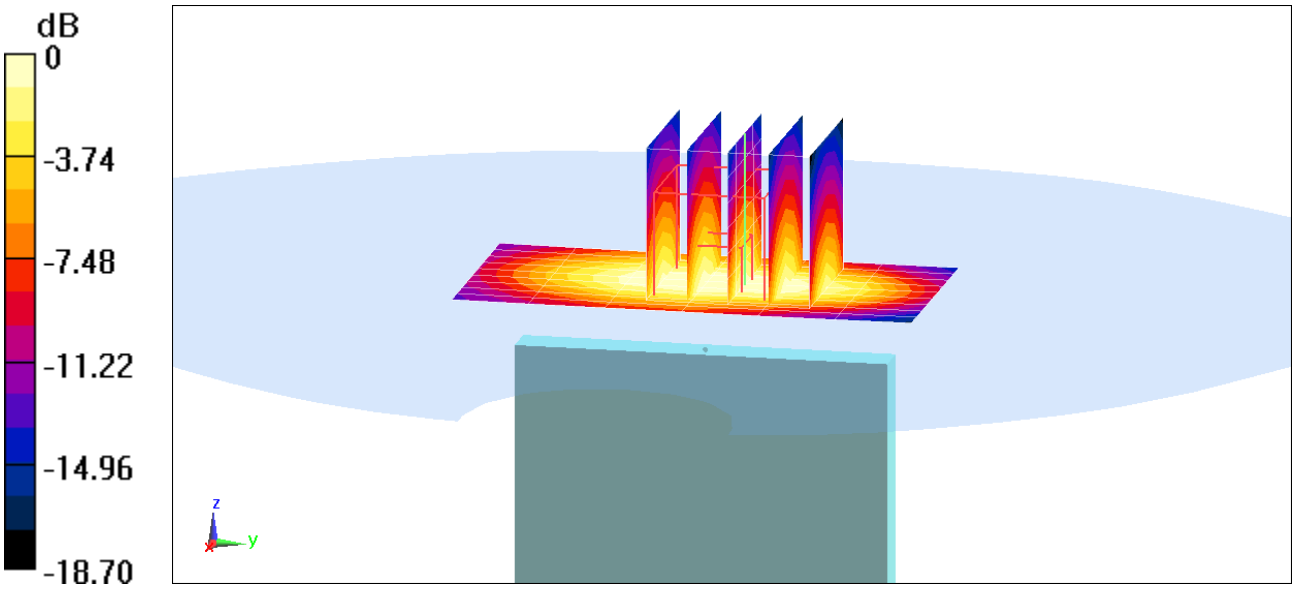
Communication System: UID 0, _GSM GPRS; 4 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1910 MHz; σ = 1.587 S/m; ε_r = 52.758; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.5°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1909.8 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: GPRS 1900, Body SAR, Bottom Edge, High.ch, 4 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 = 16.35 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.671 W/kg
SAR(1 g) = 0.386 W/kg



0 dB = 0.566 W/kg = -2.47 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

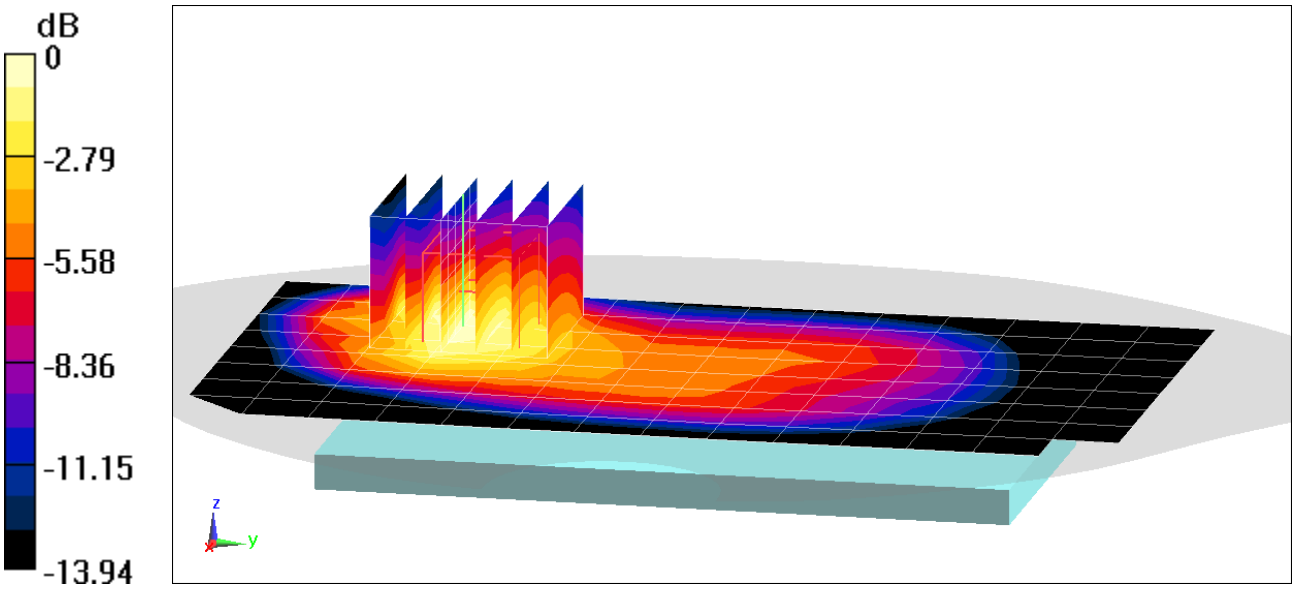
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.948 S/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: UMTS 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 = 23.60 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.841 W/kg
SAR(1 g) = 0.499 W/kg



0 dB = 0.696 W/kg = -1.57 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

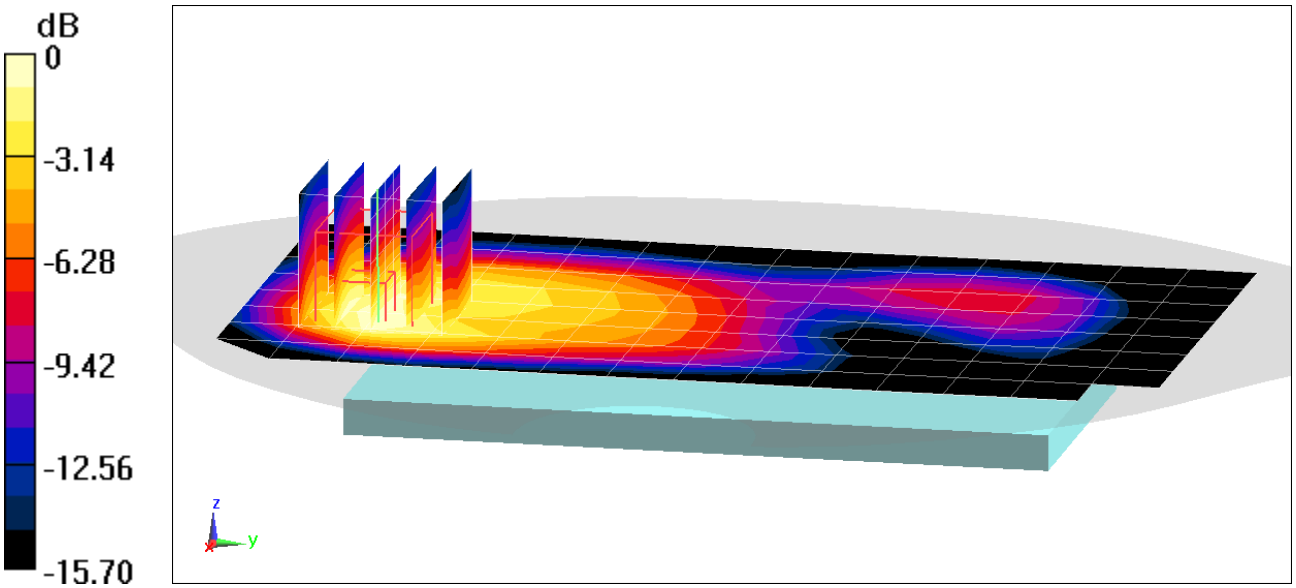
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.482 S/m; ε_r = 51.62; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1732.4 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.62 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.684 W/kg



0 dB = 0.910 W/kg = -0.41 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

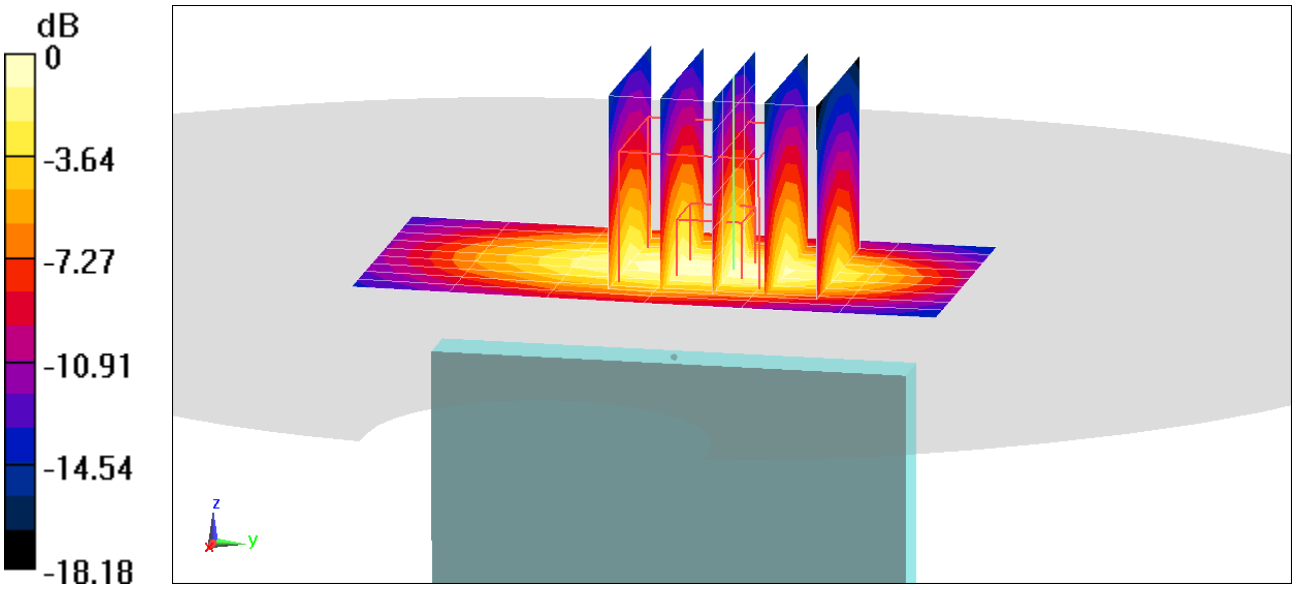
Communication System: UID 0, _UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1752.6$ MHz; $\sigma = 1.504$ S/m; $\varepsilon_r = 51.525$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1752.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: UMTS 1750, Body SAR, 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 = 25.68 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 0.902 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

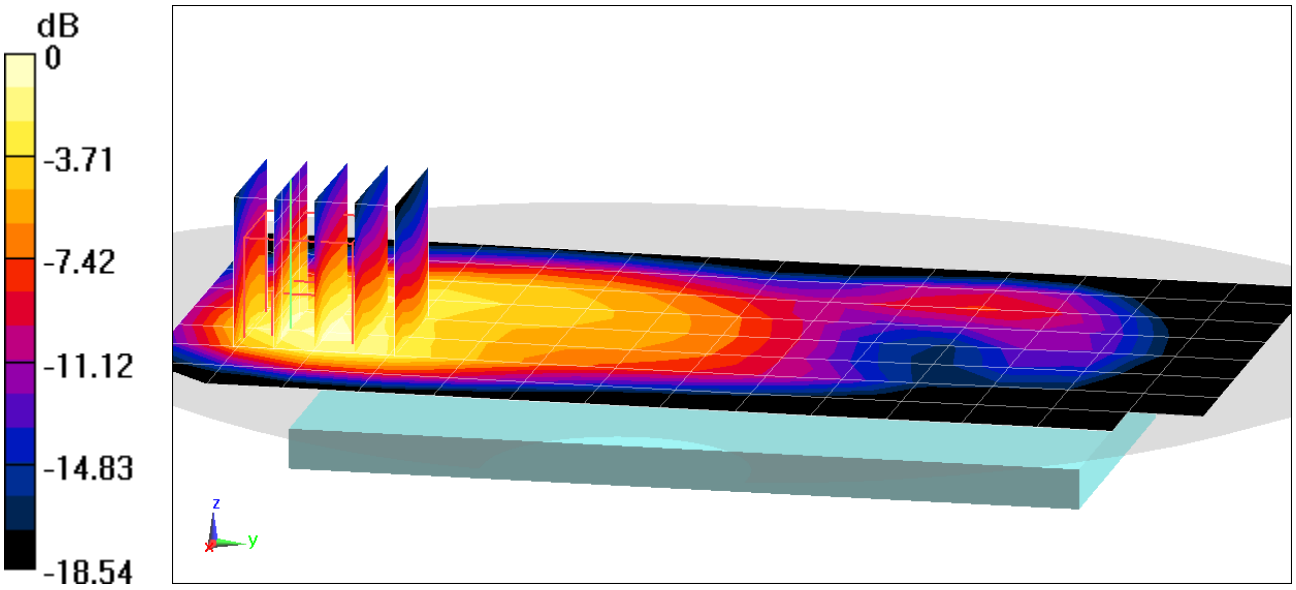
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.584 S/m; ε_r = 53.112; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1907.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.55 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.622 W/kg



0 dB = 0.903 W/kg = -0.44 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

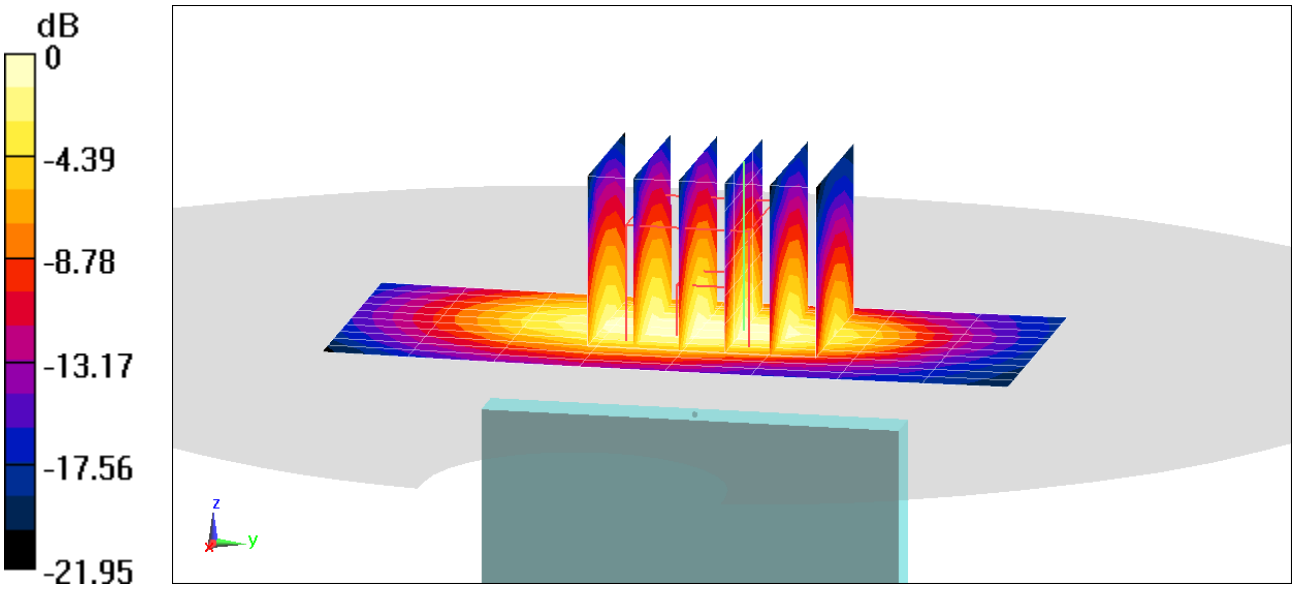
Communication System: UID 0, UMTS; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1852.4 MHz; σ = 1.523 S/m; ε_r = 53.317; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1852.4 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (11x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.28 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.769 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

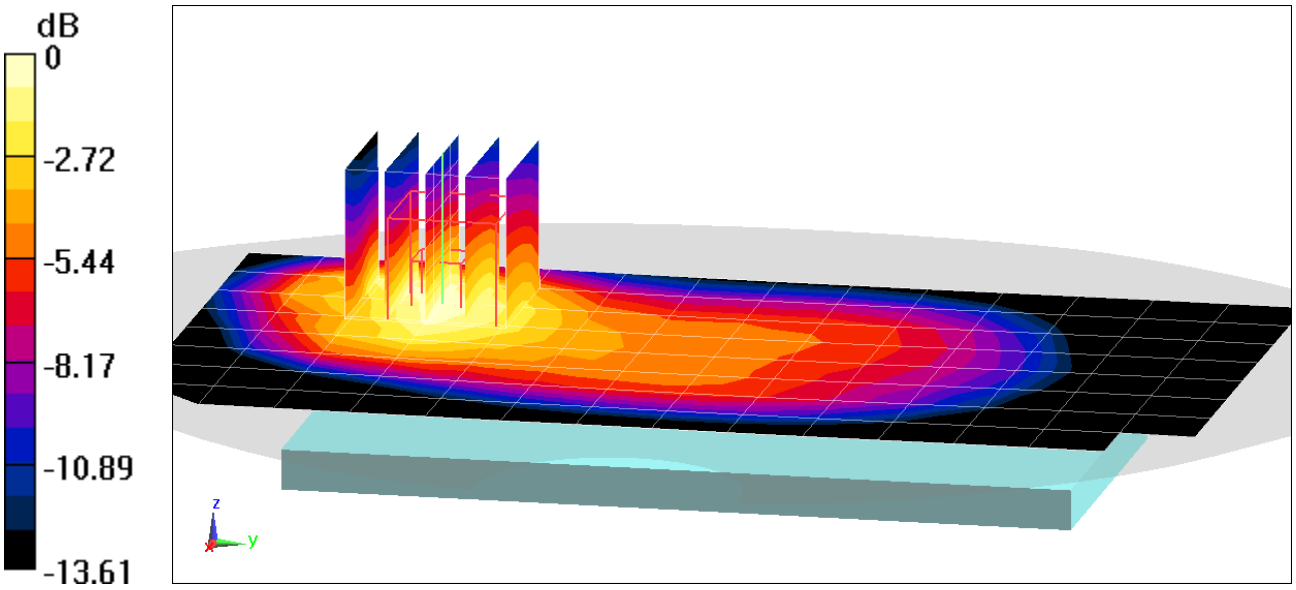
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.929 S/m; ε_r = 53.454; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 820.1 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.13 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.859 W/kg
SAR(1 g) = 0.510 W/kg



0 dB = 0.701 W/kg = -1.54 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

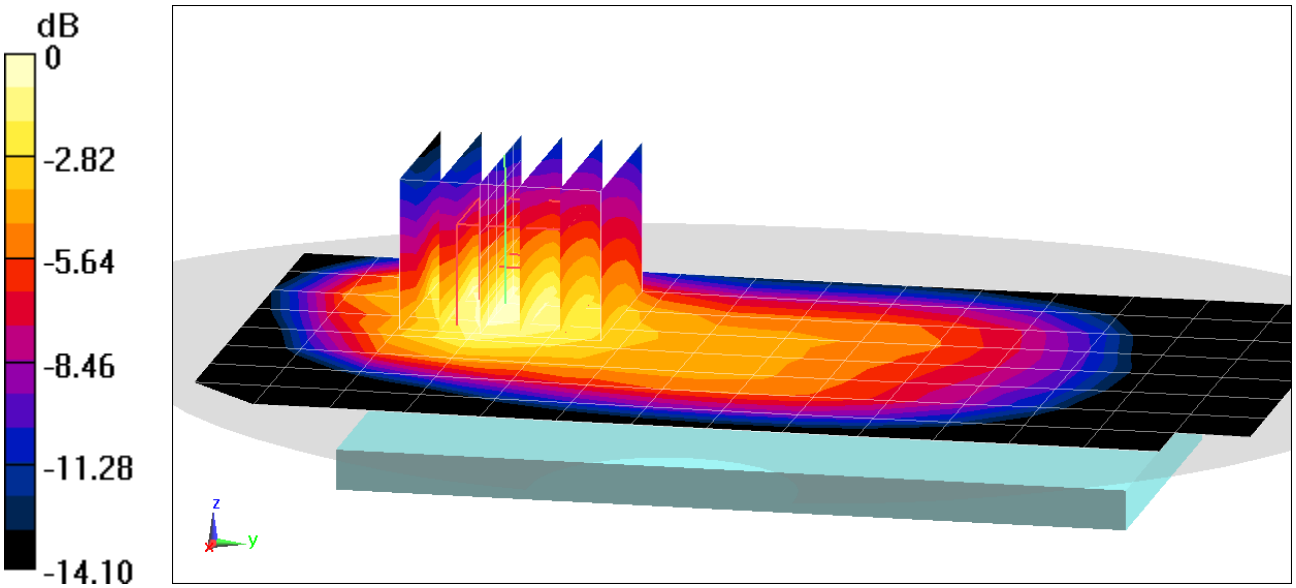
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.929 S/m; ε_r = 53.454; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 820.1 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.75 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.815 W/kg
SAR(1 g) = 0.491 W/kg



0 dB = 0.686 W/kg = -1.64 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

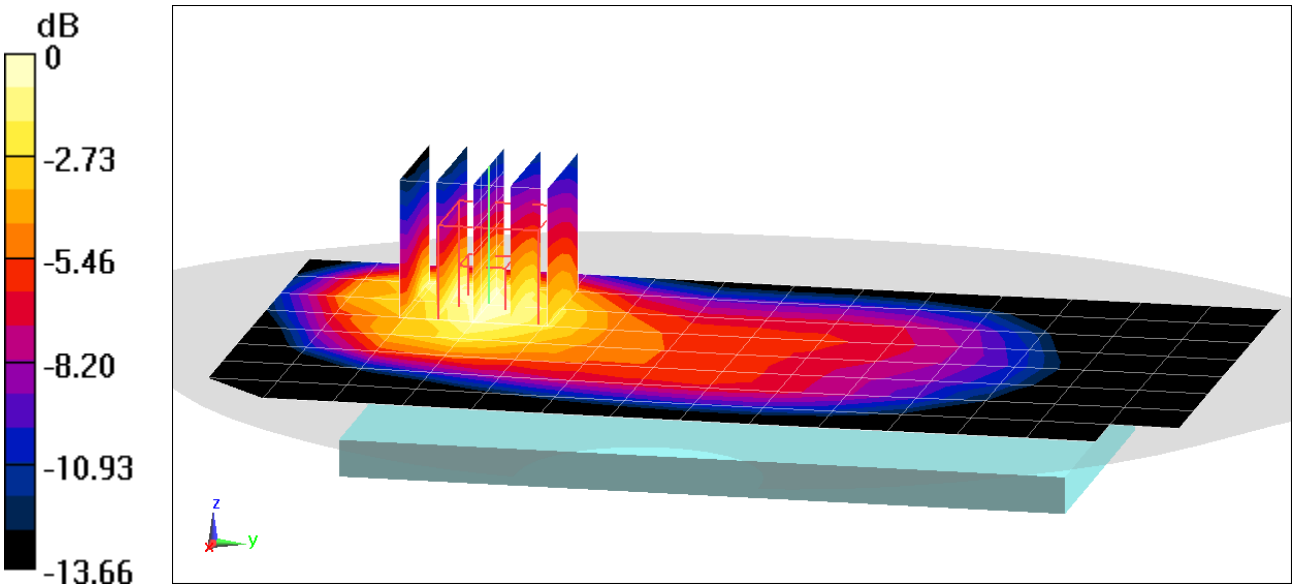
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.948$ S/m; $\varepsilon_r = 53.301$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.52 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.71 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.995 W/kg
SAR(1 g) = 0.586 W/kg



0 dB = 0.816 W/kg = -0.88 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

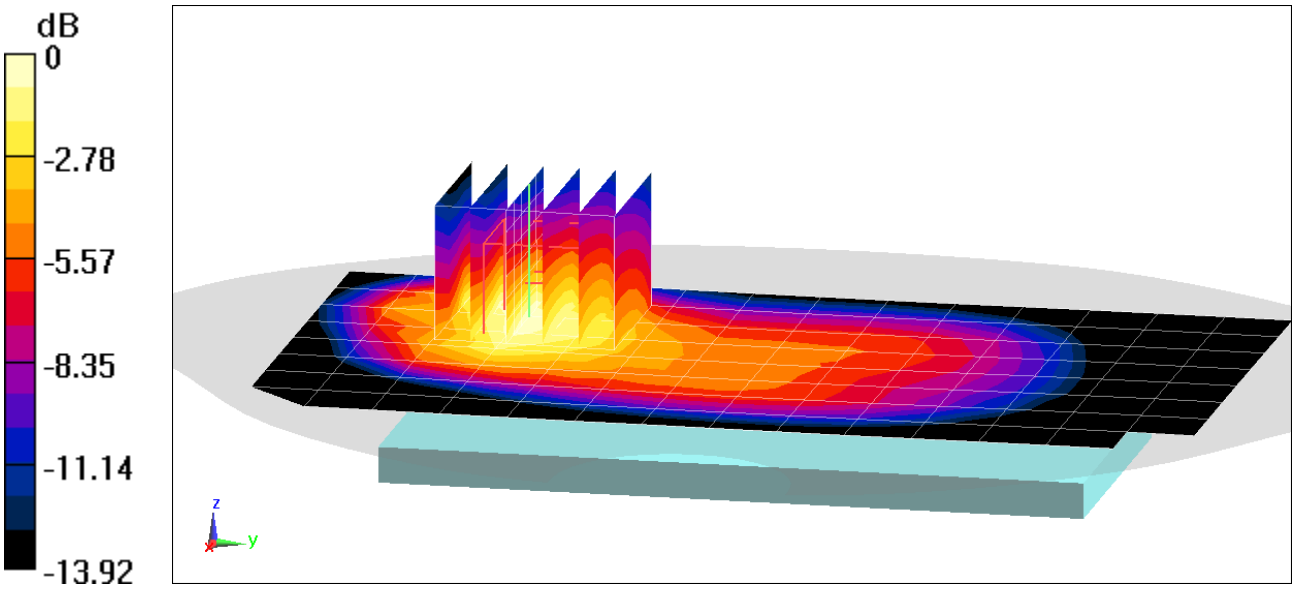
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.948 S/m; ε_r = 53.301; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.52 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.91 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.930 W/kg
SAR(1 g) = 0.552 W/kg



0 dB = 0.777 W/kg = -1.10 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

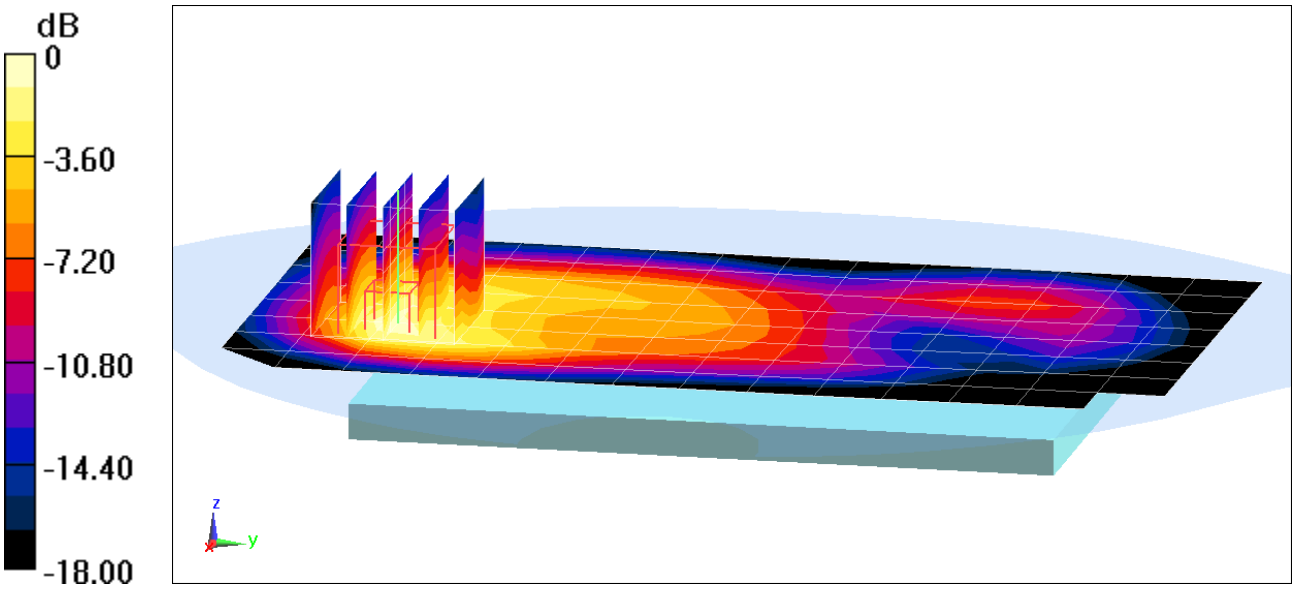
Communication System: UID 0, Frequency: 1851.25 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1851.25 MHz; σ = 1.516 S/m; ε_r = 52.943; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.5°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1851.25 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS CDMA, 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 = 22.47 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.686 W/kg



0 dB = 1.01 W/kg = 0.04 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

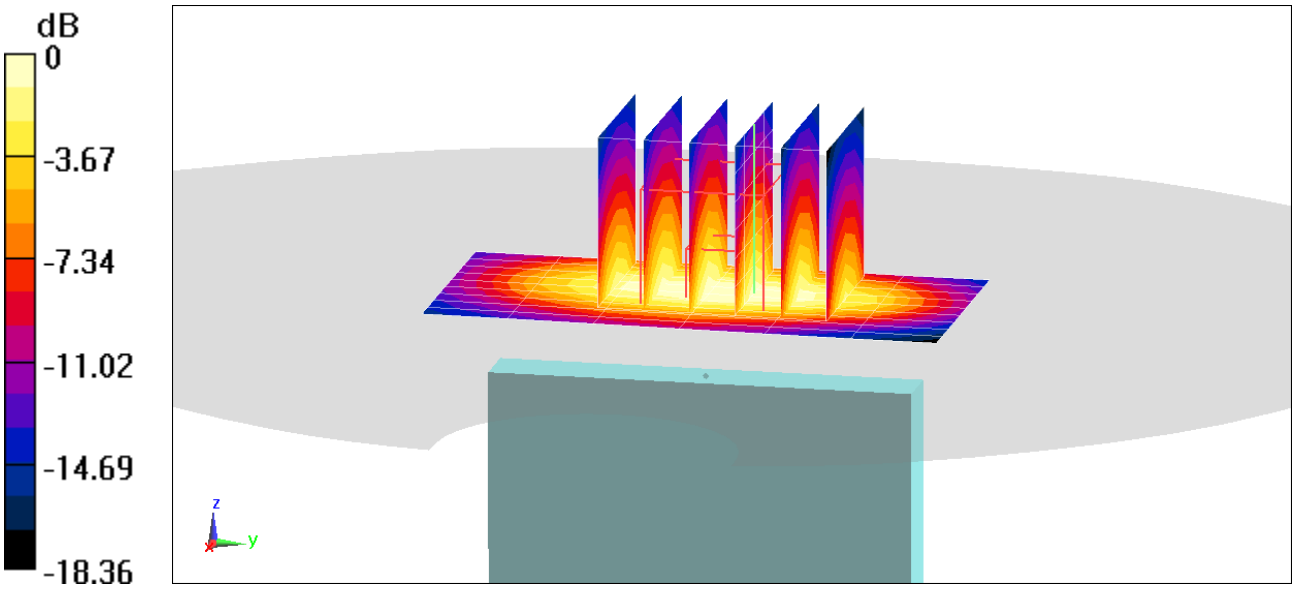
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.551 S/m; ε_r = 52.517; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-30-2019; Ambient Temp: 23.0°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7547; ConvF(7.53, 7.53, 7.53) @ 1880 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: Right Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1797
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO, Body SAR, Bottom Edge, Mid.ch

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.26 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.07 W/kg



0 dB = 1.57 W/kg = 1.96 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

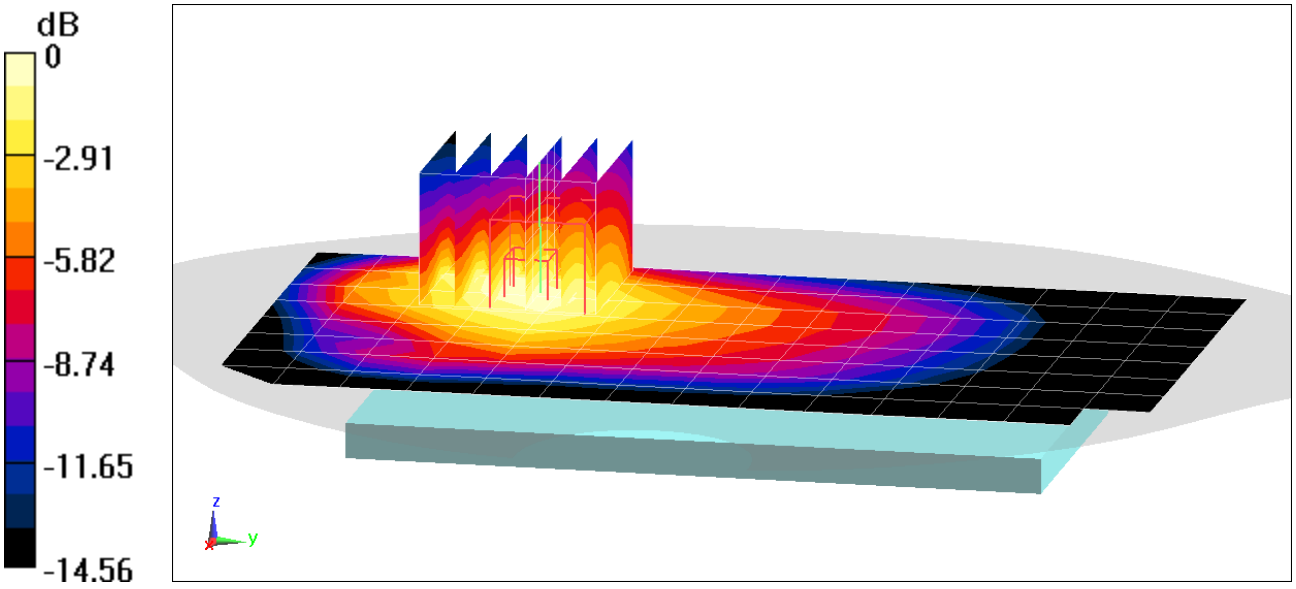
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.92 S/m; ε_r = 55.022; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 21.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7488; ConvF(11.28, 11.28, 11.28) @ 680.5 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 71, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.41 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.845 W/kg
SAR(1 g) = 0.510 W/kg



0 dB = 0.683 W/kg = -1.66 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

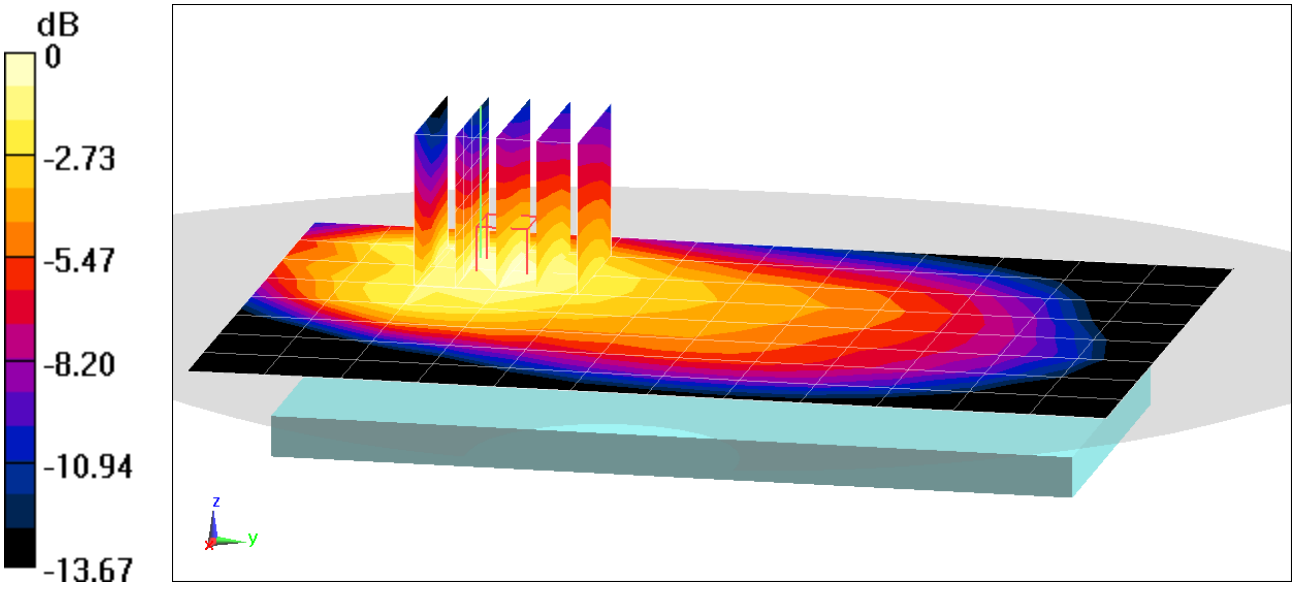
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.936 S/m; ε_r = 53.939; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-18-2019; Ambient Temp: 20.5°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7488; ConvF(11.28, 11.28, 11.28) @ 707.5 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK 1 RB, 49 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 = 22.67 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.779 W/kg
SAR(1 g) = 0.463 W/kg



0 dB = 0.644 W/kg = -1.91 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

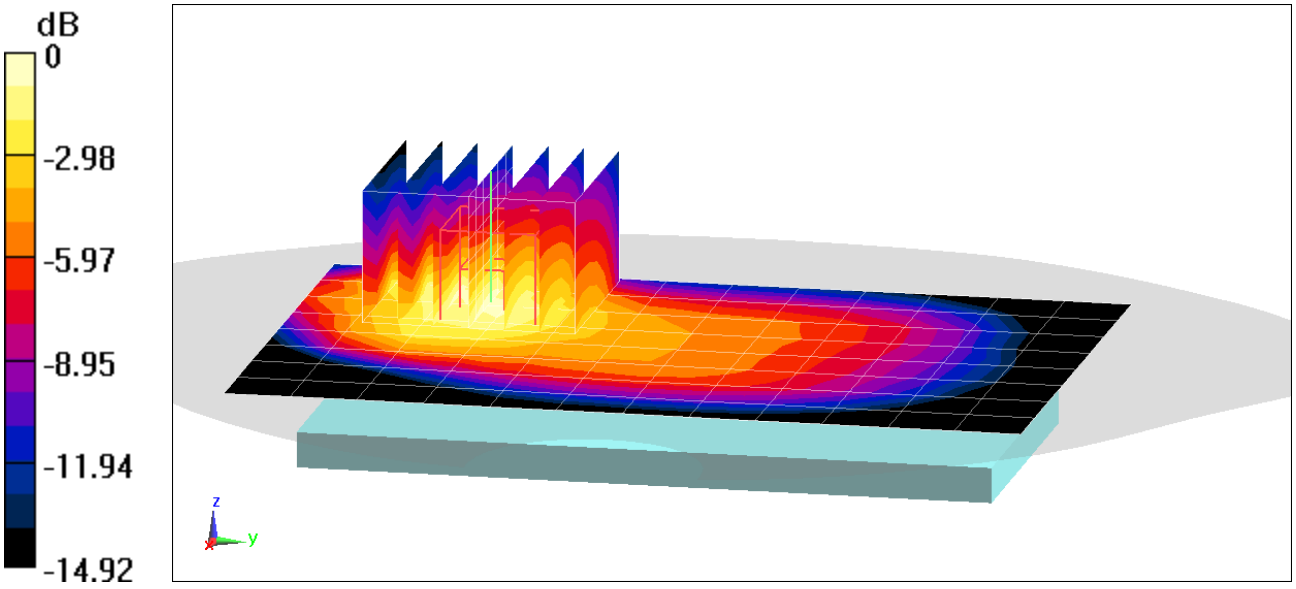
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.962 S/m; ε_r = 53.757; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-18-2019; Ambient Temp: 20.5°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7488; ConvF(11.28, 11.28, 11.28) @ 782 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: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 (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.86 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.962 W/kg
SAR(1 g) = 0.575 W/kg



0 dB = 0.791 W/kg = -1.02 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

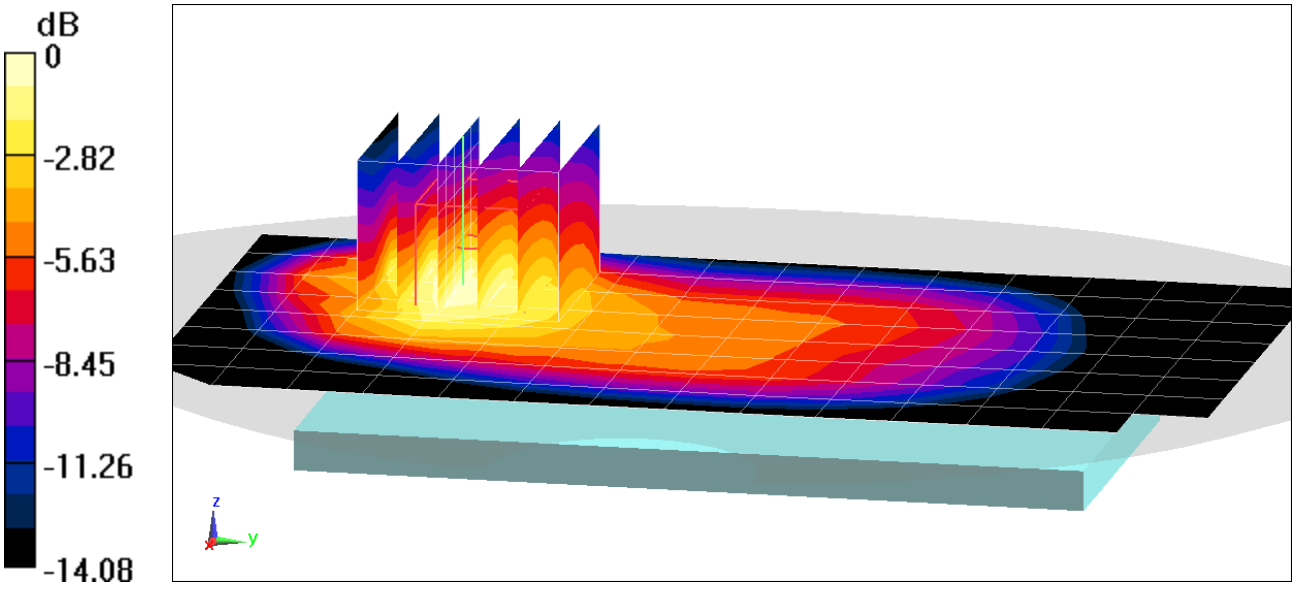
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.942 S/m; ε_r = 53.35; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 831.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.71 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.901 W/kg
SAR(1 g) = 0.539 W/kg



0 dB = 0.757 W/kg = -1.21 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

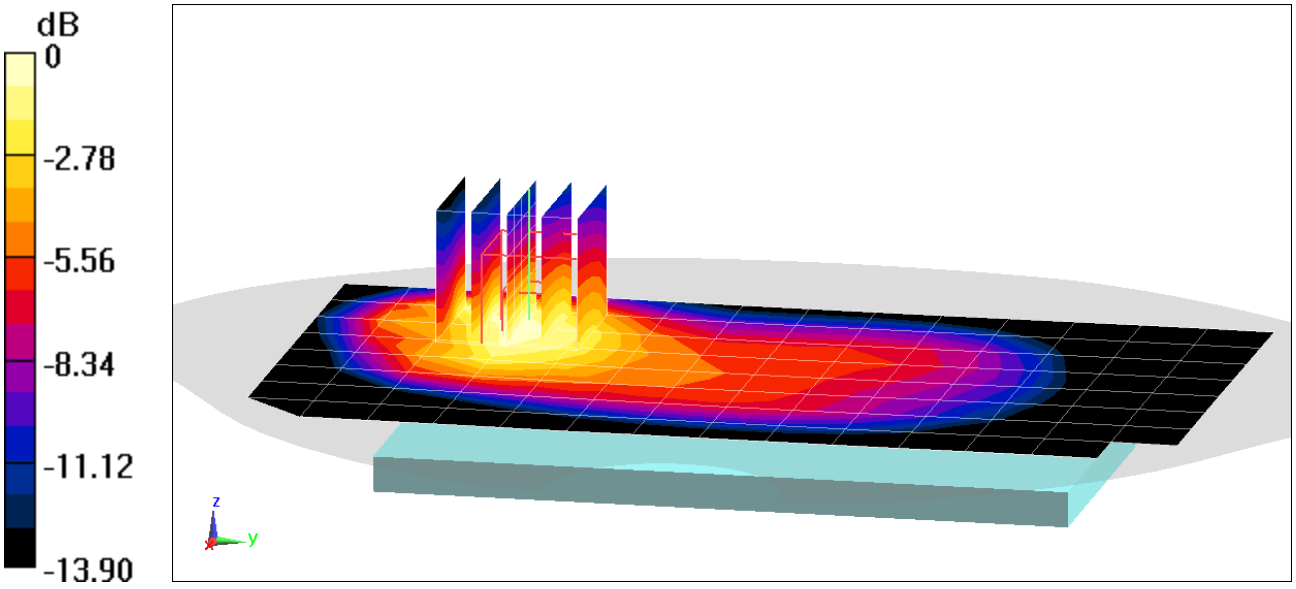
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.948 S/m; ε_r = 53.301; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK 1 RB, 49 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 = 25.57 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.585 W/kg



0 dB = 0.828 W/kg = -0.82 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

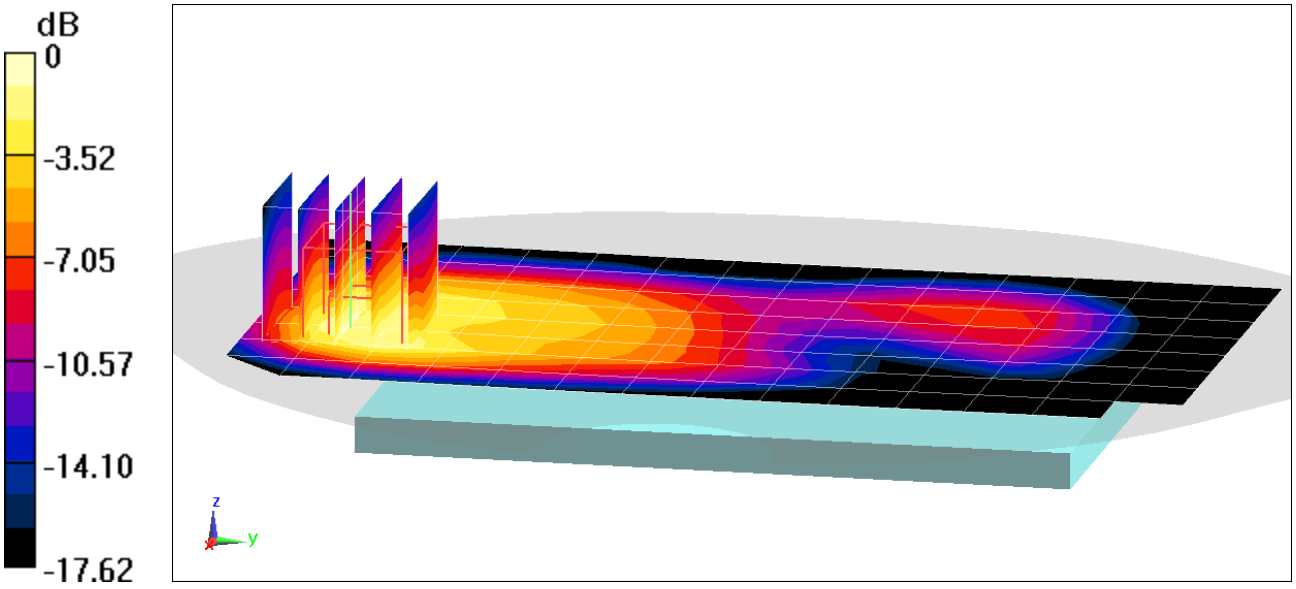
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1745 MHz; σ = 1.495 S/m; ε_r = 51.558; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1745 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.88 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.643 W/kg



0 dB = 0.940 W/kg = -0.27 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

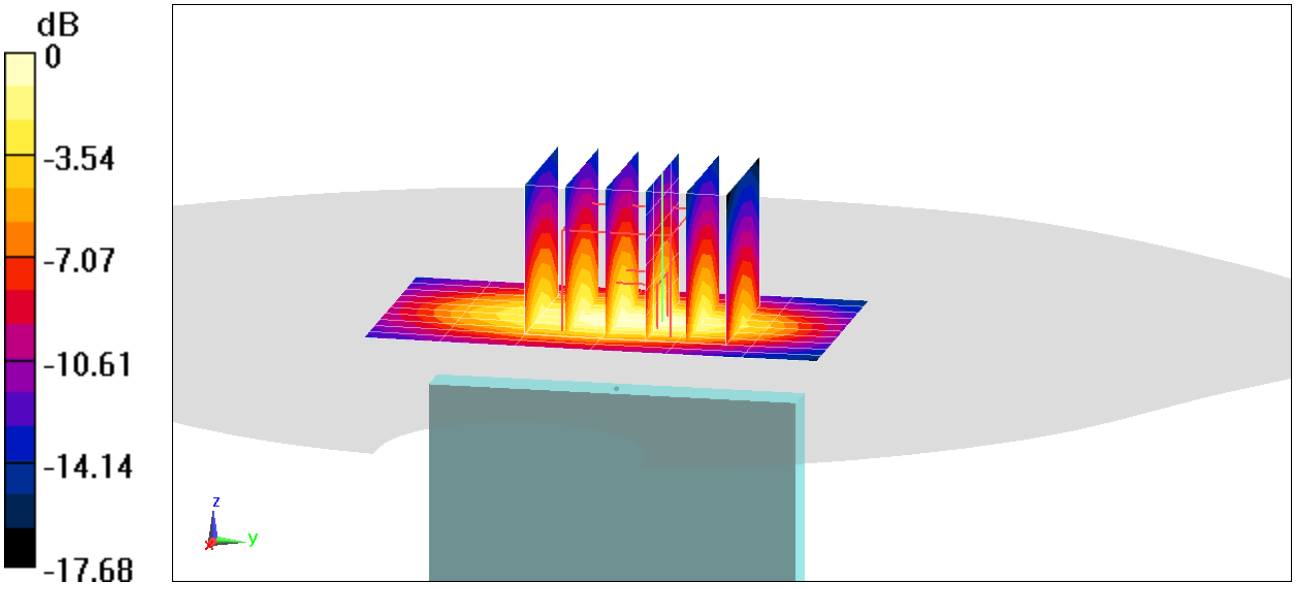
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1745$ MHz; $\sigma = 1.495$ S/m; $\varepsilon_r = 51.558$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1745 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Body SAR, Bottom Edge, Mid.ch, 20 MHz Bandwidth, QPSK 1 RB, 0 RB Offset

Area Scan (11x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.11 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.868 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

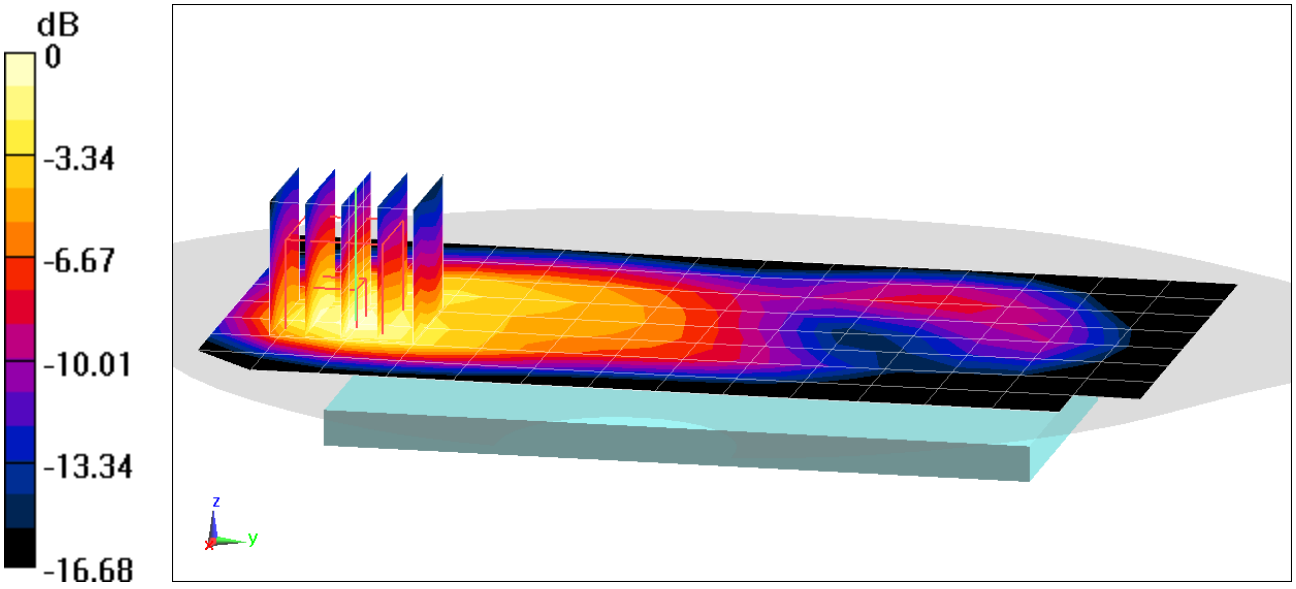
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.52 S/m; ε_r = 53.638; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 22.1°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1860 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Body SAR, Back side, 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 = 23.39 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.796 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

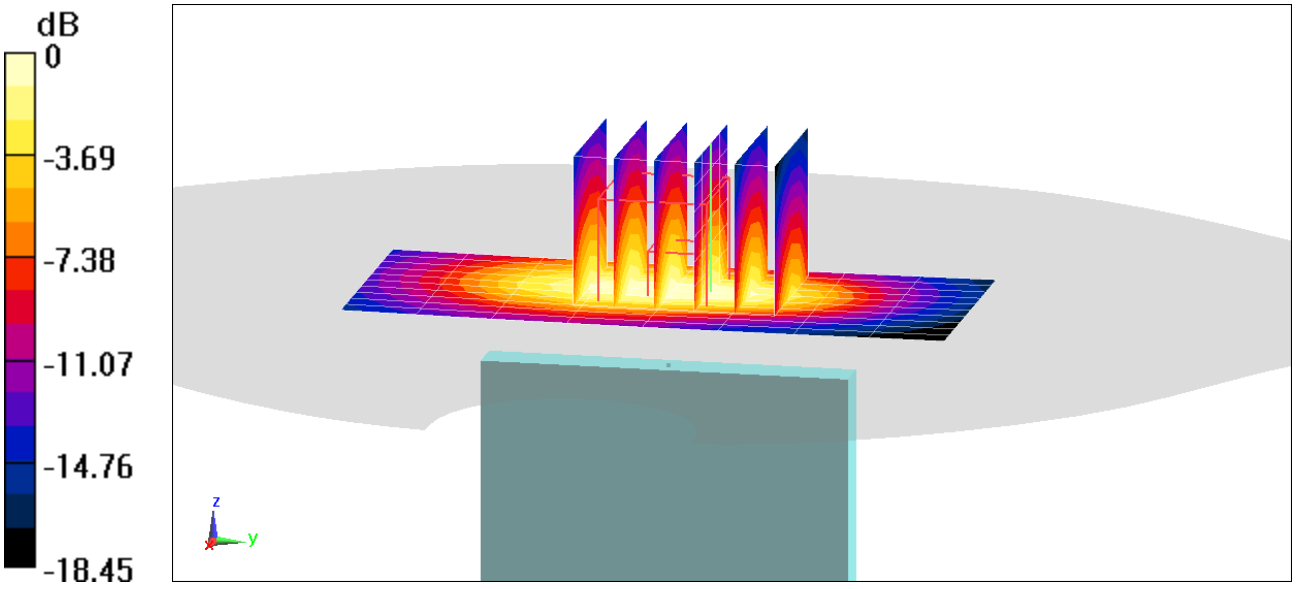
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.52 S/m; ε_r = 53.638; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 22.1°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1860 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Body SAR, Bottom Edge, Low.ch, 20 MHz Bandwidth, QPSK 1 RB, 0 RB Offset

Area Scan (11x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.96 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.935 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

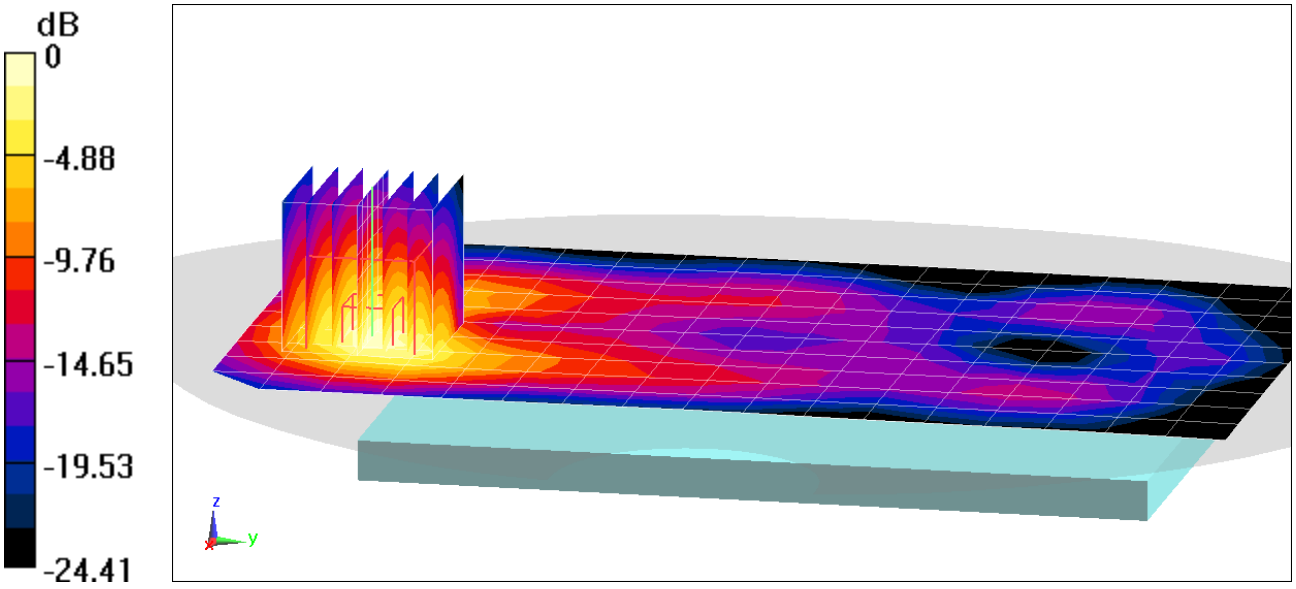
Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2510 MHz; σ = 2.079 S/m; ε_r = 51.598; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2019; Ambient Temp: 20.9°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3288; ConvF(4.5, 4.5, 4.5) @ 2510 MHz; Calibrated: 12/11/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2018
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1177
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 7, Body SAR, Back side, Low.ch, 20 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 = 21.18 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.786 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

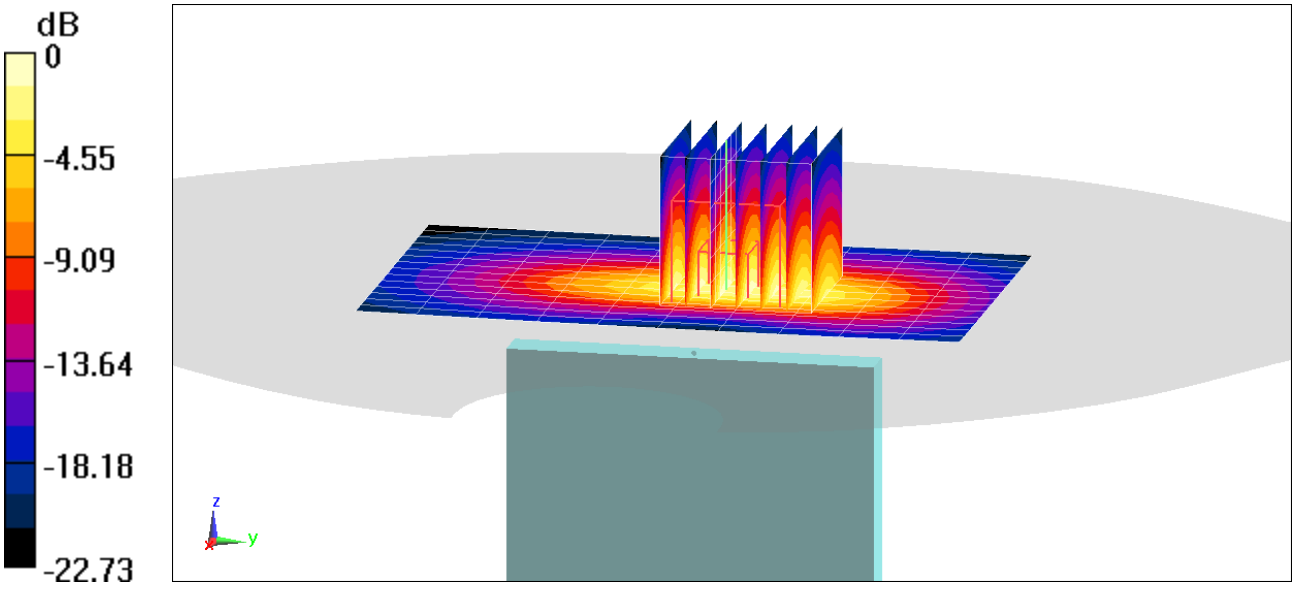
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2535 MHz; σ = 2.078 S/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2535 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 7, Body SAR, Bottom Edge, Mid.ch, 20 MHz Bandwidth, QPSK 1 RB, 99 RB Offset

Area Scan (15x11x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.57 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.36 W/kg
SAR(1 g) = 1.13 W/kg



0 dB = 1.89 W/kg = 2.76 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

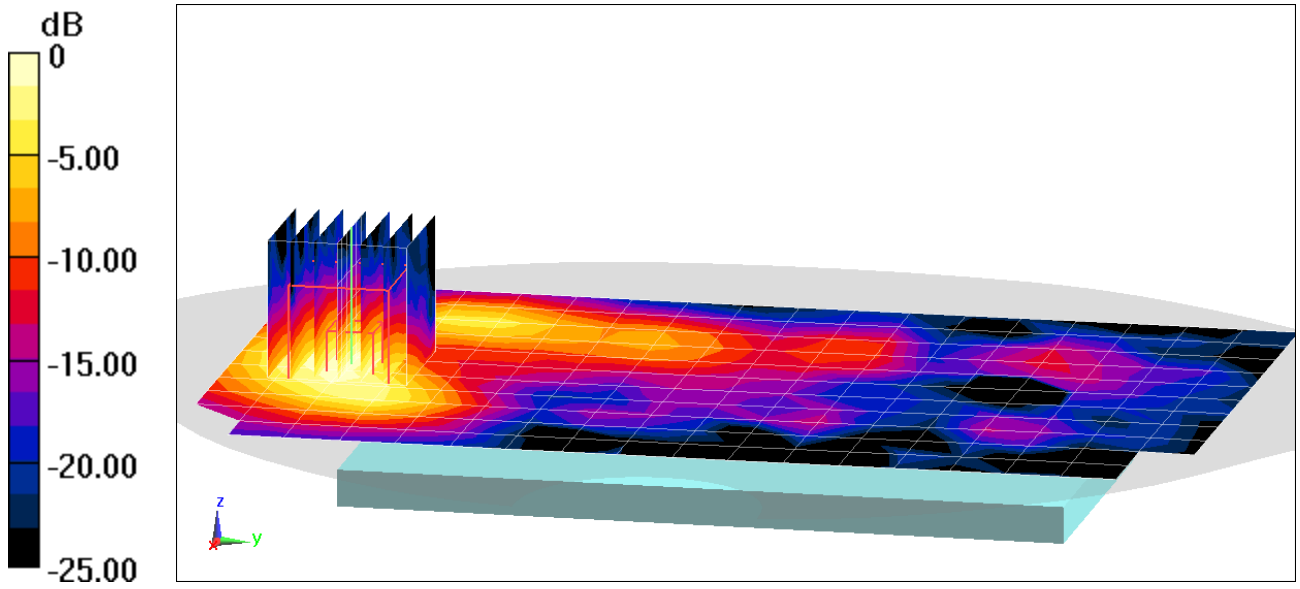
Communication System: UID 0, LTE Band 48; Frequency: 3603.3 MHz; Duty Cycle: 1:1.58
Medium: 3600 Body Medium parameters used (interpolated):
$f = 3603.3$ MHz; $\sigma = 3.272$ S/m; $\varepsilon_r = 49.686$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.6°C

Probe: EX3DV4 - SN3589; ConvF(6.13, 6.13, 6.13) @ 3603.3 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2018
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1177
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 48, Body SAR, Back side, Low-Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (12x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 8.521 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.610 W/kg
SAR(1 g) = 0.215 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

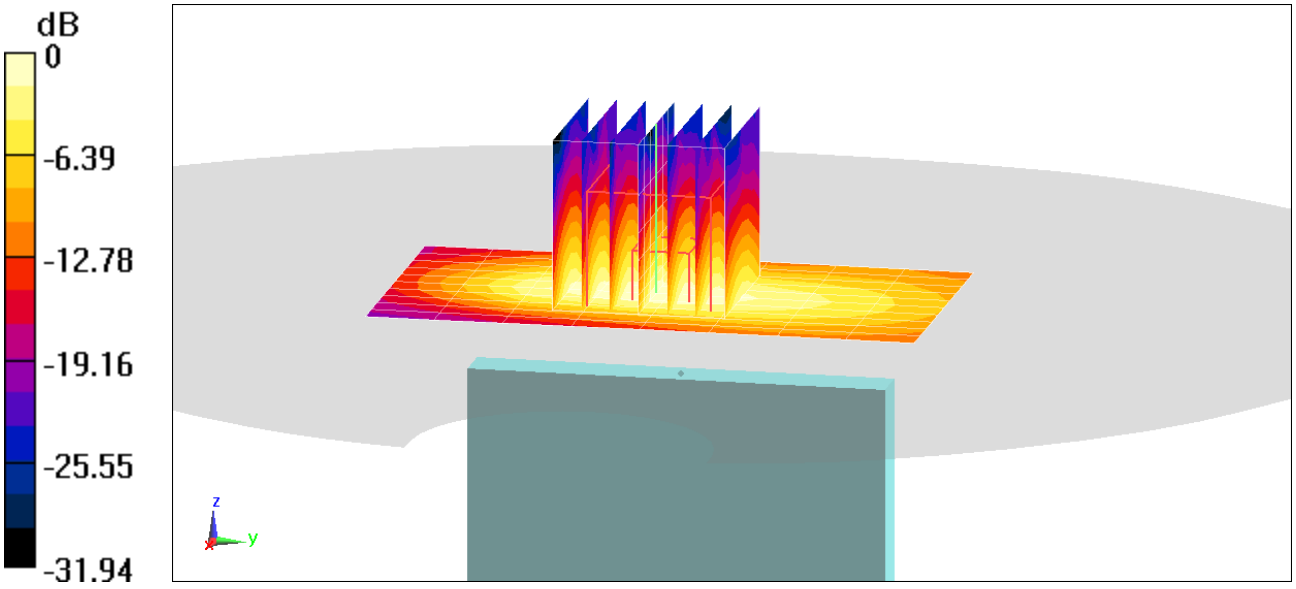
Communication System: UID 0, LTE Band 48; Frequency: 3603.3 MHz; Duty Cycle: 1:1.58
Medium: 3600 Body Medium parameters used (interpolated):
$f = 3603.3$ MHz; $\sigma = 3.272$ S/m; $\varepsilon_r = 49.686$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 21.1°C; Tissue Temp: 19.6°C

Probe: EX3DV4 - SN3589; ConvF(6.13, 6.13, 6.13) @ 3603.3 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1533; Calibrated: 12/7/2018
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1177
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 48, Body SAR, Bottom Edge, High.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x9x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 11.30 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.390 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

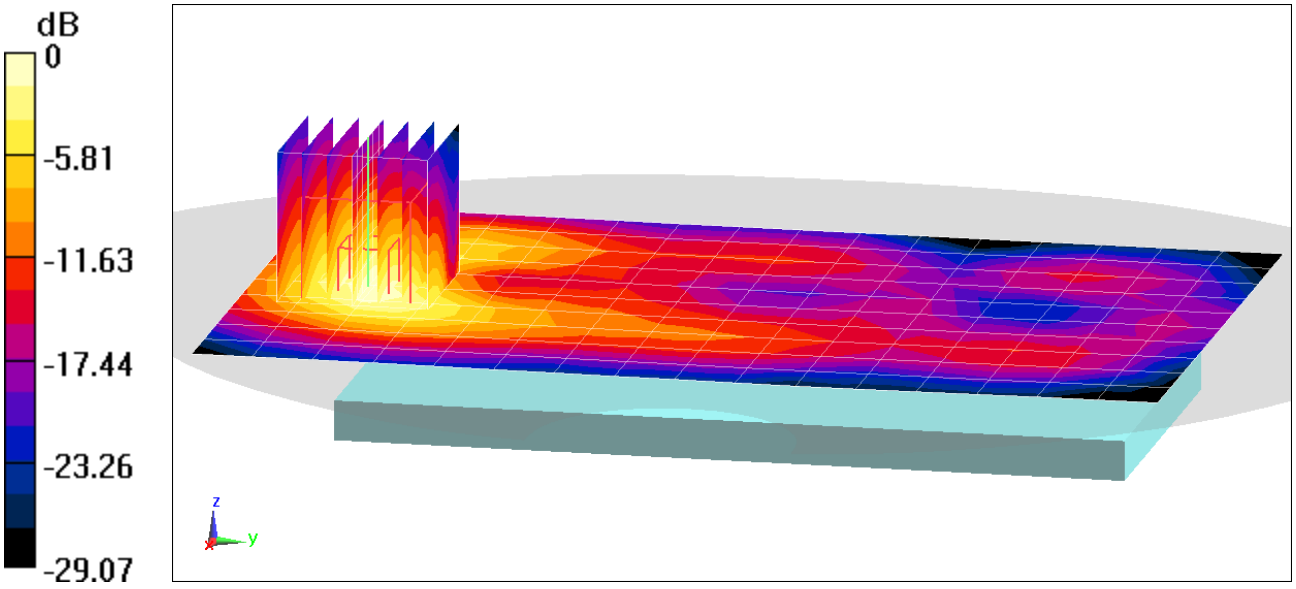
Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2593 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body Medium parameters used (interpolated):
f = 2593 MHz; σ = 2.147 S/m; ε_r = 50.144; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2593 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 Power Class 2, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.55 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.513 W/kg



0 dB = 0.872 W/kg = -0.59 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

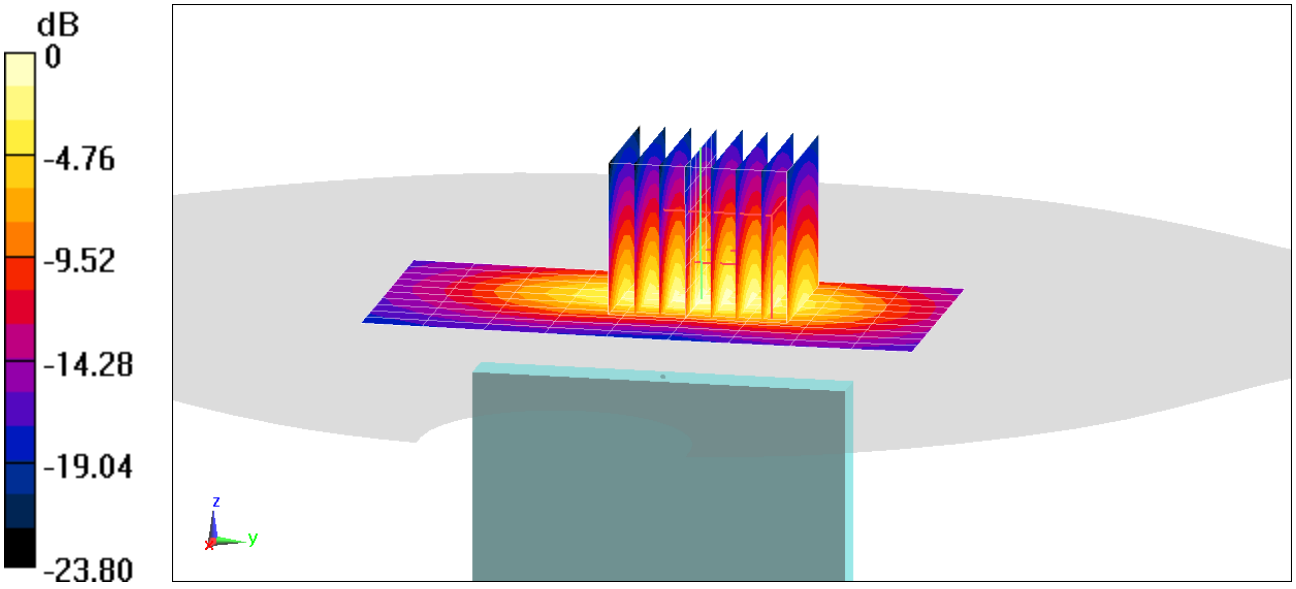
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2506 MHz; Duty Cycle: 1:2.31
Medium parameters used (interpolated):
f = 2506 MHz; σ = 2.044 S/m; ε_r = 50.37; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-19-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.7°C

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

Mode: LTE Band 41 Power Class 2, Body SAR, Bottom Edge, Low.ch, 20 MHz Bandwidth QPSK, 1 RB, 99 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.28 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.818 W/kg



0 dB = 1.36 W/kg = 1.34 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08766

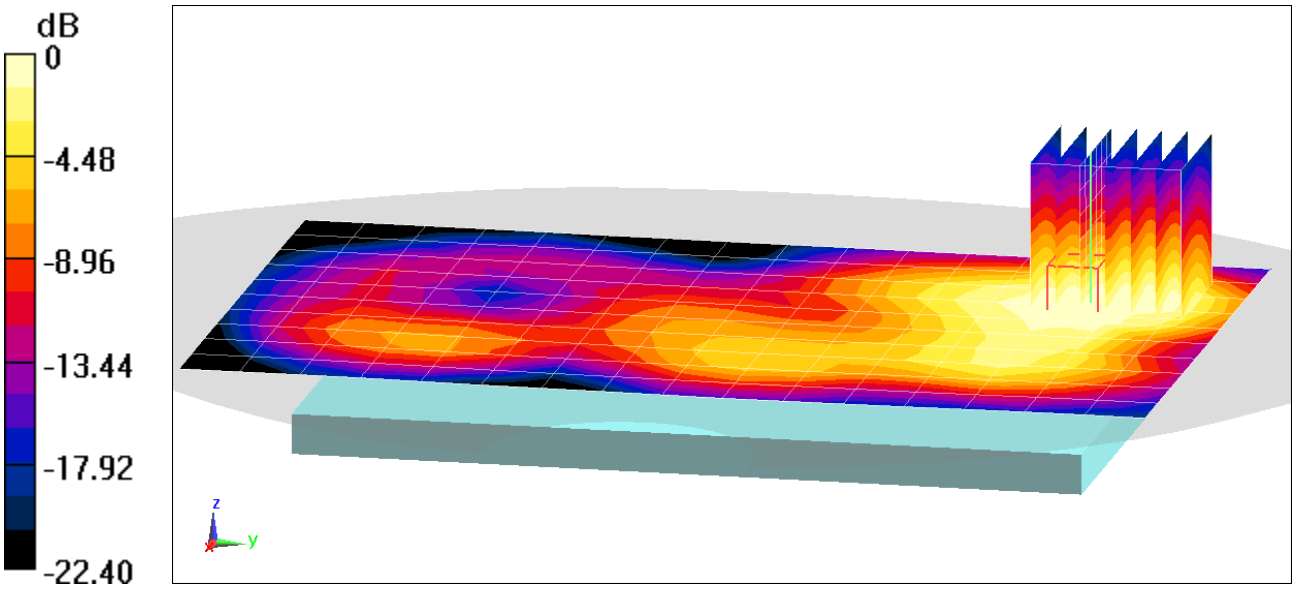
Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2462 MHz; σ = 2.025 S/m; ε_r = 51.773; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 22.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7547; ConvF(7.3, 7.3, 7.3) @ 2462 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 11, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.61 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.500 W/kg
SAR(1 g) = 0.257 W/kg



0 dB = 0.402 W/kg = -3.96 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08758

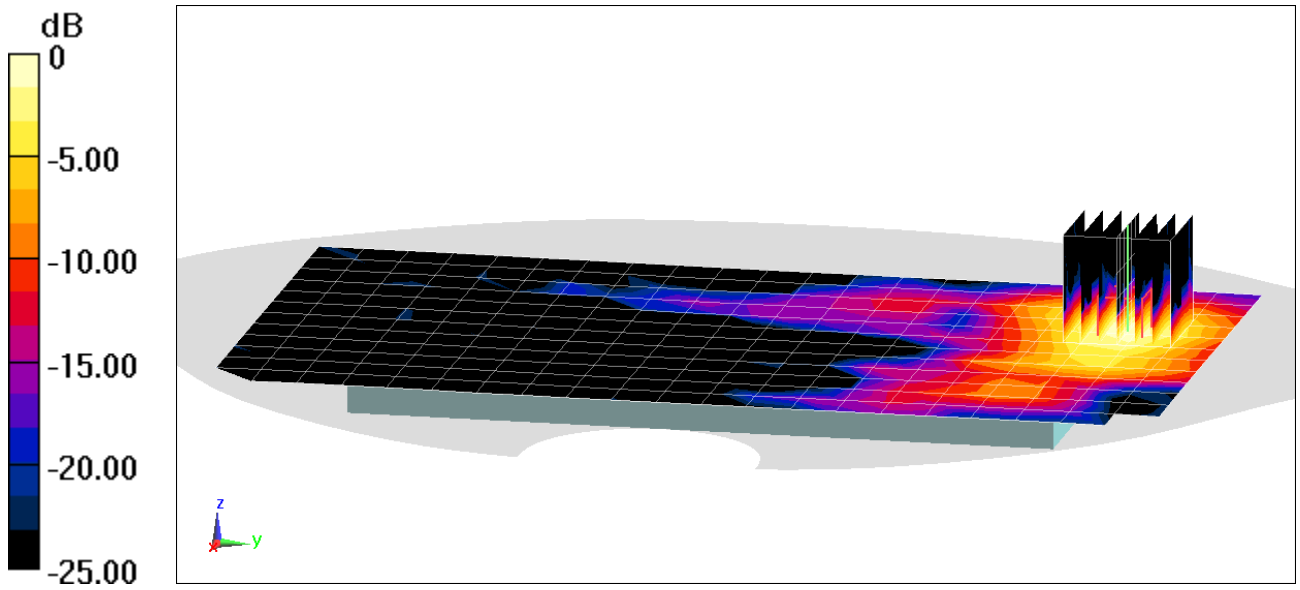
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5720 MHz; Duty Cycle: 1:1
Medium: 5GHz Body Medium parameters used (interpolated):
f = 5720 MHz; σ = 6.139 S/m; ε_r = 48.195; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-17-2019; Ambient Temp: 21.3°C; Tissue Temp:21.5°C

Probe: EX3DV4 - SN7410; ConvF(4.6, 4.6, 4.6) @ 5720 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, UNII-2C, 20 MHz Bandwidth, Body SAR, Ch 144, 6 Mbps, Back Side

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 6.893 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.267 W/kg



0 dB = 0.651 W/kg = -1.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08758

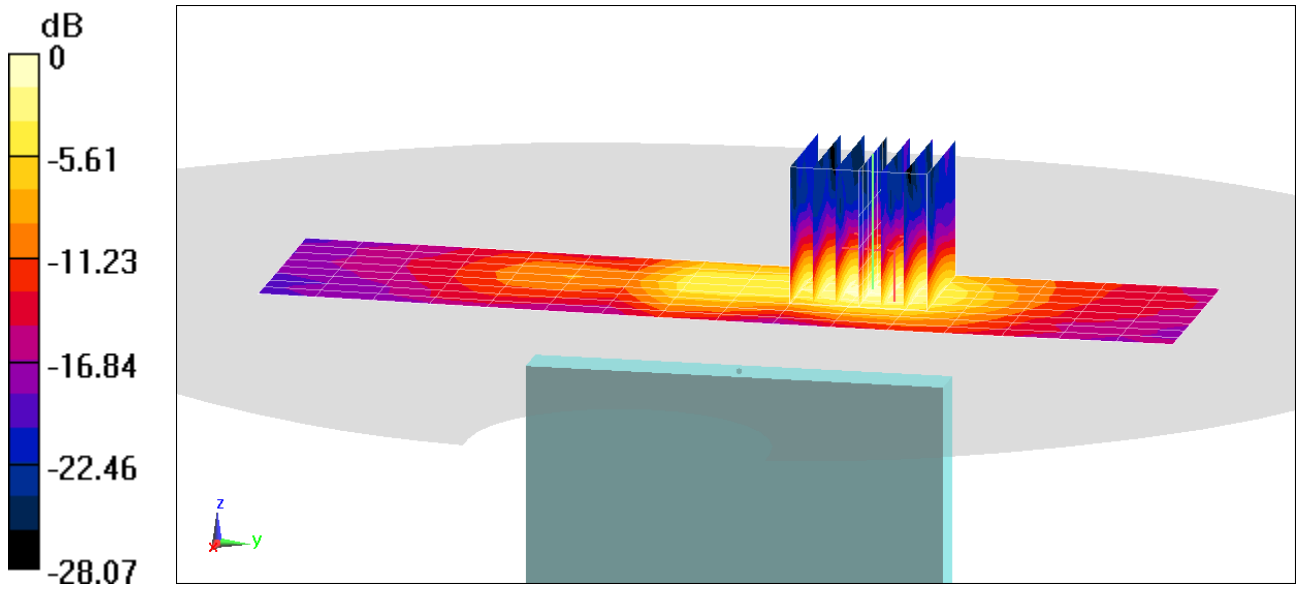
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body Medium parameters used:
f = 5745 MHz; σ = 6.19 S/m; ε_r = 48.765; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-14-2019; Ambient Temp: 22.0°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7409; ConvF(4.23, 4.23, 4.23) @ 5745 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Body SAR, Ch 149, 6 Mbps, Top Edge

Area Scan (9x17x1): Measurement grid: dx=5mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 10.36 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 3.16 W/kg
SAR(1 g) = 0.720 W/kg



0 dB = 1.72 W/kg = 2.36 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08766

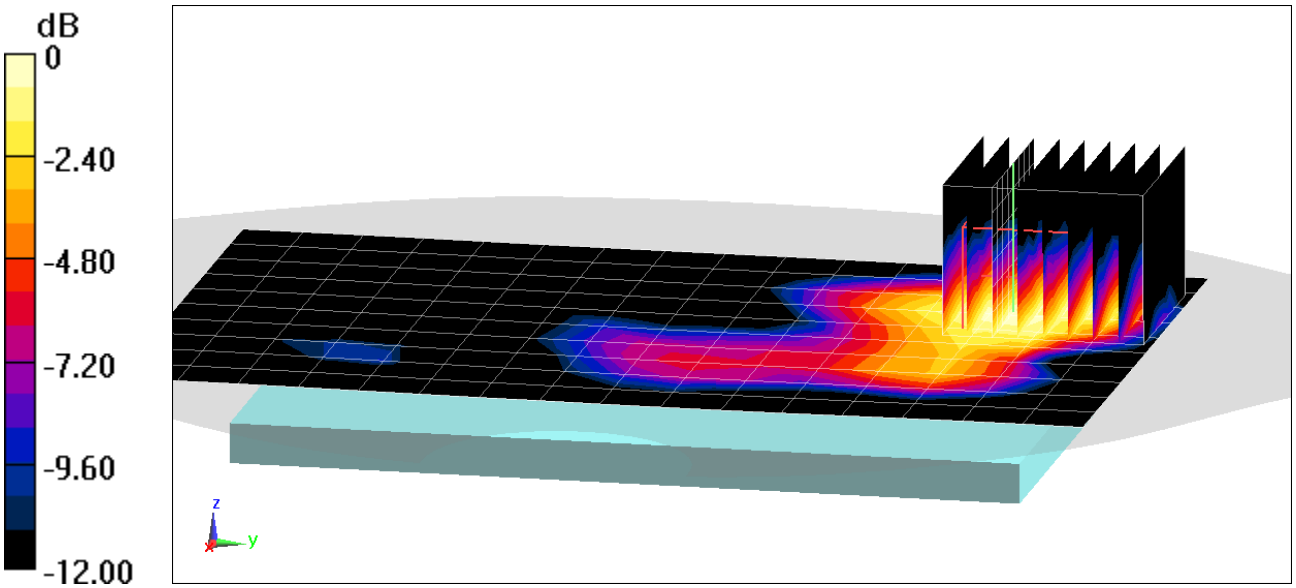
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.294
Medium: 2450 Body Medium parameters used (interpolated):
f = 2441 MHz; σ = 2 S/m; ε_r = 51.833; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 22.9°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7547; ConvF(7.3, 7.3, 7.3) @ 2441 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.552 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.0520 W/kg
SAR(1 g) = 0.026 W/kg



0 dB = 0.0418 W/kg = -13.79 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08642

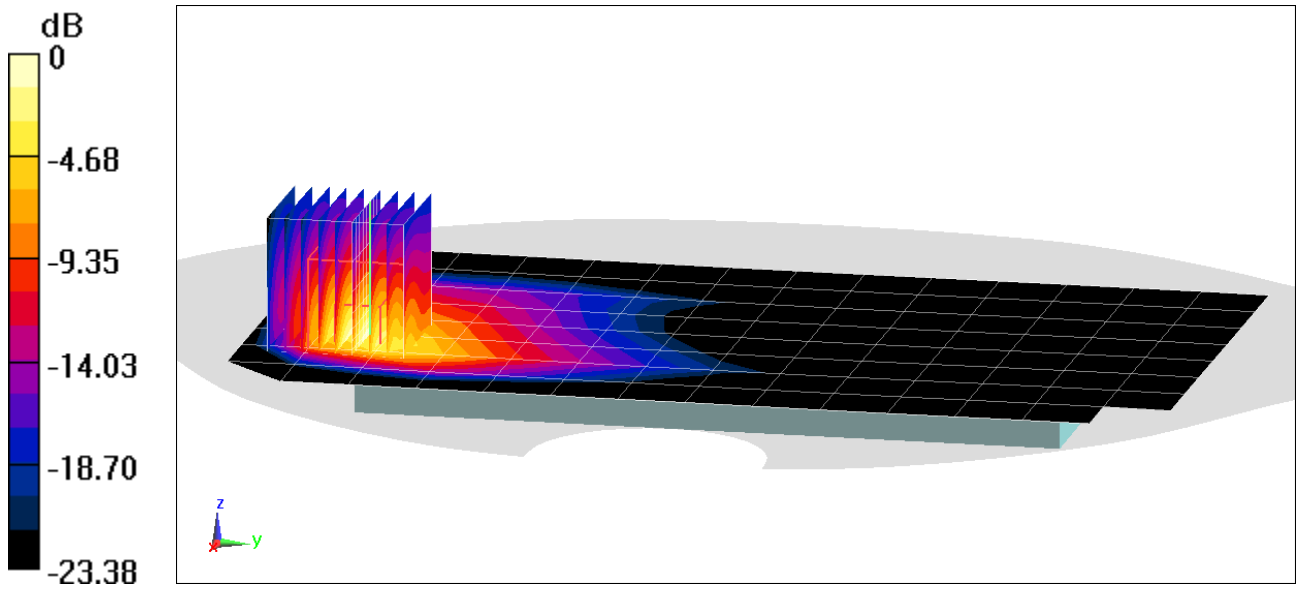
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1752.6 MHz; σ = 1.536 S/m; ε_r = 52.092; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 09-25-2019; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1752.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (9x9x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 66.32 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(10 g) = 2.42 W/kg



0 dB = 10.2 W/kg = 10.09 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

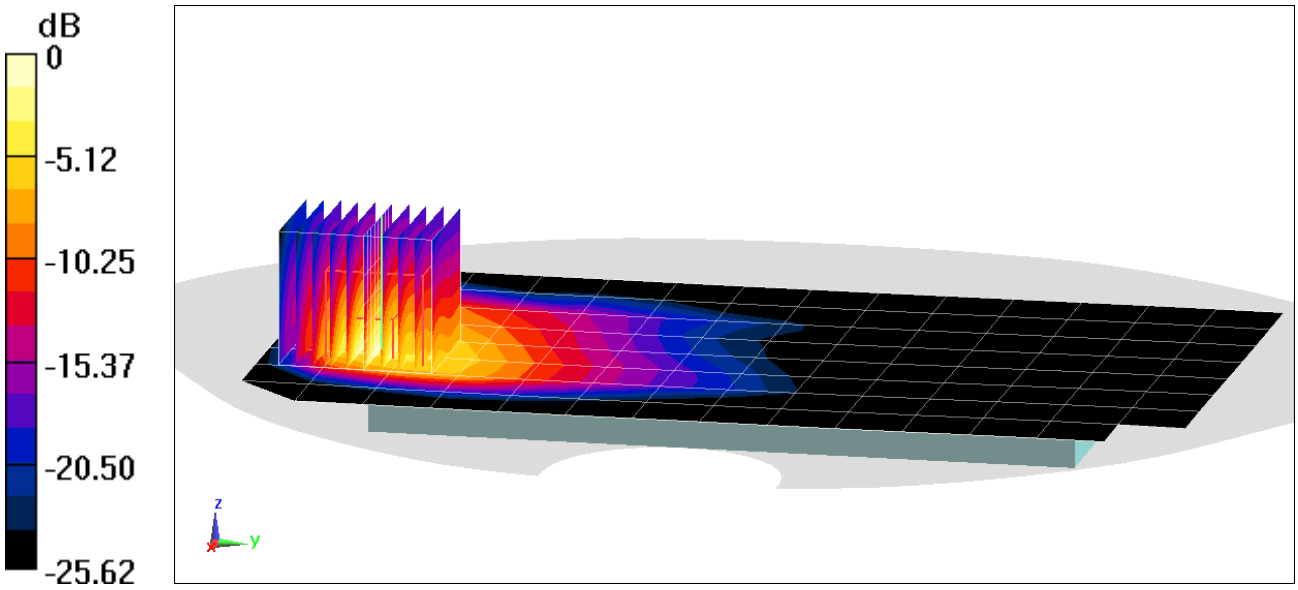
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.555 S/m; ε_r = 52.867; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-14-2019; Ambient Temp: 21.5°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7406; ConvF(7.95, 7.95, 7.95) @ 1880 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (9x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 60.54 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 12.4 W/kg
SAR(10 g) = 2.11 W/kg



0 dB = 9.31 W/kg = 9.69 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08626

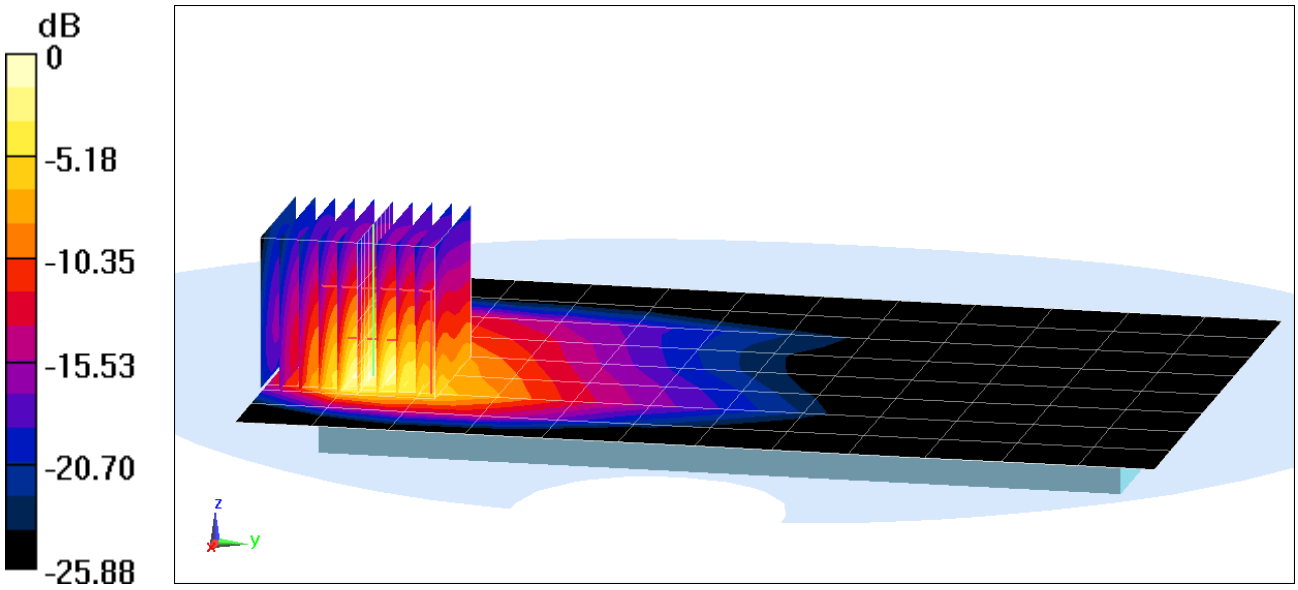
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.551 S/m; ε_r = 52.834; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 09-23-2019; Ambient Temp: 21.5°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO, Phablet SAR, Back side, Mid.ch

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 62.68 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 13.9 W/kg
SAR(10 g) = 2.21 W/kg



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

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08659

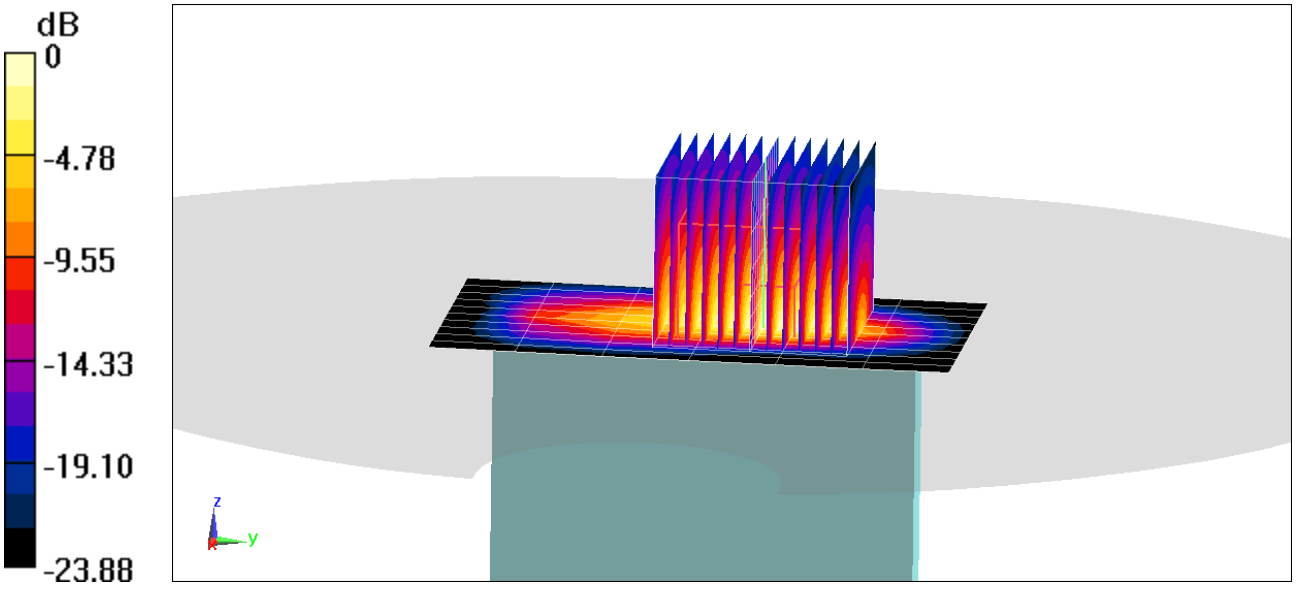
Communication System: UID 0, LTE Band 66 (AWS): Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1770 MHz; σ = 1.554 S/m; ε_r = 52.026; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 09-25-2019; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

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

Mode: LTE Band 66 (AWS), Phablet SAR, Bottom Edge, High.ch, 20 MHz Bandwidth QPSK, 50 RB, 25 RB Offset

Area Scan (11x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.8mm, dy=2.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 65.24 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(10 g) = 2.27 W/kg



0 dB = 12.0 W/kg = 10.79 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08667

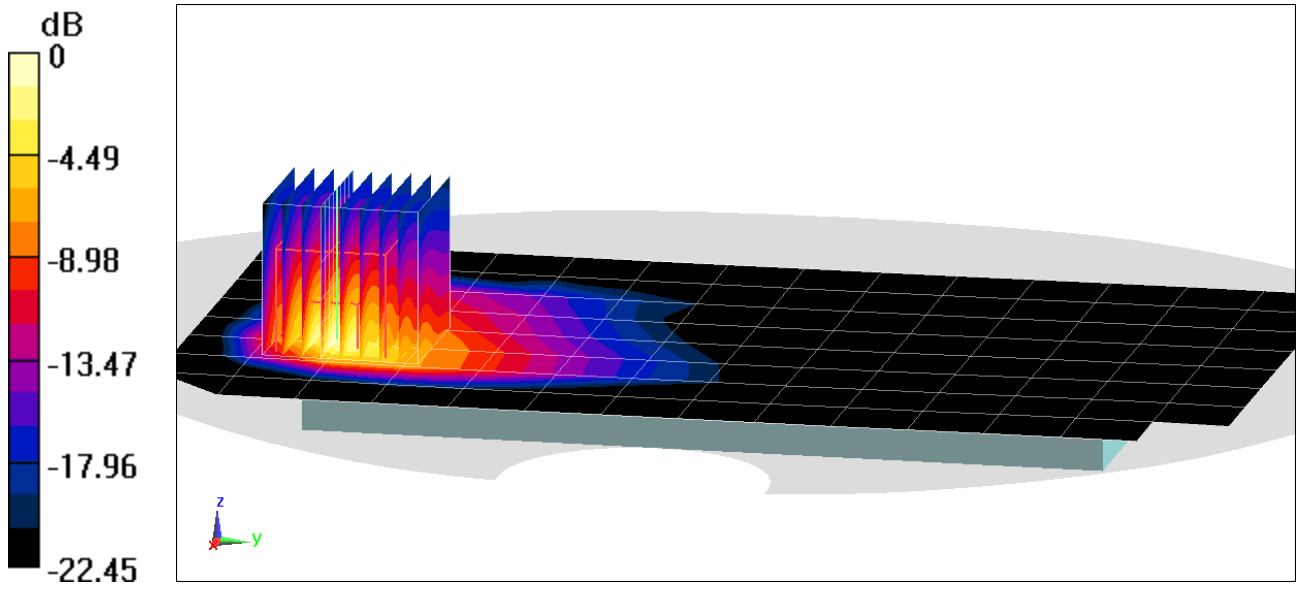
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.558 S/m; ε_r = 52.438; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-16-2019; Ambient Temp: 20.6°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7406; ConvF(7.95, 7.95, 7.95) @ 1882.5 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Phablet SAR, Back side, Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 59.26 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 13.4 W/kg
SAR(10 g) = 2.21 W/kg



0 dB = 10.1 W/kg = 10.04 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08634

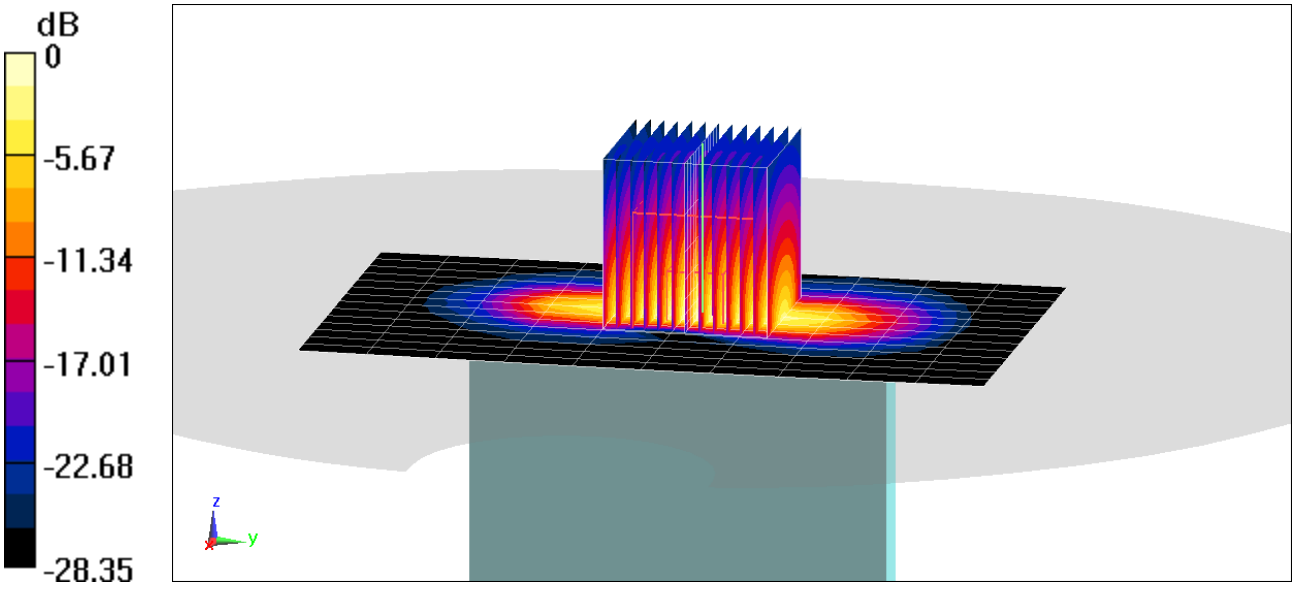
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2535 MHz; σ = 2.135 S/m; ε_r = 50.596; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 09-22-2019; Ambient Temp: 21.2°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2535 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 7, Phablet SAR, Bottom Edge, Mid.ch, 20 MHz Bandwidth, QPSK 50 RB, 25 RB Offset

Area Scan (15x11x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.4mm, dy=2.4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 68.85 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 24.0 W/kg
SAR(10 g) = 2.49 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

DUT: ZNFQ620WA; Type: Portable Handset; Serial: 08758

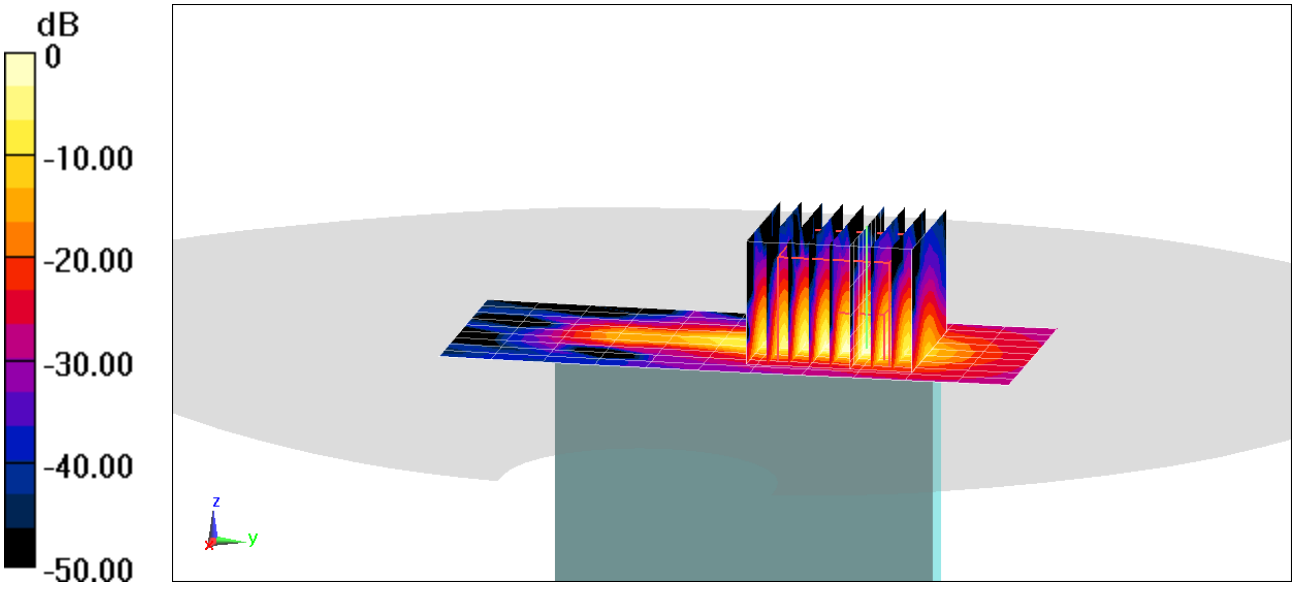
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5620 MHz; Duty Cycle: 1:1
Medium: 5GHz Body Medium parameters used:
f = 5620 MHz; σ = 5.996 S/m; ε_r = 48.37; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 09-17-2019; Ambient Temp: 21.3°C; Tissue Temp:21.5°C

Probe: EX3DV4 - SN7410; ConvF(4.42, 4.42, 4.42) @ 5620 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Phablet SAR, Ch 124, 6 Mbps
Top Edge

Area Scan (10x12x1): Measurement grid: dx=5mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 44.18 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 75.5 W/kg
SAR(10 g) = 2.2 W/kg



0 dB = 30.7 W/kg = 14.87 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

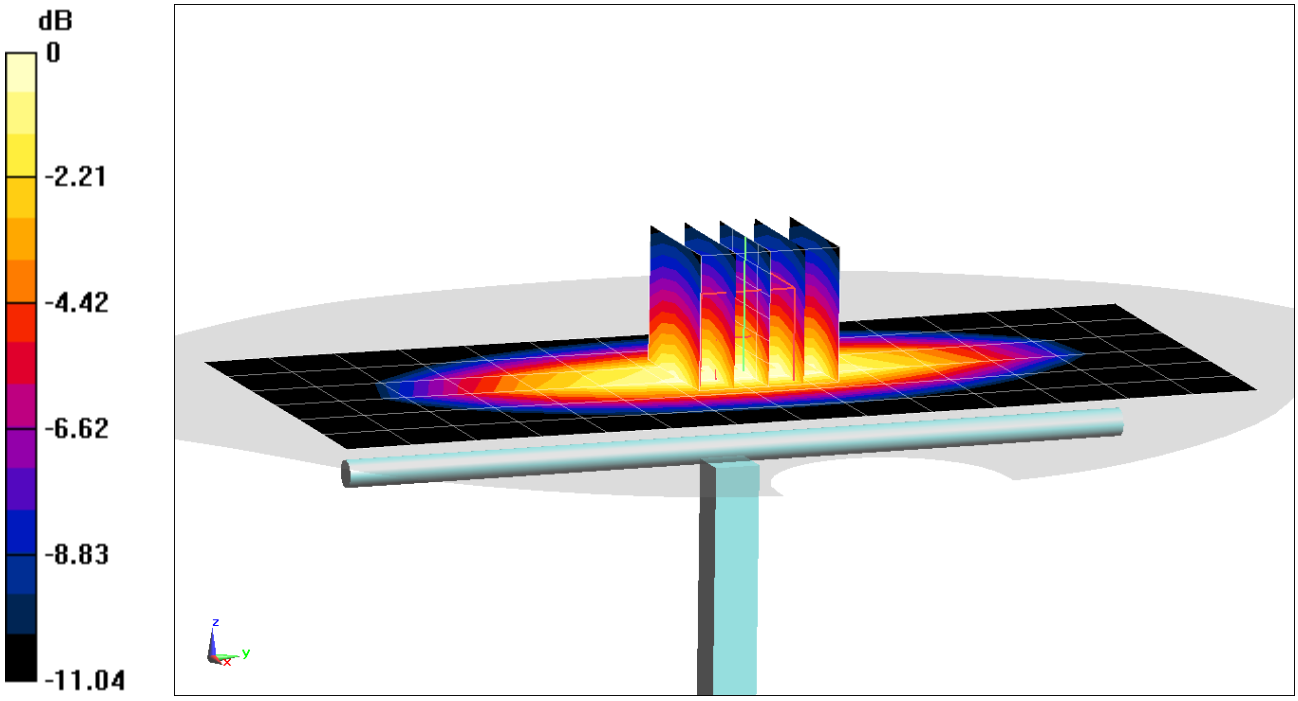
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used:
f = 750 MHz; σ = 0.881 S/m; ε_r = 42.582; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-20-2019; Ambient Temp: 22.0°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7409; ConvF(9.96, 9.96, 9.96) @ 750 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.70 W/kg
SAR(1 g) = 1.68 W/kg
Deviation(1 g) = 1.45%



0 dB = 2.32 W/kg = 3.65 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

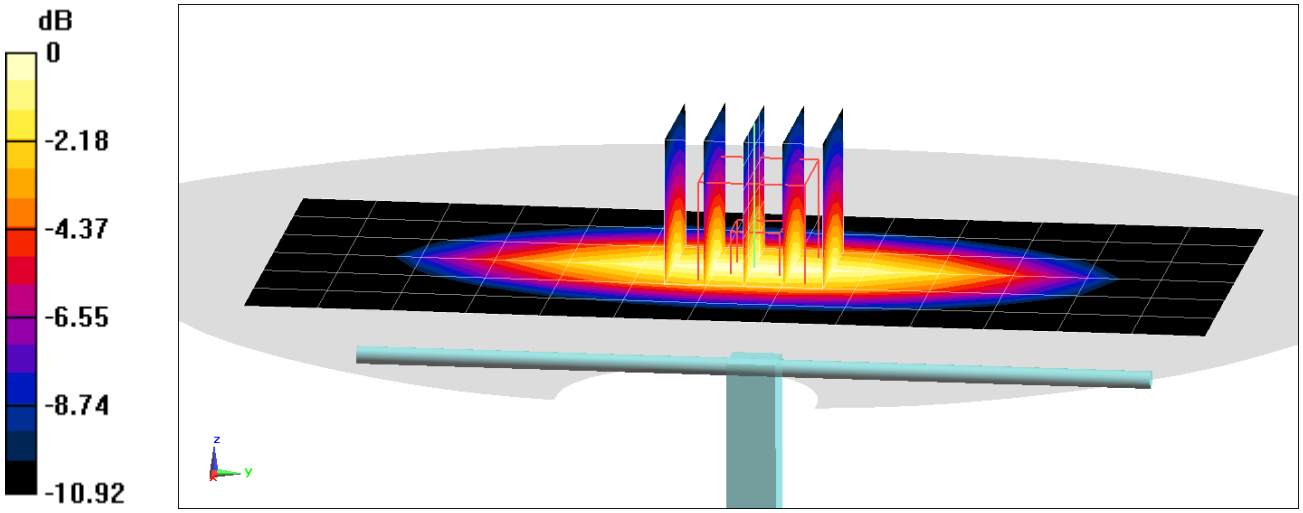
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.912 S/m; ε_r = 43.45; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-20-2019; Ambient Temp: 22.5°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7417; ConvF(10.07, 10.07, 10.07) @ 835 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.92 W/kg
SAR(1 g) = 1.88 W/kg
Deviation(1 g) = -1.98%



0 dB = 2.56 W/kg = 4.08 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

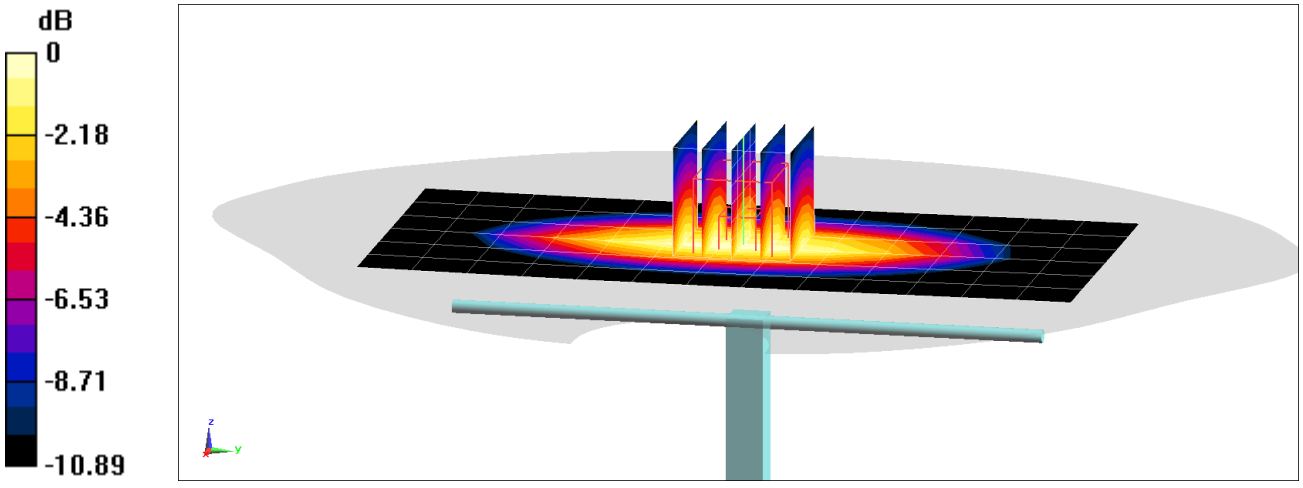
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used:
f = 835 MHz; σ = 0.896 S/m; ε_r = 42.63; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 835 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.00 W/kg
SAR(1 g) = 1.99 W/kg
Deviation(1 g) = 3.75%



0 dB = 2.66 W/kg = 4.25 dBW/kg

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1148

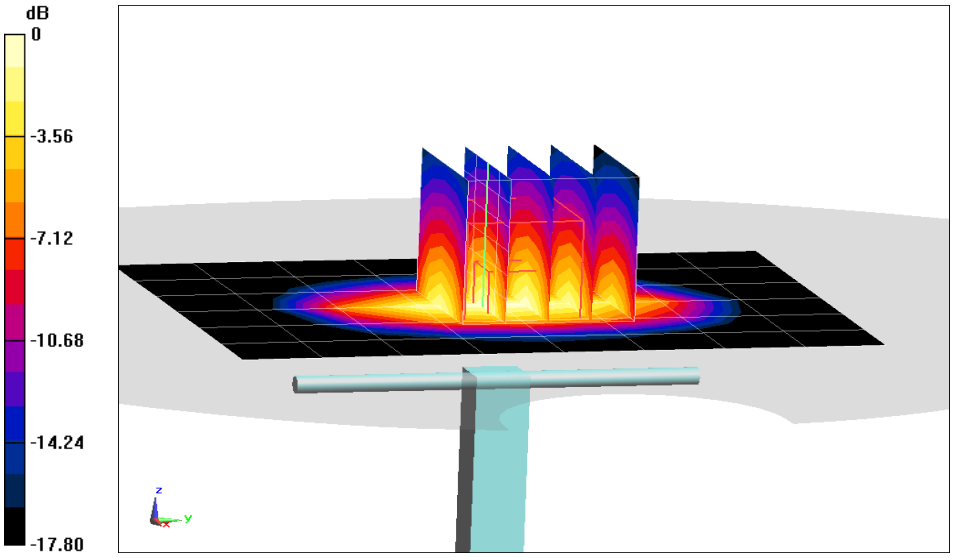
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.349 S/m; ε_r = 41.416; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 20.7°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.67, 8.67, 8.67) @ 1750 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 6.54 W/kg
SAR(1 g) = 3.55 W/kg
Deviation(1 g) = -4.05%



0 dB = 5.38 W/kg = 7.31 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148

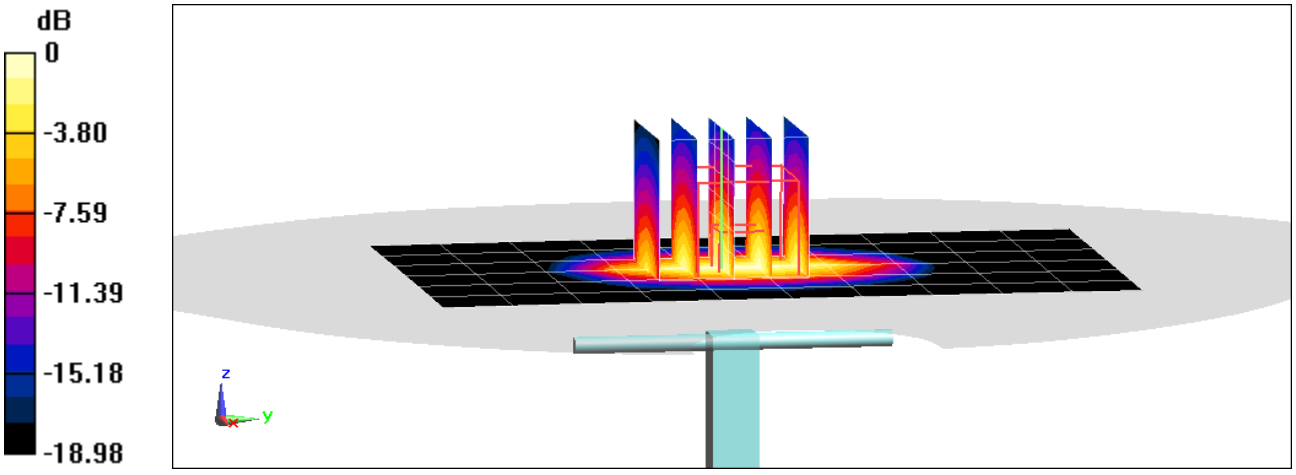
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.444 S/m; ε_r = 41.18; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 20.4°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7538; ConvF(8.32, 8.32, 8.32) @ 1900 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn728; Calibrated: 5/8/2019
Phantom: Left Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.43 W/kg
SAR(1 g) = 3.99 W/kg
Deviation(1 g) = 2.05%



0 dB = 6.10 W/kg = 7.85 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

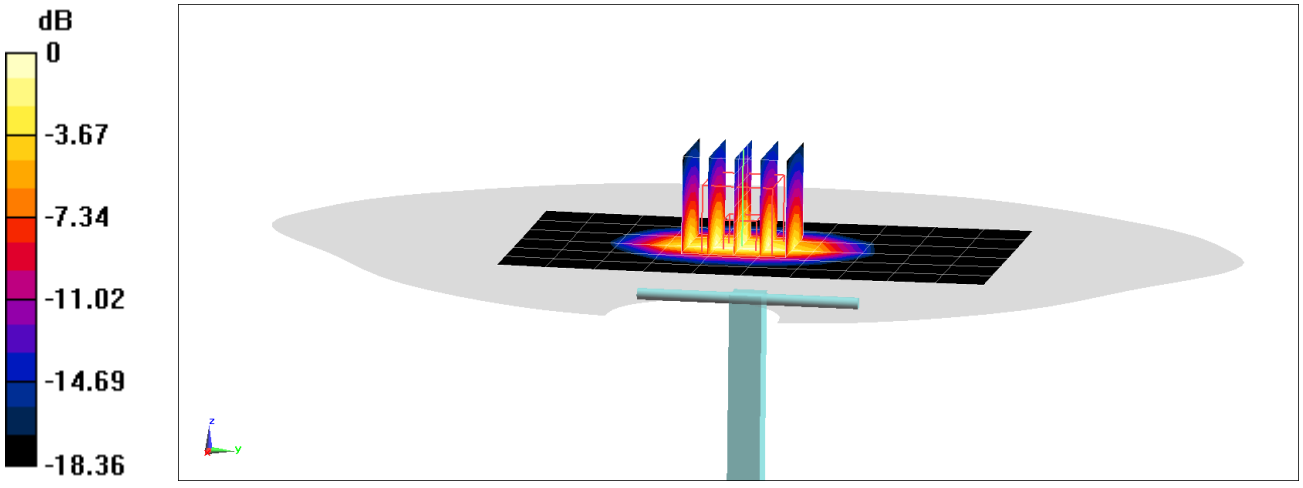
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 MHz Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.439 S/m; ε_r = 40.621; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2019; Ambient Temp: 20.1°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7406; ConvF(8.18, 8.18, 8.18) @ 1900 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.78 W/kg
SAR(1 g) = 4.1 W/kg
Deviation(1 g) = 4.33%



0 dB = 6.48 W/kg = 8.12 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

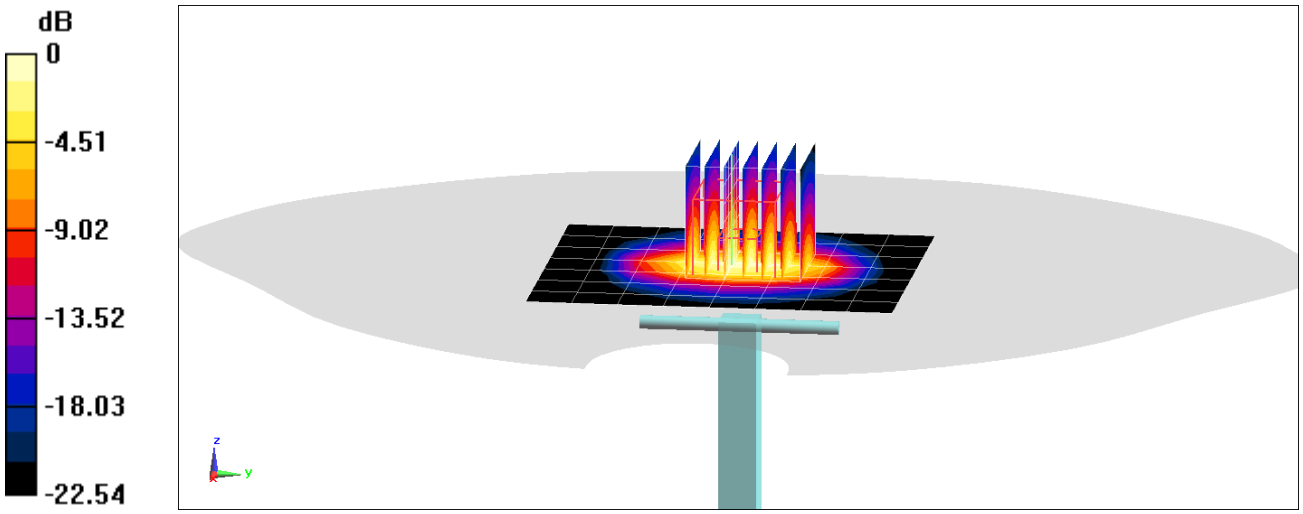
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.842 S/m; ε_r = 40.894; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-16-2019; Ambient Temp: 21.2°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2450 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.4 W/kg
SAR(1 g) = 5.07 W/kg
Deviation(1 g) = -4.52%



0 dB = 8.36 W/kg = 9.22 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

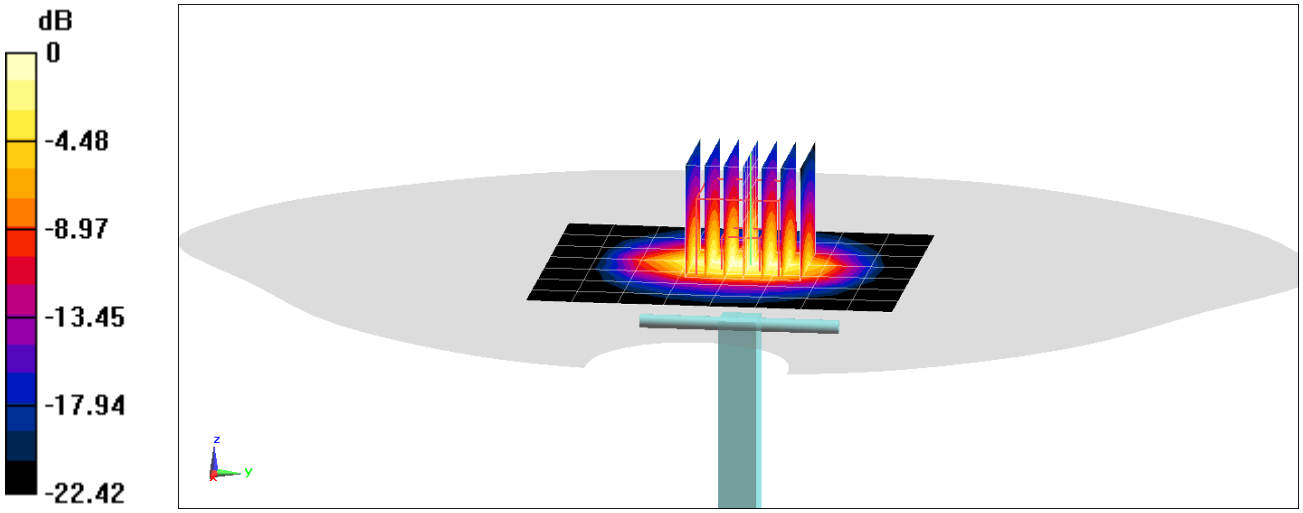
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.879 S/m; ε_r = 41.014; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2450 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.2 W/kg
SAR(1 g) = 5.43 W/kg
Deviation(1 g) = 2.26%



0 dB = 9.03 W/kg = 9.56 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

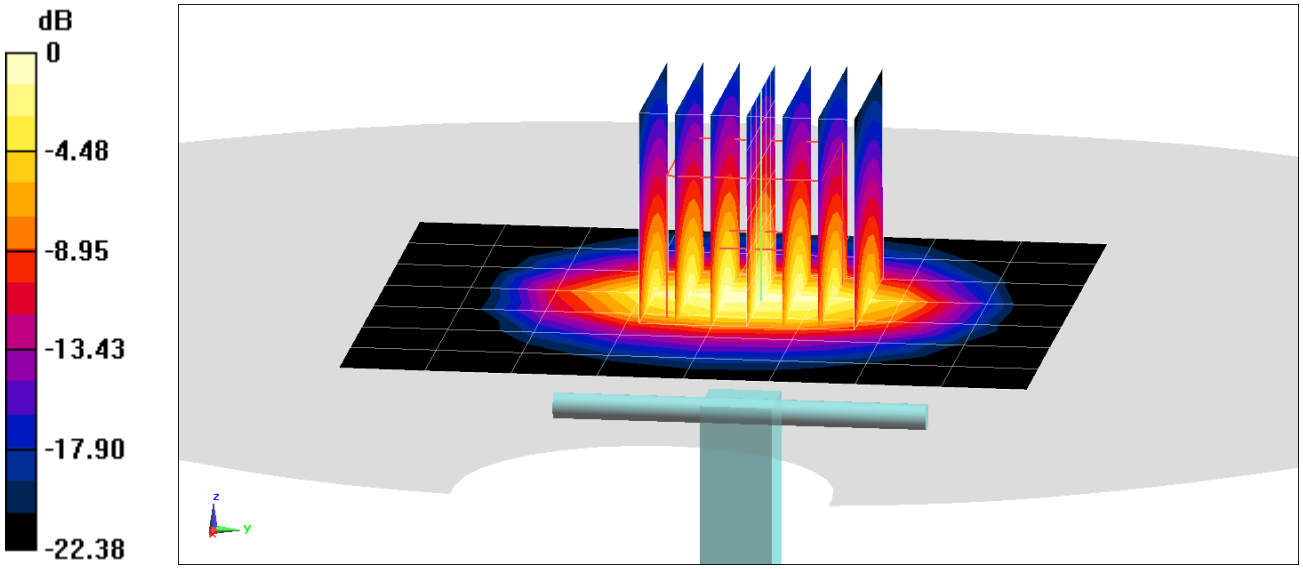
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.831 S/m; ε_r = 40.703; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-30-2019; Ambient Temp: 20.1°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2450 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.6 W/kg
SAR(1 g) = 5.17 W/kg
Deviation(1 g) = -2.64%



0 dB = 8.64 W/kg = 9.37 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

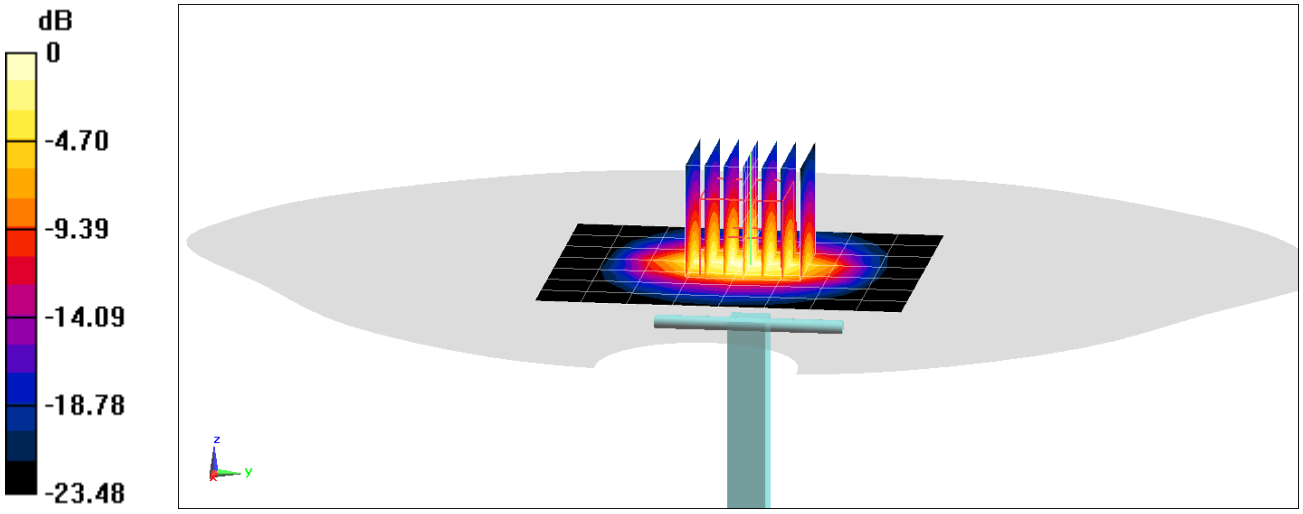
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2600 MHz; σ = 2.001 S/m; ε_r = 40.802; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7417; ConvF(7.17, 7.17, 7.17) @ 2600 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.53 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 12.2 W/kg
SAR(1 g) = 5.7 W/kg
Deviation(1 g) = 0.88%



0 dB = 9.72 W/kg = 9.88 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 3500 MHz; Type: D3500V2; Serial: 1059

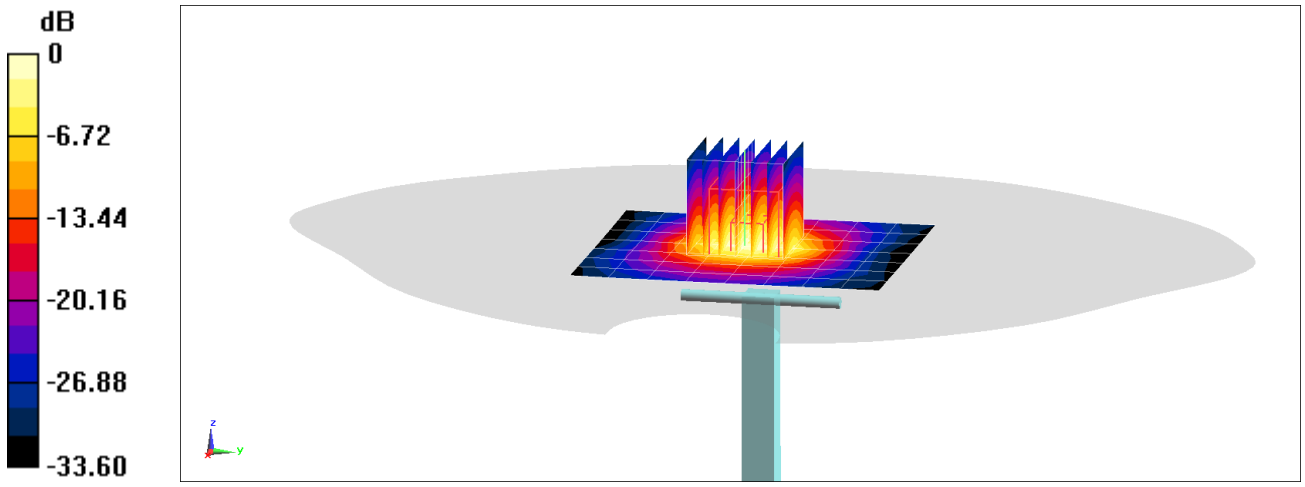
Communication System: UID 0, CW; Frequency: 3500 MHz; Duty Cycle: 1:1
Medium: 3500-3700 MHz Head Medium parameters used:
f = 3500 MHz; σ = 2.796 S/m; ε_r = 38.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-17-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3589; ConvF(6.16, 6.16, 6.16) @ 3500 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

3500 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 6.67 W/kg
Deviation(1 g) = 5.11%



0 dB = 13.0 W/kg = 11.14 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 3700 MHz; Type: D3700V2; Serial: 1018

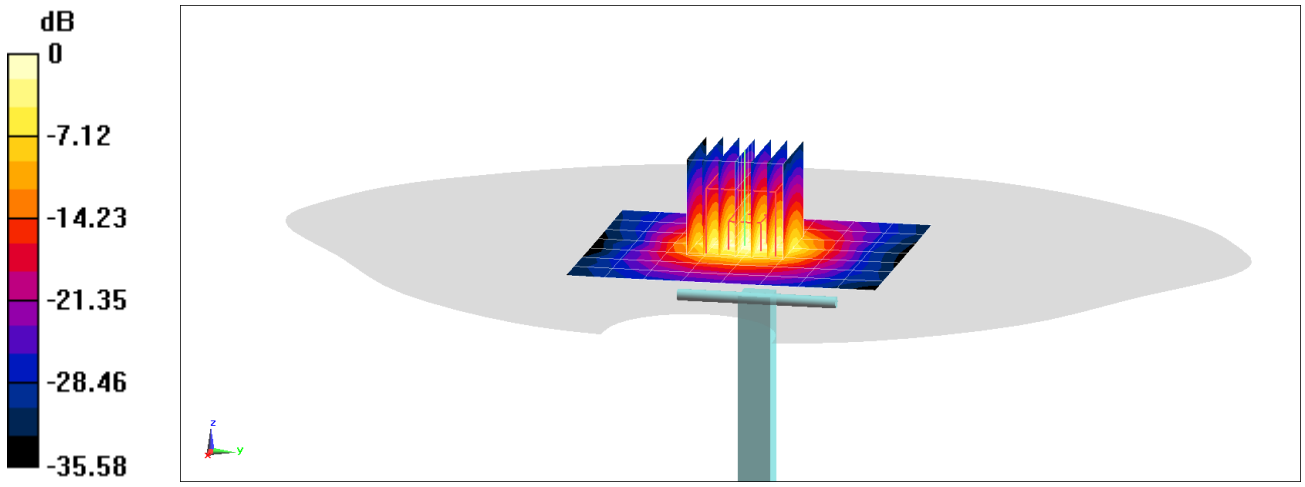
Communication System: UID 0, CW; Frequency: 3700 MHz; Duty Cycle: 1:1
Medium: 3500-3700 MHz Head Medium parameters used (interpolated):
f = 3700 MHz; σ = 2.983 S/m; ε_r = 37.722; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-17-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3589; ConvF(6.02, 6.02, 6.02) @ 3700 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

3700 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 19.6 W/kg
SAR(1 g) = 6.82 W/kg
Deviation(1 g) = 3.65%



0 dB = 13.7 W/kg = 11.37 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

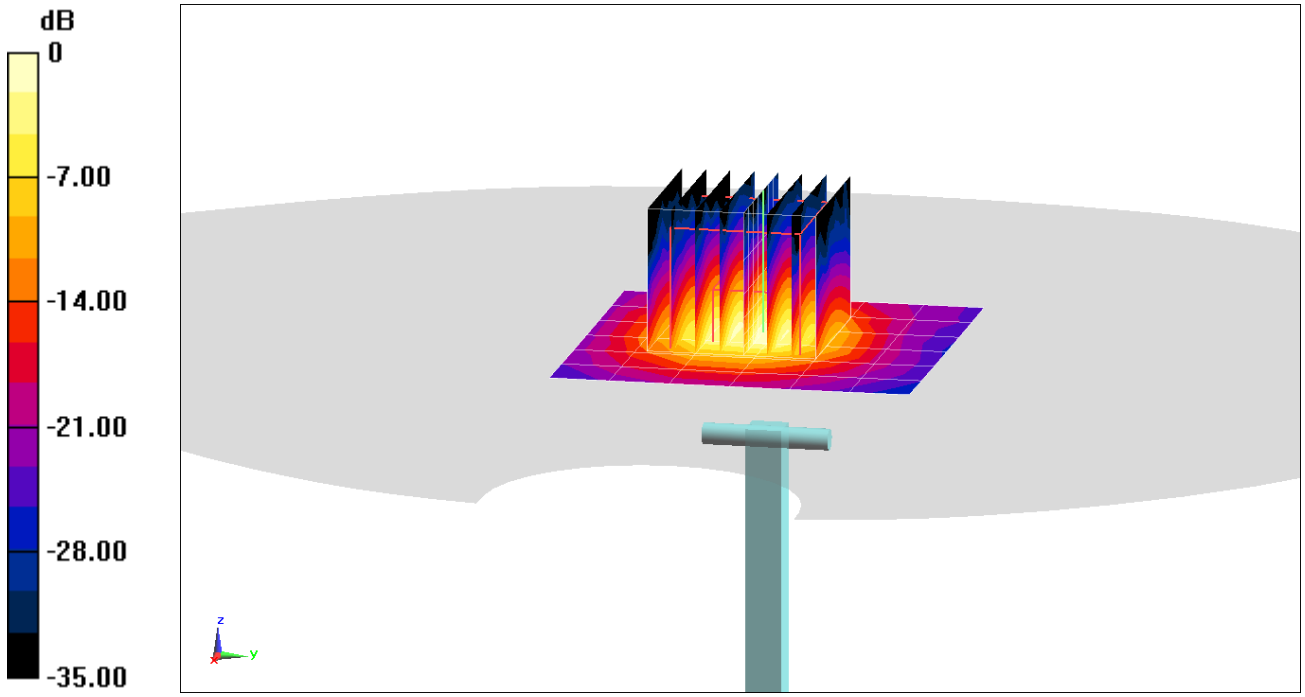
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5250 MHz; σ = 4.493 S/m; ε_r = 35.298; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-07-2019; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(5.54, 5.54, 5.54) @ 5250 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 16.0 W/kg
SAR(1 g) = 3.86 W/kg
Deviation(1 g) = -4.46%



0 dB = 9.19 W/kg = 9.63 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

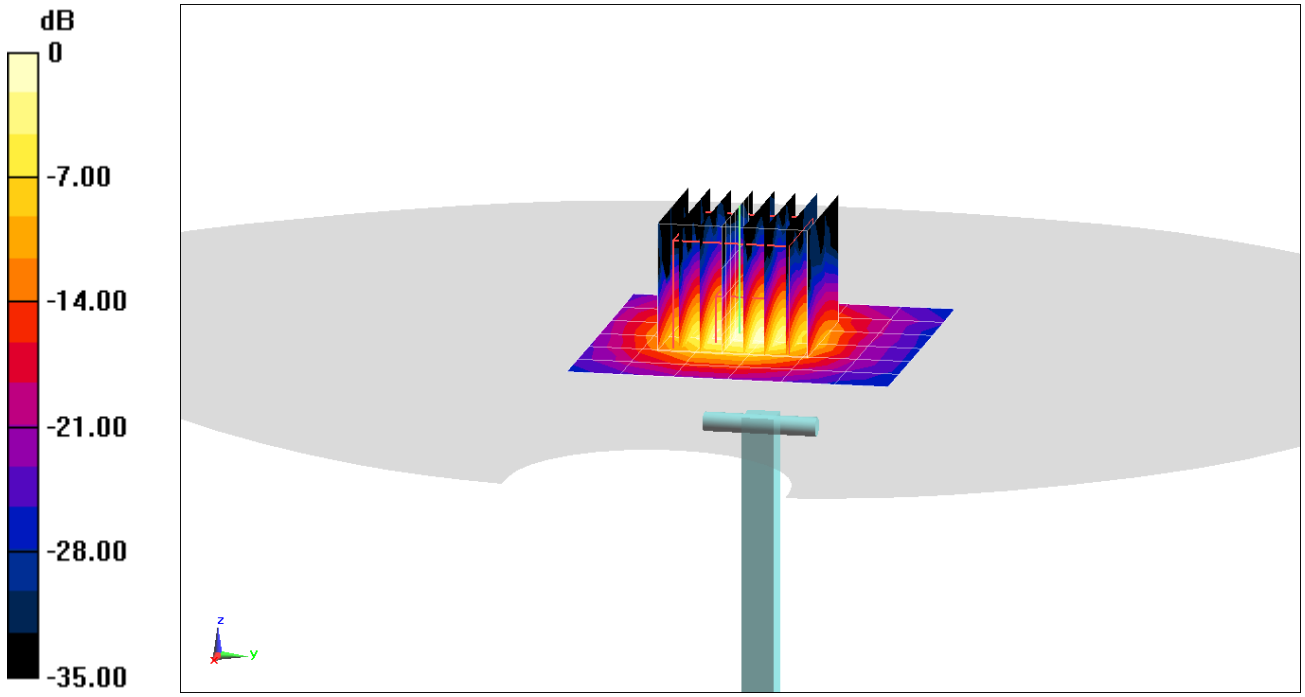
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5600 MHz; σ = 4.907 S/m; ε_r = 34.614; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-07-2019; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(4.94, 4.94, 4.94) @ 5600 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 3.9 W/kg
Deviation(1 g) = -5.68%



0 dB = 9.53 W/kg = 9.79 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

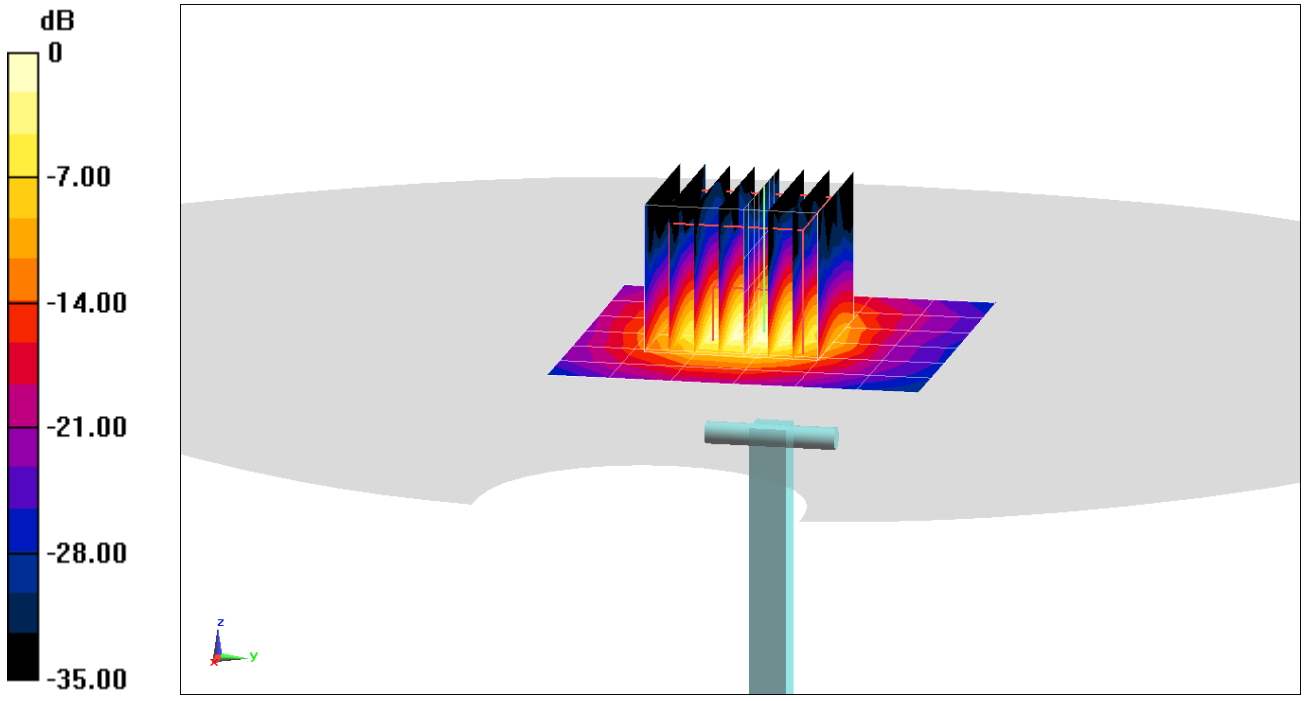
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head Medium parameters used:
f = 5750 MHz; σ = 5.079 S/m; ε_r = 34.402; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-07-2019; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(5.23, 5.23, 5.23) @ 5750 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.4 W/kg
SAR(1 g) = 3.7 W/kg
Deviation(1 g) = -7.73%



0 dB = 9.26 W/kg = 9.67 dBW/kg

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DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

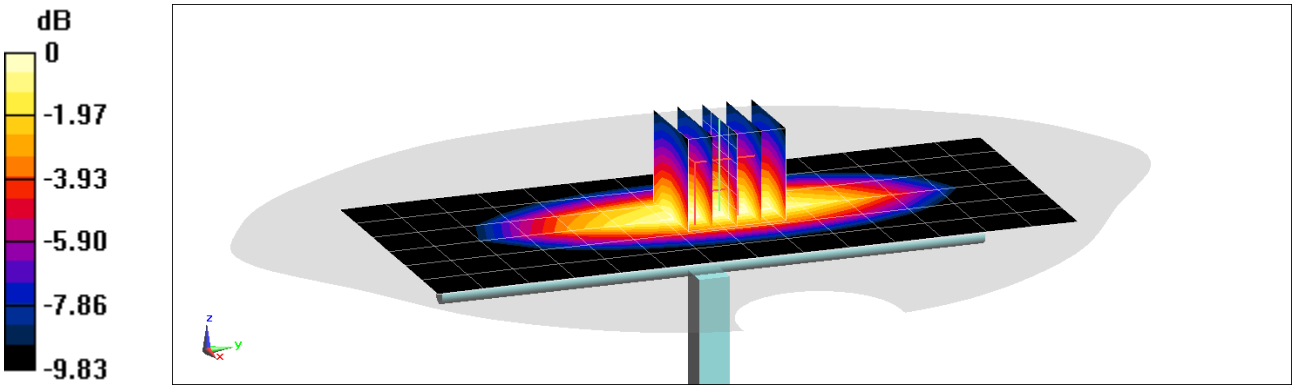
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.944 S/m; ε_r = 54.869; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-16-2019; Ambient Temp: 21.5°C; Tissue Temp: 21.7°C

Probe: EX3DV4 - SN7488; ConvF(11.28, 11.28, 11.28) @ 750 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.54 W/kg
SAR(1 g) = 1.69 W/kg
Deviation(1 g) = 0.24%



0 dB = 2.24 W/kg = 3.50 dBW/kg