



SAR EVALUATION REPORT

Applicant Name:
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 Gyeonggi-do, 16677, Korea

Date of Testing:
 05/07/18 - 06/11/18
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 PCTEST Lab, Columbia, MD, USA
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FCC ID: A3LSMN960U

APPLICANT: SAMSUNG ELECTRONICS CO., LTD.

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: SM-N960U
Additional Model(s): SM-N960U1, SM-N960W, SM-N960XU

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phabliet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.17	0.39	0.83	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.27	0.52	1.08	N/A
PCE	CDMA/EVDO BC0 (§90S)	817.90 - 823.10 MHz	0.25	0.33	0.84	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.26	0.47	0.93	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.11	0.51	0.49	2.45
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.32	0.60	2.20
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.17	0.71	0.87	3.30
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.17	0.75	1.00	3.24
PCE	LTE Band 71	665.5 - 695.5 MHz	0.15	0.36	0.54	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.21	0.39	0.72	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	0.23	0.38	0.89	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	0.24	0.43	0.84	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.24	0.49	1.06	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.24	0.52	1.18	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1759.3 MHz	0.12	0.54	0.61	2.51
PCE	LTE Band 4 (AWS)	1710.7 - 1759.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1814.3 MHz	0.14	0.76	0.96	2.53
PCE	LTE Band 2 (PCS)	1850.7 - 1809.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.13	0.59	1.18	2.92
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.12	0.65	1.27	3.12
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.12	0.55	1.35	3.23
PCE	LTE Band 38	2572.5 - 2617.5 MHz	N/A	N/A	N/A	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.05	0.14	0.43	N/A
NIII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A	N/A
NIII	U-NII-2A	5260 - 5320 MHz	0.24	0.30	N/A	1.28
NIII	U-NII-2C	5500 - 5720 MHz	0.43	0.19	N/A	1.16
NIII	U-NII-3	5745 - 5825 MHz	0.34	0.19	0.29	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	1.02	< 0.1	0.17	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.59	1.52	1.59	3.90

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
UMTS 850	Voice/Data	826.40 - 846.60 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 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 14	Voice/Data	790.5 - 795.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
LTE Band 38	Voice/Data	2572.5 - 2617.5 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
ANT+	Data	2402 - 2480 MHz
MST	Data	555 Hz - 8.33 kHz

1.2 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions and under some conditions when the device is being used in close proximity to the user's hand. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in phablet use conditions. 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.

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1.3 Nominal and Maximum Output Power Specifications



This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

1.3.1 Maximum PCE Output Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 850	Maximum	33.5	33.5	31.5	29.5	28.5	28.0	26.0	24.0	23.0
	Nominal	32.5	32.5	30.5	28.5	27.5	27.0	25.0	23.0	22.0
GSM/GPRS/EDGE 1900	Maximum	31.0	31.0	28.5	26.5	25.5	27.0	25.0	23.0	22.0
	Nominal	30.0	30.0	27.5	25.5	24.5	26.0	24.0	22.0	21.0

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	3GPP DC-HSDPA
UMTS Band 5 (850 MHz)	Maximum	25.8	24.8	24.8	24.8
	Nominal	24.8	23.8	23.8	23.8
UMTS Band 4 (1750 MHz)	Maximum	25.5	24.5	24.5	24.5
	Nominal	24.5	23.5	23.5	23.5
UMTS Band 2 (1900 MHz)	Maximum	25.2	24.2	24.2	24.2
	Nominal	24.2	23.2	23.2	23.2



Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	26.0
	Nominal	25.0
CDMA/EVDO BC0 (§22H)	Maximum	26.0
	Nominal	25.0
PCS CDMA/EVDO	Maximum	25.0
	Nominal	24.0

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Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	25.8
	Nominal	24.8
LTE Band 12	Maximum	25.8
	Nominal	24.8
LTE Band 17	Maximum	25.8
	Nominal	24.8
LTE Band 13	Maximum	25.8
	Nominal	24.8
LTE Band 14	Maximum	25.5
	Nominal	24.5
LTE Band 26 (Cell)	Maximum	25.8
	Nominal	24.8
LTE Band 5 (Cell)	Maximum	25.8
	Nominal	24.8
LTE Band 66 (AWS)	Maximum	25.5
	Nominal	24.5
LTE Band 4 (AWS)	Maximum	25.5
	Nominal	24.5
LTE Band 25 (PCS)	Maximum	25.2
	Nominal	24.2
LTE Band 2 (PCS)	Maximum	25.2
	Nominal	24.2
LTE Band 30	Maximum	24.5
	Nominal	23.5
LTE Band 7	Maximum	24.0
	Nominal	23.0
LTE Band 38	Maximum	24.0
	Nominal	23.0
LTE Band 41 (PC3)	Maximum	25.0
	Nominal	24.0
LTE Band 41 (PC2)	Maximum	28.2
	Nominal	27.2

1.3.2 Reduced PCE Output Power- Hotspot Mode Activated



Mode / Band		Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		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 1900	Maximum	27.5	25.8	23.8	22.0	26.0	25.0	23.0	21.5
	Nominal	26.5	24.8	22.8	21.0	25.0	24.0	22.0	20.5

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Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	3GPP DC- HSDPA
UMTS Band 4 (1750 MHz)	Maximum	20.5	20.5	20.5	20.5
	Nominal	19.5	19.5	19.5	19.5
UMTS Band 2 (1900 MHz)	Maximum	20.5	20.5	20.5	20.5
	Nominal	19.5	19.5	19.5	19.5

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	21.0
	Nominal	20.0

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	21.0
	Nominal	20.0
LTE Band 4 (AWS)	Maximum	21.0
	Nominal	20.0
LTE Band 25 (PCS)	Maximum	20.5
	Nominal	19.5
LTE Band 2 (PCS)	Maximum	20.5
	Nominal	19.5
LTE Band 30	Maximum	21.0
	Nominal	20.0
LTE Band 7	Maximum	20.5
	Nominal	19.5
LTE Band 38	Maximum	22.5
	Nominal	21.5
LTE Band 41 (PC3)	Maximum	22.5
	Nominal	21.5
LTE Band 41 (PC2)	Maximum	22.5
	Nominal	21.5

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1.3.3

Reduced PCE Output Power- Grip Sensor Activated

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 1900	Maximum	27.5	27.5	25.8	23.8	22.0	26.0	25.0	23.0	21.5
	Nominal	26.5	26.5	24.8	22.8	21.0	25.0	24.0	22.0	20.5

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	3GPP DC-HSDPA
UMTS Band 4 (1750 MHz)	Maximum	22.0	22.0	22.0	22.0
	Nominal	21.0	21.0	21.0	21.0
UMTS Band 2 (1900 MHz)	Maximum	20.5	20.5	20.5	20.5
	Nominal	19.5	19.5	19.5	19.5



Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	21.0
	Nominal	20.0

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Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 4 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 25 (PCS)	Maximum	20.5
	Nominal	19.5
LTE Band 2 (PCS)	Maximum	20.5
	Nominal	19.5
LTE Band 30	Maximum	22.5
	Nominal	21.5
LTE Band 7	Maximum	21.0
	Nominal	20.0
LTE Band 41 (PC3)	Maximum	24.0
	Nominal	23.0
LTE Band 41 (PC2)	Maximum	24.0
	Nominal	23.0

1.3.4 Maximum Bluetooth and SISO/MIMO WLAN Output Power



Mode / Band		Modulated Average - Single Tx Chain (dBm)	
		Ch. 1, 11	Ch. 2-10
IEEE 802.11b (2.4 GHz)	Maximum	21.0	
	Nominal	20.0	
IEEE 802.11g (2.4 GHz)	Maximum	17.0	18.0
	Nominal	16.0	17.0
IEEE 802.11n (2.4 GHz)	Maximum	17.0	18.0
	Nominal	16.0	17.0

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Mode / Band		Modulated Average - SISO (dBm)						
		20 MHz Bandwidth		40 MHz Bandwidth			80 MHz Bandwidth	
		Ch. 36-64	Ch. 100-165	Ch. 38	Ch. 62	Ch. 46-54, 102-159	Ch. 42-106	Ch. 122-155
IEEE 802.11a (5 GHz)	Maximum	18.0	17.5					
	Nominal	17.0	16.5					
IEEE 802.11n (5 GHz)	Maximum	18.0	17.5	16.0	15.0	17.0		
	Nominal	17.0	16.5	15.0	14.0	16.0		
IEEE 802.11ac (5 GHz)	Maximum	18.0	17.5	16.0	15.0	17.0	15.0	16.0
	Nominal	17.0	16.5	15.0	14.0	16.0	14.0	15.0

Mode / Band		Modulated Average - MIMO (dBm)	
		20 MHz Bandwidth	
		Ch. 1, 11	Ch. 2- 10
IEEE 802.11g (2.4 GHz)	Maximum	20.0	21.0
	Nominal	19.0	20.0
IEEE 802.11n (2.4 GHz)	Maximum	20.0	21.0
	Nominal	19.0	20.0

Mode / Band		Modulated Average - MIMO (dBm)						
		20 MHz Bandwidth		40 MHz Bandwidth			80 MHz Bandwidth	
		Ch. 36-64	Ch. 100-165	Ch. 38	Ch. 62	Ch. 46-54, 102-159	Ch. 42-106	Ch. 122-155
IEEE 802.11a (5 GHz)	Maximum	21.0	20.5					
	Nominal	20.0	19.5					
IEEE 802.11n (5 GHz)	Maximum	21.0	20.5	19.0	18.0	20.0		
	Nominal	20.0	19.5	18.0	17.0	19.0		
IEEE 802.11ac (5 GHz)	Maximum	21.0	20.5	19.0	18.0	20.0	18.0	19.0
	Nominal	20.0	19.5	18.0	17.0	19.0	17.0	18.0



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Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth (1 Mbps)	Maximum	16.5
	Nominal	15.5
Bluetooth (EDR)	Maximum	11.0
	Nominal	10.0
Bluetooth LE	Maximum	10.0
	Nominal	9.0

1.3.5 Reduced SISO and MIMO WLAN Output Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	17.0
	Nominal	16.0
IEEE 802.11g (2.4 GHz)	Maximum	17.0
	Nominal	16.0
IEEE 802.11n (2.4 GHz)	Maximum	17.0
	Nominal	16.0

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	14.0		
	Nominal	13.0		
IEEE 802.11n (5 GHz)	Maximum	14.0	14.0	
	Nominal	13.0	13.0	
IEEE 802.11ac (5 GHz)	Maximum	14.0	14.0	14.0
	Nominal	13.0	13.0	13.0



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Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11g (2.4 GHz)	Maximum	20.0		
	Nominal	19.0		
IEEE 802.11n (2.4 GHz)	Maximum	20.0		
	Nominal	19.0		
IEEE 802.11a (5 GHz)	Maximum	17.0		
	Nominal	16.0		
IEEE 802.11n (5 GHz)	Maximum	17.0	17.0	
	Nominal	16.0	16.0	
IEEE 802.11ac (5 GHz)	Maximum	17.0	17.0	17.0
	Nominal	16.0	16.0	16.0

1.3.6 Maximum Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

	# Tx	5 GHz WIFI [dBm]		2.4 GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz	2	A	-	-	B	2.4 GHz: b,g,n 5 GHz: a,n,ac
	2	-	A	B	-	
	2	A	-	B	-	
	2	-	A	-	B	
	3	A	A	B	-	2.4 GHz: b, g, n 5 GHz: n, ac, a (CDD + STBC only)
	3	A	A	-	B	
	3	A	-	B	B	2.4 GHz: n, g (CDD + STBC only) 5 GHz: a, n, ac
	3	-	A	B	B	
	4	A	A	B	B	2.4 GHz: n, g (CDD + STBC only) 5 GHz: n, ac, a (CDD + STBC only)

A = 13 dBm
B = 16 dBm
(Upper tolerance: target + 1.0 dB)

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1.3.7



Reduced Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

	# Tx	5 GHz WIFI [dBm]		2.4 GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz	2	A	-	-	B	2.4 GHz: b,g,n 5 GHz: a,n,ac
	2	-	A	B	-	
	2	A	-	B	-	
	2	-	A	-	B	
	3	A	A	B	-	2.4 GHz: b, g, n 5 GHz: n, ac, a (CDD + STBC only)
	3	A	A	-	B	
	3	A	-	B	B	2.4 GHz: n, g (CDD + STBC only) 5 GHz: a, n, ac
	3	-	A	B	B	
	4	A	A	B	B	2.4 GHz: n, g (CDD + STBC only) 5 GHz: n, ac, a (CDD + STBC only)

A = 12 dBm

B = 13 dBm

(Upper tolerance: target + 1.0 dB)

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1.4 DUT Antenna Locations

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



**Table 1-1
Device Edges/Sides for SAR Testing**

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 14	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 30 Ant A	Yes	Yes	No	Yes	Yes	Yes
LTE Band 30 Ant B	Yes	Yes	No	Yes	No	Yes
LTE Band 7 Ant A	Yes	Yes	No	Yes	Yes	Yes
LTE Band 7 Ant B	Yes	Yes	No	Yes	No	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-1, 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 F.

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1.6 Simultaneous Transmission Capabilities



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

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

**Table 1-2
Simultaneous Transmission Scenarios**

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes [^]	Yes	N/A	Yes	[^] Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
7	1x CDMA voice + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
8	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
9	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
10	GSM voice + 2.4 GHz Bluetooth	Yes [^]	Yes	N/A	Yes	[^] Bluetooth Tethering is considered
11	GSM voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
12	GSM voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
13	GSM voice + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
14	GSM voice + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
15	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
16	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
17	UMTS + 2.4 GHz Bluetooth	Yes [^]	Yes	Yes [^]	Yes	[^] Bluetooth Tethering is considered
18	UMTS + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
19	UMTS + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
20	UMTS + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
21	UMTS + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
22	LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
23	LTE + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
24	LTE + 2.4 GHz Bluetooth	Yes [^]	Yes	Yes [^]	Yes	[^] Bluetooth Tethering is considered
25	LTE + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
26	LTE + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
27	LTE + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
28	LTE + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
29	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
30	CDMA/EVDO data + 5 GHz Wi-Fi	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
31	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes ^{**^}	Yes [*]	Yes [^]	Yes	[*] Pre-installed VOIP applications are considered [^] Bluetooth Tethering is considered
32	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
33	CDMA/EVDO data + 5 GHz Wi-Fi MIMO	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
34	CDMA/EVDO data + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
35	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes [*]	Yes [*]	Yes	Yes	[*] Pre-installed VOIP applications are considered
36	GPRS/EDGE + 2.4 GHz Wi-Fi	N/A	N/A	Yes	Yes	
37	GPRS/EDGE + 5 GHz Wi-Fi	N/A	N/A	Yes	Yes	
38	GPRS/EDGE + 2.4 GHz Bluetooth	N/A	N/A	Yes [^]	Yes	[^] Bluetooth Tethering is considered
39	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	
40	GPRS/EDGE + 5 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	
41	GPRS/EDGE + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	N/A	N/A	Yes	Yes	
42	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	

1. Bluetooth cannot transmit simultaneously with WLAN.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.

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4. Per the manufacturer, WIFI Direct is not 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-3 by S/W, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
6. This device supports 2x2 MIMO Tx for WLAN 802.11n/ac. 802.11a/g/n/ac supports CDD and STBC and 802.11n/ac additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports VoLTE.
8. This device supports VoWIFI.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

This device supports IEEE 802.11ac with the following features:

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

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.



(B) Licensed Transmitter(s)

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

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

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

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

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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 downlink only LTE CA operations was not needed since the maximum average output power in downlink only LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive. DLCA power measurements can be found in Appendix H.

This device supports LTE Carrier Aggregation (CA) in the uplink for LTE Band 41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.



This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive.

This device supports 64QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225 D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64 QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

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 14.2).

This device uses antenna B for LTE Band 7 and LTE Band 30 standalone operations. During some inter-band downlink carrier aggregation scenarios with Band 7 or Band 30 as the PCC, the transmit operations for these bands are switched to Antenna A. Both antennas were completely evaluated for SAR following FCC KDB procedures for all test positions and exposure conditions for LTE Band 7 and 30. Per FCC Guidance, the device was connected in a radiated downlink carrier aggregation scenario for evaluations of Antenna A. The operational description contains more information about this switching mechanism.



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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 4x4 Downlink MIMO, 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.

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LTE Information						
FCC ID	A3LSMN960U					
Form Factor	Portable Handset					
Frequency Range of each LTE transmission band	LTE Band 71 (865.5 - 935.5 MHz)					
	LTE Band 12 (695 - 713.5 MHz)					
	LTE Band 17 (706.5 - 713.5 MHz)					
	LTE Band 13 (779.5 - 784.5 MHz)					
	LTE Band 14 (790.5 - 795.5 MHz)					
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)					
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)					
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)					
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)					
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)					
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)					
	LTE Band 30 (2307.5 - 2312.5 MHz)					
	LTE Band 7 (2502.5 - 2567.5 MHz)					
	LTE Band 41 (2498.5 - 2687.5 MHz)					
	LTE Band 38 (2572.5 - 2617.5 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 14: 5 MHz, 10 MHz				
LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz						
LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz						
LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 30: 5 MHz, 10 MHz						
LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz						
LTE Band 38: 5 MHz, 10 MHz, 15 MHz, 20 MHz						
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High	
	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 14: 5 MHz	790.5 (23305)		793 (23330)		795.5 (23355)	
LTE Band 14: 10 MHz	N/A		793 (23330)		N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26997)		831.5 (26965)		848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26965)		847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26965)		846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26965)		844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26965)		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 (19967)		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 (18807)		1880 (18900)		1909.3 (19183)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18815)		1880 (18900)		1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18825)		1880 (18900)		1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18850)		1880 (18900)		1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18875)		1880 (18900)		1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18900)		1880 (18900)		1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)		2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)		N/A	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)		2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)		2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)		2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)		2560 (21350)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)	
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)	
LTE Band 41: 15 MHz	2508 (39780)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)	
LTE Band 41: 20 MHz	2508 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)	
LTE Band 38: 5 MHz	2572.5 (37775)		2595 (38000)		2617.5 (38225)	
LTE Band 38: 10 MHz	2575 (37800)		2595 (38000)		2615 (38200)	
LTE Band 38: 15 MHz	2577.5 (37825)		2595 (38000)		2612.5 (38175)	
LTE Band 38: 20 MHz	2580 (37850)		2595 (38000)		2610 (38150)	
UE Category	DL UE Cat 18 (QPSK, 16QAM, 64QAM, 256QAM), UL UE Cat 13 (QPSK, 16QAM, 64QAM)					
Modulations Supported in UL	QPSK, 16QAM, 64QAM					
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.57 (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	LTE Release 14 Information and this device does not support full CA features on 3GPP Release 14. It supports carrier aggregation and identical MIMO and LA features as shown in Section 9 and Appendix H. All other uplink communications are identical to the Release 8 specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 14 Features are not supported: Relay, HetNet, Enhanced eICIC, MDH, eMBS, Cross-Carrier Scheduling, Enhanced SC-FDMA.					

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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/m³)
- 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]

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4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
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.

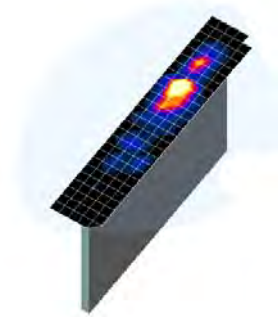


Figure 4-1
Sample SAR Area Scan

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

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{area}, \Delta y_{area}$)	Maximum Zoom Scan Resolution (mm) ($\Delta x_{zoom}, \Delta y_{zoom}$)	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

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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].

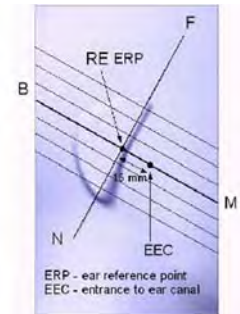


Figure 5-1
Close-Up Side view of ERP

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 then 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

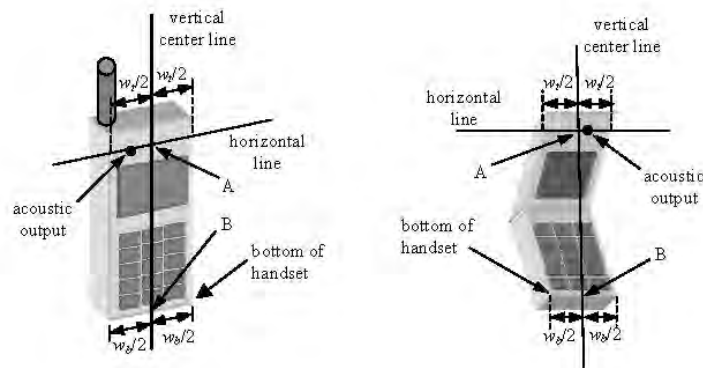




Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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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 $\epsilon = 3$ and loss tangent $\delta = 0.02$.

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 with 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 / 15° 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 15 degrees.
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).



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

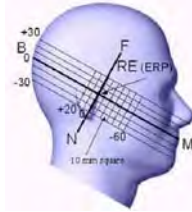


Figure 6-3 Side view w/ relevant markings

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.

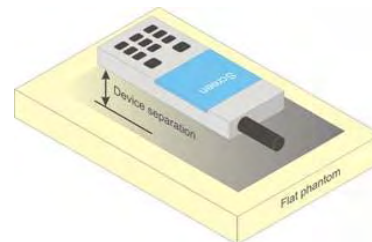




Figure 6-4 Sample Body-Worn Diagram

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

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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 ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) 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.

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6.8 Phablet Configurations



For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna <=25 mm from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 mm is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

6.1 Additional Test Positions due to Proximity Conditions

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

When the sensor detects a user is touching the device on or near to the antenna the device reduces the maximum allowed output power. However, the proximity sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, an additional exposure condition is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level.

The proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

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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 <i>General Population</i> (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT <i>Occupational</i> (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.

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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.

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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 SCH₀ 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
$\frac{I_{or}}{I_{or}}$	dBm/1.23 MHz	-104
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
$\frac{I_{or}}{I_{or}}$	dBm/1.23 MHz	-86
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	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 full rate 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+SCH_n), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCH_n), 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.

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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. The 1x 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.

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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).

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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 $\frac{1}{2}$ 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

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carrier aggregation is inactive on the PCC. For every supported combination of downlink only carrier aggregation, 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 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.

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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

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result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

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

8.7.9 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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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	25.42	25.41	25.45	25.40	25.42	25.40	25.42
Cellular	1013	22H	824.7	24.73	24.73	24.72	24.73	24.72	24.94	24.93
	384	22H	836.52	24.70	24.71	24.72	24.69	24.70	24.91	24.90
	777	22H	848.31	24.47	24.48	24.49	24.46	24.47	24.66	24.67
PCS	25	24E	1851.25	24.94	24.95	24.89	24.95	24.97	24.99	25.00
	600	24E	1880	24.90	24.88	24.83	24.89	24.90	24.92	24.93
	1175	24E	1908.75	24.80	24.82	24.79	24.81	24.82	24.94	24.88

Table 9-2
Reduced Conducted Powers- Hotspot Mode Active

Band	Channel	Rule Part	Frequency	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	20.61	20.62	20.65	20.71
	600	24E	1880	20.47	20.44	20.50	20.50
	1175	24E	1908.75	20.54	20.54	20.70	20.70



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Table 9-3
Reduced Conducted Powers- Grip Sensor Mode Active



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	20.70	20.61	20.87	20.61	20.62	20.65	20.71
	600	24E	1880	20.54	20.46	20.57	20.47	20.44	20.50	20.50
	1175	24E	1908.75	20.62	20.54	20.61	20.54	20.54	20.70	20.70

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

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9.2 GSM Conducted Powers

**Table 9-4
Maximum Conducted Power**

Maximum Burst-Averaged Output Power										
Band	Channel	Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	32.84	32.92	31.15	29.46	28.24	26.97	25.52	23.25	22.25
	190	32.68	32.78	30.93	29.41	28.19	27.15	25.51	23.53	22.34
	251	32.56	32.63	30.71	29.04	27.71	26.94	25.09	23.04	22.07
GSM 1900	512	30.76	30.72	28.13	26.29	25.46	26.11	24.51	22.48	21.18
	661	30.52	30.59	27.96	25.91	25.18	25.86	24.23	22.01	21.07
	810	30.58	30.61	28.02	25.81	25.14	25.91	24.38	22.08	20.96

Calculated Maximum Frame-Averaged Output Power										
Band	Channel	Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	23.81	23.89	25.13	25.20	25.23	17.94	19.50	18.99	19.24
	190	23.65	23.75	24.91	25.15	25.18	18.12	19.49	19.27	19.33
	251	23.53	23.60	24.69	24.78	24.70	17.91	19.07	18.78	19.06
GSM 1900	512	21.73	21.69	22.11	22.03	22.45	17.08	18.49	18.22	18.17
	661	21.49	21.56	21.94	21.65	22.17	16.83	18.21	17.75	18.06
	810	21.55	21.58	22.00	21.55	22.13	16.88	18.36	17.82	17.95

GSM 850	Frame	23.47	23.47	24.48	24.24	24.49	17.97	18.98	18.74	18.99
GSM 1900	Avg.Targets:	20.97	20.97	21.48	21.24	21.49	16.97	17.98	17.74	17.99



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Table 9-5
Reduced Conducted Powers- Hotspot Mode Active

Maximum Burst-Averaged Output Power									
Band	Channel	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		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 1900	512	26.55	24.76	22.60	21.18	24.97	23.80	21.97	20.13
	661	26.49	24.91	22.53	21.22	24.85	23.62	21.68	19.91
	810	26.63	24.72	22.41	21.19	24.92	23.73	21.78	20.08

Calculated Maximum Frame-Averaged Output Power									
Band	Channel	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		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 1900	512	17.52	18.74	18.34	18.17	15.94	17.78	17.71	17.12
	661	17.46	18.89	18.27	18.21	15.82	17.60	17.42	16.90
	810	17.60	18.70	18.15	18.18	15.89	17.71	17.52	17.07

GSM 1900	Frame Avg Targets:	17.47	18.78	18.54	17.99	15.97	17.98	17.74	17.49
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Table 9-6
Reduced Conducted Powers- Grip Sensor Mode Active

Maximum Burst-Averaged Output Power									
Band	Channel	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		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 1900	512	26.55	24.76	22.60	21.31	24.97	23.80	21.97	20.13
	661	26.49	24.91	22.53	21.10	24.85	23.62	21.68	19.91
	810	26.63	24.72	22.41	21.26	24.92	23.73	21.78	20.08

Calculated Maximum Frame-Averaged Output Power									
Band	Channel	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
		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	-9.03	-6.02	-4.26	-3.01	-9.03	-6.02	-4.26	-3.01
	190	-9.03	-6.02	-4.26	-3.01	-9.03	-6.02	-4.26	-3.01
	251	-9.03	-6.02	-4.26	-3.01	-9.03	-6.02	-4.26	-3.01
GSM 1900	512	17.52	18.74	18.34	18.30	15.94	17.78	17.71	17.12
	661	17.46	18.89	18.27	18.09	15.82	17.60	17.42	16.90
	810	17.60	18.70	18.15	18.25	15.89	17.71	17.52	17.07

GSM 1900	Frame Avg. Targets:	17.47	18.78	18.54	18.49	15.97	17.98	17.74	17.49
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Note:

- 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.
- 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.
- EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK modulation do not have an impact on output power.

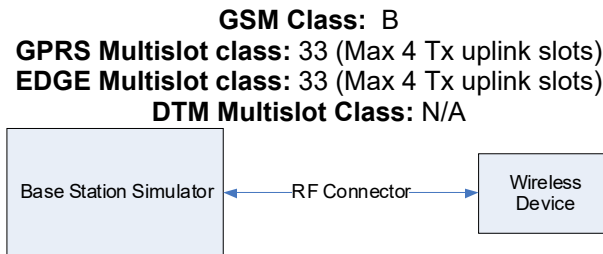


Figure 9-2
Power Measurement Setup

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9.3 UMTS Conducted Powers

**Table 9-7
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	24.98	24.80	24.69	24.91	24.80	24.83	24.52	24.38	24.39	-
99		12.2 kbps AMR	24.99	24.89	24.69	24.92	24.82	24.95	24.53	24.41	24.41	-
6	HSDPA	Subtest 1	23.97	23.85	23.61	23.92	23.80	23.88	23.50	23.36	23.38	0
6		Subtest 2	23.95	23.86	23.67	23.94	23.77	23.92	23.52	23.37	23.43	0
6		Subtest 3	23.48	23.41	23.12	23.43	23.33	23.42	23.02	22.88	22.91	0.5
6		Subtest 4	23.43	23.35	23.19	23.38	23.31	23.32	23.05	22.87	22.86	0.5
6	HSUPA	Subtest 1	23.85	23.76	23.51	23.40	23.30	23.93	23.54	23.37	23.37	0
6		Subtest 2	21.95	21.85	21.62	21.93	21.81	21.91	21.55	21.42	21.44	2
6		Subtest 3	22.98	22.88	22.66	22.97	22.85	22.96	22.55	22.43	22.44	1
6		Subtest 4	21.99	21.87	21.59	21.94	21.87	21.96	21.54	21.38	21.42	2
6		Subtest 5	23.99	23.88	23.62	23.94	23.83	23.92	23.51	23.40	23.44	0
8	DC-HSDPA	Subtest 1	23.90	23.85	23.63	23.97	23.84	23.91	23.51	23.38	23.38	0
8		Subtest 2	23.98	23.84	23.61	23.95	23.84	23.91	23.47	23.34	23.37	0
8		Subtest 3	23.45	23.36	23.09	23.42	23.34	23.42	22.96	22.88	22.85	0.5
8		Subtest 4	23.46	23.32	23.11	23.42	23.34	23.38	22.97	22.88	22.83	0.5

**Table 9-8
Reduced Conducted Powers- Hotspot Mode Active**

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	19.93	19.87	19.87	20.34	20.11	20.30	-
99		12.2 kbps AMR	19.90	19.91	19.88	20.33	20.09	20.29	-
6	HSDPA	Subtest 1	18.86	18.77	18.76	19.94	19.94	19.69	0
6		Subtest 2	18.87	18.77	18.80	19.97	19.71	19.68	0
6		Subtest 3	18.35	18.32	18.34	19.45	19.21	19.23	0.5
6		Subtest 4	18.36	18.32	18.31	19.44	19.22	19.24	0.5
6	HSUPA	Subtest 1	18.87	18.84	18.86	19.92	19.69	19.70	0
6		Subtest 2	16.81	16.79	16.80	17.92	17.62	17.66	2
6		Subtest 3	17.84	17.78	17.79	18.90	18.61	18.61	1
6		Subtest 4	16.83	16.80	16.80	17.91	17.60	17.67	2
6		Subtest 5	18.86	18.84	18.85	19.91	19.71	19.72	0
8	DC-HSDPA	Subtest 1	18.81	18.76	18.73	19.90	19.92	19.71	0
8		Subtest 2	18.80	18.75	18.74	19.99	19.65	19.65	0
8		Subtest 3	18.32	18.31	18.35	19.41	19.18	19.30	0.5
8		Subtest 4	18.32	18.33	18.30	19.41	19.20	19.13	0.5

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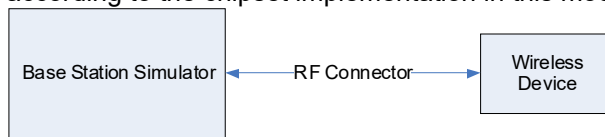
**Table 9-9
Reduced Conducted Powers- Grip Sensor Mode Active**

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	21.19	21.20	21.21	20.34	20.11	20.30	-
99		12.2 kbps AMR	21.18	21.20	21.22	20.33	20.09	20.29	-
6	HSDPA	Subtest 1	20.27	20.28	20.31	19.94	19.94	19.69	0
6		Subtest 2	20.29	20.31	20.31	19.97	19.71	19.68	0
6		Subtest 3	19.80	19.75	19.83	19.45	19.21	19.23	0.5
6		Subtest 4	19.77	19.81	19.80	19.44	19.22	19.24	0.5
6	HSUPA	Subtest 1	20.28	20.28	20.33	19.92	19.69	19.70	0
6		Subtest 2	18.25	18.23	18.28	17.92	17.62	17.66	2
6		Subtest 3	19.25	19.19	19.25	18.90	18.61	18.61	1
6		Subtest 4	18.21	18.22	18.25	17.91	17.60	17.67	2
6		Subtest 5	20.27	20.25	20.31	19.91	19.71	19.72	0
8	DC-HSDPA	Subtest 1	20.17	20.18	20.21	19.90	19.92	19.71	0
8		Subtest 2	20.18	20.22	20.30	19.99	19.65	19.65	0
8		Subtest 3	19.82	19.65	19.74	19.41	19.18	19.30	0.5
8		Subtest 4	19.75	19.82	19.82	19.41	19.20	19.13	0.5



DC-HSDPA considerations

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

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



**Figure 9-3
Power Measurement Setup**

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9.4 LTE Conducted Powers

9.4.1 LTE Band 71

Table 9-10
LTE Band 71 Conducted Powers - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth						
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			133297 (680.5 MHz)			
			Conducted Power [dBm]			
QPSK	1	0	24.98	0	0	
	1	50	25.00		0	
	1	99	24.80		0	
	16QAM	50	0	24.01	0-1	1
		50	25	24.03		1
		50	50	23.81		1
		100	0	23.93		1
64QAM	1	0	24.21	0-1	1	
	1	50	24.12		1	
	1	99	24.07		1	
	16QAM	50	0	23.06	0-2	2
		50	25	23.04		2
		50	50	22.88		2
		100	0	23.00		2
64QAM	1	0	23.09	0-2	2	
	1	50	23.13		2	
	1	99	23.02		2	
	64QAM	50	0	22.09	0-3	3
		50	25	22.06		3
		50	50	21.88		3
		100	0	22.01		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.

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**Table 9-11
LTE Band 71 Conducted Powers - 15 MHz Bandwidth**

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.02	0	0
	1	36	25.06		0
	1	74	24.88		0
	36	0	24.08	0-1	1
	36	18	24.17		1
	36	37	23.98		1
	75	0	24.09		1
16QAM	1	0	24.19	0-1	1
	1	36	24.20		1
	1	74	24.11		1
	36	0	23.15	0-2	2
	36	18	23.20		2
	36	37	23.04		2
	75	0	23.11		2
64QAM	1	0	23.21	0-2	2
	1	36	23.26		2
	1	74	23.03		2
	36	0	22.16	0-3	3
	36	18	22.22		3
	36	37	22.08		3
	75	0	22.15		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.





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Table 9-12
LTE Band 71 Conducted Powers - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			133172 (668.0 MHz)	133297 (680.5 MHz)	133422 (693.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.69	24.93	25.00	0	0	
	1	25	24.74	24.96	24.92		0	
	1	49	24.67	24.92	24.93		0	
	25	0	23.82	24.11	23.97	0-1	1	
	25	12	23.83	24.03	24.03		1	
	25	25	23.85	23.96	23.93		1	
16QAM	50	0	23.78	24.04	23.98	0-1	1	
	1	0	23.82	24.09	24.20		0-1	1
	1	25	23.95	24.13	24.09			1
	1	49	23.92	24.17	24.06	0-2		1
	25	0	22.86	23.18	23.04		2	
	25	12	22.89	23.13	23.10		2	
64QAM	25	25	22.88	23.04	23.00	0-2	2	
	50	0	22.83	23.08	23.08		2	
	1	0	22.86	23.19	23.15		0-2	2
	1	25	22.93	23.16	23.08	2		
	1	49	22.91	23.18	23.07	2		
	64QAM	25	0	21.85	22.24	22.06	0-3	3
25		12	21.93	22.17	22.07	3		
25		25	21.92	22.06	22.00	3		
50		0	21.89	22.15	22.08	3		

Table 9-13
LTE Band 71 Conducted Powers - 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			133147 (665.5 MHz)	133297 (680.5 MHz)	133447 (695.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.64	24.92	24.93	0	0	
	1	12	24.61	24.87	24.88		0	
	1	24	24.72	24.88	24.87		0	
	12	0	23.76	24.03	23.93	0-1	1	
	12	6	23.72	23.97	23.91		1	
	12	13	23.76	23.94	23.96		1	
16QAM	25	0	23.71	23.96	23.92	0-1	1	
	1	0	23.74	24.00	24.06		0-1	1
	1	12	23.77	24.04	24.02			1
	1	24	23.99	24.01	24.10	0-2		1
	12	0	22.75	23.04	23.00		2	
	12	6	22.79	23.03	22.96		2	
64QAM	12	13	22.84	22.99	23.05	0-2	2	
	25	0	22.78	23.04	22.98		2	
	1	0	22.79	23.07	23.04		0-2	2
	1	12	22.88	23.05	23.10	2		
	1	24	22.86	22.96	23.05	0-3		2
	12	0	21.79	22.06	21.99		3	
12	6	21.81	22.07	22.01	3			
64QAM	12	13	21.84	22.02	22.03	0-3	3	
	25	0	21.76	22.04	21.95		3	

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9.4.2

LTE Band 12

Table 9-14
 LTE Band 12 Conducted Powers - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.64	0	0
	1	25	24.63		0
	1	49	24.58		0
	25	0	23.71	0-1	1
	25	12	23.70		1
	25	25	23.68		1
	50	0	23.66		1
16QAM	1	0	23.96	0-1	1
	1	25	23.97		1
	1	49	23.93		1
	25	0	22.80	0-2	2
	25	12	22.78		2
	25	25	22.74		2
	50	0	22.72		2
64QAM	1	0	22.93	0-2	2
	1	25	22.92		2
	1	49	22.84		2
	25	0	21.77	0-3	3
	25	12	21.82		3
	25	25	21.76		3
	50	0	21.77		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.



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Table 9-15
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.52	24.52	24.44	0	0	
	1	12	24.48	24.50	24.43		0	
	1	24	24.55	24.50	24.40		0	
	12	0	23.61	23.58	23.51	0-1	1	
	12	6	23.62	23.61	23.52		1	
	12	13	23.65	23.57	23.49		1	
16QAM	25	0	23.67	23.59	23.51	0-1	1	
	1	0	23.87	23.87	23.81		0-1	1
	1	12	23.85	23.87	23.78			1
	1	24	23.91	23.85	23.73	0-2		1
	12	0	22.68	22.76	22.62		2	
	12	6	22.70	22.74	22.66		2	
64QAM	12	13	22.73	22.70	22.61	0-2	2	
	25	0	22.75	22.65	22.58		2	
	1	0	22.82	22.82	22.72		0-2	2
	1	12	22.77	22.82	22.70	2		
	1	24	22.84	22.78	22.69	2		
	64QAM	12	0	21.69	21.71	21.64	0-3	3
		12	6	21.72	21.75	21.63		3
		12	13	21.73	21.70	21.59		3
25		0	21.77	21.71	21.60	0-3	3	

Table 9-16
LTE Band 12 Conducted Powers - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.54	24.53	24.45	0	0	
	1	7	24.60	24.62	24.52		0	
	1	14	24.50	24.52	24.40		0	
	QPSK	8	0	23.58	23.56	23.50	0-1	1
		8	4	23.61	23.61	23.51		1
		8	7	23.60	23.59	23.51		1
15		0	23.60	23.60	23.51	1		
16QAM	1	0	23.84	23.86	23.76	0-1	1	
	1	7	23.95	23.97	23.85		1	
	1	14	23.83	23.87	23.74		1	
	16QAM	8	0	22.71	22.73	22.62	0-2	2
		8	4	22.73	22.73	22.64		2
		8	7	22.72	22.72	22.61		2
64QAM	15	0	22.67	22.64	22.56	0-2	2	
	1	0	22.78	22.80	22.69		0-2	2
	1	7	22.90	22.91	22.80			2
	64QAM	1	14	22.76	22.80	22.67		0-3
		8	0	21.68	21.68	21.59	3	
		8	4	21.70	21.72	21.62	3	
		8	7	21.69	21.70	21.60	3	
		15	0	21.69	21.68	21.59	3	





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Table 9-17
LTE Band 12 Conducted Powers -1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.49	24.48	24.39	0	0
	1	2	24.55	24.54	24.44		0
	1	5	24.48	24.46	24.38		0
	3	0	24.52	24.50	24.41		0
	3	2	24.55	24.53	24.43		0
	3	3	24.52	24.50	24.41		0
16QAM	6	0	23.56	23.54	23.46	0-1	1
	1	0	23.84	23.82	23.71	0-1	1
	1	2	23.89	23.88	23.76		1
	1	5	23.82	23.81	23.69		1
	3	0	23.70	23.71	23.58		1
	3	2	23.77	23.76	23.62		1
3	3	23.69	23.69	23.57	1		
64QAM	6	0	22.70	22.70	22.60	0-2	2
	1	0	22.77	22.76	22.64	0-2	2
	1	2	22.81	22.84	22.72		2
	1	5	22.75	22.75	22.64		2
	3	0	22.68	22.68	22.58		2
	3	2	22.73	22.73	22.61		2
	3	3	22.69	22.69	22.57		2
6	0	21.67	21.67	21.56	0-3	3	



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9.4.3

LTE Band 13

Table 9-18
 LTE Band 13 Conducted Powers - 10 MHz Bandwidth



LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.62	0	0
	1	25	25.11		0
	1	49	25.03		0
	25	0	24.23	0-1	1
	25	12	24.16		1
	25	25	24.09		1
	50	0	24.15		1
16QAM	1	0	23.68	0-1	1
	1	25	24.33		1
	1	49	24.42		1
	25	0	23.16	0-2	2
	25	12	23.26		2
	25	25	23.19		2
	50	0	23.21		2
64QAM	1	0	22.63	0-2	2
	1	25	23.19		2
	1	49	23.15		2
	25	0	22.16	0-3	3
	25	12	22.13		3
	25	25	22.12		3
	50	0	22.20		3

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**Table 9-19
LTE Band 13 Conducted Powers - 5 MHz Bandwidth**

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.97	0	0
	1	12	24.94		0
	1	24	24.90		0
	12	0	23.99	0-1	1
	12	6	24.03		1
	12	13	23.97		1
	25	0	23.99		1
16QAM	1	0	24.28	0-1	1
	1	12	24.20		1
	1	24	24.24		1
	12	0	23.08	0-2	2
	12	6	23.14		2
	12	13	23.09		2
	25	0	23.04		2
64QAM	1	0	23.23	0-2	2
	1	12	23.16		2
	1	24	23.14		2
	12	0	22.11	0-3	3
	12	6	22.13		3
	12	13	22.10		3
	25	0	22.06		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.



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LTE Band 14

Table 9-20
 LTE Band 14 Conducted Powers - 10 MHz Bandwidth



LTE Band 14 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.57	0	0
	1	25	24.58		0
	1	49	24.51		0
	25	0	23.65	0-1	1
	25	12	23.64		1
	25	25	23.57		1
	50	0	23.53		1
16QAM	1	0	23.64	0-1	1
	1	25	23.74		1
	1	49	23.76		1
	25	0	22.62	0-2	2
	25	12	22.61		2
	25	25	22.56		2
	50	0	22.60		2
64QAM	1	0	22.56	0-2	2
	1	25	22.71		2
	1	49	22.71		2
	25	0	21.64	0-3	3
	25	12	21.62		3
	25	25	21.58		3
	50	0	21.57		3

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**Table 9-21
LTE Band 14 Conducted Powers - 5 MHz Bandwidth**

LTE Band 14 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23330 (793.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.61	0	0
	1	12	24.59		0
	1	24	24.54		0
	12	0	23.67	0-1	1
	12	6	23.66		1
	12	13	23.60		1
	25	0	23.64		1
16QAM	1	0	23.91	0-1	1
	1	12	23.89		1
	1	24	23.83		1
	12	0	22.73	0-2	2
	12	6	22.76		2
	12	13	22.69		2
	25	0	22.70		2
64QAM	1	0	22.87	0-2	2
	1	12	22.84		2
	1	24	22.79		2
	12	0	21.72	0-3	3
	12	6	21.75		3
	12	13	21.70		3
	25	0	21.73		3

Note: LTE Band 14 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.

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LTE Band 26 (Cell)

Table 9-22
 LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26865 (831.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.80	0	0
	1	36	24.69		0
	1	74	24.46		0
	36	0	23.79	0-1	1
	36	18	23.71		1
	36	37	23.62		1
	75	0	23.69		1
16QAM	1	0	23.89	0-1	1
	1	36	23.81		1
	1	74	23.53		1
	36	0	22.65	0-2	2
	36	18	22.61		2
	36	37	22.51		2
	75	0	22.55		2
64QAM	1	0	22.82	0-2	2
	1	36	22.74		2
	1	74	22.48		2
	36	0	21.64	0-3	3
	36	18	21.63		3
	36	37	21.52		3
	75	0	21.58		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.



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Table 9-23
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26740 (819.0 MHz)	26865 (831.5 MHz)	26990 (844.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.67	24.76	24.60	0	0
	1	25	24.69	24.65	24.51		0
	1	49	24.62	24.59	24.41		0
	25	0	23.78	23.72	23.58	0-1	1
	25	12	23.77	23.70	23.57		1
	25	25	23.72	23.66	23.50		1
16QAM	50	0	23.76	23.68	23.55	0-1	1
	1	0	24.01	24.08	23.90		1
	1	25	23.99	24.00	23.84		1
	1	49	23.97	23.93	23.72	0-2	1
	25	0	22.85	22.83	22.67		2
	25	12	22.87	22.81	22.63		2
64QAM	25	25	22.79	22.76	22.59	0-2	2
	50	0	22.83	22.80	22.64		2
	1	0	22.94	23.01	22.82		0-2
	1	25	22.95	22.95	22.79	2	
	1	49	22.93	22.84	22.68	0-3	
	25	0	21.88	21.84	21.67		3
25	12	21.86	21.83	21.68	3		
25	25	21.82	21.75	21.60	0-3	3	
50	0	21.85	21.82	21.64		3	

Table 9-24
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26715 (816.5 MHz)	26865 (831.5 MHz)	27015 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.69	24.72	24.54	0	0
	1	12	24.63	24.67	24.47		0
	1	24	24.71	24.63	24.45		0
	12	0	23.68	23.71	23.51	0-1	1
	12	6	23.70	23.73	23.53		1
	12	13	23.75	23.67	23.48		1
16QAM	25	0	23.78	23.68	23.49	0-1	1
	1	0	24.00	24.06	23.88		1
	1	12	23.99	24.00	23.82		1
	1	24	23.99	23.95	23.74	0-2	1
	12	0	22.81	22.85	22.65		2
	12	6	22.82	22.83	22.63		2
64QAM	12	13	22.86	22.79	22.55	0-2	2
	25	0	22.84	22.80	22.58		2
	1	0	22.94	23.00	22.79		0-2
	1	12	22.90	22.94	22.76	2	
	1	24	22.94	22.91	22.70	0-3	
	12	0	21.77	21.81	21.64		3
12	6	21.82	21.85	21.63	3		
12	13	21.84	21.76	21.58	0-3	3	
25	0	21.87	21.78	21.58		3	





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Table 9-25
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26705 (815.5 MHz)	26865 (831.5 MHz)	27025 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.65	24.68	24.47	0	0
	1	7	24.73	24.75	24.57		0
	1	14	24.63	24.67	24.44		0
	8	0	23.67	23.69	23.48	0-1	1
	8	4	23.69	23.71	23.50		1
	8	7	23.67	23.68	23.47		1
16QAM	15	0	23.67	23.71	23.49	0-1	1
	1	0	23.96	24.03	23.81		1
	1	7	24.07	24.10	23.90		1
	1	14	23.97	24.00	23.73	0-2	1
	8	0	22.80	22.82	22.59		2
	8	4	22.83	22.83	22.63		2
64QAM	8	7	22.77	22.79	22.57	0-2	2
	15	0	22.73	22.76	22.54		2
	1	0	22.91	22.97	22.77		0-2
	1	7	23.03	23.05	22.82	2	
	1	14	22.88	22.93	22.69	0-3	
	8	0	21.77	21.80	21.59		3
	8	4	21.79	21.81	21.60		3
	8	7	21.77	21.78	21.57	0-3	3
15	0	21.76	21.79	21.58	3		

Table 9-26
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	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26697 (814.7 MHz)	26865 (831.5 MHz)	27033 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.59	24.59	24.37	0	0
	1	2	24.65	24.67	24.44		0
	1	5	24.57	24.59	24.37		0
	3	0	24.62	24.63	24.40		0
	3	2	24.66	24.67	24.44		0
	3	3	24.63	24.63	24.40		0
16QAM	6	0	23.62	23.64	23.42	0-1	1
	1	0	23.97	23.94	23.71	0-1	1
	1	2	24.01	24.02	23.78		1
	1	5	23.93	23.91	23.67		1
	3	0	23.84	23.85	23.61		1
	3	2	23.87	23.89	23.64		1
3	3	23.83	23.85	23.60	1		
64QAM	6	0	22.75	22.77	22.54	0-2	2
	1	0	22.84	22.86	22.64	0-2	2
	1	2	22.93	22.93	22.69		2
	1	5	22.80	22.83	22.61		2
	3	0	22.80	22.82	22.58		2
	3	2	22.84	22.84	22.61		2
	3	3	22.79	22.80	22.58		2
6	0	21.72	21.74	21.51	0-3		3

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LTE Band 5 (Cell)

Table 9-27
 LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20525 (836.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.60	0	0
	1	25	24.53		0
	1	49	24.42		0
	25	0	23.69	0-1	1
	25	12	23.66		1
	25	25	23.56		1
	50	0	23.64		1
16QAM	1	0	23.70	0-1	1
	1	25	23.69		1
	1	49	23.62		1
	25	0	22.57	0-2	2
	25	12	22.54		2
	25	25	22.47		2
	50	0	22.52		2
64QAM	1	0	22.58	0-2	2
	1	25	22.62		2
	1	49	22.52		2
	25	0	21.58	0-3	3
	25	12	21.55		3
	25	25	21.50		3
	50	0	21.54		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.



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

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20425 (826.5 MHz)	20525 (836.5 MHz)	20625 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.60	24.58	24.47	0	0
	1	12	24.59	24.54	24.41		0
	1	24	24.53	24.51	24.39		0
	12	0	23.71	23.66	23.54	0-1	1
	12	6	23.70	23.68	23.55		1
	12	13	23.66	23.61	23.49		1
	25	0	23.67	23.63	23.51		1
16QAM	1	0	23.98	23.95	23.84	0-1	1
	1	12	23.95	23.90	23.79		1
	1	24	23.91	23.80	23.68		1
	12	0	22.78	22.78	22.67	0-2	2
	12	6	22.82	22.79	22.65		2
	12	13	22.76	22.72	22.60		2
	25	0	22.78	22.75	22.59		2
64QAM	1	0	22.90	22.89	22.76	0-2	2
	1	12	22.91	22.83	22.70		2
	1	24	22.86	22.77	22.65		2
	12	0	21.79	21.77	21.65	0-3	3
	12	6	21.80	21.79	21.64		3
	12	13	21.76	21.71	21.59		3
	25	0	21.78	21.74	21.60		3

Table 9-29
LTE Band 5 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.62	24.57	24.43	0	0
	1	7	24.71	24.65	24.49		0
	1	14	24.59	24.53	24.39		0
	8	0	23.67	23.64	23.50	0-1	1
	8	4	23.68	23.65	23.51		1
	8	7	23.68	23.62	23.48		1
	15	0	23.68	23.65	23.50		1
16QAM	1	0	23.97	23.94	23.77	0-1	1
	1	7	24.07	24.00	23.84		1
	1	14	23.92	23.85	23.69		1
	8	0	22.80	22.76	22.60	0-2	2
	8	4	22.80	22.76	22.62		2
	8	7	22.80	22.74	22.59		2
	15	0	22.72	22.68	22.54		2
64QAM	1	0	22.87	22.85	22.71	0-2	2
	1	7	23.00	22.93	22.79		2
	1	14	22.87	22.80	22.63		2
	8	0	21.77	21.75	21.60	0-3	3
	8	4	21.80	21.75	21.61		3
	8	7	21.77	21.70	21.57		3
	15	0	21.77	21.75	21.59		3





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Table 9-30
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	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.54	24.47	24.32	0	0
	1	2	24.61	24.55	24.38		0
	1	5	24.53	24.49	24.31		0
	3	0	24.58	24.52	24.36		0
	3	2	24.61	24.55	24.39		0
	3	3	24.58	24.53	24.35		0
16QAM	6	0	23.62	23.59	23.42	0-1	1
	1	0	23.91	23.84	23.69	0-1	1
	1	2	23.99	23.90	23.73		1
	1	5	23.89	23.80	23.61		1
	3	0	23.80	23.71	23.55		1
	3	2	23.84	23.76	23.58		1
3	3	23.79	23.71	23.53	1		
64QAM	6	0	22.76	22.72	22.55	0-2	2
	1	0	22.82	22.74	22.59	0-2	2
	1	2	22.88	22.82	22.64		2
	1	5	22.80	22.74	22.55		2
	3	0	22.77	22.70	22.55		2
	3	2	22.82	22.74	22.57		2
3	3	22.76	22.68	22.52	2		
	6	0	21.72	21.68	21.51	0-3	3

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LTE Band 66 (AWS)

Table 9-31
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.24	24.22	24.10	0	0
	1	50	23.97	23.93	23.82		0
	1	99	24.02	23.86	23.71		0
	50	0	23.23	23.21	23.06	0-1	1
	50	25	23.15	23.06	22.95		1
	50	50	23.13	23.00	22.89		1
16QAM	100	0	23.22	23.09	22.99	0-1	1
	1	0	23.54	23.53	23.41		1
	1	50	23.26	23.25	23.14		1
	1	99	23.35	23.19	23.05	0-2	1
	50	0	22.27	22.26	22.12		2
	50	25	22.18	22.16	22.01		2
64QAM	50	50	22.24	22.06	21.98	0-2	2
	100	0	22.31	22.15	22.06		2
	1	0	22.51	22.48	22.37		0-2
	1	50	22.20	22.17	22.07	2	
	1	99	22.27	22.12	21.97	0-3	
	50	0	21.30	21.27	21.14		3
50	25	21.22	21.18	21.05	3		
50	50	21.26	21.10	20.97	0-3	3	
100	0	21.30	21.18	21.09		3	

Table 9-32
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.23	24.18	24.05	0	0
	1	36	24.02	23.95	23.79		0
	1	74	23.95	23.92	23.77		0
	36	0	23.15	23.12	23.01	0-1	1
	36	18	23.11	23.08	22.93		1
	36	37	23.07	23.03	22.87		1
16QAM	75	0	23.10	23.06	22.94	0-1	1
	1	0	23.52	23.49	23.41		1
	1	36	23.27	23.26	23.15		1
	1	74	23.24	23.23	23.08	0-2	1
	36	0	22.24	22.20	22.09		2
	36	18	22.18	22.15	22.01		2
64QAM	36	37	22.12	22.09	21.95	0-2	2
	75	0	22.17	22.14	22.01		2
	1	0	22.46	22.44	22.32		0-2
	1	36	22.22	22.24	22.10	2	
	1	74	22.23	22.19	22.03	0-3	
	36	0	21.21	21.24	21.10		3
36	18	21.21	21.15	21.00	3		
36	37	21.14	21.08	20.93	0-3	3	
75	0	21.19	21.15	21.01		3	



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Table 9-33
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.08	24.06	23.93	0	0
	1	25	23.95	23.92	23.79		0
	1	49	23.92	23.88	23.73		0
	25	0	23.09	23.12	22.93	0-1	1
	25	12	23.08	23.04	22.90		1
	25	25	23.04	23.01	22.85		1
16QAM	50	0	23.08	23.06	22.92	0-1	1
	1	0	23.42	23.40	23.23		1
	1	25	23.27	23.28	23.14		1
	1	49	23.24	23.26	23.09	0-2	1
	25	0	22.20	22.20	22.02		2
	25	12	22.15	22.13	21.98		2
64QAM	25	25	22.10	22.10	21.93	0-2	2
	50	0	22.14	22.10	21.99		2
	1	0	22.35	22.32	22.18		0-2
	1	25	22.23	22.22	22.05	2	
	1	49	22.21	22.17	22.03	0-3	
	25	0	21.22	21.22	21.04		3
25	12	21.20	21.13	20.99	3		
25	25	21.15	21.10	20.95	0-3	3	
50	0	21.20	21.17	21.00		3	

Table 9-34
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	24.03	24.02	23.86	0	0	
	1	12	23.95	23.93	23.76		0	
	1	24	23.94	23.93	23.75		0	
	12	0	23.09	23.07	22.91	0-1	1	
	12	6	23.10	23.05	22.90		1	
	12	13	23.04	23.01	22.87		1	
16QAM	25	0	23.07	23.04	22.86	0-1	1	
	1	0	23.37	23.35	23.18		0-1	1
	1	12	23.29	23.29	23.12			1
	1	24	23.26	23.26	23.09	0-2		1
	12	0	22.19	22.17	22.03		2	
	12	6	22.19	22.17	22.02		2	
64QAM	12	13	22.19	22.17	22.02	0-2	2	
	25	0	22.13	22.12	21.98		2	
	1	0	22.29	22.30	22.15		0-2	2
	1	12	22.25	22.24	22.06	2		
	1	24	22.24	22.22	22.04	0-3		2
	12	0	21.21	21.17	21.03		3	
12	6	21.22	21.19	21.02	0-3		3	
12	13	21.19	21.18	21.01		3		
25	0	21.19	21.14	20.97	0-3	3		



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Table 9-35
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)			
Conducted Power [dBm]								
QPSK	1	0	23.98	23.98	23.78	0	0	
	1	7	24.05	24.02	23.85		0	
	1	14	23.92	23.90	23.75		0	
	QPSK	8	0	23.04	23.03	22.81	0-1	1
		8	4	23.07	23.04	22.85		1
		8	7	23.04	23.02	22.84		1
		15	0	23.05	23.03	22.84		1
16QAM	1	0	23.31	23.30	23.13	0-1	1	
	1	7	23.41	23.40	23.18		1	
	1	14	23.30	23.28	23.07		1	
	16QAM	8	0	22.16	22.16	21.95	0-2	2
		8	4	22.18	22.15	21.98		2
		8	7	22.17	22.12	21.96		2
		15	0	22.14	22.07	21.90		2
64QAM	1	0	22.27	22.24	22.06	0-2	2	
	1	7	22.35	22.33	22.14		2	
	1	14	22.24	22.19	22.03		2	
	64QAM	8	0	21.17	21.13	20.95	0-3	3
		8	4	21.21	21.17	20.97		3
		8	7	21.15	21.12	20.94		3
		15	0	21.13	21.11	20.95		3

Table 9-36
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	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
Conducted Power [dBm]							
QPSK	1	0	23.92	23.88	23.69	0	0
	1	2	23.95	23.94	23.76		0
	1	5	23.90	23.87	23.66		0
	3	0	23.94	23.92	23.74		0
	3	2	23.97	23.96	23.76		0
	3	3	23.93	23.91	23.73		0
	16QAM	6	0	23.00	22.97	22.79	0-1
1		0	23.25	23.23	23.07	0-1	1
1		2	23.31	23.31	23.10		1
1		5	23.23	23.20	23.02		1
3		0	23.16	23.12	22.93		1
3		2	23.18	23.15	22.95		1
3		3	23.13	23.11	22.95		1
64QAM	6	0	22.13	22.12	21.94	0-2	2
	1	0	22.17	22.16	21.97	0-2	2
	1	2	22.24	22.24	22.04		2
	1	5	22.16	22.15	21.95		2
	3	0	22.13	22.10	21.92		2
	3	2	22.16	22.14	21.96		2
	3	3	22.13	22.12	21.92		2
6	0	21.10	21.08	20.89	0-3	3	



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Table 9-37
LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	20.87	20.75	20.75	0	0	
	1	50	20.60	20.45	20.46		0	
	1	99	20.56	20.50	20.49		0	
	50	0	20.81	20.69	20.70	0-1	0	
	50	25	20.76	20.57	20.60		0	
	50	50	20.65	20.51	20.51		0	
16QAM	100	0	20.74	20.61	20.59	0-1	0	
	1	0	21.00	20.97	20.98		0	
	1	50	20.92	20.81	20.81		0	
	1	99	20.89	20.82	20.80	0-2	0	
	50	0	20.91	20.77	20.78		0	
	50	25	20.81	20.69	20.68		0	
64QAM	50	50	20.73	20.61	20.59	0-2	0	
	100	0	20.83	20.69	20.67		0	
	1	0	20.93	20.92	20.90		0-2	0
	1	50	20.88	20.75	20.76	0		
	1	99	20.82	20.76	20.73	0		
	64QAM	50	0	20.64	20.52	20.52	0-3	0
		50	25	20.55	20.43	20.38		0
		50	50	20.47	20.33	20.30		0
100		0	20.58	20.42	20.42	0		

Table 9-38
LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	20.75	20.66	20.65	0	0	
	1	36	20.55	20.43	20.53		0	
	1	74	20.52	20.41	20.48		0	
	36	0	20.72	20.61	20.62	0-1	0	
	36	18	20.66	20.53	20.56		0	
	36	37	20.62	20.46	20.54		0	
16QAM	75	0	20.65	20.52	20.50	0-1	0	
	1	0	21.00	20.91	21.00		0	
	1	36	20.91	20.82	20.86		0	
	1	74	20.88	20.75	20.79	0-2	0	
	36	0	20.81	20.72	20.67		0	
	36	18	20.78	20.65	20.64		0	
64QAM	36	37	20.69	20.59	20.64	0-2	0	
	75	0	20.74	20.62	20.60		0	
	1	0	20.95	20.95	20.94		0-2	0
	1	36	20.84	20.73	20.81	0		
	1	74	20.82	20.69	20.75	0		
	64QAM	36	0	20.51	20.42	20.36	0-3	0
		36	18	20.47	20.37	20.34		0
36		37	20.42	20.29	20.39	0		
75		0	20.46	20.37	20.32	0		



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Table 9-39
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.65	20.54	20.50	0	0
	1	25	20.55	20.43	20.50		0
	1	49	20.52	20.38	20.45		0
	25	0	20.70	20.56	20.54	0-1	0
	25	12	20.63	20.52	20.58		0
	25	25	20.58	20.48	20.54		0
16QAM	50	0	20.65	20.54	20.47	0-1	0
	1	0	20.99	20.88	20.85		0
	1	25	20.88	20.76	20.83		0
	1	49	20.85	20.72	20.79	0-2	0
	25	0	20.77	20.67	20.62		0
	25	12	20.74	20.60	20.70		0
64QAM	25	25	20.69	20.56	20.60	0-2	0
	50	0	20.71	20.60	20.55		0
	1	0	20.92	20.84	20.81		0-3
	1	25	20.83	20.74	20.77	0	
	1	49	20.79	20.66	20.72	0	
	25	0	20.48	20.38	20.33	0-3	0
25	12	20.46	20.32	20.39	0		
25	25	20.42	20.30	20.35	0		
	50	0	20.46	20.34	20.28		0

Table 9-40
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.59	20.47	20.56	0	0
	1	12	20.53	20.40	20.46		0
	1	24	20.53	20.40	20.47		0
	12	0	20.62	20.50	20.59	0-1	0
	12	6	20.64	20.53	20.58		0
	12	13	20.58	20.46	20.52		0
16QAM	25	0	20.60	20.49	20.56	0-1	0
	1	0	20.94	20.85	20.89		0
	1	12	20.92	20.77	20.81		0
	1	24	20.88	20.75	20.80	0-2	0
	12	0	20.76	20.66	20.71		0
	12	6	20.76	20.64	20.71		0
64QAM	12	13	20.78	20.62	20.71	0-2	0
	25	0	20.71	20.58	20.62		0
	1	0	20.91	20.81	20.83		0-3
	1	12	20.85	20.73	20.77	0	
	1	24	20.83	20.70	20.74	0	
	12	0	20.46	20.34	20.40	0-3	0
12	6	20.45	20.37	20.39	0		
12	13	20.45	20.36	20.40	0		
	25	0	20.44	20.30	20.37		0



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Table 9-41
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
Conducted Power [dBm]							
QPSK	1	0	20.57	20.44	20.52	0	0
	1	7	20.64	20.53	20.57		0
	1	14	20.53	20.39	20.46		0
	8	0	20.60	20.49	20.53	0-1	0
	8	4	20.63	20.51	20.55		0
	8	7	20.60	20.48	20.52		0
	15	0	20.63	20.48	20.53		0
16QAM	1	0	20.91	20.80	20.85	0-1	0
	1	7	21.00	20.89	20.93		0
	1	14	20.89	20.75	20.78		0
	8	0	20.73	20.63	20.64	0-2	0
	8	4	20.77	20.64	20.67		0
	8	7	20.72	20.61	20.63		0
	15	0	20.70	20.56	20.59		0
64QAM	1	0	20.85	20.73	20.76	0-2	0
	1	7	20.96	20.83	20.84		0
	1	14	20.80	20.68	20.70		0
	8	0	20.44	20.33	20.36	0-3	0
	8	4	20.47	20.34	20.37		0
	8	7	20.44	20.32	20.34		0
	15	0	20.43	20.30	20.33		0

Table 9-42
LTE Band 66 (AWS) Reduced Conducted Powers – 1.4 MHz Bandwidth- Hotspot Mode Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
Conducted Power [dBm]							
QPSK	1	0	20.48	20.35	20.40	0	0
	1	2	20.54	20.40	20.47		0
	1	5	20.45	20.33	20.41		0
	3	0	20.53	20.38	20.46		0
	3	2	20.55	20.43	20.47		0
	3	3	20.51	20.39	20.44	0	
	6	0	20.53	20.43	20.47	0-1	0
16QAM	1	0	20.84	20.74	20.75	0-1	0
	1	2	20.91	20.81	20.81		0
	1	5	20.82	20.70	20.72		0
	3	0	20.73	20.64	20.65		0
	3	2	20.77	20.67	20.69		0
	3	3	20.74	20.62	20.63	0	
	6	0	20.70	20.57	20.61	0-2	0
64QAM	1	0	20.79	20.68	20.68	0-2	0
	1	2	20.83	20.72	20.73		0
	1	5	20.75	20.64	20.64		0
	3	0	20.73	20.62	20.65		0
	3	2	20.77	20.65	20.67		0
	3	3	20.73	20.61	20.61	0	
	6	0	20.38	20.26	20.29	0-3	0



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Table 9-43

LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.50	21.48	21.45	0	0
	1	50	21.20	21.17	21.18		0
	1	99	21.25	21.18	21.16		0
	50	0	21.40	21.36	21.39	0-1	0
	50	25	21.30	21.29	21.28		0
	50	50	21.34	21.22	21.19		0
16QAM	100	0	21.39	21.30	21.29	0-1	0
	1	0	21.80	21.79	21.79		0
	1	50	21.57	21.50	21.53		0
	50	0	21.48	21.49	21.48	0-2	0
	50	25	21.43	21.37	21.37		0
	50	50	21.46	21.32	21.29		0
64QAM	100	0	21.54	21.40	21.40	0-2	0
	1	0	21.78	21.76	21.76		0
	1	50	21.52	21.50	21.45		0
	1	99	21.59	21.52	21.49	0-3	0
	50	0	21.23	21.22	21.21		0
	50	25	21.13	21.11	21.09		0
	50	50	21.18	21.05	21.02	0	
	100	0	21.24	21.11	21.13	0	

Table 9-44

LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.54	21.59	21.54	0	0
	1	36	21.35	21.35	21.43		0
	1	74	21.35	21.31	21.37		0
	36	0	21.51	21.54	21.49	0-1	0
	36	18	21.44	21.44	21.43		0
	36	37	21.39	21.38	21.46		0
16QAM	75	0	21.43	21.43	21.42	0-1	0
	1	0	21.87	21.93	21.91		0
	1	36	21.75	21.68	21.75		0
	1	74	21.70	21.66	21.74	0-2	0
	36	0	21.62	21.65	21.59		0
	36	18	21.57	21.54	21.54		0
64QAM	36	37	21.51	21.49	21.53	0-2	0
	75	0	21.57	21.52	21.50		0
	1	0	21.85	21.82	21.82		0
	1	36	21.65	21.65	21.75	0-3	0
	1	74	21.62	21.61	21.66		0
	36	0	21.30	21.34	21.28		0
	36	18	21.27	21.25	21.22	0	
	36	37	21.19	21.18	21.25	0	
	75	0	21.27	21.25	21.23	0	



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Table 9-45
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.47	21.47	21.43	0	0
	1	25	21.36	21.33	21.40		0
	1	49	21.31	21.31	21.35		0
	25	0	21.47	21.47	21.46	0-1	0
	25	12	21.46	21.41	21.49		0
	25	25	21.41	21.37	21.43		0
16QAM	50	0	21.44	21.42	21.40	0-1	0
	1	0	21.74	21.83	21.77		0
	1	25	21.72	21.66	21.72		0
	1	49	21.70	21.67	21.69	0-2	0
	25	0	21.60	21.56	21.57		0
	25	12	21.57	21.53	21.58		0
64QAM	25	25	21.50	21.49	21.52	0-2	0
	50	0	21.55	21.53	21.49		0
	1	0	21.76	21.74	21.71		0-2
	1	25	21.66	21.65	21.72	0	
	1	49	21.63	21.60	21.65	0	
	64QAM	25	0	21.28	21.28	21.27	0-3
25		12	21.27	21.24	21.32	0	
25		25	21.24	21.20	21.28	0	
50		0	21.27	21.25	21.22	0	

Table 9-46
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.42	21.41	21.46	0	0
	1	12	21.34	21.33	21.37		0
	1	24	21.31	21.29	21.36		0
	12	0	21.44	21.40	21.47	0-1	0
	12	6	21.44	21.40	21.45		0
	12	13	21.37	21.35	21.43		0
16QAM	25	0	21.41	21.40	21.43	0-1	0
	1	0	21.72	21.74	21.74		0
	1	12	21.71	21.64	21.74		0
	1	24	21.71	21.57	21.70	0-2	0
	12	0	21.57	21.52	21.59		0
	12	6	21.56	21.52	21.59		0
64QAM	12	13	21.56	21.53	21.59	0-2	0
	25	0	21.52	21.50	21.54		0
	1	0	21.72	21.70	21.74		0-2
	1	12	21.66	21.64	21.66	0	
	1	24	21.64	21.60	21.64	0	
	64QAM	12	0	21.26	21.23	21.30	0-3
12		6	21.26	21.23	21.31	0	
12		13	21.27	21.23	21.30	0	
25		0	21.23	21.21	21.27	0	





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Table 9-47
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
Conducted Power [dBm]							
QPSK	1	0	21.37	21.36	21.41	0	0
	1	7	21.44	21.43	21.46		0
	1	14	21.34	21.31	21.34		0
	8	0	21.41	21.39	21.43	0-1	0
	8	4	21.42	21.41	21.44		0
	8	7	21.38	21.36	21.41		0
	15	0	21.42	21.40	21.42		0
16QAM	1	0	21.66	21.66	21.74	0-1	0
	1	7	21.75	21.75	21.81		0
	1	14	21.66	21.63	21.70		0
	8	0	21.53	21.51	21.54	0-2	0
	8	4	21.56	21.54	21.58		0
	8	7	21.54	21.51	21.54		0
	15	0	21.49	21.45	21.49		0
64QAM	1	0	21.67	21.65	21.67	0-2	0
	1	7	21.76	21.71	21.77		0
	1	14	21.63	21.60	21.61		0
	8	0	21.23	21.21	21.22	0-3	0
	8	4	21.26	21.23	21.26		0
	8	7	21.20	21.20	21.24		0
	15	0	21.22	21.20	21.23		0

Table 9-48
LTE Band 66 (AWS) Reduced Conducted Powers – 1.4 MHz Bandwidth- Grip Sensor Mode Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
Conducted Power [dBm]							
QPSK	1	0	21.26	21.28	21.28	0	0
	1	2	21.32	21.32	21.35		0
	1	5	21.23	21.23	21.28		0
	3	0	21.30	21.29	21.31	0-1	0
	3	2	21.33	21.32	21.34		0
	3	3	21.29	21.28	21.32		0
	6	0	21.30	21.29	21.35		0
16QAM	1	0	21.58	21.55	21.68	0-1	0
	1	2	21.60	21.61	21.70		0
	1	5	21.52	21.54	21.61		0
	3	0	21.47	21.45	21.55	0-2	0
	3	2	21.52	21.51	21.60		0
	3	3	21.46	21.46	21.54		0
	6	0	21.49	21.47	21.51		0
64QAM	1	0	21.55	21.56	21.59	0-2	0
	1	2	21.63	21.61	21.64		0
	1	5	21.52	21.53	21.57		0
	3	0	21.52	21.51	21.54	0-3	0
	3	2	21.55	21.54	21.57		0
	3	3	21.50	21.50	21.53		0
	6	0	21.16	21.15	21.19		0

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LTE Band 25 (PCS)

Table 9-49
LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.35	24.50	24.47	0	0
	1	50	23.95	24.29	24.24		0
	1	99	24.04	24.45	24.32		0
	50	0	23.19	23.37	23.43	0-1	1
	50	25	23.10	23.32	23.35		1
	50	50	23.05	23.44	23.28		1
16QAM	100	0	23.11	23.33	23.36	0-1	1
	1	0	23.72	23.89	23.77		1
	1	50	23.25	23.59	23.58		1
	1	99	23.39	23.77	23.64	0-2	1
	50	0	22.28	22.46	22.50		2
	50	25	22.19	22.39	22.41		2
64QAM	50	50	22.08	22.45	22.34	0-2	2
	100	0	22.19	22.40	22.45		2
	1	0	22.66	22.85	22.71		0-2
	1	50	22.26	22.57	22.51	2	
	1	99	22.36	22.72	22.55	2	
	64QAM	50	0	21.29	21.46	21.52	0-3
50		25	21.22	21.43	21.43	3	
50		50	21.15	21.49	21.38	3	
100		0	21.19	21.42	21.44	3	

Table 9-50
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.42	24.28	24.54	0	0
	1	36	24.23	24.12	24.45		0
	1	74	24.17	24.22	24.45		0
	36	0	23.37	23.22	23.55	0-1	1
	36	18	23.30	23.20	23.43		1
	36	37	23.23	23.17	23.50		1
16QAM	75	0	23.29	23.20	23.45	0-1	1
	1	0	23.76	23.62	23.91		1
	1	36	23.57	23.46	23.81		1
	1	74	23.49	23.58	23.76	0-2	1
	36	0	22.46	22.34	22.58		2
	36	18	22.40	22.29	22.52		2
64QAM	36	37	22.31	22.25	22.56	0-2	2
	75	0	22.39	22.28	22.52		2
	1	0	22.70	22.56	22.82		0-2
	1	36	22.49	22.39	22.72	2	
	1	74	22.41	22.49	22.69	2	
	64QAM	36	0	21.45	21.32	21.58	0-3
36		18	21.39	21.30	21.51	3	
36		37	21.33	21.26	21.55	3	
75		0	21.40	21.29	21.52	3	

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**Table 9-51
LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth**

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.55	24.43	24.56	0	0
	1	25	24.25	24.11	24.41		0
	1	49	24.39	24.40	24.38		0
	25	0	23.37	23.23	23.56	0-1	1
	25	12	23.32	23.23	23.50		1
	25	25	23.28	23.17	23.45		1
16QAM	50	0	23.32	23.21	23.49	0-1	1
	1	0	23.89	23.74	23.88		1
	1	25	23.57	23.44	23.74		1
	1	49	23.74	23.72	23.76	0-2	1
	25	0	22.47	22.33	22.64		2
	25	12	22.40	22.29	22.59		2
64QAM	25	25	22.37	22.27	22.53	0-2	2
	50	0	22.41	22.27	22.58		2
	1	0	22.82	22.67	22.79		2
	1	25	22.50	22.38	22.68	0-2	2
	1	49	22.65	22.68	22.66		2
	25	0	21.45	21.34	21.63		0-3
25	12	21.42	21.30	21.59	3		
25	25	21.36	21.26	21.55	3		
	50	0	21.41	21.30	21.59		3

**Table 9-52
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth**

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.32	24.19	24.47	0	0
	1	12	24.23	24.12	24.40		0
	1	24	24.26	24.13	24.40		0
	12	0	23.32	23.18	23.47	0-1	1
	12	6	23.29	23.17	23.48		1
	12	13	23.28	23.17	23.42		1
16QAM	25	0	23.29	23.16	23.46	0-1	1
	1	0	23.67	23.50	23.80		1
	1	12	23.56	23.44	23.74		1
	1	24	23.56	23.44	23.73	0-2	1
	12	0	22.41	22.29	22.54		2
	12	6	22.39	22.27	22.57		2
64QAM	12	13	22.38	22.26	22.52	0-2	2
	25	0	22.38	22.25	22.52		2
	1	0	22.57	22.42	22.71		0-2
	1	12	22.49	22.38	22.65	2	
	1	24	22.47	22.37	22.64	2	
	64QAM	12	0	21.41	21.29	21.62	0-3
12		6	21.41	21.29	21.62	3	
12		13	21.41	21.30	21.62	3	
25		0	21.36	21.25	21.53	3	



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Table 9-53
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.27	24.18	24.42	0	0
	1	7	24.35	24.22	24.50		0
	1	14	24.24	24.12	24.38		0
	8	0	23.29	23.14	23.46	0-1	1
	8	4	23.31	23.19	23.46		1
	8	7	23.26	23.17	23.45		1
16QAM	15	0	23.29	23.15	23.51	0-1	1
	1	0	23.58	23.41	23.75		1
	1	7	23.68	23.57	23.84		1
	1	14	23.55	23.48	23.72	0-2	1
	8	0	22.42	22.29	22.54		2
	8	4	22.43	22.31	22.56		2
64QAM	8	7	22.39	22.28	22.54	0-2	2
	15	0	22.37	22.22	22.48		2
	1	0	22.51	22.40	22.67		2
	1	7	22.60	22.49	22.77	0-2	2
	1	14	22.49	22.36	22.64		2
	8	0	21.39	21.29	21.59		0-3
	8	4	21.40	21.28	21.59	3	
	8	7	21.39	21.29	21.59	3	
	15	0	21.39	21.26	21.53		3

Table 9-54
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	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.21	24.28	24.31	0	0
	1	2	24.25	24.36	24.38		0
	1	5	24.20	24.28	24.33		0
	3	0	24.21	24.32	24.35		0
	3	2	24.25	24.36	24.40		0
	3	3	24.22	24.32	24.35		0
16QAM	6	0	23.24	23.34	23.38	0-1	1
	1	0	23.56	23.63	23.70	0-1	1
	1	2	23.61	23.69	23.73		1
	1	5	23.49	23.61	23.66		1
	3	0	23.42	23.54	23.54		1
	3	2	23.48	23.57	23.60		1
3	3	23.41	23.51	23.56	1		
64QAM	6	0	22.39	22.48	22.51	0-2	2
	1	0	22.45	22.54	22.59	0-2	2
	1	2	22.51	22.61	22.66		2
	1	5	22.42	22.54	22.59		2
	3	0	22.64	22.27	22.61		2
	3	2	22.62	22.29	22.60		2
	3	3	22.64	22.28	22.60		2
6	0	21.34	21.42	21.47	0-3		3



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Table 9-55

LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)			
Conducted Power [dBm]								
QPSK	1	0	20.41	20.42	20.50	0	0	
	1	50	20.19	20.02	20.19		0	
	1	99	20.18	20.27	20.20		0	
	QPSK	50	0	20.24	20.11	20.29	0-1	0
		50	25	20.14	20.05	20.19		0
		50	50	20.03	20.02	20.12		0
		100	0	20.13	20.07	20.20		0
16QAM	1	0	20.50	20.49	20.49	0-1	0	
	1	50	20.42	20.27	20.38		0	
	1	99	20.46	20.36	20.38		0	
	16QAM	50	0	20.43	20.23	20.39	0-2	0
		50	25	20.24	20.14	20.29		0
		50	50	20.16	20.11	20.23		0
		100	0	20.24	20.17	20.30		0
64QAM	1	0	20.50	20.47	20.49	0-2	0	
	1	50	20.34	20.18	20.41		0	
	1	99	20.36	20.45	20.41		0	
	64QAM	50	0	20.41	20.19	20.40	0-3	0
		50	25	20.24	20.12	20.33		0
		50	50	20.14	20.09	20.21		0
		100	0	20.23	20.22	20.29		0

Table 9-56

LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)			
Conducted Power [dBm]								
QPSK	1	0	20.48	20.25	20.40	0	0	
	1	36	20.27	20.08	20.22		0	
	1	74	20.13	20.17	20.21		0	
	QPSK	36	0	20.34	20.15	20.28	0-1	0
		36	18	20.28	20.07	20.22		0
		36	37	20.14	20.07	20.25		0
		75	0	20.19	20.08	20.20		0
16QAM	1	0	20.50	20.45	20.48	0-1	0	
	1	36	20.46	20.37	20.42		0	
	1	74	20.43	20.46	20.40		0	
	16QAM	36	0	20.46	20.28	20.36	0-2	0
		36	18	20.41	20.21	20.34		0
		36	37	20.24	20.17	20.34		0
		75	0	20.30	20.18	20.31		0
64QAM	1	0	20.50	20.42	20.48	0-2	0	
	1	36	20.43	20.26	20.47		0	
	1	74	20.30	20.34	20.47		0	
	64QAM	36	0	20.12	19.89	20.08	0-3	0
		36	18	20.06	19.86	19.98		0
		36	37	19.89	19.83	20.04		0
		75	0	19.95	19.87	19.99		0



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Table 9-57

LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.35	20.32	20.49	0	0
	1	25	20.19	19.98	20.19		0
	1	49	20.36	20.29	20.15		0
	25	0	20.33	20.10	20.31	0-1	0
	25	12	20.29	20.06	20.29		0
	25	25	20.26	20.05	20.21		0
16QAM	50	0	20.31	20.09	20.27	0-1	0
	1	0	20.45	20.46	20.45		0
	1	25	20.43	20.36	20.42		0
	1	49	20.41	20.45	20.41	0-2	0
	25	0	20.45	20.23	20.40		0
	25	12	20.42	20.21	20.36		0
64QAM	25	25	20.37	20.17	20.36	0-2	0
	50	0	20.40	20.19	20.36		0
	1	0	20.49	20.46	20.47		0-2
	1	25	20.44	20.24	20.44	0	
	1	49	20.43	20.41	20.40	0	
	64QAM	25	0	20.13	19.90	20.09	0-3
25		12	20.10	19.86	20.07	0	
25		25	20.06	19.83	20.02	0	
50		0	20.09	19.87	20.06	0	

Table 9-58

LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.30	20.22	20.39	0	0
	1	12	20.18	20.05	20.29		0
	1	24	20.21	20.05	20.31		0
	12	0	20.40	20.23	20.42	0-1	0
	12	6	20.38	20.15	20.40		0
	12	13	20.35	20.13	20.38		0
16QAM	25	0	20.26	20.12	20.37	0-1	0
	1	0	20.50	20.45	20.50		0
	1	12	20.49	20.40	20.47		0
	1	24	20.50	20.39	20.49	0-2	0
	12	0	20.39	20.24	20.50		0
	12	6	20.40	20.25	20.49		0
64QAM	12	13	20.37	20.25	20.46	0-2	0
	25	0	20.34	20.20	20.46		0
	1	0	20.48	20.40	20.50		0-2
	1	12	20.47	20.35	20.48	0	
	1	24	20.48	20.37	20.48	0	
	64QAM	12	0	20.11	19.98	20.30	0-3
12		6	20.11	19.98	20.30	0	
12		13	20.11	19.98	20.29	0	
25		0	20.08	19.97	20.21	0	



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Table 9-59



LTE Band 25 (PCS) Reduced Conducted Powers - 3 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
Conducted Power [dBm]							
QPSK	1	0	20.33	20.20	20.44	0	0
	1	7	20.39	20.25	20.48		0
	1	14	20.28	20.13	20.40		0
	8	0	20.27	20.11	20.37	0-1	0
	8	4	20.26	20.15	20.39		0
	8	7	20.23	20.12	20.34		0
	15	0	20.10	19.99	20.28		0
16QAM	1	0	20.41	20.23	20.50	0-1	0
	1	7	20.50	20.36	20.50		0
	1	14	20.38	20.24	20.48		0
	8	0	20.22	20.07	20.32	0-2	0
	8	4	20.23	20.09	20.34		0
	8	7	20.22	20.07	20.33		0
	15	0	20.16	20.03	20.27		0
64QAM	1	0	20.34	20.22	20.45	0-2	0
	1	7	20.42	20.29	20.47		0
	1	14	20.31	20.16	20.39		0
	8	0	19.95	19.78	20.12	0-3	0
	8	4	19.95	19.78	20.11		0
	8	7	19.94	19.80	20.12		0
	15	0	19.92	19.77	20.04		0

Table 9-60

LTE Band 25 (PCS) Reduced Conducted Powers – 1.4 MHz Bandwidth- Hotspot/Grip Sensor Mode Active

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
Conducted Power [dBm]							
QPSK	1	0	20.26	20.20	20.13	0	0
	1	2	20.25	20.24	20.18		0
	1	5	20.19	20.16	20.12		0
	3	0	20.24	20.22	20.15		0
	3	2	20.29	20.26	20.20		0
	3	3	20.21	20.22	20.15		0
	6	0	20.24	20.24	20.18	0-1	0
16QAM	1	0	20.46	20.47	20.46	0-1	0
	1	2	20.50	20.49	20.49		0
	1	5	20.45	20.43	20.41		0
	3	0	20.44	20.46	20.36		0
	3	2	20.49	20.50	20.40		0
	3	3	20.44	20.46	20.36		0
	6	0	20.47	20.41	20.36	0-2	0
64QAM	1	0	20.45	20.44	20.36	0-2	0
	1	2	20.49	20.48	20.40		0
	1	5	20.40	20.39	20.33		0
	3	0	20.50	20.38	20.17		0
	3	2	20.50	20.17	20.38		0
	3	3	20.50	20.17	20.38		0
	6	0	20.04	20.05	19.99	0-3	0



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9.4.9

LTE Band 30

Table 9-61
 LTE Band 30 Antenna B Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.82	0	0
	1	25	23.53		0
	1	49	23.70		0
	25	0	22.84	0-1	1
	25	12	22.77		1
	25	25	22.73		1
	50	0	22.74		1
16QAM	1	0	23.06	0-1	1
	1	25	22.81		1
	1	49	22.97		1
	25	0	21.85	0-2	2
	25	12	21.84		2
	25	25	21.78		2
	50	0	21.78		2
64QAM	1	0	21.91	0-2	2
	1	25	21.76		2
	1	49	21.80		2
	25	0	20.86	0-3	3
	25	12	20.80		3
	25	25	20.76		3
	50	0	20.84		3

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**Table 9-62
LTE Band 30 Antenna B Maximum Conducted Powers - 5 MHz Bandwidth**

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.85	0	0
	1	12	23.80		0
	1	24	23.91		0
	12	0	22.94	0-1	1
	12	6	22.92		1
	12	13	22.90		1
	25	0	22.90		1
16QAM	1	0	23.19	0-1	1
	1	12	23.14		1
	1	24	23.23		1
	12	0	22.00	0-2	2
	12	6	21.99		2
	12	13	21.96		2
	25	0	21.97		2
64QAM	1	0	22.08	0-2	2
	1	12	22.03		2
	1	24	22.11		2
	12	0	21.04	0-3	3
	12	6	21.05		3
	12	13	20.99		3
	25	0	20.97		3

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





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Table 9-63

LTE Band 30 Antenna B Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.62	0	0
	1	25	20.40		0
	1	49	20.26		0
	25	0	20.55	0-1	0
	25	12	20.42		0
	25	25	20.42		0
	50	0	20.42		0
16QAM	1	0	20.78	0-1	0
	1	25	20.75		0
	1	49	20.48		0
	25	0	20.58	0-2	0
	25	12	20.42		0
	25	25	20.42		0
	50	0	20.55		0
64QAM	1	0	20.73	0-2	0
	1	25	20.55		0
	1	49	20.59		0
	25	0	20.31	0-3	0
	25	12	20.27		0
	25	25	20.22		0
	50	0	20.25		0

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**Table 9-64
LTE Band 30 Antenna B Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active**

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.60	0	0
	1	12	20.41		0
	1	24	20.32		0
	12	0	20.48	0-1	0
	12	6	20.47		0
	12	13	20.45		0
	25	0	20.46		0
16QAM	1	0	20.65	0-1	0
	1	12	20.53		0
	1	24	20.48		0
	12	0	20.48	0-2	0
	12	6	20.52		0
	12	13	20.52		0
	25	0	20.51		0
64QAM	1	0	20.64	0-2	0
	1	12	20.56		0
	1	24	20.57		0
	12	0	20.60	0-3	0
	12	6	20.49		0
	12	13	20.59		0
	25	0	20.28		0

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



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Table 9-65

LTE Band 30 Antenna B Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	21.81	0	0
	1	25	21.57		0
	1	49	21.54		0
	25	0	21.72	0-1	0
	25	12	21.69		0
	25	25	21.61		0
	50	0	21.66		0
16QAM	1	0	21.95	0-1	0
	1	25	21.69		0
	1	49	21.65		0
	25	0	21.81	0-2	0
	25	12	21.76		0
	25	25	21.69		0
	50	0	21.73		0
64QAM	1	0	22.03	0-2	0
	1	25	21.86		0
	1	49	21.72		0
	25	0	20.80	0-3	1
	25	12	20.77		1
	25	25	20.72		1
	50	0	20.75		1





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Table 9-66

LTE Band 30 Antenna B Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active



LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	21.66	0	0
	1	12	21.58		0
	1	24	21.55		0
	12	0	21.66	0-1	0
	12	6	21.65		0
	12	13	21.62		0
	25	0	21.64		0
16QAM	1	0	21.84	0-1	0
	1	12	21.74		0
	1	24	21.70		0
	12	0	21.72	0-2	0
	12	6	21.75		0
	12	13	21.69		0
	25	0	21.73		0
64QAM	1	0	21.90	0-2	0
	1	12	21.84		0
	1	24	21.82		0
	12	0	20.74	0-3	1
	12	6	20.77		1
	12	13	20.62		1
	25	0	20.73		1

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

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**Table 9-67
LTE Band 30 Antenna A Maximum Conducted Powers - 10 MHz Bandwidth**

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.70	0	0
	1	25	23.53		0
	1	49	23.54		0
	25	0	22.61	0-1	1
	25	12	22.58		1
	25	25	22.55		1
	50	0	22.54		1
16QAM	1	0	22.92	0-1	1
	1	25	22.70		1
	1	49	22.82		1
	25	0	21.68	0-2	2
	25	12	21.59		2
	25	25	21.56		2
	50	0	21.60		2
64QAM	1	0	21.93	0-2	2
	1	25	21.80		2
	1	49	21.89		2
	25	0	20.67	0-3	3
	25	12	20.61		3
	25	25	20.62		3
	50	0	20.64		3

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**Table 9-68
LTE Band 30 Antenna A Maximum Conducted Powers - 5 MHz Bandwidth**

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.58	0	0
	1	12	23.50		0
	1	24	23.55		0
	12	0	22.54	0-1	1
	12	6	22.54		1
	12	13	22.48		1
	25	0	22.59		1
16QAM	1	0	22.88	0-1	1
	1	12	22.76		1
	1	24	22.86		1
	12	0	21.61	0-2	2
	12	6	21.62		2
	12	13	21.64		2
	25	0	21.59		2
64QAM	1	0	21.79	0-2	2
	1	12	21.82		2
	1	24	21.68		2
	12	0	20.62	0-3	3
	12	6	20.65		3
	12	13	20.55		3
	25	0	20.56		3

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





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Table 9-69

LTE Band 30 Antenna A Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.61	0	0
	1	25	20.43		0
	1	49	20.37		0
	25	0	20.53	0-1	0
	25	12	20.48		0
	25	25	20.45		0
	50	0	20.47		0
16QAM	1	0	20.72	0-1	0
	1	25	20.75		0
	1	49	20.61		0
	25	0	20.58	0-2	0
	25	12	20.55		0
	25	25	20.52		0
	50	0	20.54		0
64QAM	1	0	20.79	0-2	0
	1	25	20.73		0
	1	49	20.69		0
	25	0	20.30	0-3	0
	25	12	20.27		0
	25	25	20.19		0
	50	0	20.27		0

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**Table 9-70
LTE Band 30 Antenna A Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active**

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	20.49	0	0
	1	12	20.40		0
	1	24	20.43		0
	12	0	20.43	0-1	0
	12	6	20.42		0
	12	13	20.45		0
	25	0	20.44		0
16QAM	1	0	20.77	0-1	0
	1	12	20.72		0
	1	24	20.68		0
	12	0	20.51	0-2	0
	12	6	20.53		0
	12	13	20.49		0
	25	0	20.50		0
64QAM	1	0	20.76	0-2	0
	1	12	20.73		0
	1	24	20.70		0
	12	0	20.29	0-3	0
	12	6	20.29		0
	12	13	20.23		0
	25	0	20.22		0

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





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Table 9-71

LTE Band 30 Antenna A Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active



LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	22.06	0	0
	1	25	21.95		0
	1	49	21.95		0
	25	0	22.07	0-1	0
	25	12	22.04		0
	25	25	21.99		0
	50	0	22.01		0
16QAM	1	0	22.30	0-1	0
	1	25	22.22		0
	1	49	22.21		0
	25	0	22.13	0-2	0
	25	12	22.11		0
	25	25	22.02		0
	50	0	22.05		0
64QAM	1	0	22.44	0-2	0
	1	25	22.37		0
	1	49	22.28		0
	25	0	21.12	0-3	1
	25	12	21.09		1
	25	25	21.05		1
	50	0	21.09		1

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**Table 9-72
LTE Band 30 Antenna A Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active**

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			27710 (2310.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	22.03	0	0
	1	12	21.90		0
	1	24	21.96		0
	12	0	21.97	0-1	0
	12	6	22.03		0
	12	13	21.98		0
	25	0	21.98		0
16QAM	1	0	22.33	0-1	0
	1	12	22.16		0
	1	24	22.30		0
	12	0	22.09	0-2	0
	12	6	22.07		0
	12	13	22.03		0
	25	0	22.06		0
64QAM	1	0	22.34	0-2	0
	1	12	22.24		0
	1	24	22.27		0
	12	0	21.12	0-3	1
	12	6	21.12		1
	12	13	21.07		1
	25	0	21.05		1

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

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LTE Band 7

Table 9-73
LTE Band 7 Antenna B Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
Conducted Power [dBm]							
QPSK	1	0	23.38	23.17	23.62	0	0
	1	50	23.34	23.11	23.41		0
	1	99	23.24	23.03	23.23		0
	50	0	22.48	22.25	22.51	0-1	1
	50	25	22.44	22.22	22.42		1
	50	50	22.44	22.19	22.34		1
16QAM	100	0	22.45	22.23	22.42	0-1	1
	1	0	22.59	22.35	22.94		1
	1	50	22.67	22.29	22.72		1
	1	99	22.69	22.19	22.73	0-2	1
	50	0	21.55	21.33	21.60		2
	50	25	21.51	21.28	21.50		2
64QAM	50	50	21.47	21.27	21.42	0-2	2
	100	0	21.52	21.28	21.50		2
	1	0	21.70	21.39	21.83		0-2
	1	50	21.64	21.35	21.58	2	
	1	99	21.62	21.37	21.46	0-3	
	50	0	20.56	20.35	20.64		3
50	25	20.54	20.33	20.53	3		
64QAM	50	50	20.50	20.28	20.39	0-3	3
	100	0	20.53	20.31	20.47		3

Table 9-74
LTE Band 7 Antenna B Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
Conducted Power [dBm]							
QPSK	1	0	23.44	23.18	23.51	0	0
	1	36	23.41	23.20	23.40		0
	1	74	23.39	23.19	23.39		0
	36	0	22.54	22.31	22.51	0-1	1
	36	18	22.50	22.29	22.49		1
	36	37	22.46	22.26	22.42		1
16QAM	75	0	22.51	22.28	22.47	0-1	1
	1	0	22.80	22.51	22.88		1
	1	36	22.79	22.56	22.75		1
	1	74	22.79	22.53	22.74	0-2	1
	36	0	21.63	21.41	21.62		2
	36	18	21.60	21.38	21.55		2
64QAM	36	37	21.53	21.33	21.53	0-2	2
	75	0	21.56	21.38	21.55		2
	1	0	21.72	21.48	21.82		0-2
	1	36	21.74	21.54	21.70	2	
	1	74	21.70	21.51	21.68	0-3	
	36	0	20.63	20.41	20.58		3
36	18	20.59	20.41	20.56	3		
64QAM	36	37	20.55	20.35	20.50	0-3	3
	75	0	20.59	20.39	20.55		3



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Table 9-75
LTE Band 7 Antenna B Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	23.40	23.29	23.48	0	0	
	1	25	23.38	23.25	23.42		0	
	1	49	23.42	23.20	23.36		0	
	25	0	22.42	22.32	22.48	0-1	1	
	25	12	22.56	22.32	22.47		1	
	25	25	22.49	22.25	22.43		1	
16QAM	50	0	22.51	22.28	22.47	0-1	1	
	1	0	22.74	22.65	22.77		0-1	1
	1	25	22.69	22.61	22.73			1
	1	49	22.76	22.54	22.71	0-2		1
	25	0	21.49	21.40	21.57		2	
	25	12	21.62	21.41	21.55		2	
64QAM	25	25	21.56	21.32	21.51	0-2	2	
	50	0	21.60	21.37	21.49		2	
	1	0	21.70	21.56	21.74		0-2	2
	1	25	21.65	21.54	21.69	2		
	1	49	21.72	21.52	21.65	0-3		2
	25	0	20.55	20.39	20.56		3	
25	12	20.67	20.39	20.54	3			
64QAM	25	25	20.62	20.36	20.51	0-3	3	
	50	0	20.61	20.39	20.55		3	

Table 9-76
LTE Band 7 Antenna B Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	23.37	23.27	23.36	0	0	
	1	12	23.36	23.22	23.37		0	
	1	24	23.36	23.18	23.35		0	
	12	0	22.44	22.31	22.42	0-1	1	
	12	6	22.45	22.33	22.42		1	
	12	13	22.41	22.26	22.40		1	
16QAM	25	0	22.41	22.27	22.40	0-1	1	
	1	0	22.74	22.59	22.76		0-1	1
	1	12	22.71	22.58	22.73			1
	1	24	22.65	22.51	22.70	0-2		1
	12	0	21.50	21.38	21.53		2	
	12	6	21.58	21.39	21.54		2	
64QAM	12	13	21.47	21.37	21.50	0-2	2	
	25	0	21.52	21.35	21.51		2	
	1	0	21.64	21.51	21.63		0-2	2
	1	12	21.64	21.53	21.66	2		
	1	24	21.59	21.46	21.60	0-3		2
	12	0	20.52	20.37	20.54		3	
12	6	20.55	20.39	20.53	3			
64QAM	12	13	20.53	20.38	20.53	0-3	3	
	25	0	20.50	20.36	20.51		3	



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Table 9-77

LTE Band 7 Antenna B Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.03	20.05	20.02	0	0
	1	50	19.74	19.89	19.70		0
	1	99	19.79	19.77	19.55		0
	50	0	19.89	20.02	19.94	0-1	0
	50	25	19.85	19.98	19.88		0
	50	50	19.85	19.92	19.75		0
	100	0	19.93	20.00	19.89		0
16QAM	1	0	20.16	20.27	20.22	0-1	0
	1	50	19.96	20.11	19.81		0
	1	99	19.90	19.94	19.54		0
	50	0	20.01	20.16	20.05	0-2	0
	50	25	19.98	20.08	19.96		0
	50	50	19.92	20.05	19.78		0
	100	0	20.04	20.05	19.96		0
64QAM	1	0	20.16	20.26	20.25	0-2	0
	1	50	19.95	20.11	19.91		0
	1	99	20.05	19.92	19.72		0
	50	0	19.70	19.82	19.70	0-3	0
	50	25	19.65	19.81	19.65		0
	50	50	19.65	19.75	19.47		0
	100	0	19.72	19.76	19.67		0

Table 9-78

LTE Band 7 Antenna B Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.02	20.02	19.74	0	0
	1	36	19.87	19.80	19.47		0
	1	74	19.77	19.73	19.41		0
	36	0	20.04	19.97	19.74	0-1	0
	36	18	19.99	19.90	19.60		0
	36	37	19.88	19.81	19.50		0
	75	0	19.94	19.91	19.66		0
16QAM	1	0	20.34	20.38	20.08	0-1	0
	1	36	20.19	20.14	19.73		0
	1	74	20.14	20.05	19.67		0
	36	0	20.11	20.09	19.85	0-2	0
	36	18	20.05	20.02	19.66		0
	36	37	19.97	19.89	19.57		0
	75	0	20.04	20.00	19.74		0
64QAM	1	0	20.21	20.23	20.01	0-2	0
	1	36	20.10	20.05	19.73		0
	1	74	20.03	19.93	19.59		0
	36	0	19.79	19.75	19.48	0-3	0
	36	18	19.77	19.68	19.32		0
	36	37	19.65	19.61	19.23		0
	75	0	19.70	19.68	19.41		0



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Table 9-79
LTE Band 7 Antenna B Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
Conducted Power [dBm]							
QPSK	1	0	20.03	20.06	19.61	0	0
	1	25	19.90	19.95	19.49		0
	1	49	19.81	19.82	19.45		0
	25	0	20.03	19.95	19.62	0-1	0
	25	12	20.01	19.93	19.60		0
	25	25	19.93	19.81	19.51		0
16QAM	50	0	19.97	19.87	19.55	0-1	0
	1	0	20.29	20.29	19.85		0
	1	25	20.21	20.12	19.69		0
	1	49	20.13	20.04	19.70	0-2	0
	25	0	20.11	20.05	19.67		0
	25	12	20.07	19.99	19.64		0
64QAM	25	25	20.01	19.90	19.60	0-2	0
	50	0	20.04	20.01	19.63		0
	1	0	20.28	20.20	19.77		0-3
	1	25	20.11	20.11	19.73	0	
	1	49	20.10	19.95	19.65	0	
	25	0	19.78	19.71	19.37	0	
25	12	19.75	19.70	19.35	0		
25	25	19.69	19.63	19.28	0		
50	0	19.74	19.69	19.32	0		

Table 9-80
LTE Band 7 Antenna B Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
Conducted Power [dBm]							
QPSK	1	0	19.93	19.83	19.53	0	0
	1	12	19.84	19.77	19.48		0
	1	24	19.80	19.75	19.41		0
	12	0	19.98	19.91	19.56	0-1	0
	12	6	19.96	19.91	19.53		0
	12	13	19.91	19.85	19.52		0
16QAM	25	0	19.94	19.89	19.50	0-1	0
	1	0	20.24	20.16	19.76		0
	1	12	20.23	20.12	19.69		0
	1	24	20.10	20.11	19.76	0-2	0
	12	0	20.09	20.03	19.65		0
	12	6	20.10	20.00	19.64		0
64QAM	12	13	20.03	19.95	19.59	0-2	0
	25	0	20.03	19.94	19.58		0
	1	0	20.14	20.11	19.73		0-3
	1	12	20.13	20.08	19.77	0	
	1	24	20.09	20.01	19.65	0	
	12	0	19.77	19.70	19.32	0	
12	6	19.77	19.67	19.32	0		
12	13	19.71	19.64	19.25	0		
25	0	19.75	19.67	19.30	0		



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Table 9-81

LTE Band 7 Antenna B Reduced Conducted Powers - 20 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.96	20.15	20.03	0	0
	1	50	19.71	20.01	19.79		0
	1	99	19.75	19.97	19.65		0
	50	0	19.83	20.11	19.95	0-1	0
	50	25	19.81	20.09	19.92		0
	50	50	19.79	20.05	19.76		0
	100	0	19.80	20.07	19.90		0
16QAM	1	0	20.09	20.29	20.20	0-1	0
	1	50	19.90	20.16	19.92		0
	1	99	19.92	20.05	19.77		0
	50	0	19.93	20.18	20.06	0-2	0
	50	25	19.88	20.16	19.99		0
	50	50	19.90	20.11	19.83		0
	100	0	19.95	20.14	20.00		0
64QAM	1	0	20.18	20.28	20.16	0-2	0
	1	50	19.94	20.17	19.95		0
	1	99	19.97	20.07	19.92		0
	50	0	19.68	19.90	19.78	0-3	0
	50	25	19.60	19.85	19.74		0
	50	50	19.59	19.74	19.52		0
	100	0	19.66	19.81	19.63		0

Table 9-82

LTE Band 7 Antenna B Reduced Conducted Powers - 15 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.34	20.32	20.13	0	0
	1	36	20.21	20.22	19.88		0
	1	74	20.18	20.18	19.86		0
	36	0	20.30	20.34	20.08	0-1	0
	36	18	20.31	20.31	19.99		0
	36	37	20.25	20.24	19.92		0
	75	0	20.26	20.27	20.05		0
16QAM	1	0	20.61	20.57	20.44	0-1	0
	1	36	20.52	20.54	20.17		0
	1	74	20.49	20.49	20.16		0
	36	0	20.37	20.38	20.19	0-2	0
	36	18	20.40	20.39	20.07		0
	36	37	20.31	20.32	20.02		0
	75	0	20.34	20.35	20.12		0
64QAM	1	0	20.59	20.58	20.37	0-2	0
	1	36	20.50	20.47	20.16		0
	1	74	20.46	20.45	20.15		0
	36	0	20.09	20.13	19.89	0-3	0
	36	18	20.10	20.10	19.75		0
	36	37	20.05	20.03	19.71		0
	75	0	20.06	20.06	19.85		0



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Table 9-83

LTE Band 7 Antenna B Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.28	20.27	19.95	0	0
	1	25	20.23	20.21	19.89		0
	1	49	20.19	20.16	19.83		0
	25	0	20.30	20.28	19.95	0-1	0
	25	12	20.30	20.27	19.93		0
	25	25	20.27	20.25	19.88		0
16QAM	50	0	20.27	20.25	19.91	0-1	0
	1	0	20.55	20.59	20.17		0
	1	25	20.54	20.57	20.16		0
	1	49	20.52	20.54	20.16	0-2	0
	25	0	20.41	20.36	20.03		0
	25	12	20.41	20.40	20.03		0
64QAM	25	25	20.32	20.33	19.98	0-2	0
	50	0	20.34	20.37	20.00		0
	1	0	20.55	20.52	20.19		0-2
	1	25	20.51	20.49	20.15	0	
	1	49	20.47	20.44	20.11	0	
	64QAM	25	0	20.11	20.10	19.72	0-3
25		12	20.09	20.08	19.73	0	
25		25	20.03	20.04	19.68	0	
50		0	20.08	20.06	19.73	0	

Table 9-84

LTE Band 7 Antenna B Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.21	20.18	19.84	0	0
	1	12	20.22	20.20	19.83		0
	1	24	20.16	20.17	19.82		0
	12	0	20.31	20.27	19.87	0-1	0
	12	6	20.31	20.26	19.93		0
	12	13	20.24	20.23	19.89		0
16QAM	25	0	20.30	20.25	19.87	0-1	0
	1	0	20.55	20.56	20.11		0
	1	12	20.56	20.55	20.17		0
	1	24	20.51	20.51	20.08	0-2	0
	12	0	20.38	20.39	19.99		0
	12	6	20.41	20.39	20.04		0
64QAM	12	13	20.40	20.36	20.00	0-2	0
	25	0	20.36	20.35	19.98		0
	1	0	20.50	20.46	20.09		0-2
	1	12	20.52	20.46	20.11	0	
	1	24	20.44	20.41	20.05	0	
	64QAM	12	0	20.10	20.07	19.69	0-3
12		6	20.14	20.10	19.71	0	
12		13	20.07	20.06	19.67	0	
25		0	20.07	20.03	19.69	0	



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Table 9-85
LTE Band 7 Antenna A Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.23	23.09	23.21	0	0
	1	50	23.15	22.97	23.02		0
	1	99	23.11	22.83	22.98		0
	50	0	22.25	22.11	22.14	0-1	1
	50	25	22.11	21.98	22.08		1
	50	50	22.09	21.89	22.06		1
	100	0	22.05	21.97	22.08		1
16QAM	1	0	22.57	22.38	22.55	0-1	1
	1	50	22.44	22.23	22.36		1
	1	99	22.34	22.11	22.32		1
	50	0	21.26	21.15	21.23	0-2	2
	50	25	21.18	21.04	21.18		2
	50	50	21.18	20.95	21.12		2
	100	0	21.16	20.99	21.16		2
64QAM	1	0	21.64	21.51	21.59	0-2	2
	1	50	21.45	21.38	21.47		2
	1	99	21.54	21.19	21.37		2
	50	0	20.28	20.21	20.24	0-3	3
	50	25	20.26	20.10	20.19		3
	50	50	20.26	19.98	20.18		3
	100	0	20.20	20.07	20.19		3

Table 9-86
LTE Band 7 Antenna A Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.26	23.21	23.23	0	0
	1	36	23.21	23.14	23.08		0
	1	74	23.05	22.98	23.02		0
	36	0	22.24	22.23	22.13	0-1	1
	36	18	22.24	22.11	22.14		1
	36	37	22.09	22.06	22.02		1
	75	0	22.15	22.09	22.09		1
16QAM	1	0	22.53	22.44	22.55	0-1	1
	1	36	22.50	22.39	22.40		1
	1	74	22.49	22.28	22.19		1
	36	0	21.34	21.26	21.18	0-2	2
	36	18	21.31	21.19	21.17		2
	36	37	21.18	21.12	21.12		2
	75	0	21.25	21.14	21.13		2
64QAM	1	0	21.61	21.51	21.57	0-2	2
	1	36	21.45	21.46	21.30		2
	1	74	21.33	21.24	21.16		2
	36	0	20.36	20.24	20.22	0-3	3
	36	18	20.32	20.21	20.18		3
	36	37	20.20	20.12	20.12		3
	75	0	20.27	20.18	20.14		3



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Table 9-87
LTE Band 7 Antenna A Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	23.48	23.30	23.19	0	0	
	1	25	23.40	23.18	23.11		0	
	1	49	23.39	23.15	23.07		0	
	25	0	22.40	22.27	22.17	0-1	1	
	25	12	22.47	22.27	22.17		1	
	25	25	22.44	22.16	22.10		1	
16QAM	50	0	22.50	22.22	22.12	0-1	1	
	1	0	22.61	22.70	22.49		0-1	1
	1	25	22.64	22.52	22.45			1
	1	49	22.65	22.50	22.36	0-2		1
	25	0	21.39	21.33	21.24		2	
	25	12	21.40	21.32	21.26		2	
64QAM	25	25	21.35	21.21	21.19	0-2	2	
	50	0	21.41	21.25	21.21		2	
	1	0	21.60	21.57	21.55		0-2	2
	1	25	21.55	21.55	21.38	2		
	1	49	21.60	21.41	21.34	2		
	64QAM	25	0	20.44	20.33	20.30	0-3	3
25		12	20.40	20.33	20.26	3		
25		25	20.37	20.25	20.16	3		
50		0	20.40	20.20	20.26	3		

Table 9-88
LTE Band 7 Antenna A Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)			
			Conducted Power [dBm]					
QPSK	1	0	23.36	23.26	23.09	0	0	
	1	12	23.37	23.17	23.10		0	
	1	24	23.31	23.13	23.05		0	
	12	0	22.37	22.17	22.12	0-1	1	
	12	6	22.41	22.23	22.15		1	
	12	13	22.30	22.14	22.07		1	
16QAM	25	0	22.32	22.19	22.12	0-1	1	
	1	0	22.70	22.57	22.49		0-1	1
	1	12	22.69	22.46	22.46			1
	1	24	22.72	22.48	22.41	0-2		1
	12	0	21.46	21.24	21.17		2	
	12	6	21.44	21.25	21.24		2	
64QAM	12	13	21.38	21.23	21.15	0-2	2	
	25	0	21.42	21.21	21.14		2	
	1	0	21.61	21.49	21.44		0-2	2
	1	12	21.48	21.45	21.39	2		
	1	24	21.58	21.38	21.28	2		
	64QAM	12	0	20.49	20.34	20.23	0-3	3
12		6	20.49	20.28	20.21	3		
12		13	20.43	20.24	20.19	3		
25		0	20.40	20.23	20.21	3		



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Table 9-89
LTE Band 7 Antenna A Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.78	19.80	19.56	0	0
	1	50	19.51	19.55	19.37		0
	1	99	19.51	19.43	19.22		0
	50	0	19.67	19.72	19.46	0-1	0
	50	25	19.59	19.65	19.40		0
	50	50	19.44	19.55	19.38		0
	100	0	19.56	19.65	19.42		0
16QAM	1	0	20.00	20.03	19.86	0-1	0
	1	50	19.84	19.86	19.66		0
	1	99	19.78	19.76	19.51		0
	50	0	19.76	19.85	19.57	0-2	0
	50	25	19.68	19.78	19.50		0
	50	50	19.60	19.62	19.45		0
	100	0	19.65	19.73	19.48		0
64QAM	1	0	20.03	20.05	19.79	0-2	0
	1	50	19.85	19.82	19.57		0
	1	99	19.77	19.70	19.50		0
	50	0	19.76	19.83	19.54	0-3	0
	50	25	19.67	19.76	19.53		0
	50	50	19.56	19.64	19.48		0
	100	0	19.65	19.71	19.54		0

Table 9-90
LTE Band 7 Antenna A Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.50	19.79	19.53	0	0
	1	36	19.31	19.67	19.21		0
	1	74	19.28	19.48	19.12		0
	36	0	19.42	19.75	19.42	0-1	0
	36	18	19.49	19.69	19.36		0
	36	37	19.41	19.65	19.21		0
	75	0	19.45	19.68	19.34		0
16QAM	1	0	19.84	20.18	19.87	0-1	0
	1	36	19.83	20.06	19.65		0
	1	74	19.77	19.87	19.49		0
	36	0	19.52	19.82	19.50	0-2	0
	36	18	19.61	19.78	19.43		0
	36	37	19.48	19.72	19.28		0
	75	0	19.53	19.76	19.42		0
64QAM	1	0	19.81	20.15	19.85	0-2	0
	1	36	19.60	19.98	19.47		0
	1	74	19.65	19.84	19.43		0
	36	0	19.23	19.53	19.19	0-3	0
	36	18	19.25	19.55	19.16		0
	36	37	19.15	19.41	18.96		0
	75	0	19.19	19.41	19.10		0



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Table 9-91
LTE Band 7 Antenna A Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.83	19.82	19.45	0	0
	1	25	19.72	19.68	19.26		0
	1	49	19.70	19.61	19.17		0
	25	0	19.81	19.73	19.38	0-1	0
	25	12	19.76	19.76	19.27		0
	25	25	19.75	19.64	19.22		0
16QAM	50	0	19.79	19.70	19.35	0-1	0
	1	0	20.13	20.12	19.88		0
	1	25	20.08	20.08	19.70		0
	1	49	20.11	19.99	19.65	0-2	0
	25	0	19.88	19.82	19.50		0
	25	12	19.87	19.84	19.39		0
64QAM	25	25	19.87	19.74	19.26	0-2	0
	50	0	19.91	19.79	19.44		0
	1	0	20.10	20.11	19.70		0-2
	1	25	20.04	20.02	19.62	0	
	1	49	20.03	19.94	19.55	0	
	64QAM	25	0	19.56	19.56	19.18	0-3
25		12	19.53	19.50	19.08	0	
25		25	19.57	19.44	19.04	0	
50		0	19.64	19.48	19.14	0	

Table 9-92
LTE Band 7 Antenna A Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.70	19.75	19.25	0	0
	1	12	19.61	19.66	19.21		0
	1	24	19.60	19.62	19.21		0
	12	0	19.69	19.73	19.29	0-1	0
	12	6	19.68	19.76	19.28		0
	12	13	19.60	19.73	19.25		0
16QAM	25	0	19.64	19.69	19.28	0-1	0
	1	0	20.03	20.05	19.62		0
	1	12	20.09	20.10	19.71		0
	1	24	19.95	20.07	19.58	0-2	0
	12	0	19.81	19.84	19.39		0
	12	6	19.80	19.86	19.42		0
64QAM	12	13	19.78	19.75	19.38	0-2	0
	25	0	19.76	19.77	19.36		0
	1	0	19.91	20.02	19.58		0-2
	1	12	19.95	19.98	19.56	0	
	1	24	19.90	19.94	19.53	0	
	64QAM	12	0	19.49	19.52	19.10	0-3
12		6	19.48	19.52	19.10	0	
12		13	19.43	19.47	19.05	0	
25		0	19.46	19.48	19.10	0	



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Table 9-93

LTE Band 7 Antenna A Reduced Conducted Powers - 20 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.26	20.39	20.25	0	0
	1	50	20.05	20.21	19.95		0
	1	99	20.06	20.00	19.93		0
	50	0	20.21	20.29	20.14	0-1	0
	50	25	20.12	20.24	20.08		0
	50	50	20.04	20.14	19.91		0
	100	0	20.09	20.23	20.10		0
16QAM	1	0	20.52	20.60	20.50	0-1	0
	1	50	20.35	20.50	20.17		0
	1	99	20.32	20.30	20.21		0
	50	0	20.28	20.38	20.25	0-2	0
	50	25	20.18	20.31	20.16		0
	50	50	20.08	20.19	20.02		0
	100	0	20.15	20.25	20.15		0
64QAM	1	0	20.52	20.65	20.56	0-2	0
	1	50	20.43	20.56	20.35		0
	1	99	20.40	20.35	20.31		0
	50	0	20.00	20.12	19.91	0-3	0
	50	25	19.90	20.06	19.90		0
	50	50	19.79	19.95	19.74		0
	100	0	19.88	20.02	19.85		0

Table 9-94

LTE Band 7 Antenna A Reduced Conducted Powers - 15 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.10	20.37	20.17	0	0
	1	36	19.91	20.36	19.91		0
	1	74	19.92	20.18	19.83		0
	36	0	19.98	20.33	20.10	0-1	0
	36	18	20.07	20.32	19.92		0
	36	37	19.96	20.22	19.88		0
	75	0	20.03	20.35	20.06		0
16QAM	1	0	20.42	20.65	20.60	0-1	0
	1	36	20.40	20.64	20.23		0
	1	74	20.34	20.56	20.23		0
	36	0	20.05	20.43	20.11	0-2	0
	36	18	20.12	20.35	20.06		0
	36	37	20.04	20.26	19.90		0
	75	0	20.10	20.32	20.06		0
64QAM	1	0	20.35	20.64	20.45	0-2	0
	1	36	20.23	20.56	20.21		0
	1	74	20.29	20.48	20.09		0
	36	0	19.78	20.19	19.85	0-3	0
	36	18	19.88	20.06	19.69		0
	36	37	19.80	20.03	19.62		0
	75	0	19.83	20.04	19.76		0



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Table 9-95



LTE Band 7 Antenna A Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.36	20.36	19.92	0	0
	1	25	20.28	20.27	19.83		0
	1	49	20.27	20.20	19.77		0
	25	0	20.33	20.35	19.91	0-1	0
	25	12	20.32	20.25	19.86		0
	25	25	20.33	20.24	19.82		0
16QAM	50	0	20.31	20.28	19.82	0-1	0
	1	0	20.50	20.60	20.34		0
	1	25	20.52	20.65	20.18		0
	1	49	20.60	20.59	20.07	0-2	0
	25	0	20.39	20.35	19.95		0
	25	12	20.35	20.32	19.94		0
64QAM	25	25	20.39	20.29	19.88	0-2	0
	50	0	20.40	20.30	19.93		0
	1	0	20.44	20.66	20.23		0-2
	1	25	20.49	20.58	20.18	0	
	1	49	20.50	20.54	20.12	0	
	64QAM	25	0	20.13	20.10	19.65	0-3
25		12	20.11	20.06	19.66	0	
25		25	20.17	19.96	19.60	0	
50		0	20.15	20.06	19.63	0	

Table 9-96

LTE Band 7 Antenna A Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.19	20.24	19.84	0	0
	1	12	20.17	20.25	19.83		0
	1	24	20.16	20.15	19.77		0
	12	0	20.23	20.26	19.86	0-1	0
	12	6	20.22	20.24	19.85		0
	12	13	20.15	20.24	19.82		0
16QAM	25	0	20.18	20.23	19.83	0-1	0
	1	0	20.44	20.58	20.28		0
	1	12	20.45	20.57	20.18		0
	1	24	20.41	20.52	20.03	0-2	0
	12	0	20.33	20.31	19.93		0
	12	6	20.30	20.36	19.98		0
64QAM	12	13	20.29	20.31	19.90	0-2	0
	25	0	20.26	20.26	19.88		0
	1	0	20.47	20.57	20.13		0-2
	1	12	20.40	20.54	20.15	0	
	1	24	20.38	20.46	20.09	0	
	64QAM	12	0	19.99	20.06	19.62	0-3
12		6	19.99	20.11	19.67	0	
12		13	19.91	20.01	19.60	0	
25		0	19.92	20.02	19.61	0	

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LTE Band 41

Table 9-97
LTE Band 41 PC3 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.41	23.65	23.79	23.78	23.87	0	0
	1	50	23.21	23.51	23.49	23.59	23.54		0
	1	99	23.20	23.55	23.56	23.53	23.44		0
	50	0	22.35	22.67	22.64	22.69	22.75	0-1	1
	50	25	22.30	22.63	22.60	22.64	22.67		1
	50	50	22.26	22.61	22.55	22.63	22.56		1
16QAM	100	0	22.31	22.67	22.60	22.60	22.66	0-1	1
	1	0	22.70	22.78	22.79	22.76	23.09		1
	1	50	22.54	22.63	22.61	22.65	22.86		1
	1	99	22.49	22.69	22.69	22.65	22.73	0-2	1
	50	0	21.47	21.71	21.77	21.76	21.83		2
	50	25	21.38	21.77	21.70	21.80	21.74		2
64QAM	50	50	21.32	21.75	21.67	21.74	21.67	0-2	2
	100	0	21.39	21.80	21.76	21.74	21.75		2
	1	0	21.20	21.35	21.45	21.46	21.59		0-3
	1	50	21.00	21.13	21.14	21.17	21.33	2	
	1	99	20.97	21.14	21.07	21.16	21.25	2	
	50	0	20.45	20.76	20.77	20.78	20.85	3	
50	25	20.41	20.80	20.72	20.82	20.78	3		
50	50	20.35	20.77	20.70	20.75	20.66	3		
100	0	20.39	20.82	20.70	20.73	20.76	3		

Table 9-98
LTE Band 41 PC3 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.47	23.57	24.15	24.00	24.07	0	0
	1	36	23.36	23.46	23.95	23.86	23.84		0
	1	74	23.27	23.38	23.78	23.74	23.74		0
	36	0	22.46	22.80	23.06	22.99	22.99	0-1	1
	36	18	22.44	22.75	23.05	22.91	22.88		1
	36	37	22.39	22.66	22.92	22.84	22.84		1
16QAM	75	0	22.40	22.72	23.00	22.90	22.87	0-1	1
	1	0	22.82	23.13	23.43	23.38	23.36		1
	1	36	22.67	22.98	23.25	23.20	23.22		1
	1	74	22.56	22.95	23.14	23.05	23.03	0-2	1
	36	0	21.53	21.89	22.13	22.01	22.09		2
	36	18	21.51	21.86	22.10	22.03	22.04		2
64QAM	36	37	21.47	21.79	22.05	21.94	21.94	0-2	2
	75	0	21.50	21.84	22.14	21.96	22.05		2
	1	0	21.29	21.61	21.87	21.81	21.80		2
	1	36	21.18	21.48	21.75	21.63	21.69	0-3	2
	1	74	21.08	21.47	21.60	21.60	21.51		2
	36	0	20.54	20.83	21.16	21.04	21.03		3
36	18	20.51	20.88	21.09	21.06	21.06	3		
36	37	20.46	20.81	21.04	20.96	20.96	3		
75	0	20.55	20.90	21.10	21.03	21.01	3		

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**Table 9-99
LTE Band 41 PC3 Maximum Conducted Powers - 10 MHz Bandwidth**

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.66	23.72	24.01	23.84	23.79	0	0
	1	25	23.64	23.70	23.99	23.83	23.67		0
	1	49	23.61	23.58	23.86	23.79	23.68		0
	25	0	22.71	22.77	23.02	22.82	22.74	0-1	1
	25	12	22.73	22.75	23.04	22.85	22.71		1
	25	25	22.66	22.66	22.90	22.81	22.70		1
16QAM	50	0	22.66	22.71	23.04	22.79	22.75	0-1	1
	1	0	23.06	23.02	23.31	22.78	23.01		1
	1	25	22.98	23.05	23.28	22.71	22.92		1
	1	49	22.85	22.98	23.14	22.66	22.91	0-2	1
	25	0	21.72	21.74	22.11	21.89	21.80		2
	25	12	21.71	21.76	22.06	21.91	21.81		2
64QAM	25	25	21.67	21.78	21.98	21.88	21.79	0-2	2
	50	0	21.79	21.85	22.14	21.93	21.74		2
	1	0	21.52	21.57	21.85	21.97	21.96		0-3
	1	25	21.44	21.53	21.78	21.90	21.87	2	
	1	49	21.35	21.42	21.67	21.85	21.84	2	
	25	0	20.85	20.91	21.20	20.84	20.81	0-3	3
25	12	20.88	20.89	21.19	20.83	20.83	3		
25	25	20.80	20.91	21.03	20.79	20.80	3		
50	0	20.77	20.83	21.08	20.87	20.83		3	

**Table 9-100
LTE Band 41 PC3 Maximum Conducted Powers - 5 MHz Bandwidth**

LTE Band 41 5 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
			Conducted Power [dBm]							
QPSK	1	0	23.39	23.70	23.85	23.79	23.75	0	0	
	1	12	23.38	23.66	23.80	23.77	23.71		0	
	1	24	23.38	23.65	23.77	23.73	23.69		0	
	12	0	22.44	22.67	22.81	22.83	22.75	0-1	1	
	12	6	22.48	22.71	22.82	22.87	22.74		1	
	12	13	22.47	22.64	22.81	22.82	22.71		1	
16QAM	25	0	22.48	22.69	22.80	22.84	22.74	0-1	1	
	1	0	22.13	22.72	22.87	22.86	22.81		0-2	1
	1	12	22.12	22.70	22.86	22.83	22.76			1
	1	24	22.13	22.71	22.81	22.81	22.77	0-2		1
	12	0	21.45	21.82	22.01	21.90	21.91		2	
	12	6	21.46	21.85	21.99	21.93	21.93		2	
64QAM	12	13	21.42	21.83	22.00	21.86	21.89	0-2	2	
	25	0	21.52	21.71	21.90	21.84	21.80		2	
	1	0	21.68	21.88	22.05	21.71	21.99		0-3	2
	1	12	21.72	21.87	22.02	21.70	21.95	2		
	1	24	21.70	21.88	22.03	21.69	21.93	2		
	12	0	20.57	20.76	20.91	20.84	20.78	0-3	3	
12	6	20.60	20.78	20.91	20.85	20.79	3			
12	13	20.59	20.76	20.89	20.81	20.76	3			
25	0	20.52	20.72	20.88	20.88	20.77		3		



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Table 9-101
LTE Band 41 PC3 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

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	21.91	22.11	22.28	22.32	22.34	0	0
	1	50	21.74	21.92	22.01	22.23	22.10		0
	1	99	21.71	21.99	21.99	22.13	22.00		0
	50	0	21.87	22.15	22.18	22.29	22.30	0-1	0
	50	25	21.81	22.14	22.09	22.28	22.20		0
	50	50	21.76	22.06	21.99	22.21	22.10		0
16QAM	100	0	21.83	22.16	22.10	22.19	22.20	0-1	0
	1	0	22.25	22.42	22.49	22.45	22.49		0
	1	50	22.05	22.25	22.24	22.43	22.40		0
	1	99	22.00	22.23	22.21	22.32	22.28	0-2	0
	50	0	21.52	21.82	21.98	21.92	21.87		0
	50	25	21.42	21.81	21.89	21.94	21.77		0
64QAM	50	50	21.39	21.73	21.76	21.85	21.68	0-2	0
	100	0	21.43	21.78	21.90	21.84	21.79		0
	1	0	21.75	21.96	22.11	22.16	22.15		0-3
	1	50	21.55	21.78	21.82	21.99	21.92	0	
	1	99	21.52	21.87	21.87	21.93	21.73	0	
	50	0	20.54	20.85	20.99	20.89	20.92	1	
50	25	20.48	20.77	20.90	20.92	20.86	1		
50	50	20.40	20.78	20.80	20.86	20.72	1		
100	0	20.46	20.76	20.91	20.81	20.78	1		

Table 9-102
LTE Band 41 PC3 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.08	22.09	22.30	22.28	22.20	0	0
	1	36	21.95	21.90	22.09	22.03	22.05		0
	1	74	21.86	21.77	22.03	21.87	21.89		0
	36	0	22.03	22.00	22.21	22.16	22.12	0-1	0
	36	18	22.00	21.97	22.14	22.08	22.08		0
	36	37	21.94	21.87	22.09	21.98	22.04		0
16QAM	75	0	21.97	21.89	22.11	22.05	22.09	0-1	0
	1	0	22.21	22.24	22.45	22.36	22.36		0
	1	36	22.08	22.06	22.25	22.14	22.19		0
	1	74	22.02	21.97	22.09	22.00	22.08	0-2	0
	36	0	21.62	21.60	21.81	21.80	21.76		0
	36	18	21.59	21.57	21.76	21.71	21.70		0
64QAM	36	37	21.53	21.50	21.69	21.57	21.61	0-2	0
	75	0	21.56	21.53	21.74	21.65	21.68		0
	1	0	21.57	21.60	21.79	21.76	21.71		0
	1	36	21.46	21.43	21.62	21.53	21.55	0-3	0
	1	74	21.43	21.36	21.51	21.40	21.44		0
	36	0	20.62	20.60	20.80	20.77	20.73		1
36	18	20.56	20.55	20.75	20.67	20.67	1		
36	37	20.54	20.46	20.66	20.58	20.63	1		
75	0	20.58	20.56	20.75	20.69	20.71	1		



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Table 9-103
LTE Band 41 PC3 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.08	22.05	22.28	22.25	22.23	0	0
	1	25	22.00	21.96	22.17	22.11	22.09		0
	1	49	21.88	21.87	22.01	21.96	21.99		0
	25	0	22.04	21.99	22.25	22.17	22.21	0-1	0
	25	12	22.05	22.00	22.21	22.14	22.16		0
	25	25	21.98	21.92	22.14	22.05	22.09		0
16QAM	50	0	22.05	22.03	22.21	22.16	22.18	0-1	0
	1	0	22.22	22.23	22.45	22.34	22.36		0
	1	25	22.16	22.14	22.35	22.24	22.25		0
	1	49	22.10	22.05	22.26	22.09	22.20	0-2	0
	25	0	21.59	21.57	21.79	21.75	21.71		0
	25	12	21.58	21.53	21.77	21.69	21.68		0
64QAM	25	25	21.51	21.47	21.67	21.62	21.61	0-2	0
	50	0	21.66	21.59	21.83	21.78	21.76		0
	1	0	21.57	21.62	21.80	21.73	21.74		0
	1	25	21.53	21.52	21.72	21.64	21.61	0-3	0
	1	49	21.48	21.43	21.62	21.53	21.56		0
	25	0	20.75	20.72	20.93	20.88	20.87		1
25	12	20.74	20.68	20.91	20.82	20.83	1		
25	25	20.65	20.61	20.80	20.77	20.77	1		
50	0	20.67	20.63	20.83	20.80	20.77	1		

Table 9-104
LTE Band 41 PC3 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

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	21.98	21.98	22.17	22.12	22.11	0	0
	1	12	21.98	21.94	22.16	22.12	22.07		0
	1	24	21.88	21.85	22.06	21.99	22.02		0
	12	0	21.99	21.98	22.19	22.14	22.11	0-1	0
	12	6	22.02	21.99	22.19	22.12	22.11		0
	12	13	21.97	21.94	22.11	22.05	22.06		0
16QAM	25	0	22.03	21.97	22.14	22.08	22.09	0-1	0
	1	0	22.16	22.17	22.37	22.24	22.27		0
	1	12	22.14	22.12	22.32	22.21	22.23		0
	1	24	22.09	22.06	22.27	22.12	22.17	0-2	0
	12	0	21.64	21.61	21.81	21.76	21.77		0
	12	6	21.67	21.62	21.82	21.75	21.74		0
64QAM	12	13	21.61	21.56	21.78	21.71	21.71	0-2	0
	25	0	21.53	21.49	21.71	21.67	21.64		0
	1	0	21.54	21.53	21.75	21.66	21.62		0
	1	12	21.52	21.51	21.70	21.62	21.59	0-3	0
	1	24	21.48	21.45	21.63	21.53	21.53		0
	12	0	20.54	20.52	20.77	20.72	20.69		1
12	6	20.58	20.54	20.74	20.68	20.66	1		
12	13	20.54	20.49	20.69	20.61	20.63	1		
25	0	20.68	20.64	20.84	20.81	20.79	1		



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Table 9-105
LTE Band 41 PC3 Reduced Conducted Powers - 20 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.58	22.79	22.86	22.94	23.03	0	0
	1	50	22.38	22.65	22.57	22.77	22.77		0
	1	99	22.37	22.63	22.58	22.71	22.68		0
	50	0	22.57	22.76	22.77	22.87	22.96	0-1	0
	50	25	22.51	22.71	22.68	22.86	22.87		0
	50	50	22.47	22.65	22.56	22.79	22.78		0
16QAM	100	0	22.51	22.73	22.67	22.78	22.89	0-1	0
	1	0	22.92	23.04	23.14	23.17	23.30		0
	1	50	22.71	22.89	22.90	23.04	23.02		0
	1	99	22.68	22.87	22.87	22.97	22.97	0-2	1
	50	0	21.68	21.85	21.87	21.93	22.04		1
	50	25	21.62	21.81	21.78	21.94	21.96		1
64QAM	50	50	21.57	21.79	21.70	21.89	21.82	0-2	1
	100	0	21.62	21.82	21.77	21.86	21.97		1
	1	0	21.47	21.54	21.64	21.67	21.81		1
	1	50	21.20	21.33	21.35	21.52	21.53	0-3	1
	1	99	21.16	21.35	21.35	21.47	21.42		1
	50	0	20.70	20.86	20.86	20.93	21.04		2
50	25	20.65	20.76	20.80	20.98	21.00	0-3	2	
50	50	20.52	20.73	20.68	20.89	20.89		2	
100	0	20.62	20.81	20.82	20.89	20.96	0-3	2	

Table 9-106
LTE Band 41 PC3 Reduced Conducted Powers - 15 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.76	22.62	22.74	22.72	22.87	0	0
	1	36	22.61	22.46	22.56	22.54	22.71		0
	1	74	22.51	22.41	22.52	22.43	22.59		0
	36	0	22.73	22.59	22.72	22.73	22.81	0-1	0
	36	18	22.72	22.58	22.66	22.60	22.80		0
	36	37	22.63	22.46	22.55	22.52	22.70		0
16QAM	75	0	22.69	22.52	22.63	22.59	22.76	0-1	0
	1	0	22.98	22.80	22.91	22.96	22.98		0
	1	36	22.79	22.61	22.73	22.72	22.85		0
	1	74	22.70	22.57	22.70	22.60	22.72	0-2	0
	36	0	21.81	21.68	21.77	21.80	21.92		1
	36	18	21.78	21.65	21.73	21.73	21.89		1
64QAM	36	37	21.69	21.61	21.68	21.64	21.80	0-2	1
	75	0	21.77	21.66	21.73	21.70	21.85		1
	1	0	21.59	21.41	21.54	21.56	21.62		1
	1	36	21.43	21.25	21.36	21.30	21.46	0-3	1
	1	74	21.35	21.19	21.35	21.20	21.34		1
	36	0	20.83	20.69	20.81	20.80	20.91		2
36	18	20.76	20.66	20.75	20.70	20.87	0-3	2	
36	37	20.71	20.56	20.61	20.59	20.79		2	
75	0	20.80	20.63	20.77	20.72	20.89	0-3	2	



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Table 9-107

LTE Band 41 PC3 Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 10 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
Conducted Power [dBm]										
QPSK	1	0	22.71	22.58	22.70	22.67	22.84	0	0	
	1	25	22.62	22.51	22.60	22.59	22.70		0	
	1	49	22.55	22.45	22.57	22.49	22.66		0	
	QPSK	25	0	22.69	22.56	22.67	22.64	22.78	0-1	0
		25	12	22.67	22.50	22.62	22.61	22.76		0
		25	25	22.58	22.47	22.55	22.54	22.71		0
50		0	22.67	22.52	22.63	22.62	22.77	0		
16QAM	1	0	22.80	22.73	22.86	22.84	22.96	0-1	0	
	1	25	22.79	22.65	22.75	22.70	22.85		0	
	1	49	22.71	22.58	22.74	22.61	22.78		0	
	16QAM	25	0	21.76	21.58	21.73	21.69	21.84	0-2	1
		25	12	21.68	21.56	21.70	21.63	21.81		1
		25	25	21.61	21.48	21.61	21.54	21.74		1
64QAM	50	0	21.80	21.65	21.76	21.72	21.87	0-3	1	
	1	0	21.49	21.37	21.50	21.47	21.61		1	
	1	25	21.42	21.25	21.35	21.33	21.48		1	
	1	49	21.35	21.19	21.37	21.24	21.42		1	
	25	0	20.86	20.73	20.80	20.82	20.97		2	
	25	12	20.83	20.66	20.78	20.74	20.93		2	
25	25	20.73	20.63	20.68	20.68	20.87	2			
50	0	20.78	20.66	20.77	20.72	20.92	2			

Table 9-108

LTE Band 41 PC3 Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 5 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
Conducted Power [dBm]										
QPSK	1	0	22.65	22.54	22.64	22.57	22.77	0	0	
	1	12	22.61	22.49	22.61	22.54	22.74		0	
	1	24	22.52	22.40	22.50	22.49	22.67		0	
	QPSK	12	0	22.64	22.45	22.61	22.61	22.76	0-1	0
		12	6	22.65	22.53	22.63	22.58	22.80		0
		12	13	22.56	22.48	22.59	22.52	22.73		0
25		0	22.64	22.49	22.60	22.58	22.76	0		
16QAM	1	0	22.80	22.67	22.81	22.76	22.90	0-1	0	
	1	12	22.76	22.61	22.74	22.70	22.84		0	
	1	24	22.72	22.58	22.67	22.64	22.81		0	
	16QAM	12	0	21.78	21.64	21.75	21.75	21.86	0-2	1
		12	6	21.77	21.66	21.75	21.73	21.87		1
		12	13	21.74	21.61	21.71	21.66	21.86		1
64QAM	25	0	21.65	21.51	21.65	21.63	21.79	0-3	1	
	1	0	21.43	21.27	21.41	21.40	21.53		1	
	1	12	21.40	21.26	21.35	21.35	21.46		1	
	1	24	21.33	21.20	21.32	21.30	21.44		1	
	12	0	20.78	20.67	20.78	20.75	21.43		2	
	12	6	20.79	20.69	20.80	20.75	20.91		2	
12	13	20.73	20.65	20.70	20.71	20.92	2			
25	0	20.81	20.67	20.79	20.71	20.87	2			



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Table 9-109
LTE Band 41 PC2 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.54	26.96	27.06	27.05	27.16	0	0
	1	50	27.41	26.80	26.92	26.99	26.94		0
	1	99	27.41	26.85	26.98	26.93	26.83		0
	50	0	26.52	25.93	26.04	26.03	26.09	0-1	1
	50	25	26.51	25.98	26.00	26.09	26.04		1
	50	50	26.45	25.91	25.92	26.02	25.96		1
16QAM	100	0	26.50	26.01	26.01	25.99	26.04	0-1	1
	1	0	26.89	26.33	26.41	26.45	26.47		1
	1	50	26.75	26.16	26.29	26.29	26.27		1
	1	99	26.72	26.19	26.35	26.28	26.13	0-2	1
	50	0	25.66	25.03	25.13	25.16	25.20		2
	50	25	25.62	25.07	25.09	25.18	25.12		2
64QAM	50	50	25.56	25.03	25.04	25.12	25.07	0-2	2
	100	0	25.65	25.14	25.14	25.16	25.17		2
	1	0	25.72	25.18	25.29	25.29	25.37		2
	1	50	25.62	24.98	25.11	25.15	25.14	0-3	2
	1	99	25.58	25.06	25.17	25.13	25.03		2
	50	0	24.66	24.04	24.19	24.17	24.21		3
64QAM	50	25	24.63	24.09	24.15	24.20	24.16	0-3	3
	50	50	24.58	24.03	24.07	24.14	24.07		3
	100	0	24.61	24.11	24.14	24.12	24.16		3

Table 9-110
LTE Band 41 PC2 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
			Conducted Power [dBm]							
QPSK	1	0	27.19	26.93	27.03	27.16	27.08	0	0	
	1	36	27.12	26.81	26.96	27.05	26.97		0	
	1	74	27.12	26.79	26.90	27.01	26.91		0	
	36	0	26.14	25.85	25.99	26.04	25.93	0-1	1	
	36	18	26.14	25.83	26.00	25.99	25.91		1	
	36	37	26.12	25.81	25.95	25.94	25.82		1	
16QAM	75	0	26.13	25.81	25.97	25.96	25.88	0-1	1	
	1	0	26.64	26.34	26.49	26.50	26.39		0-1	1
	1	36	26.59	26.27	26.42	26.36	26.26			1
	1	74	26.58	26.27	26.37	26.27	26.16	0-2		1
	36	0	25.25	24.90	25.09	25.23	25.09		2	
	36	18	25.24	24.90	25.13	25.19	25.06		2	
64QAM	36	37	25.22	24.83	25.04	25.14	25.05	0-2	2	
	75	0	25.22	24.84	25.07	25.06	25.00		2	
	1	0	25.51	25.42	25.39	25.71	25.62		0-2	2
	1	36	25.42	25.35	25.25	25.57	25.47	2		
	1	74	25.41	25.34	25.21	25.51	25.40	2		
	64QAM	36	0	24.28	23.94	24.12	24.18	24.06	0-3	3
36		18	24.31	23.93	24.11	24.14	24.02	3		
36		37	24.24	23.90	24.07	24.10	24.01	3		
75		0	24.25	23.93	24.08	24.09	24.03	3		



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Table 9-111
LTE Band 41 PC2 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.42	27.06	27.32	27.32	27.17	0	0
	1	25	27.33	26.98	27.18	27.19	27.00		0
	1	49	27.27	26.93	27.13	27.14	26.93		0
	25	0	26.35	26.06	26.20	26.23	26.08	0-1	1
	25	12	26.38	26.03	26.21	26.22	26.04		1
	25	25	26.33	25.98	26.16	26.14	25.95		1
16QAM	50	0	26.32	26.03	26.17	26.18	26.06	0-1	1
	1	0	26.67	26.52	26.60	26.61	26.57		1
	1	25	26.61	26.42	26.48	26.46	26.38		1
	1	49	26.60	26.38	26.41	26.41	26.37	0-2	2
	25	0	25.45	25.13	25.32	25.32	25.13		2
	25	12	25.42	25.11	25.30	25.29	25.11		2
64QAM	25	25	25.40	25.08	25.23	25.21	25.04	0-2	2
	50	0	25.44	25.04	25.32	25.28	25.09		2
	1	0	25.38	24.88	25.09	25.04	25.02		0-3
	1	25	25.33	24.81	24.99	24.94	24.92	2	
	1	49	25.24	24.70	24.91	24.83	24.85	2	
	25	0	24.37	23.87	24.08	24.03	23.99	0-3	3
25	12	24.39	23.85	24.06	23.99	23.97	3		
25	25	24.31	23.77	24.00	23.92	23.92	3		
50	0	24.29	23.76	23.97	23.90	23.92	3		

Table 9-112
LTE Band 41 PC2 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
			Conducted Power [dBm]							
QPSK	1	0	27.16	26.63	26.85	26.75	26.76	0	0	
	1	12	27.16	26.55	26.80	26.72	26.71		0	
	1	24	27.11	26.52	26.74	26.63	26.68		0	
	12	0	26.15	25.63	25.82	25.78	25.77	0-1	1	
	12	6	26.14	25.65	25.84	25.77	25.77		1	
	12	13	26.11	25.58	25.79	25.69	25.71		1	
16QAM	25	0	26.16	25.61	25.81	25.75	25.74	0-1	1	
	1	0	26.52	26.03	26.23	26.19	26.14		0-2	2
	1	12	26.52	25.99	26.23	26.17	26.11			2
	1	24	26.48	25.95	26.15	26.06	26.07	0-3		3
	12	0	25.33	24.81	25.01	24.95	24.91		2	
	12	6	25.30	24.80	25.00	24.96	24.90		2	
64QAM	12	13	25.28	24.74	24.94	24.89	24.85	0-2	2	
	25	0	25.20	24.68	24.89	24.81	24.78		2	
	1	0	25.33	24.83	25.02	24.96	24.92		0-3	3
	1	12	25.34	24.81	25.03	24.99	24.92	2		
	1	24	25.26	24.72	24.93	24.87	24.84	2		
	12	0	24.24	23.70	23.94	23.86	23.83	0-3	3	
12	6	24.26	23.74	23.93	23.86	23.85	3			
12	13	24.20	23.66	23.87	23.81	23.79	3			
25	0	24.35	23.81	24.02	23.95	23.93	3			



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Table 9-113
LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

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	21.88	21.92	22.01	22.05	22.20	0	0
	1	50	21.69	21.72	21.76	21.91	21.92		0
	1	99	21.64	21.82	21.73	21.82	21.78		0
	50	0	21.83	21.89	21.88	22.01	22.12	0-1	0
	50	25	21.80	21.95	21.80	22.00	22.02		0
	50	50	21.71	21.90	21.69	21.91	21.98		0
16QAM	100	0	21.78	21.97	21.76	21.90	22.09	0-1	0
	1	0	22.38	22.49	22.43	22.50	22.50		0
	1	50	22.18	22.30	22.17	22.36	22.46		0
	50	0	21.94	22.03	22.02	22.08	22.27	0-2	0
	50	25	21.87	22.12	21.91	22.13	22.18		0
	50	50	21.82	22.01	21.80	22.05	22.07		0
64QAM	100	0	21.91	22.03	21.89	22.01	22.19	0-2	0
	1	0	21.96	22.05	22.07	22.10	22.31		0
	1	50	21.78	21.89	21.82	22.01	22.05		0
	50	0	21.72	21.75	21.71	21.78	21.94	0-3	0
	50	25	21.61	21.80	21.60	21.83	21.91		0
	50	50	21.54	21.75	21.51	21.79	21.79		0
	100	0	21.58	21.77	21.61	21.75	21.82		0

Table 9-114
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.08	22.08	22.30	22.29	22.22	0	0
	1	36	21.94	21.91	22.10	22.06	22.04		0
	1	74	21.83	21.80	21.99	21.91	21.90		0
	36	0	22.06	22.03	22.22	22.21	22.15	0-1	0
	36	18	22.02	21.97	22.16	22.13	22.13		0
	36	37	21.96	21.89	22.08	22.02	22.03		0
16QAM	75	0	21.93	21.91	22.14	22.04	22.08	0-1	0
	1	0	22.45	22.50	22.50	22.46	22.48		0
	1	36	22.31	22.22	22.42	22.36	22.42		0
	36	0	22.11	22.14	22.35	22.29	22.25	0-2	0
	36	18	22.10	22.09	22.32	22.24	22.19		0
	36	37	22.05	21.99	22.20	22.13	22.17		0
64QAM	75	0	22.08	22.05	22.26	22.19	22.20	0-2	0
	1	0	21.60	21.61	21.83	21.78	21.75		0
	1	36	21.48	21.54	21.65	21.59	21.57		0
	36	0	22.13	22.11	22.33	22.30	22.24	0-3	0
	36	18	22.10	22.10	22.29	22.21	22.20		0
	36	37	22.04	22.00	22.18	22.15	22.13		0
	75	0	22.10	22.07	22.26	22.20	22.23		0



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Table 9-115
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 10 MHz Bandwidth										
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]	
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)			
Conducted Power [dBm]										
QPSK	1	0	22.00	22.04	22.22	22.20	22.19	0	0	
	1	25	21.93	21.92	22.13	22.08	22.03		0	
	1	49	21.85	21.81	21.99	21.91	21.95		0	
	QPSK	25	0	22.06	21.97	22.25	22.16	22.13	0-1	0
		25	12	22.04	21.99	22.22	22.10	22.11		0
		25	25	21.97	21.91	22.12	22.03	22.09		0
50		0	22.01	21.97	22.18	22.12	22.11	0		
16QAM	1	0	22.43	22.42	22.50	22.50	22.49	0-1	0	
	1	25	22.38	22.35	22.48	22.43	22.47		0	
	1	49	22.32	22.27	22.48	22.32	22.41		0	
	16QAM	25	0	22.08	22.08	22.30	22.25	22.20	0-2	0
		25	12	22.08	22.07	22.27	22.20	22.18		0
		25	25	22.03	22.00	22.20	22.14	22.12		0
64QAM	50	0	22.14	22.11	22.32	22.24	22.26	0-3	0	
	1	0	22.21	22.20	22.45	22.39	22.34		0	
	1	25	22.17	22.15	22.35	22.27	22.23		0	
	1	49	22.08	22.05	22.25	22.17	22.17		0	
	25	0	22.22	22.21	22.39	22.38	22.33		0	
	25	12	22.20	22.18	22.40	22.32	22.32		0	
25	25	22.13	22.10	22.30	22.25	22.27	0			
50	0	22.14	22.10	22.34	22.26	22.27	0			

Table 9-116
LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

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	21.91	21.92	22.10	22.09	22.02	0	0	
	1	12	21.87	21.85	22.07	22.03	21.99		0	
	1	24	21.86	21.84	22.00	21.93	21.92		0	
	QPSK	12	0	21.92	21.91	22.13	22.04	22.03	0-1	0
		12	6	21.94	21.92	22.11	22.07	22.02		0
		12	13	21.92	21.84	22.06	22.02	22.04		0
16QAM	25	0	21.94	21.92	22.11	22.05	22.04	0-2	0	
	1	0	22.34	22.34	22.50	22.43	22.45		0	
	1	12	22.32	22.18	22.49	22.39	22.41		0	
	1	24	22.27	22.14	22.45	22.30	22.37		0	
	12	0	22.12	22.09	22.32	22.24	22.20		0	
	12	6	22.14	22.08	22.31	22.23	22.22		0	
64QAM	12	13	22.07	22.03	22.26	22.17	22.17	0-2	0	
	25	0	21.99	21.95	22.19	22.08	22.09		0	
	1	0	22.10	22.12	22.31	22.25	22.19		0	
	64QAM	1	12	22.10	22.08	22.29	22.24	22.18	0-3	0
		1	24	22.02	22.01	22.21	22.15	22.11		0
		12	0	22.01	22.03	22.19	22.15	22.12		0
12		6	22.02	22.02	22.21	22.17	22.12	0		
12		13	21.99	21.96	22.15	22.09	22.05	0		
25	0	22.13	22.10	22.30	22.24	22.21	0			



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Table 9-117

LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.60	22.88	22.87	22.90	23.00	0	0
	1	50	22.36	22.67	22.60	22.75	22.74		0
	1	99	22.35	22.61	22.59	22.68	22.60		0
	50	0	22.58	22.81	22.77	22.84	22.95	0-1	0
	50	25	22.52	22.76	22.67	22.88	22.87		0
	50	50	22.44	22.68	22.57	22.76	22.73		0
16QAM	100	0	22.53	22.75	22.71	22.78	22.86	0-1	0
	1	0	23.13	23.29	23.34	23.37	23.49		0
	1	50	22.90	23.12	23.05	23.26	23.22		0
	1	99	22.89	23.10	23.06	23.18	23.11	0-2	0
	50	0	22.70	22.87	22.86	22.93	23.03		0
	50	25	22.63	22.83	22.79	22.96	22.95		0
64QAM	50	50	22.56	22.80	22.69	22.88	22.84	0-2	0
	100	0	22.62	22.83	22.82	22.86	22.92		0
	1	0	22.74	22.90	22.96	22.99	23.11		0-3
	1	50	22.53	22.73	22.69	22.85	22.84	0	
	1	99	22.48	22.71	22.68	22.79	22.74	0	
	50	0	22.39	22.61	22.59	22.67	22.74	0	
50	25	22.34	22.55	22.51	22.70	22.68	0		
50	50	22.25	22.49	22.40	22.60	22.59	0		
100	0	22.31	22.55	22.51	22.58	22.68	0		

Table 9-118

LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.76	22.87	22.96	23.16	22.73	0	0
	1	36	22.62	22.70	22.78	22.93	22.56		0
	1	74	22.55	22.61	22.77	22.82	22.68		0
	36	0	22.71	22.82	22.84	23.00	22.72	0-1	0
	36	18	22.65	22.76	22.80	22.93	22.81		0
	36	37	22.62	22.73	22.71	22.80	22.73		0
16QAM	75	0	22.65	22.74	22.80	22.87	22.81	0-1	0
	1	0	22.90	23.31	23.41	23.43	22.90		0
	1	36	22.75	23.13	23.23	23.24	22.75		0
	1	74	22.64	23.05	23.24	23.11	22.65	0-2	0
	36	0	22.66	22.65	22.86	22.80	22.79		0
	36	18	22.66	22.60	22.83	22.74	22.74		0
64QAM	36	37	22.58	22.55	22.71	22.63	22.66	0-2	0
	75	0	22.60	22.60	22.77	22.70	22.73		0
	1	0	22.72	22.75	22.97	22.92	22.88		0-3
	1	36	22.57	22.57	22.80	22.72	22.75	0	
	1	74	22.53	22.51	22.69	22.58	22.62	0	
	36	0	22.63	22.65	22.84	22.80	22.85	0	
36	18	22.61	22.61	22.79	22.75	22.79	0		
36	37	22.55	22.50	22.70	22.65	22.70	0		
75	0	22.63	22.58	22.79	22.73	22.79	0		



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Table 9-119



LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
Conducted Power [dBm]									
QPSK	1	0	22.73	22.85	22.92	23.09	22.97	0	0
	1	25	22.61	22.72	22.79	22.93	22.81		0
	1	49	22.60	22.68	22.82	22.86	22.76		0
	25	0	22.70	22.79	22.91	22.95	22.90	0-1	0
	25	12	22.66	22.80	22.89	22.92	22.87		0
	25	25	22.66	22.73	22.79	22.89	22.81		0
16QAM	50	0	22.64	22.75	22.86	22.93	22.87	0-1	0
	1	0	23.18	23.22	23.37	23.34	23.41		0
	1	25	23.09	23.15	23.23	23.19	23.24		0
	25	0	22.56	22.52	22.75	22.68	22.68	0-2	0
	25	12	22.55	22.52	22.73	22.64	22.63		0
	25	25	22.50	22.44	22.66	22.59	22.62		0
64QAM	50	0	22.63	22.59	22.82	22.74	22.74	0-2	0
	1	0	22.67	22.66	22.88	22.87	22.83		0
	1	25	22.62	22.59	22.81	22.72	22.74		0
	1	49	22.53	22.50	22.70	22.62	22.67	0-3	0
	25	0	22.69	22.69	22.90	22.84	22.87		0
	25	12	22.69	22.66	22.86	22.81	22.84		0
25	25	22.62	22.58	22.80	22.71	22.78	0-3	0	
50	0	22.62	22.57	22.81	22.73	22.77		0	

Table 9-120

LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
Conducted Power [dBm]									
QPSK	1	0	22.61	22.72	22.82	22.91	22.83	0	0
	1	12	22.60	22.71	22.74	22.84	22.77		0
	1	24	22.56	22.65	22.72	22.82	22.73		0
	12	0	22.66	22.75	22.84	22.96	22.84	0-1	0
	12	6	22.68	22.77	22.87	22.95	22.89		0
	12	13	22.66	22.73	22.83	22.91	22.82		0
16QAM	25	0	22.68	22.73	22.84	22.91	22.86	0-1	0
	1	0	22.85	23.13	22.98	23.13	23.20		0
	1	12	22.84	23.06	22.99	23.04	23.14		0
	1	24	22.78	23.05	22.94	23.05	23.12	0-2	0
	12	0	22.64	22.60	22.83	22.72	22.72		0
	12	6	22.64	22.60	22.81	22.72	22.73		0
64QAM	12	13	22.58	22.56	22.76	22.67	22.68	0-2	0
	25	0	22.51	22.51	22.69	22.63	22.62		0
	1	0	22.63	22.62	22.82	22.74	22.75		0-3
	1	12	22.62	22.59	22.80	22.74	22.73	0	
	1	24	22.57	22.52	22.74	22.65	22.67	0	
	12	0	22.54	22.53	22.72	22.66	22.70	0-3	0
12	6	22.55	22.53	22.75	22.65	22.68	0		
12	13	22.47	22.49	22.66	22.61	22.63	0		
25	0	22.62	22.61	22.83	22.76	22.79	0		

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9.4.12 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-121
LTE Uplink Carrier Aggregation Maximum Conducted Powers

Combination	PCC							SCC						Power		
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C (1)	LTE B41	20	41490	2680.0	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	23.96	23.87

Table 9-122
LTE Uplink Carrier Aggregation Reduced Conducted Powers – Hotspot Mode Active

Combination	PCC							SCC						Power		
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C (1)	LTE B41	20	39750	2506.0	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	21.90	21.71
CA_41C (1)	LTE B41	20	40185	2549.5	QPSK	1	0	LTE B41	20	39987	2529.7	QPSK	1	99	22.03	22.11
CA_41C (1)	LTE B41	20	40620	2593.0	QPSK	1	0	LTE B41	20	40422	2573.2	QPSK	1	99	22.24	22.28
CA_41C (1)	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	22.18	22.32
CA_41C (1)	LTE B41	20	41490	2680.0	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	22.23	22.34
CA_41C (1)	LTE B41	20	39750	2506.0	QPSK	50	50	LTE B41	20	39948	2525.8	QPSK	50	0	22.01	21.76
CA_41C (1)	LTE B41	20	40185	2549.5	QPSK	50	0	LTE B41	20	39987	2529.7	QPSK	50	50	22.20	22.15
CA_41C (1)	LTE B41	20	40620	2593.0	QPSK	50	0	LTE B41	20	40422	2573.2	QPSK	50	50	22.36	22.18
CA_41C (1)	LTE B41	20	41055	2636.5	QPSK	50	0	LTE B41	20	40857	2616.7	QPSK	50	50	22.35	22.29
CA_41C (1)	LTE B41	20	41490	2680.0	QPSK	50	0	LTE B41	20	41292	2660.2	QPSK	50	50	22.27	22.30

Table 9-123
LTE Uplink Carrier Aggregation Reduced Conducted Powers – Grip Sensor Active

Combination	PCC							SCC						Power		
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C (1)	LTE B41	20	39750	2506.0	QPSK	50	50	LTE B41	20	39948	2525.8	QPSK	50	0	22.26	22.47
CA_41C (1)	LTE B41	20	40185	2549.5	QPSK	50	0	LTE B41	20	39987	2529.7	QPSK	50	50	22.82	22.76
CA_41C (1)	LTE B41	20	40620	2593.0	QPSK	50	0	LTE B41	20	40422	2573.2	QPSK	50	50	22.58	22.77
CA_41C (1)	LTE B41	20	41055	2636.5	QPSK	50	0	LTE B41	20	40857	2616.7	QPSK	50	50	22.72	22.87
CA_41C (1)	LTE B41	20	41490	2680.0	QPSK	50	0	LTE B41	20	41292	2660.2	QPSK	50	50	22.63	22.96

Notes:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of two 20 MHz component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
3. Uplink carrier aggregation is only possible when the device is operating with Power Class 3 for LTE Band 41.



Figure 9-4
Power Measurement Setup

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9.5 WLAN Conducted Powers

Table 9-124
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	20.18	16.80	16.77
2417	2	N/A	17.43	17.41
2437	6	20.77	17.42	17.41
2457	10	N/A	17.54	17.51
2462	11	20.15	15.82	15.84

Table 9-125
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	20.19	16.83	16.65
2417	2	N/A	17.37	17.98
2437	6	20.24	17.93	17.91
2457	10	N/A	17.82	17.64
2462	11	20.08	15.98	15.74

Table 9-126
2.4 GHz WLAN Maximum Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	16.77	16.65	19.72
2417	2	17.41	17.98	20.71
2437	6	17.41	17.91	20.68
2457	10	17.51	17.64	20.59
2462	11	15.84	15.74	18.80



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Table 9-127
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	17.24	17.14	17.27
5200	40	17.24	17.23	17.24
5220	44	17.28	17.26	17.19
5240	48	17.31	17.29	17.34
5260	52	17.08	17.05	17.04
5280	56	17.04	17.11	17.08
5300	60	17.15	17.04	17.06
5320	64	17.15	17.21	17.04
5500	100	16.35	16.29	16.33
5600	120	16.54	16.38	16.42
5620	124	16.36	16.54	16.59
5720	144	16.62	16.46	16.54
5745	149	16.65	16.62	16.48
5785	157	16.70	16.64	16.69
5825	165	16.68	16.51	16.52

Table 9-128
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.87	16.82	16.84
5200	40	16.88	16.79	16.83
5220	44	16.84	16.77	16.81
5240	48	16.83	16.89	16.76
5260	52	16.95	16.88	16.84
5280	56	16.92	16.83	16.92
5300	60	16.92	16.91	16.96
5320	64	16.93	16.89	16.76
5500	100	17.13	17.14	17.21
5600	120	17.22	17.23	17.30
5620	124	17.34	17.33	17.20
5720	144	17.35	17.29	17.22
5745	149	17.20	17.13	17.10
5785	157	17.26	17.21	17.21
5825	165	17.25	17.15	17.16



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Table 9-129
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	17.14	16.82	19.99
5200	40	17.23	16.79	20.03
5220	44	17.26	16.77	20.03
5240	48	17.29	16.89	20.10
5260	52	17.05	16.88	19.98
5280	56	17.11	16.83	19.98
5300	60	17.04	16.91	19.99
5320	64	17.21	16.89	20.06
5500	100	15.94	16.02	18.99
5600	120	15.97	16.40	19.20
5620	124	16.00	16.23	19.13
5720	144	15.89	16.42	19.17
5745	149	15.99	16.25	19.13
5785	157	15.94	16.24	19.10
5825	165	15.85	16.32	19.10

Table 9-130
Maximum Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
2412	1	16.55	16.69
2437	6	16.11	16.86
2462	11	16.41	16.83

5GHz (80MHz) 802.11ac Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
5210	42	13.84	13.59
5290	58	13.59	13.69
5530	106	13.98	13.53
5610	122	13.93	13.47
5690	138	13.99	13.55
5775	155	13.53	13.43



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Table 9-131
2.4 GHz WLAN Reduced Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	16.09	16.34	16.55
2437	6	15.97	16.27	16.11
2462	11	16.37	16.45	16.41

Table 9-132
2.4 GHz WLAN Reduced Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	16.58	16.86	16.69
2437	6	16.65	16.97	16.86
2462	11	16.89	16.95	16.83

Table 9-133
2.4 GHz WLAN Reduced Average RF Power – MIMO

2.4GHz 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
2412	1	16.55	16.69	19.63
2437	6	16.11	16.86	19.51
2462	11	16.41	16.83	19.64

Table 9-134
5 GHz WLAN Reduced Average RF Power – Ant 1

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
		Average
5210	42	13.84
5290	58	13.59
5530	106	13.98
5610	122	13.93
5690	138	13.99
5775	155	13.53



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Table 9-135
5 GHz WLAN Reduced Average RF Power – Ant 2

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
		Average
5210	42	13.59
5290	58	13.69
5530	106	13.53
5610	122	13.47
5690	138	13.55
5775	155	13.43

Table 9-136
Reduced Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
2412	1	13.56	13.95
2437	6	13.29	13.69
2462	11	13.35	13.98

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

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

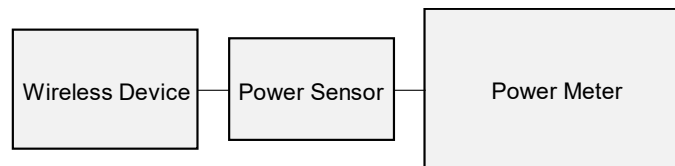




Figure 9-5
Power Measurement Setup



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9.6 Bluetooth Conducted Powers

Table 9-137
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	16.14	41.079
2441	1.0	39	16.47	44.357
2480	1.0	78	16.50	44.637
2402	2.0	0	9.56	9.042
2441	2.0	39	9.15	8.226
2480	2.0	78	9.50	8.919
2402	3.0	0	9.99	9.980
2441	3.0	39	9.54	8.991
2480	3.0	78	9.39	8.682

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

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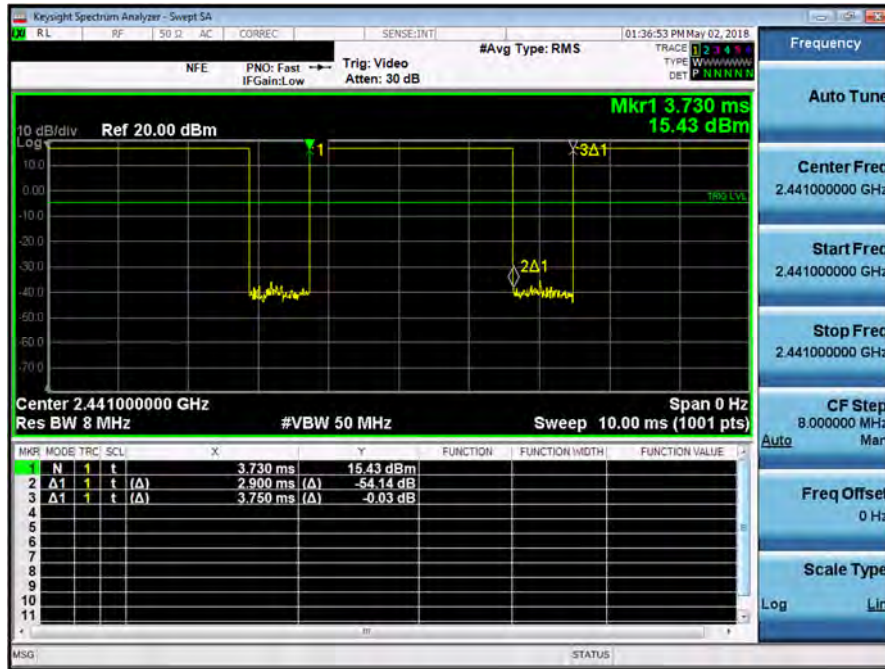


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.9ms}{3.75ms} * 100\% = 77.3\%$$

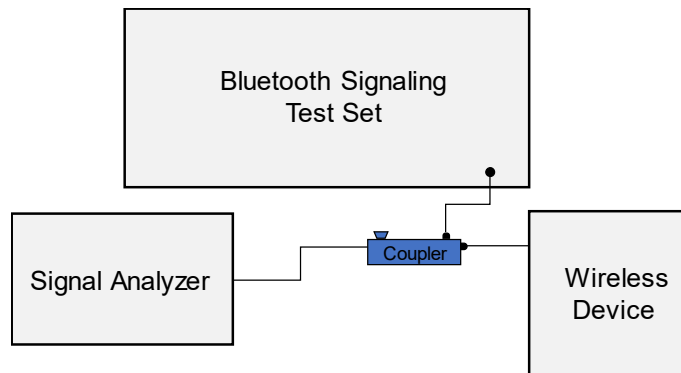


Figure 9-7
Power Measurement Setup



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10 SYSTEM VERIFICATION

10.1 Tissue Verification



**Table 10-1
Measured Head Tissue Properties**

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
5/9/2018	750H	21.6	680	0.888	41.875	0.888	42.305	0.00%	-1.02%
			695	0.894	41.837	0.889	42.227	0.56%	-0.92%
			700	0.895	41.824	0.889	42.201	0.67%	-0.89%
			710	0.898	41.796	0.890	42.149	0.90%	-0.84%
			740	0.908	41.715	0.893	41.994	1.68%	-0.66%
			755	0.913	41.653	0.894	41.916	2.13%	-0.63%
			770	0.919	41.600	0.895	41.838	2.68%	-0.57%
			785	0.925	41.549	0.896	41.760	3.24%	-0.51%
5/14/2018	835H	20.7	800	0.931	41.504	0.897	41.682	3.79%	-0.43%
			820	0.913	40.851	0.899	41.578	1.56%	-1.75%
			835	0.919	40.788	0.900	41.500	2.11%	-1.72%
5/9/2018	1750H	21.6	850	0.925	40.736	0.916	41.500	0.98%	-1.84%
			1710	1.347	39.645	1.348	40.142	-0.07%	-1.24%
			1750	1.370	39.600	1.371	40.079	-0.07%	-1.20%
5/8/2018	1900H	22.8	1790	1.389	39.522	1.394	40.016	-0.36%	-1.23%
			1850	1.367	39.637	1.400	40.000	-2.36%	-0.91%
			1880	1.399	39.515	1.400	40.000	-0.07%	-1.21%
5/10/2018	1900H	22.3	1910	1.430	39.369	1.400	40.000	2.14%	-1.58%
			1850	1.391	39.224	1.400	40.000	-0.64%	-1.94%
			1880	1.425	39.096	1.400	40.000	1.79%	-2.26%
5/14/2018	2450H	22.1	1910	1.453	38.948	1.400	40.000	3.79%	-2.63%
			2450	1.859	38.548	1.800	39.200	3.28%	-1.66%
			2500	1.913	38.350	1.855	39.136	3.13%	-2.01%
			2550	1.972	38.163	1.909	39.073	3.30%	-2.33%
			2600	2.026	37.973	1.964	39.009	3.16%	-2.66%
			2650	2.085	37.784	2.018	38.945	3.32%	-2.98%
			2700	2.140	37.591	2.073	38.882	3.23%	-3.32%
5/17/2018	2450H	22.0	2300	1.705	39.628	1.670	39.500	2.10%	0.32%
			2310	1.716	39.592	1.679	39.480	2.20%	0.28%
			2400	1.815	39.270	1.756	39.289	3.36%	-0.05%
			2450	1.870	39.093	1.800	39.200	3.89%	-0.27%
			2500	1.930	38.893	1.855	39.136	4.04%	-0.62%
			2550	1.987	38.718	1.909	39.073	4.09%	-0.91%
			2600	2.046	38.497	1.964	39.009	4.18%	-1.31%
			2650	2.103	38.298	2.018	38.945	4.21%	-1.66%
			2700	2.160	38.086	2.073	38.882	4.20%	-2.05%
5/21/2018	2450H	22.1	2400	1.798	38.855	1.756	39.289	2.39%	-1.10%
			2450	1.850	38.673	1.800	39.200	2.78%	-1.34%
			2500	1.909	38.479	1.855	39.136	2.91%	-1.68%
			5240	4.527	34.702	4.696	35.940	-3.60%	-3.44%
			5260	4.548	34.680	4.717	35.917	-3.58%	-3.44%
05/07/2018	5200H-5800H	21.0	5280	4.563	34.647	4.737	35.894	-3.67%	-3.47%
			5300	4.585	34.607	4.758	35.871	-3.64%	-3.52%
			5320	4.604	34.553	4.778	35.849	-3.64%	-3.62%
			5500	4.781	34.332	4.963	35.643	-3.67%	-3.68%
			5520	4.799	34.294	4.983	35.620	-3.69%	-3.72%
			5540	4.829	34.273	5.004	35.597	-3.50%	-3.72%
			5560	4.837	34.228	5.024	35.574	-3.72%	-3.78%
			5580	4.863	34.214	5.045	35.551	-3.61%	-3.76%
			5600	4.885	34.194	5.065	35.529	-3.55%	-3.76%
			5620	4.908	34.155	5.086	35.506	-3.50%	-3.80%
			5640	4.938	34.101	5.106	35.483	-3.29%	-3.89%
			5660	4.950	34.093	5.127	35.460	-3.45%	-3.86%
			5680	4.962	34.076	5.147	35.437	-3.59%	-3.84%
			5700	4.984	34.065	5.168	35.414	-3.56%	-3.81%
			5745	5.030	34.003	5.214	35.363	-3.53%	-3.85%
			5765	5.048	33.973	5.234	35.340	-3.55%	-3.87%
			5785	5.064	33.932	5.255	35.317	-3.63%	-3.92%
			5800	5.078	33.915	5.270	35.300	-3.64%	-3.92%
			5805	5.084	33.914	5.275	35.294	-3.62%	-3.91%
			5825	5.109	33.896	5.296	35.271	-3.53%	-3.90%

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**Table 10-2
Measured Body Tissue Properties**



Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
5/11/2018	750B	21.8	700	0.945	54.252	0.959	55.726	-1.46%	-2.65%
			710	0.948	54.245	0.960	55.687	-1.25%	-2.59%
			740	0.960	54.203	0.963	55.570	-0.31%	-2.46%
			755	0.966	54.167	0.964	55.512	0.21%	-2.42%
			770	0.972	54.120	0.965	55.453	0.73%	-2.40%
			785	0.978	54.080	0.966	55.395	1.24%	-2.37%
			800	0.984	54.033	0.967	55.336	1.76%	-2.35%
5/14/2018	750B	21.2	680	0.928	54.494	0.958	55.804	-3.13%	-2.35%
			695	0.933	54.444	0.959	55.745	-2.71%	-2.33%
			700	0.935	54.432	0.959	55.726	-2.50%	-2.32%
			710	0.938	54.413	0.960	55.687	-2.29%	-2.29%
			740	0.950	54.347	0.963	55.570	-1.35%	-2.20%
			755	0.955	54.314	0.964	55.512	-0.93%	-2.16%
			820	0.987	54.127	0.969	55.258	1.86%	-2.05%
5/13/2018	835B	20.5	835	1.002	53.993	0.970	55.200	3.30%	-2.19%
			850	1.016	53.848	0.988	55.154	2.83%	-2.37%
			820	0.985	53.769	0.969	55.258	1.65%	-2.69%
5/15/2018	835B	21.8	835	1.000	53.640	0.970	55.200	3.09%	-2.83%
			850	1.015	53.486	0.988	55.154	2.73%	-3.02%
			820	0.976	53.172	0.969	55.258	0.72%	-3.78%
5/17/2018	835B	21.8	835	0.991	53.033	0.970	55.200	2.16%	-3.93%
			850	1.006	52.890	0.988	55.154	1.82%	-4.10%
			1710	1.445	52.794	1.463	53.537	-1.23%	-1.39%
5/11/2018	1750B	21.4	1750	1.494	52.672	1.488	53.432	0.40%	-1.42%
			1790	1.540	52.500	1.514	53.326	1.72%	-1.55%
			1710	1.463	51.977	1.463	53.537	0.00%	-2.91%
5/16/2018	1750B	20.2	1750	1.510	51.830	1.488	53.432	1.48%	-3.00%
			1790	1.558	51.684	1.514	53.326	2.91%	-3.08%
			1710	1.429	53.809	1.463	53.537	-2.32%	0.51%
5/22/2018	1750B	21.3	1750	1.456	53.758	1.488	53.432	-2.15%	0.61%
			1790	1.484	53.707	1.514	53.326	-1.98%	0.71%
			1850	1.519	53.692	1.520	53.300	-0.07%	0.74%
5/9/2018	1900B	22.0	1880	1.552	53.614	1.520	53.300	2.11%	0.59%
			1910	1.586	53.542	1.520	53.300	4.34%	0.45%
			1850	1.524	54.121	1.520	53.300	0.26%	1.54%
5/11/2018	1900B	22.0	1880	1.558	54.023	1.520	53.300	2.50%	1.36%
			1910	1.594	53.916	1.520	53.300	4.87%	1.16%
			1850	1.500	54.759	1.520	53.300	-1.32%	2.74%
5/14/2018	1900B	22.0	1880	1.536	54.674	1.520	53.300	1.05%	2.58%
			1910	1.572	54.591	1.520	53.300	3.42%	2.42%
			2450	2.040	51.219	1.950	52.700	4.62%	-2.81%
5/12/2018	2450B	22.2	2500	2.102	51.056	2.021	52.636	4.01%	-3.00%
			2550	2.163	50.933	2.092	52.573	3.39%	-3.12%
			2600	2.224	50.750	2.163	52.509	2.62%	-3.35%
			2650	2.285	50.602	2.234	52.445	2.28%	-3.51%
			2700	2.346	50.432	2.305	52.382	1.78%	-3.72%
			2400	1.971	51.171	1.902	52.767	3.63%	-3.02%
			2450	2.026	51.043	1.950	52.700	3.90%	-3.14%
5/15/2018	2450B	22.3	2500	2.083	50.872	2.021	52.636	3.07%	-3.35%
			2550	2.142	50.741	2.092	52.573	2.39%	-3.48%
			2600	2.197	50.606	2.163	52.509	1.57%	-3.62%
			2650	2.257	50.450	2.234	52.445	1.03%	-3.80%
			2700	2.316	50.301	2.305	52.382	0.48%	-3.97%
			2400	1.950	51.900	1.902	52.767	2.52%	-1.64%
			2450	2.011	51.706	1.950	52.700	3.13%	-1.89%
5/15/2018	2450B	23.3	2500	2.085	51.518	2.021	52.636	3.17%	-2.12%
			2400	1.958	52.280	1.902	52.767	2.94%	-0.92%
			2450	2.028	52.124	1.950	52.700	4.00%	-1.09%
5/17/2018	2450B	23.2	2500	2.098	51.926	2.021	52.636	3.81%	-1.35%
			2400	1.978	51.679	1.902	52.767	4.00%	-2.06%
			2450	2.027	51.527	1.950	52.700	3.95%	-2.23%
5/18/2018	2450B	22.1	2500	2.094	51.364	2.021	52.636	3.61%	-2.42%
			2550	2.153	51.253	2.092	52.573	2.92%	-2.51%
			2600	2.209	51.063	2.163	52.509	2.13%	-2.75%
			2650	2.277	50.947	2.234	52.445	1.92%	-2.86%
			2700	2.333	50.754	2.305	52.382	1.21%	-3.11%
			2400	1.967	51.995	1.902	52.767	3.42%	-1.46%
			2450	2.023	51.858	1.950	52.700	3.74%	-1.60%
5/21/2018	2450B	22.1	2500	2.083	51.724	2.021	52.636	3.07%	-1.73%
			2550	2.143	51.599	2.092	52.573	2.44%	-1.85%
			2600	2.200	51.415	2.163	52.509	1.71%	-2.08%
			2650	2.264	51.279	2.234	52.445	1.34%	-2.22%
			2700	2.324	51.114	2.305	52.382	0.82%	-2.42%
			2300	1.866	51.842	1.809	52.900	3.15%	-2.00%
			2310	1.877	51.822	1.816	52.887	3.36%	-2.01%
5/22/2018	2450B	21.9	2320	1.888	51.795	1.826	52.873	3.40%	-2.04%

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**Table 10-3
Measured Body Tissue Properties Continued**

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
05/07/2018	5200B-5800B	22.5	5240	5.463	48.331	5.346	48.960	2.19%	-1.28%
			5260	5.486	48.285	5.369	48.933	2.18%	-1.32%
			5280	5.512	48.255	5.393	48.906	2.21%	-1.33%
			5300	5.544	48.216	5.416	48.879	2.36%	-1.36%
			5320	5.562	48.191	5.439	48.851	2.26%	-1.35%
			5500	5.809	47.892	5.650	48.607	2.81%	-1.47%
			5520	5.834	47.841	5.673	48.580	2.84%	-1.52%
			5540	5.862	47.831	5.696	48.553	2.91%	-1.49%
			5560	5.900	47.752	5.720	48.526	3.15%	-1.60%
			5580	5.921	47.745	5.743	48.499	3.10%	-1.55%
			5600	5.957	47.699	5.766	48.471	3.31%	-1.59%
			5620	5.983	47.694	5.790	48.444	3.33%	-1.55%
			5640	6.005	47.649	5.813	48.417	3.30%	-1.59%
			5660	6.034	47.618	5.837	48.390	3.38%	-1.60%
			5680	6.064	47.575	5.860	48.363	3.48%	-1.63%
			5700	6.096	47.522	5.883	48.336	3.62%	-1.68%
			5745	6.164	47.417	5.936	48.275	3.84%	-1.78%
			5765	6.199	47.408	5.959	48.248	4.03%	-1.74%
5785	6.223	47.394	5.982	48.220	4.03%	-1.71%			
5800	6.245	47.345	6.000	48.200	4.08%	-1.77%			
5805	6.253	47.346	6.006	48.193	4.11%	-1.76%			
5825	6.271	47.316	6.029	48.166	4.01%	-1.76%			
05/14/2018	5200B-5800B	22.5	5240	5.454	48.460	5.346	48.960	2.02%	-1.02%
			5260	5.478	48.441	5.369	48.933	2.03%	-1.01%
			5280	5.501	48.437	5.393	48.906	2.00%	-0.96%
			5300	5.530	48.348	5.416	48.879	2.10%	-1.09%
			5320	5.546	48.343	5.439	48.851	1.97%	-1.04%
			5500	5.797	48.044	5.650	48.607	2.60%	-1.16%
			5520	5.813	48.039	5.673	48.580	2.47%	-1.11%
			5540	5.845	47.996	5.696	48.553	2.62%	-1.15%
			5560	5.864	47.938	5.720	48.526	2.52%	-1.21%
			5580	5.902	47.898	5.743	48.499	2.77%	-1.24%
			5600	5.937	47.879	5.766	48.471	2.97%	-1.22%
			5620	5.960	47.874	5.790	48.444	2.94%	-1.18%
			5640	5.993	47.809	5.813	48.417	3.10%	-1.26%
			5660	6.010	47.755	5.837	48.390	2.96%	-1.31%
			5680	6.038	47.716	5.860	48.363	3.04%	-1.34%
			5700	6.059	47.691	5.883	48.336	2.99%	-1.33%
			5745	6.125	47.653	5.936	48.275	3.18%	-1.29%
			5765	6.148	47.611	5.959	48.248	3.17%	-1.32%
5785	6.186	47.588	5.982	48.220	3.41%	-1.31%			
5800	6.202	47.558	6.000	48.200	3.37%	-1.33%			
5805	6.209	47.547	6.006	48.193	3.38%	-1.34%			
5825	6.254	47.519	6.029	48.166	3.73%	-1.34%			

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.



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Test System Verification

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

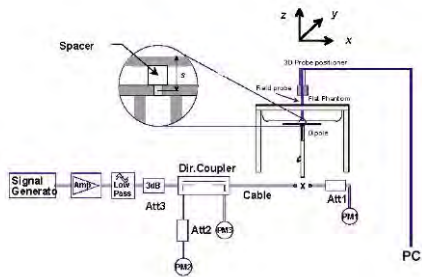
Table 10-4
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
E	750	HEAD	05/09/2018	21.3	21.6	0.200	1161	3213	1.610	8.170	8.050	-1.47%
E	835	HEAD	05/14/2018	21.5	20.7	0.200	4d119	3213	1.960	9.530	9.800	2.83%
E	1750	HEAD	05/09/2018	21.3	21.6	0.100	1148	3213	3.590	36.400	35.900	-1.37%
G	1900	HEAD	05/08/2018	23.1	23.0	0.100	5d080	3332	3.870	39.300	38.700	-1.53%
G	1900	HEAD	05/10/2018	22.4	21.8	0.100	5d148	3332	3.900	40.100	39.000	-2.74%
G	2300	HEAD	05/17/2018	22.6	21.1	0.100	1008	3332	4.850	49.600	48.500	-2.22%
G	2450	HEAD	05/14/2018	23.7	21.8	0.100	882	3332	5.420	52.200	54.200	3.83%
G	2450	HEAD	05/17/2018	22.6	21.1	0.100	882	3332	5.210	52.200	52.100	-0.19%
G	2450	HEAD	05/21/2018	21.0	22.0	0.100	882	3332	5.360	52.200	53.600	2.68%
G	2600	HEAD	05/14/2018	23.7	21.8	0.100	1004	3332	5.490	55.900	54.900	-1.79%
G	2600	HEAD	05/17/2018	22.6	21.1	0.100	1004	3332	5.620	55.900	56.200	0.54%
H	5250	HEAD	05/07/2018	20.9	21.0	0.050	1191	3589	3.820	78.900	76.400	-3.17%
H	5600	HEAD	05/07/2018	20.9	21.0	0.050	1191	3589	4.120	83.600	82.400	-1.44%
H	5750	HEAD	05/07/2018	20.9	21.0	0.050	1191	3589	3.860	79.100	77.200	-2.40%
H	750	BODY	05/11/2018	20.9	21.8	0.200	1054	7410	1.760	8.610	8.800	2.21%
H	750	BODY	05/14/2018	21.9	21.2	0.200	1003	7410	1.710	8.580	8.550	-0.35%
I	835	BODY	05/13/2018	22.2	20.8	0.200	4d047	3287	2.020	9.570	10.100	5.54%
I	835	BODY	05/15/2018	22.8	21.5	0.200	4d047	3287	2.020	9.570	10.100	5.54%
I	835	BODY	05/17/2018	23.2	21.6	0.200	4d047	3287	2.050	9.570	10.250	7.11%
J	1750	BODY	05/16/2018	22.0	20.2	0.100	1148	3347	3.890	37.000	38.900	5.14%
J	1750	BODY	05/22/2018	22.5	21.3	0.100	1150	3347	3.820	36.500	38.200	4.66%
J	1900	BODY	05/09/2018	21.9	21.6	0.100	5d148	3347	4.090	39.600	40.900	3.28%
K	2300	BODY	05/22/2018	22.2	21.0	0.100	1073	3319	4.990	48.100	49.900	3.74%
K	2450	BODY	05/12/2018	23.1	22.2	0.100	797	3319	5.250	51.100	52.500	2.74%
D	2450	BODY	05/15/2018	23.5	23.3	0.100	797	3318	5.130	51.100	51.300	0.39%
D	2450	BODY	05/17/2018	22.5	22.2	0.100	719	3318	5.240	50.100	52.400	4.59%
K	2450	BODY	05/18/2018	21.5	21.1	0.100	797	3319	5.290	51.100	52.900	3.52%
K	2450	BODY	05/21/2018	21.7	21.7	0.100	797	3319	4.980	51.100	49.800	-2.54%
K	2600	BODY	05/12/2018	23.1	22.2	0.100	1126	3319	5.600	54.300	56.000	3.13%
K	2600	BODY	05/18/2018	21.5	21.1	0.100	1126	3319	5.460	54.300	54.600	0.55%
K	2600	BODY	05/21/2018	21.7	21.7	0.100	1126	3319	5.590	54.300	55.900	2.95%
D	5250	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	3.700	76.900	74.000	-3.77%
D	5600	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	3.760	78.500	75.200	-4.20%
D	5750	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	3.570	77.100	71.400	-7.39%
D	5250	BODY	05/14/2018	21.9	21.5	0.050	1237	7308	3.550	76.900	71.000	-7.67%
D	5600	BODY	05/14/2018	21.9	21.5	0.050	1237	7308	3.870	78.500	77.400	-1.40%
D	5750	BODY	05/14/2018	21.9	21.5	0.050	1237	7308	3.700	77.100	74.000	-4.02%

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**Table 10-5
System Verification Results – 10g**



System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
I	1750	BODY	05/11/2018	22.0	20.9	0.100	1051	3287	2.070	19.900	20.700	4.02%
J	1900	BODY	05/11/2018	22.4	22.0	0.100	5d148	3347	2.160	20.900	21.600	3.35%
J	1900	BODY	05/14/2018	21.0	21.8	0.100	5d148	3347	2.130	20.900	21.300	1.91%
K	2300	BODY	05/22/2018	22.2	21.0	0.100	1073	3319	2.390	23.200	23.900	3.02%
K	2450	BODY	05/15/2018	22.5	22.3	0.100	797	3319	2.380	24.200	23.800	-1.65%
K	2600	BODY	05/15/2018	22.5	22.3	0.100	1126	3319	2.370	24.400	23.700	-2.87%
D	5250	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	1.040	21.500	20.800	-3.26%
D	5600	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	1.040	22.100	20.800	-5.88%
D	5750	BODY	05/07/2018	23.3	21.4	0.050	1237	7308	0.995	21.400	19.900	-7.01%



**Figure 10-1
System Verification Setup Diagram**



**Figure 10-2
System Verification Setup Photo**

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11 SAR DATA SUMMARY



11.1 Standalone Head SAR Data

**Table 11-1
GSM 850 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	32.68	0.00	Right	Cheek	Q2293	1:8.3	0.141	1.208	0.170	A1
836.60	190	GSM 850	GSM	33.5	32.68	0.19	Right	Tilt	Q2293	1:8.3	0.082	1.208	0.099	
836.60	190	GSM 850	GSM	33.5	32.68	0.07	Left	Cheek	Q2293	1:8.3	0.119	1.208	0.144	
836.60	190	GSM 850	GSM	33.5	32.68	0.04	Left	Tilt	Q2293	1:8.3	0.071	1.208	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 11-2
UMTS 850 Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.8	24.80	76	0.01	Right	Cheek	Q2293	1:1	0.216	1.259	0.272	A2
836.60	4183	UMTS 850	RMC	25.8	24.80	76	0.03	Right	Tilt	Q2293	1:1	0.115	1.259	0.145	
836.60	4183	UMTS 850	RMC	25.8	24.80	76	-0.04	Left	Cheek	Q2293	1:1	0.171	1.259	0.215	
836.60	4183	UMTS 850	RMC	25.8	24.80	76	0.01	Left	Tilt	Q2293	1:1	0.107	1.259	0.135	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								



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**Table 11-3
CDMA BC10 (§90S) Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	26.0	25.41	76	-0.02	Right	Cheek	Q2322	1:1	0.218	1.146	0.250	A3
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	26.0	25.41	76	-0.04	Right	Tilt	Q2322	1:1	0.110	1.146	0.126	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	26.0	25.41	76	-0.02	Left	Cheek	Q2322	1:1	0.175	1.146	0.201	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	26.0	25.41	76	0.01	Left	Tilt	Q2322	1:1	0.104	1.146	0.119	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	26.0	25.42	76	-0.01	Right	Cheek	Q2322	1:1	0.194	1.143	0.222	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	26.0	25.42	76	0.00	Right	Tilt	Q2322	1:1	0.105	1.143	0.120	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	26.0	25.42	76	0.01	Left	Cheek	Q2322	1:1	0.145	1.143	0.166	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	26.0	25.42	76	0.04	Left	Tilt	Q2322	1:1	0.147	1.143	0.168	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram						

**Table 11-4
CDMA BC0 (§22H) Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	26.0	24.71	76	0.00	Right	Cheek	Q2322	1:1	0.195	1.346	0.262	A4
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	26.0	24.71	76	-0.05	Right	Tilt	Q2322	1:1	0.108	1.346	0.145	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	26.0	24.71	76	-0.04	Left	Cheek	Q2322	1:1	0.157	1.346	0.211	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	26.0	24.71	76	0.02	Left	Tilt	Q2322	1:1	0.091	1.346	0.122	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	26.0	24.90	76	0.00	Right	Cheek	Q2322	1:1	0.190	1.288	0.245	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	26.0	24.90	76	0.02	Right	Tilt	Q2322	1:1	0.096	1.288	0.124	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	26.0	24.90	76	-0.01	Left	Cheek	Q2322	1:1	0.142	1.288	0.183	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	26.0	24.90	76	0.10	Left	Tilt	Q2322	1:1	0.109	1.288	0.140	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram						

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**Table 11-5
UMTS 1750 Head SAR**



MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.5	24.80	17	0.07	Right	Cheek	Q2293	1:1	0.068	1.175	0.080	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	-0.01	Right	Tilt	Q2293	1:1	0.073	1.175	0.086	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	0.08	Left	Cheek	Q2293	1:1	0.094	1.175	0.110	A5
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	0.07	Left	Tilt	Q2293	1:1	0.073	1.175	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
GSM 1900 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	31.0	30.52	0.11	Right	Cheek	Q2293	1:8.3	0.054	1.117	0.060	
1880.00	661	GSM 1900	GSM	31.0	30.52	0.13	Right	Tilt	Q2293	1:8.3	0.028	1.117	0.031	
1880.00	661	GSM 1900	GSM	31.0	30.52	0.10	Left	Cheek	Q2293	1:8.3	0.066	1.117	0.074	A6
1880.00	661	GSM 1900	GSM	31.0	30.52	-0.15	Left	Tilt	Q2293	1:8.3	0.030	1.117	0.034	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

**Table 11-7
UMTS 1900 Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.2	24.38	16	0.03	Right	Cheek	Q2293	1:1	0.090	1.208	0.109	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	16	-0.03	Right	Tilt	Q2293	1:1	0.049	1.208	0.059	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	16	0.08	Left	Cheek	Q2293	1:1	0.144	1.208	0.174	A7
1880.00	9400	UMTS 1900	RMC	25.2	24.38	16	0.09	Left	Tilt	Q2293	1:1	0.062	1.208	0.075	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							



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**Table 11-8
PCS CDMA Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.0	24.88	17	0.08	Right	Cheek	Q2322	1:1	0.108	1.028	0.111	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.88	17	0.05	Right	Tilt	Q2322	1:1	0.096	1.028	0.099	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.88	17	-0.05	Left	Cheek	Q2322	1:1	0.137	1.028	0.141	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.88	17	0.17	Left	Tilt	Q2322	1:1	0.084	1.028	0.086	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.93	17	0.17	Right	Cheek	Q2322	1:1	0.107	1.016	0.109	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.93	17	-0.14	Right	Tilt	Q2322	1:1	0.079	1.016	0.080	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.93	17	0.04	Left	Cheek	Q2322	1:1	0.163	1.016	0.166	A8
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.93	17	-0.21	Left	Tilt	Q2322	1:1	0.082	1.016	0.083	
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]	Ant State	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	Md	LTE Band 71	20	25.8	25.00	0	-0.15	0	Right	Cheek	QPSK	1	50	Q2306	1:1	0.128	1.202	0.154	A9
680.50	133297	Md	LTE Band 71	20	24.8	24.03	0	0.05	1	Right	Cheek	QPSK	50	25	Q2306	1:1	0.100	1.194	0.119	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	0	-0.08	0	Right	Tilt	QPSK	1	50	Q2306	1:1	0.043	1.202	0.052	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	0	0.07	1	Right	Tilt	QPSK	50	25	Q2306	1:1	0.033	1.194	0.039	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	0	0.05	0	Left	Cheek	QPSK	1	50	Q2306	1:1	0.112	1.202	0.135	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	0	0.02	1	Left	Cheek	QPSK	50	25	Q2306	1:1	0.093	1.194	0.111	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	0	0.04	0	Left	Tilt	QPSK	1	50	Q2306	1:1	0.049	1.202	0.059	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	0	0.03	1	Left	Tilt	QPSK	50	25	Q2306	1:1	0.039	1.194	0.047	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

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**Table 11-10
LTE Band 12 Head SAR**



MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 12	10	25.8	24.64	0	-0.09	0	Right	Cheek	QPSK	1	0	Q2306	1:1	0.157	1.306	0.205	A10
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.01	1	Right	Cheek	QPSK	25	0	Q2306	1:1	0.135	1.285	0.173	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.06	0	Right	Tilt	QPSK	1	0	Q2306	1:1	0.090	1.306	0.118	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	0.06	1	Right	Tilt	QPSK	25	0	Q2306	1:1	0.078	1.285	0.100	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.05	0	Left	Cheek	QPSK	1	0	Q2306	1:1	0.140	1.306	0.183	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	0.05	1	Left	Cheek	QPSK	25	0	Q2306	1:1	0.119	1.285	0.153	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.03	0	Left	Tilt	QPSK	1	0	Q2306	1:1	0.114	1.306	0.149	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.02	1	Left	Tilt	QPSK	25	0	Q2306	1:1	0.101	1.285	0.130	
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]	Ant State	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	Md	LTE Band 13	10	25.8	25.11	76	-0.04	0	Right	Cheek	QPSK	1	25	Q2306	1:1	0.196	1.172	0.230	A11
782.00	23230	Md	LTE Band 13	10	24.8	24.23	76	-0.09	1	Right	Cheek	QPSK	25	0	Q2306	1:1	0.156	1.140	0.178	
782.00	23230	Md	LTE Band 13	10	25.8	25.11	76	0.00	0	Right	Tilt	QPSK	1	25	Q2306	1:1	0.076	1.172	0.089	
782.00	23230	Md	LTE Band 13	10	24.8	24.23	76	0.02	1	Right	Tilt	QPSK	25	0	Q2306	1:1	0.067	1.140	0.076	
782.00	23230	Md	LTE Band 13	10	25.8	25.11	76	-0.01	0	Left	Cheek	QPSK	1	25	Q2306	1:1	0.158	1.172	0.185	
782.00	23230	Md	LTE Band 13	10	24.8	24.23	76	0.04	1	Left	Cheek	QPSK	25	0	Q2306	1:1	0.122	1.140	0.139	
782.00	23230	Md	LTE Band 13	10	25.8	25.11	76	0.21	0	Left	Tilt	QPSK	1	25	Q2306	1:1	0.093	1.172	0.109	
782.00	23230	Md	LTE Band 13	10	24.8	24.23	76	0.03	1	Left	Tilt	QPSK	25	0	Q2306	1:1	0.080	1.140	0.091	
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 14 Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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)		
793.00	23330	Md	LTE Band 14	10	25.5	24.58	76	0.00	0	Right	Cheek	QPSK	1	25	Q2306	1:1	0.190	1.236	0.235	A12
793.00	23330	Md	LTE Band 14	10	24.5	23.65	76	0.03	1	Right	Cheek	QPSK	25	0	Q2306	1:1	0.150	1.216	0.182	
793.00	23330	Md	LTE Band 14	10	25.5	24.58	76	0.00	0	Right	Tilt	QPSK	1	25	Q2306	1:1	0.096	1.236	0.119	
793.00	23330	Md	LTE Band 14	10	24.5	23.65	76	-0.04	1	Right	Tilt	QPSK	25	0	Q2306	1:1	0.073	1.216	0.089	
793.00	23330	Md	LTE Band 14	10	25.5	24.58	76	0.00	0	Left	Cheek	QPSK	1	25	Q2306	1:1	0.156	1.236	0.193	
793.00	23330	Md	LTE Band 14	10	24.5	23.65	76	0.02	1	Left	Cheek	QPSK	25	0	Q2306	1:1	0.124	1.216	0.151	
793.00	23330	Md	LTE Band 14	10	25.5	24.58	76	-0.09	0	Left	Tilt	QPSK	1	25	Q2306	1:1	0.084	1.236	0.104	
793.00	23330	Md	LTE Band 14	10	24.5	23.65	76	0.03	1	Left	Tilt	QPSK	25	0	Q2306	1:1	0.065	1.216	0.079	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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**Table 11-13
LTE Band 26 (Cell) Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	0.00	0	Right	Cheek	QPSK	1	0	Q2306	1:1	0.190	1.259	0.239	A13
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.04	1	Right	Cheek	QPSK	36	0	Q2306	1:1	0.158	1.262	0.199	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.01	0	Right	Tilt	QPSK	1	0	Q2306	1:1	0.098	1.259	0.123	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.02	1	Right	Tilt	QPSK	36	0	Q2306	1:1	0.079	1.262	0.100	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.02	0	Left	Cheek	QPSK	1	0	Q2306	1:1	0.131	1.259	0.165	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.06	1	Left	Cheek	QPSK	36	0	Q2306	1:1	0.115	1.262	0.145	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.03	0	Left	Tilt	QPSK	1	0	Q2306	1:1	0.126	1.259	0.159	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	-0.01	1	Left	Tilt	QPSK	36	0	Q2306	1:1	0.104	1.262	0.131	
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 5 (Cell) Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.04	0	Right	Cheek	QPSK	1	0	Q2306	1:1	0.181	1.318	0.239	A14
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.05	1	Right	Cheek	QPSK	25	0	Q2306	1:1	0.146	1.291	0.188	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.12	0	Right	Tilt	QPSK	1	0	Q2306	1:1	0.090	1.318	0.119	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.01	1	Right	Tilt	QPSK	25	0	Q2306	1:1	0.072	1.291	0.093	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	0.04	0	Left	Cheek	QPSK	1	0	Q2306	1:1	0.151	1.318	0.199	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.03	1	Left	Cheek	QPSK	25	0	Q2306	1:1	0.115	1.291	0.148	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	0.04	0	Left	Tilt	QPSK	1	0	Q2306	1:1	0.125	1.318	0.165	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.02	1	Left	Tilt	QPSK	25	0	Q2306	1:1	0.090	1.291	0.116	
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 66 (AWS) Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.5	24.24	17	0.06	0	Right	Cheek	QPSK	1	0	Q2299	1:1	0.055	1.337	0.074	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.12	1	Right	Cheek	QPSK	50	0	Q2299	1:1	0.042	1.340	0.056	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.09	0	Right	Tilt	QPSK	1	0	Q2299	1:1	0.075	1.337	0.100	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.08	1	Right	Tilt	QPSK	50	0	Q2299	1:1	0.058	1.340	0.078	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.00	0	Left	Cheek	QPSK	1	0	Q2299	1:1	0.086	1.337	0.115	A15
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.09	1	Left	Cheek	QPSK	50	0	Q2299	1:1	0.062	1.340	0.083	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.03	0	Left	Tilt	QPSK	1	0	Q2299	1:1	0.070	1.337	0.094	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.11	1	Left	Tilt	QPSK	50	0	Q2299	1:1	0.053	1.340	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										



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**Table 11-16
LTE Band 25 (PCS) Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
MHz	Ch.																			
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.11	0	Right	Cheek	QPSK	1	0	Q2299	1:1	0.091	1.175	0.107	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	0.11	1	Right	Cheek	QPSK	50	50	Q2299	1:1	0.071	1.191	0.085	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.09	0	Right	Tilt	QPSK	1	0	Q2299	1:1	0.062	1.175	0.073	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	-0.13	1	Right	Tilt	QPSK	50	50	Q2299	1:1	0.046	1.191	0.055	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.11	0	Left	Cheek	QPSK	1	0	Q2299	1:1	0.120	1.175	0.141	A16
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	0.04	1	Left	Cheek	QPSK	50	50	Q2299	1:1	0.091	1.191	0.108	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.11	0	Left	Tilt	QPSK	1	0	Q2299	1:1	0.073	1.175	0.086	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	0.14	1	Left	Tilt	QPSK	50	50	Q2299	1:1	0.048	1.191	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 11-17
LTE Band 30 Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
MHz	Ch.																			
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	-0.17	0	Right	Cheek	Ant B	QPSK	1	0	Q2290	1:1	0.112	1.169	0.131	A17
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.00	1	Right	Cheek	Ant B	QPSK	25	0	Q2290	1:1	0.093	1.164	0.108	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	0.12	0	Right	Tilt	Ant B	QPSK	1	0	Q2290	1:1	0.059	1.169	0.069	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.15	1	Right	Tilt	Ant B	QPSK	25	0	Q2290	1:1	0.044	1.164	0.051	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	0.02	0	Left	Cheek	Ant B	QPSK	1	0	Q2290	1:1	0.078	1.169	0.091	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.17	1	Left	Cheek	Ant B	QPSK	25	0	Q2290	1:1	0.069	1.164	0.080	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	0.15	0	Left	Tilt	Ant B	QPSK	1	0	Q2290	1:1	0.032	1.169	0.037	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.16	1	Left	Tilt	Ant B	QPSK	25	0	Q2290	1:1	0.026	1.164	0.030	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	0.15	0	Right	Cheek	Ant A	QPSK	1	0	Q2290	1:1	0.076	1.202	0.091	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.21	1	Right	Cheek	Ant A	QPSK	25	0	Q2290	1:1	0.059	1.227	0.072	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	-0.11	0	Right	Tilt	Ant A	QPSK	1	0	Q2290	1:1	0.046	1.202	0.055	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	-0.06	1	Right	Tilt	Ant A	QPSK	25	0	Q2290	1:1	0.035	1.227	0.043	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	0.17	0	Left	Cheek	Ant A	QPSK	1	0	Q2290	1:1	0.046	1.202	0.055	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.07	1	Left	Cheek	Ant A	QPSK	25	0	Q2290	1:1	0.038	1.227	0.047	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	0.06	0	Left	Tilt	Ant A	QPSK	1	0	Q2290	1:1	0.023	1.202	0.028	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.16	1	Left	Tilt	Ant A	QPSK	25	0	Q2290	1:1	0.017	1.227	0.021	
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**Table 11-18
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	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2560.00	21350	High	LTE Band 7	20	24.0	23.62	0.20	0	Right	Cheek	Ant B	QPSK	1	0	Q2290	1:1	0.099	1.091	0.108	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	0.19	1	Right	Cheek	Ant B	QPSK	50	0	Q2290	1:1	0.083	1.119	0.093	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	0.14	0	Right	Tilt	Ant B	QPSK	1	0	Q2290	1:1	0.112	1.091	0.122	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	0.17	1	Right	Tilt	Ant B	QPSK	50	0	Q2290	1:1	0.091	1.119	0.102	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	-0.19	0	Left	Cheek	Ant B	QPSK	1	0	Q2290	1:1	0.113	1.091	0.123	A18
2560.00	21350	High	LTE Band 7	20	23.0	22.51	0.14	1	Left	Cheek	Ant B	QPSK	50	0	Q2290	1:1	0.084	1.119	0.094	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	0.09	0	Left	Tilt	Ant B	QPSK	1	0	Q2290	1:1	0.070	1.091	0.076	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	0.16	1	Left	Tilt	Ant B	QPSK	50	0	Q2290	1:1	0.053	1.119	0.059	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.14	0	Right	Cheek	Ant A	QPSK	1	0	Q2290	1:1	0.030	1.194	0.036	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	0.18	1	Right	Cheek	Ant A	QPSK	50	0	Q2290	1:1	0.021	1.189	0.025	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.11	0	Right	Tilt	Ant A	QPSK	1	0	Q2290	1:1	0.022	1.194	0.026	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	0.06	1	Right	Tilt	Ant A	QPSK	50	0	Q2290	1:1	0.017	1.189	0.020	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.16	0	Left	Cheek	Ant A	QPSK	1	0	Q2290	1:1	0.016	1.194	0.019	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	0.09	1	Left	Cheek	Ant A	QPSK	50	0	Q2290	1:1	0.014	1.189	0.017	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	-0.13	0	Left	Tilt	Ant A	QPSK	1	0	Q2290	1:1	0.013	1.194	0.016	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	0.14	1	Left	Tilt	Ant A	QPSK	50	0	Q2290	1:1	0.013	1.189	0.015	
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
LTE Band 41 Head SAR**

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.15	0	Right	Cheek	QPSK	1	0	Q2297	1:1.58	0.062	1.297	0.080	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.20	1	Right	Cheek	QPSK	50	0	Q2297	1:1.58	0.051	1.334	0.068	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	-0.08	0	Right	Tilt	QPSK	1	0	Q2297	1:1.58	0.072	1.297	0.093	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.12	1	Right	Tilt	QPSK	50	0	Q2297	1:1.58	0.060	1.334	0.080	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	28.2	27.16	0.20	0	Right	Tilt	QPSK	1	0	Q2297	1:2.31	0.096	1.271	0.122	A19
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.0	23.96	0.00	0	Right	Tilt	QPSK	1	0	Q2297	1:1.58	0.071	1.271	0.090	
	SCC	2660.20	41292	High	LTE Band 41	20							QPSK	1	99						
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.15	0	Left	Cheek	QPSK	1	0	Q2297	1:1.58	0.068	1.297	0.088	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.17	1	Left	Cheek	QPSK	50	0	Q2297	1:1.58	0.056	1.334	0.075	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.12	0	Left	Tilt	QPSK	1	0	Q2297	1:1.58	0.045	1.297	0.058	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.17	1	Left	Tilt	QPSK	50	0	Q2297	1:1.58	0.035	1.334	0.047	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

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**Table 11-20
DTS SISO Head SAR**



MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	17.0	16.37	-0.11	Right	Cheek	1	Q2311	1	99.0	0.340	0.287	1.156	1.010	0.335	
2462	11	802.11b	DSSS	22	17.0	16.37	0.18	Right	Tilt	1	Q2311	1	99.0	0.231	0.202	1.156	1.010	0.236	
2462	11	802.11b	DSSS	22	17.0	16.37	-0.21	Left	Cheek	1	Q2311	1	99.0	0.123	0.113	1.156	1.010	0.132	
2462	11	802.11b	DSSS	22	17.0	16.37	0.20	Left	Tilt	1	Q2311	1	99.0	0.120	0.120	1.156	1.010	0.140	
2412	1	802.11b	DSSS	22	17.0	16.58	0.06	Right	Cheek	2	Q2311	1	99.0	1.081	0.936	1.102	1.010	1.042	
2437	6	802.11b	DSSS	22	17.0	16.65	-0.01	Right	Cheek	2	Q2311	1	99.0	1.060	0.958	1.084	1.010	1.049	
2462	11	802.11b	DSSS	22	17.0	16.89	0.12	Right	Cheek	2	Q2311	1	99.0	1.061	0.791	1.026	1.010	0.820	
2462	11	802.11b	DSSS	22	17.0	16.89	0.12	Right	Tilt	2	Q2311	1	99.0	0.959	0.681	1.026	1.010	0.706	
2462	11	802.11b	DSSS	22	17.0	16.89	-0.17	Left	Cheek	2	Q2311	1	99.0	0.250	0.236	1.026	1.010	0.245	
2462	11	802.11b	DSSS	22	17.0	16.89	0.00	Left	Tilt	2	Q2311	1	99.0	0.225	0.204	1.026	1.010	0.211	
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
DTS MIMO Head SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	17.0	16.55	17.0	16.69	0.11	Right	Cheek	MMO	Q2311	13	98.6	1.313	1.170	1.109	1.014	1.316	A20
2437	6	802.11n	OFDM	20	17.0	16.11	17.0	16.86	-0.05	Right	Cheek	MMO	Q2311	13	98.6	1.225	1.060	1.227	1.014	1.319	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	-0.11	Right	Cheek	MMO	Q2311	13	98.6	1.246	1.030	1.146	1.014	1.197	
2412	1	802.11n	OFDM	20	17.0	16.55	17.0	16.69	0.18	Right	Tilt	MMO	Q2311	13	98.6	1.257	1.020	1.109	1.014	1.147	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	0.07	Right	Tilt	MMO	Q2311	13	98.6	1.055	0.863	1.146	1.014	1.003	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	-0.04	Left	Cheek	MMO	Q2311	13	98.6	0.403	0.350	1.146	1.014	0.407	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	-0.04	Left	Tilt	MMO	Q2311	13	98.6	0.398	-	1.146	1.014	-	
2412	1	802.11n	OFDM	20	17.0	16.55	17.0	16.69	0.02	Right	Cheek	MMO	Q2311	13	98.6	1.298	1.160	1.109	1.014	1.304	
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.

To achieve the 20 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17 dBm.

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**Table 11-22
NII SISO Head SAR**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	14.0	13.59	0.16	Right	Cheek	1	Q2311	29.3	94.6	0.052	0.019	1.099	1.057	0.022	
5290	58	802.11ac	OFDM	80	14.0	13.59	0.12	Right	Tilt	1	Q2311	29.3	94.6	0.045	-	1.099	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.59	0.16	Left	Cheek	1	Q2311	29.3	94.6	0.047	-	1.099	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.59	0.15	Left	Tilt	1	Q2311	29.3	94.6	0.030	-	1.099	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.69	0.13	Right	Cheek	2	Q2311	29.3	94.5	0.453	0.214	1.074	1.058	0.243	
5290	58	802.11ac	OFDM	80	14.0	13.69	0.01	Right	Tilt	2	Q2311	29.3	94.5	0.325	-	1.074	1.058	-	
5290	58	802.11ac	OFDM	80	14.0	13.69	0.18	Left	Cheek	2	Q2311	29.3	94.5	0.209	-	1.074	1.058	-	
5290	58	802.11ac	OFDM	80	14.0	13.69	0.11	Left	Tilt	2	Q2311	29.3	94.5	0.148	-	1.074	1.058	-	
5690	138	802.11ac	OFDM	80	14.0	13.99	0.12	Right	Cheek	1	Q2311	29.3	94.6	0.104	0.055	1.002	1.057	0.058	
5690	138	802.11ac	OFDM	80	14.0	13.99	0.20	Right	Tilt	1	Q2311	29.3	94.6	0.099	-	1.002	1.057	-	
5690	138	802.11ac	OFDM	80	14.0	13.99	0.21	Left	Cheek	1	Q2311	29.3	94.6	0.056	-	1.002	1.057	-	
5690	138	802.11ac	OFDM	80	14.0	13.99	-0.18	Left	Tilt	1	Q2311	29.3	94.6	0.042	-	1.002	1.057	-	
5690	138	802.11ac	OFDM	80	14.0	13.55	0.15	Right	Cheek	2	Q2311	29.3	94.5	0.790	0.366	1.109	1.058	0.429	A21
5690	138	802.11ac	OFDM	80	14.0	13.55	0.19	Right	Tilt	2	Q2311	29.3	94.5	0.517	0.214	1.109	1.058	0.251	
5690	138	802.11ac	OFDM	80	14.0	13.55	0.16	Left	Cheek	2	Q2311	29.3	94.5	0.352	-	1.109	1.058	-	
5690	138	802.11ac	OFDM	80	14.0	13.55	0.14	Left	Tilt	2	Q2311	29.3	94.5	0.277	-	1.109	1.058	-	
5775	155	802.11ac	OFDM	80	14.0	13.53	0.18	Right	Cheek	1	Q2311	29.3	94.6	0.079	-	1.114	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.53	-0.12	Right	Tilt	1	Q2311	29.3	94.6	0.083	0.031	1.114	1.057	0.037	
5775	155	802.11ac	OFDM	80	14.0	13.53	0.14	Left	Cheek	1	Q2311	29.3	94.6	0.055	-	1.114	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.53	0.19	Left	Tilt	1	Q2311	29.3	94.6	0.052	-	1.114	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.43	0.19	Right	Cheek	2	Q2311	29.3	94.5	0.588	0.281	1.140	1.058	0.339	
5775	155	802.11ac	OFDM	80	14.0	13.43	0.18	Right	Tilt	2	Q2311	29.3	94.5	0.402	-	1.140	1.058	-	
5775	155	802.11ac	OFDM	80	14.0	13.43	-0.15	Left	Cheek	2	Q2311	29.3	94.5	0.281	-	1.140	1.058	-	
5775	155	802.11ac	OFDM	80	14.0	13.43	0.09	Left	Tilt	2	Q2311	29.3	94.5	0.249	-	1.140	1.058	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

**Table 11-23
DTS MIMO Head SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	14.0	13.56	14.0	13.95	0.18	Right	Cheek	MIMO	Q2311	13	98.6	0.665	0.585	1.107	1.014	0.657	
2437	6	802.11n	OFDM	20	14.0	13.29	14.0	13.69	-0.01	Right	Cheek	MIMO	Q2311	13	98.6	0.560	0.488	1.178	1.014	0.583	
2462	11	802.11n	OFDM	20	14.0	13.35	14.0	13.98	0.05	Right	Cheek	MIMO	Q2311	13	98.6	0.635	0.547	1.161	1.014	0.644	
2412	1	802.11n	OFDM	20	14.0	13.56	14.0	13.95	0.18	Right	Tilt	MIMO	Q2311	13	98.6	0.605	0.509	1.107	1.014	0.571	
2412	1	802.11n	OFDM	20	14.0	13.56	14.0	13.95	-0.19	Left	Cheek	MIMO	Q2311	13	98.6	0.250	-	1.107	1.014	-	
2412	1	802.11n	OFDM	20	14.0	13.56	14.0	13.95	-0.01	Left	Tilt	MIMO	Q2311	13	98.6	0.218	-	1.107	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram												

DTS MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WIFI was not transmitting during the above evaluations.

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**Table 11-24
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)	
2402.00	0	Bluetooth	FHSS	16.5	16.14	-0.19	Right	Cheek	Q2311	1	77.3	0.479	1.086	1.294	0.673	
2441.00	39	Bluetooth	FHSS	16.5	16.47	-0.07	Right	Cheek	Q2311	1	77.3	0.783	1.007	1.294	1.020	A22
2480.00	78	Bluetooth	FHSS	16.5	16.50	-0.05	Right	Cheek	Q2311	1	77.3	0.739	1.000	1.294	0.956	
2402.00	0	Bluetooth	FHSS	16.5	16.14	-0.20	Right	Tilt	Q2311	1	77.3	0.563	1.086	1.294	0.791	
2441.00	39	Bluetooth	FHSS	16.5	16.47	-0.07	Right	Tilt	Q2311	1	77.3	0.704	1.007	1.294	0.917	
2480.00	78	Bluetooth	FHSS	16.5	16.50	-0.09	Right	Tilt	Q2311	1	77.3	0.664	1.000	1.294	0.859	
2480.00	78	Bluetooth	FHSS	16.5	16.50	-0.09	Left	Cheek	Q2311	1	77.3	0.214	1.000	1.294	0.277	
2480.00	78	Bluetooth	FHSS	16.5	16.50	0.01	Left	Tilt	Q2311	1	77.3	0.226	1.000	1.294	0.292	
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 11-25
GSM/UMTS/CDMA Body-Worn SAR Data**

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	32.68	N/A	0.00	15 mm	Q2293	1:8.3	back	0.322	1.208	0.389	A23
836.60	4183	UMTS 850	RMC	25.8	24.80	78	-0.01	15 mm	Q2293	1:1	back	0.411	1.259	0.517	A25
820.10	564	CDMA BC10 (\$90S)	TDSO / SO32	26.0	25.42	78	-0.02	15 mm	Q2322	1:1	back	0.292	1.143	0.334	A27
836.52	384	CDMA BC0 (\$22H)	TDSO / SO32	26.0	24.70	78	-0.01	15 mm	Q2322	1:1	back	0.346	1.349	0.467	A29
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	0.17	15 mm	Q2293	1:1	back	0.437	1.175	0.513	A31
1880.00	661	GSM 1900	GSM	31.0	30.52	N/A	-0.02	15 mm	Q2293	1:8.3	back	0.285	1.117	0.318	A33
1852.40	9262	UMTS 1900	RMC	25.2	24.52	17	0.03	15 mm	Q2293	1:1	back	0.552	1.169	0.645	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	0.07	15 mm	Q2293	1:1	back	0.543	1.208	0.656	
1907.60	9538	UMTS 1900	RMC	25.2	24.39	17	0.03	15 mm	Q2293	1:1	back	0.591	1.205	0.712	A35
1851.25	25	PCS CDMA	TDSO / SO32	25.0	24.97	17	-0.03	15 mm	Q2322	1:1	back	0.683	1.007	0.688	
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.90	17	-0.08	15 mm	Q2322	1:1	back	0.695	1.023	0.711	
1908.75	1175	PCS CDMA	TDSO / SO32	25.0	24.82	17	-0.06	15 mm	Q2322	1:1	back	0.719	1.042	0.749	A37
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

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**Table 11-26
LTE Body-Worn SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
Mhz	Ch.																				
680.50	133297	Md	LTE Band 71	20	25.8	25.00	2	-0.02	0	Ant A	Q2306	QPSK	1	50	15 mm	back	1:1	0.299	1.202	0.359	A39
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	0.00	1	Ant A	Q2306	QPSK	50	25	15 mm	back	1:1	0.240	1.194	0.287	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.01	0	Ant A	Q2306	QPSK	1	0	15 mm	back	1:1	0.296	1.306	0.387	A41
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	0.02	1	Ant A	Q2306	QPSK	25	0	15 mm	back	1:1	0.246	1.285	0.316	
782.00	23230	Md	LTE Band 13	10	25.8	25.11	0	-0.01	0	Ant A	Q2306	QPSK	1	25	15 mm	back	1:1	0.326	1.172	0.382	A43
782.00	23230	Md	LTE Band 13	10	24.8	24.23	0	-0.17	1	Ant A	Q2306	QPSK	25	0	15 mm	back	1:1	0.256	1.140	0.292	
793.00	23330	Md	LTE Band 14	10	25.5	24.58	2	-0.02	0	Ant A	Q2306	QPSK	1	25	15 mm	back	1:1	0.344	1.236	0.425	A45
793.00	23330	Md	LTE Band 14	10	24.5	23.65	2	0.04	1	Ant A	Q2306	QPSK	25	0	15 mm	back	1:1	0.280	1.216	0.340	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	0.01	0	Ant A	Q2306	QPSK	1	0	15 mm	back	1:1	0.392	1.259	0.494	A47
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.05	1	Ant A	Q2306	QPSK	36	0	15 mm	back	1:1	0.318	1.262	0.401	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	0.00	0	Ant A	Q2306	QPSK	1	0	15 mm	back	1:1	0.392	1.318	0.517	A49
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	-0.01	1	Ant A	Q2306	QPSK	25	0	15 mm	back	1:1	0.320	1.291	0.413	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	-0.02	0	Ant A	Q2299	QPSK	1	0	15 mm	back	1:1	0.405	1.337	0.541	A51
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.02	1	Ant A	Q2299	QPSK	50	0	15 mm	back	1:1	0.315	1.340	0.422	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.2	24.35	17	-0.02	0	Ant A	Q2299	QPSK	1	0	15 mm	back	1:1	0.569	1.216	0.692	
1882.50	26365	Md	LTE Band 25 (PCS)	20	25.2	24.50	17	0.01	0	Ant A	Q2299	QPSK	1	0	15 mm	back	1:1	0.605	1.175	0.711	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.2	24.47	17	0.05	0	Ant A	Q2299	QPSK	1	0	15 mm	back	1:1	0.646	1.183	0.764	A53
1882.50	26365	Md	LTE Band 25 (PCS)	20	24.2	23.44	17	0.00	1	Ant A	Q2299	QPSK	50	50	15 mm	back	1:1	0.473	1.191	0.563	
2310.00	27710	Md	LTE Band 30	10	24.5	23.82	N/A	0.07	0	Ant B	Q2290	QPSK	1	0	15 mm	back	1:1	0.456	1.169	0.533	
2310.00	27710	Md	LTE Band 30	10	23.5	22.84	N/A	0.08	1	Ant B	Q2290	QPSK	25	0	15 mm	back	1:1	0.354	1.164	0.412	
2310.00	27710	Md	LTE Band 30	10	24.5	23.70	N/A	0.01	0	Ant A	Q2290	QPSK	1	0	15 mm	back	1:1	0.490	1.202	0.589	A55
2310.00	27710	Md	LTE Band 30	10	23.5	22.61	N/A	0.05	1	Ant A	Q2290	QPSK	25	0	15 mm	back	1:1	0.371	1.227	0.455	
2510.00	20850	Low	LTE Band 7	20	24.0	23.38	N/A	0.05	0	Ant B	Q2290	QPSK	1	0	15 mm	back	1:1	0.520	1.153	0.600	
2535.00	21100	Md	LTE Band 7	20	24.0	23.17	N/A	-0.02	0	Ant B	Q2290	QPSK	1	0	15 mm	back	1:1	0.538	1.211	0.652	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	N/A	0.00	0	Ant B	Q2290	QPSK	1	0	15 mm	back	1:1	0.593	1.091	0.647	A57
2560.00	21350	High	LTE Band 7	20	23.0	22.51	N/A	0.04	1	Ant B	Q2290	QPSK	50	0	15 mm	back	1:1	0.468	1.119	0.524	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	N/A	-0.04	0	Ant A	Q2290	QPSK	1	0	15 mm	back	1:1	0.166	1.194	0.198	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	N/A	0.05	1	Ant A	Q2290	QPSK	50	0	15 mm	back	1:1	0.124	1.189	0.147	
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 11-27
LTE Band 41 Body-Worn SAR**

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
		Mhz	Ch.																		
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	-0.07	0	Q2297	QPSK	1	0	15 mm	back	1:1.58	0.313	1.297	0.406	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.03	1	Q2297	QPSK	50	0	15 mm	back	1:1.58	0.273	1.334	0.364	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	28.2	27.16	0.08	0	Q2297	QPSK	1	0	15 mm	back	1:2.31	0.431	1.271	0.548	A59
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	25.0	23.96	-0.09	0	Q2297	QPSK	1	0	15 mm	back	1:1.58	0.334	1.271	0.425	
	SCC	2660.20	41292	High								QPSK	1	99							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Body											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

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**Table 11-28
DTS Body-Worn SAR**



MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.0	20.77	0.00	15 mm	1	Q2311	1	back	99.0	0.135	0.116	1.054	1.010	0.123	
2437	6	802.11b	DSSS	22	21.0	20.24	0.03	15 mm	2	Q2311	1	back	99.0	0.136	0.118	1.191	1.010	0.142	A61
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

**Table 11-29
NII Body-Worn SAR**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	18.0	17.15	0.18	15 mm	1	Q2311	6	back	98.7	0.356	0.162	1.216	1.013	0.200	
5260	52	802.11a	OFDM	20	18.0	16.95	0.00	15 mm	2	Q2311	6	back	98.8	0.472	0.229	1.274	1.012	0.295	A63
5720	144	802.11a	OFDM	20	17.5	16.62	-0.13	15 mm	1	Q2311	6	back	98.7	0.249	0.111	1.225	1.013	0.138	
5720	144	802.11a	OFDM	20	17.5	17.35	0.09	15 mm	2	Q2311	6	back	98.8	0.422	0.185	1.035	1.012	0.194	
5785	157	802.11a	OFDM	20	17.5	16.70	-0.17	15 mm	1	Q2311	6	back	98.7	0.297	0.122	1.202	1.013	0.149	
5785	157	802.11a	OFDM	20	17.5	17.26	-0.05	15 mm	2	Q2311	6	back	98.8	0.407	0.175	1.057	1.012	0.187	
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
DSS Body-Worn SAR**

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #	
MHz	Ch.											(W/kg)			(W/kg)		
2480	78	Bluetooth	FHSS	16.5	16.50	-0.05	15 mm	Q2311	1	back	77.3	0.048	1.000	1.294	0.062	A65	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram									

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11.3 Standalone Hotspot SAR Data



**Table 11-31
GPRS/UMTS/CDMA Hotspot SAR Data**

MEASUREMENT RESULTS																
FREQUENCY	Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
														MHz		Ch.
824.20	128	GSM 850	GPRS	28.5	28.24	NA	-0.14	10 mm	Q2293	4	1.2.076	back	0.449	1.062	0.477	
836.60	190	GSM 850	GPRS	28.5	28.19	NA	-0.01	10 mm	Q2293	4	1.2.076	back	0.639	1.074	0.686	
848.80	251	GSM 850	GPRS	28.5	27.71	NA	0.03	10 mm	Q2293	4	1.2.076	back	0.692	1.199	0.830	A24
824.20	128	GSM 850	GPRS	28.5	28.24	NA	-0.04	10 mm	Q2293	4	1.2.076	front	0.523	1.062	0.555	
824.20	128	GSM 850	GPRS	28.5	28.24	NA	-0.07	10 mm	Q2293	4	1.2.076	bottom	0.357	1.062	0.379	
824.20	128	GSM 850	GPRS	28.5	28.24	NA	-0.04	10 mm	Q2293	4	1.2.076	right	0.345	1.062	0.366	
824.20	128	GSM 850	GPRS	28.5	28.24	NA	0.05	10 mm	Q2293	4	1.2.076	left	0.098	1.062	0.104	
826.40	4132	UMTS 850	RMC	25.8	24.98	78	0.00	10 mm	Q2293	N/A	1:1	back	0.827	1.208	0.999	
836.60	4183	UMTS 850	RMC	25.8	24.80	78	0.01	10 mm	Q2293	N/A	1:1	back	0.810	1.259	1.020	
846.60	4233	UMTS 850	RMC	25.8	24.69	78	0.00	10 mm	Q2293	N/A	1:1	back	0.835	1.291	1.078	A26
836.60	4183	UMTS 850	RMC	25.8	24.80	78	-0.04	10 mm	Q2293	N/A	1:1	front	0.551	1.259	0.694	
836.60	4183	UMTS 850	RMC	25.8	24.80	78	0.02	10 mm	Q2293	N/A	1:1	bottom	0.425	1.259	0.535	
836.60	4183	UMTS 850	RMC	25.8	24.80	78	-0.01	10 mm	Q2293	N/A	1:1	right	0.326	1.259	0.410	
836.60	4183	UMTS 850	RMC	25.8	24.80	78	0.00	10 mm	Q2293	N/A	1:1	left	0.103	1.259	0.130	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	26.0	25.40	78	0.04	10 mm	Q2322	N/A	1:1	back	0.732	1.148	0.840	A28
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	26.0	25.40	78	-0.01	10 mm	Q2322	N/A	1:1	front	0.534	1.148	0.613	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	26.0	25.40	78	0.01	10 mm	Q2322	N/A	1:1	bottom	0.397	1.148	0.456	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	26.0	25.40	78	0.06	10 mm	Q2322	N/A	1:1	right	0.331	1.148	0.380	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	26.0	25.40	78	0.02	10 mm	Q2322	N/A	1:1	left	0.080	1.148	0.092	
824.70	1013	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.94	78	-0.01	10 mm	Q2322	N/A	1:1	back	0.701	1.276	0.894	A30
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.91	78	-0.02	10 mm	Q2322	N/A	1:1	back	0.679	1.285	0.873	
848.31	777	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.66	78	0.01	10 mm	Q2322	N/A	1:1	back	0.684	1.361	0.931	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.91	78	0.01	10 mm	Q2322	N/A	1:1	front	0.558	1.285	0.717	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.91	78	0.00	10 mm	Q2322	N/A	1:1	bottom	0.404	1.285	0.519	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.91	78	0.03	10 mm	Q2322	N/A	1:1	right	0.322	1.285	0.414	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	26.0	24.91	78	-0.01	10 mm	Q2322	N/A	1:1	left	0.092	1.285	0.118	
1732.40	1412	UMTS 1750	RMC	20.5	19.87	17	-0.03	10 mm	Q2304	N/A	1:1	back	0.260	1.156	0.301	
1732.40	1412	UMTS 1750	RMC	20.5	19.87	17	-0.03	10 mm	Q2304	N/A	1:1	front	0.328	1.156	0.379	
1732.40	1412	UMTS 1750	RMC	20.5	19.87	17	-0.03	10 mm	Q2304	N/A	1:1	bottom	0.424	1.156	0.490	A32
1732.40	1412	UMTS 1750	RMC	20.5	19.87	17	-0.13	10 mm	Q2304	N/A	1:1	right	0.044	1.156	0.051	
1732.40	1412	UMTS 1750	RMC	20.5	19.87	17	-0.07	10 mm	Q2304	N/A	1:1	left	0.058	1.156	0.067	
1880.00	661	GSM 1900	GPRS	23.8	22.53	NA	-0.02	10 mm	Q2304	3	1.2.76	back	0.228	1.340	0.306	
1880.00	661	GSM 1900	GPRS	23.8	22.53	NA	0.02	10 mm	Q2304	3	1.2.76	front	0.196	1.340	0.265	
1880.00	661	GSM 1900	GPRS	23.8	22.53	NA	-0.07	10 mm	Q2304	3	1.2.76	bottom	0.445	1.340	0.596	A34
1880.00	661	GSM 1900	GPRS	23.8	22.53	NA	0.00	10 mm	Q2304	3	1.2.76	right	0.044	1.340	0.059	
1880.00	661	GSM 1900	GPRS	23.8	22.53	NA	0.10	10 mm	Q2304	3	1.2.76	left	0.026	1.340	0.035	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	0.03	10 mm	Q2304	N/A	1:1	back	0.351	1.094	0.384	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	0.00	10 mm	Q2304	N/A	1:1	front	0.298	1.094	0.326	
1852.40	9262	UMTS 1900	RMC	20.5	20.34	17	-0.10	10 mm	Q2304	N/A	1:1	bottom	0.647	1.038	0.672	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	-0.02	10 mm	Q2304	N/A	1:1	bottom	0.689	1.094	0.754	
1907.60	9538	UMTS 1900	RMC	20.5	20.30	17	-0.06	10 mm	Q2304	N/A	1:1	bottom	0.827	1.047	0.866	A36
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	-0.03	10 mm	Q2304	N/A	1:1	right	0.068	1.094	0.074	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	-0.03	10 mm	Q2304	N/A	1:1	left	0.043	1.094	0.047	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.08	10 mm	Q2304	N/A	1:1	back	0.413	1.122	0.463	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.03	10 mm	Q2304	N/A	1:1	front	0.344	1.122	0.386	
1851.25	25	PCS CDMA	EVDO Rev. 0	21.0	20.65	17	-0.07	10 mm	Q2304	N/A	1:1	bottom	0.687	1.084	0.745	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.05	10 mm	Q2304	N/A	1:1	bottom	0.785	1.122	0.881	
1908.75	1175	PCS CDMA	EVDO Rev. 0	21.0	20.70	17	-0.04	10 mm	Q2304	N/A	1:1	bottom	0.935	1.072	1.002	A38
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	0.07	10 mm	Q2304	N/A	1:1	right	0.070	1.122	0.079	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.08	10 mm	Q2304	N/A	1:1	left	0.045	1.122	0.050	
1908.75	1175	PCS CDMA	EVDO Rev. 0	21.0	20.70	17	-0.17	10 mm	Q2304	N/A	1:1	bottom	0.906	1.072	0.973	

ANSI / IEEE C36.1 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.



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**Table 11-32
LTE Band 71 Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 71	20	25.8	25.00	2	-0.02	0	Q2306	QPSK	1	50	10 mm	back	1:1	0.451	1.202	0.542	A40
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	0.00	1	Q2306	QPSK	50	25	10 mm	back	1:1	0.365	1.194	0.436	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	2	0.00	0	Q2306	QPSK	1	50	10 mm	front	1:1	0.366	1.202	0.440	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	-0.01	1	Q2306	QPSK	50	25	10 mm	front	1:1	0.298	1.194	0.356	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	2	0.00	0	Q2306	QPSK	1	50	10 mm	bottom	1:1	0.231	1.202	0.278	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	-0.01	1	Q2306	QPSK	50	25	10 mm	bottom	1:1	0.190	1.194	0.227	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	2	-0.02	0	Q2306	QPSK	1	50	10 mm	right	1:1	0.324	1.202	0.389	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	0.00	1	Q2306	QPSK	50	25	10 mm	right	1:1	0.260	1.194	0.310	
680.50	133297	Md	LTE Band 71	20	25.8	25.00	2	0.03	0	Q2306	QPSK	1	50	10 mm	left	1:1	0.159	1.202	0.191	
680.50	133297	Md	LTE Band 71	20	24.8	24.03	2	0.04	1	Q2306	QPSK	50	25	10 mm	left	1:1	0.132	1.194	0.158	
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 12 Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 12	10	25.8	24.64	0	0.01	0	Q2306	QPSK	1	0	10 mm	back	1:1	0.548	1.306	0.716	A42
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.02	1	Q2306	QPSK	25	0	10 mm	back	1:1	0.461	1.285	0.592	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.02	0	Q2306	QPSK	1	0	10 mm	front	1:1	0.343	1.306	0.448	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	0.02	1	Q2306	QPSK	25	0	10 mm	front	1:1	0.290	1.285	0.373	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	-0.02	0	Q2306	QPSK	1	0	10 mm	bottom	1:1	0.289	1.306	0.377	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.05	1	Q2306	QPSK	25	0	10 mm	bottom	1:1	0.239	1.285	0.307	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.00	0	Q2306	QPSK	1	0	10 mm	right	1:1	0.388	1.306	0.507	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.01	1	Q2306	QPSK	25	0	10 mm	right	1:1	0.327	1.285	0.420	
707.50	23095	Md	LTE Band 12	10	25.8	24.64	0	0.02	0	Q2306	QPSK	1	0	10 mm	left	1:1	0.128	1.306	0.167	
707.50	23095	Md	LTE Band 12	10	24.8	23.71	0	-0.04	1	Q2306	QPSK	25	0	10 mm	left	1:1	0.100	1.285	0.129	
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**Table 11-34
LTE Band 13 Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	25.8	25.11	0	0.00	0	Q2306	QPSK	1	25	10 mm	back	1:1	0.761	1.172	0.892	A44
782.00	23230	Mid	LTE Band 13	10	24.8	24.23	0	0.05	1	Q2306	QPSK	25	0	10 mm	back	1:1	0.615	1.140	0.701	
782.00	23230	Mid	LTE Band 13	10	24.8	24.15	0	0.02	1	Q2306	QPSK	50	0	10 mm	back	1:1	0.622	1.161	0.722	
782.00	23230	Mid	LTE Band 13	10	25.8	25.11	0	0.16	0	Q2306	QPSK	1	25	10 mm	front	1:1	0.461	1.172	0.540	
782.00	23230	Mid	LTE Band 13	10	24.8	24.23	0	0.03	1	Q2306	QPSK	25	0	10 mm	front	1:1	0.361	1.140	0.412	
782.00	23230	Mid	LTE Band 13	10	25.8	25.11	0	0.02	0	Q2306	QPSK	1	25	10 mm	bottom	1:1	0.330	1.172	0.387	
782.00	23230	Mid	LTE Band 13	10	24.8	24.23	0	-0.09	1	Q2306	QPSK	25	0	10 mm	bottom	1:1	0.282	1.140	0.321	
782.00	23230	Mid	LTE Band 13	10	25.8	25.11	0	0.10	0	Q2306	QPSK	1	25	10 mm	right	1:1	0.360	1.172	0.422	
782.00	23230	Mid	LTE Band 13	10	24.8	24.23	0	-0.02	1	Q2306	QPSK	25	0	10 mm	right	1:1	0.294	1.140	0.335	
782.00	23230	Mid	LTE Band 13	10	25.8	25.11	0	0.12	0	Q2306	QPSK	1	25	10 mm	left	1:1	0.138	1.172	0.162	
782.00	23230	Mid	LTE Band 13	10	24.8	24.23	0	0.00	1	Q2306	QPSK	25	0	10 mm	left	1:1	0.118	1.140	0.135	
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 14 Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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)		
793.00	23330	Mid	LTE Band 14	10	25.5	24.58	2	-0.01	0	Q2306	QPSK	1	25	10 mm	back	1:1	0.681	1.236	0.842	A46
793.00	23330	Mid	LTE Band 14	10	24.5	23.65	2	0.04	1	Q2306	QPSK	25	0	10 mm	back	1:1	0.569	1.216	0.692	
793.00	23330	Mid	LTE Band 14	10	24.5	23.53	2	-0.01	1	Q2306	QPSK	50	0	10 mm	back	1:1	0.554	1.250	0.693	
793.00	23330	Mid	LTE Band 14	10	25.5	24.58	2	0.02	0	Q2306	QPSK	1	25	10 mm	front	1:1	0.410	1.236	0.507	
793.00	23330	Mid	LTE Band 14	10	24.5	23.65	2	0.03	1	Q2306	QPSK	25	0	10 mm	front	1:1	0.340	1.216	0.413	
793.00	23330	Mid	LTE Band 14	10	25.5	24.58	2	-0.01	0	Q2306	QPSK	1	25	10 mm	bottom	1:1	0.330	1.236	0.408	
793.00	23330	Mid	LTE Band 14	10	24.5	23.65	2	-0.02	1	Q2306	QPSK	25	0	10 mm	bottom	1:1	0.261	1.216	0.317	
793.00	23330	Mid	LTE Band 14	10	25.5	24.58	2	0.07	0	Q2306	QPSK	1	25	10 mm	right	1:1	0.258	1.236	0.319	
793.00	23330	Mid	LTE Band 14	10	24.5	23.65	2	-0.02	1	Q2306	QPSK	25	0	10 mm	right	1:1	0.201	1.216	0.244	
793.00	23330	Mid	LTE Band 14	10	25.5	24.58	2	-0.05	0	Q2306	QPSK	1	25	10 mm	left	1:1	0.126	1.236	0.156	
793.00	23330	Mid	LTE Band 14	10	24.5	23.65	2	0.04	1	Q2306	QPSK	25	0	10 mm	left	1:1	0.104	1.216	0.126	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

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**Table 11-36
LTE Band 26 (Cell) Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	0.02	0	Q2306	QPSK	1	0	10 mm	back	1:1	0.844	1.259	1.063	A48
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.01	1	Q2306	QPSK	36	0	10 mm	back	1:1	0.673	1.262	0.849	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.69	76	0.00	1	Q2306	QPSK	75	0	10 mm	back	1:1	0.661	1.291	0.853	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.01	0	Q2306	QPSK	1	0	10 mm	front	1:1	0.707	1.259	0.890	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	-0.01	1	Q2306	QPSK	36	0	10 mm	front	1:1	0.561	1.262	0.708	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.69	76	0.02	1	Q2306	QPSK	75	0	10 mm	front	1:1	0.556	1.291	0.718	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	0.02	0	Q2306	QPSK	1	0	10 mm	bottom	1:1	0.373	1.259	0.470	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.01	1	Q2306	QPSK	36	0	10 mm	bottom	1:1	0.309	1.262	0.390	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.01	0	Q2306	QPSK	1	0	10 mm	right	1:1	0.319	1.259	0.402	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.00	1	Q2306	QPSK	36	0	10 mm	right	1:1	0.245	1.262	0.309	
831.50	26865	Md	LTE Band 26 (Cell)	15	25.8	24.80	76	-0.06	0	Q2306	QPSK	1	0	10 mm	left	1:1	0.079	1.259	0.099	
831.50	26865	Md	LTE Band 26 (Cell)	15	24.8	23.79	76	0.02	1	Q2306	QPSK	36	0	10 mm	left	1:1	0.067	1.262	0.085	
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 11-37
LTE Band 5 (Cell) Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.02	0	Q2306	QPSK	1	0	10 mm	back	1:1	0.895	1.318	1.180	A50
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.01	1	Q2306	QPSK	25	0	10 mm	back	1:1	0.731	1.291	0.944	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.64	76	-0.01	1	Q2306	QPSK	50	0	10 mm	back	1:1	0.730	1.306	0.953	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	0.01	0	Q2306	QPSK	1	0	10 mm	front	1:1	0.533	1.318	0.702	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	-0.03	1	Q2306	QPSK	25	0	10 mm	front	1:1	0.438	1.291	0.565	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.05	0	Q2306	QPSK	1	0	10 mm	bottom	1:1	0.400	1.318	0.527	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	-0.11	1	Q2306	QPSK	25	0	10 mm	bottom	1:1	0.326	1.291	0.421	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.03	0	Q2306	QPSK	1	0	10 mm	right	1:1	0.272	1.318	0.358	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	0.01	1	Q2306	QPSK	25	0	10 mm	right	1:1	0.221	1.291	0.285	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	0.03	0	Q2306	QPSK	1	0	10 mm	left	1:1	0.100	1.318	0.132	
836.50	20525	Md	LTE Band 5 (Cell)	10	24.8	23.69	76	-0.03	1	Q2306	QPSK	25	0	10 mm	left	1:1	0.078	1.291	0.101	
836.50	20525	Md	LTE Band 5 (Cell)	10	25.8	24.60	76	-0.01	0	Q2306	QPSK	1	0	10 mm	back	1:1	0.787	1.318	1.037	
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.



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**Table 11-38
LTE Band 66 (AWS) Hotspot SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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	21.0	20.87	17	0.01	0	Q2298	QPSK	1	0	10 mm	back	1:1	0.358	1.030	0.369	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.81	17	0.00	0	Q2298	QPSK	50	0	10 mm	back	1:1	0.349	1.045	0.365	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.87	17	-0.03	0	Q2298	QPSK	1	0	10 mm	front	1:1	0.288	1.030	0.297	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.81	17	-0.01	0	Q2298	QPSK	50	0	10 mm	front	1:1	0.283	1.045	0.296	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.87	17	0.02	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.592	1.030	0.610	A52
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.0	20.75	17	-0.05	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.534	1.059	0.566	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.0	20.75	17	0.04	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.572	1.059	0.606	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.81	17	-0.01	0	Q2298	QPSK	50	0	10 mm	bottom	1:1	0.557	1.045	0.582	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.87	17	-0.01	0	Q2298	QPSK	1	0	10 mm	right	1:1	0.063	1.030	0.065	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.81	17	-0.01	0	Q2298	QPSK	50	0	10 mm	right	1:1	0.057	1.045	0.060	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.87	17	-0.01	0	Q2298	QPSK	1	0	10 mm	left	1:1	0.087	1.030	0.090	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.0	20.81	17	0.04	0	Q2298	QPSK	50	0	10 mm	left	1:1	0.081	1.045	0.085	
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
LTE Band 25 (PCS) Hotspot SAR**



MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	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)		
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	0.00	0	Q2298	QPSK	1	0	10 mm	back	1:1	0.440	1.000	0.440	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	0.02	0	Q2298	QPSK	50	0	10 mm	back	1:1	0.434	1.050	0.456	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	0.05	0	Q2298	QPSK	1	0	10 mm	front	1:1	0.394	1.000	0.394	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	0.03	0	Q2298	QPSK	50	0	10 mm	front	1:1	0.386	1.050	0.405	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.41	17	-0.06	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.701	1.021	0.716	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.42	17	-0.03	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.780	1.019	0.795	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	-0.03	0	Q2298	QPSK	1	0	10 mm	bottom	1:1	0.879	1.000	0.879	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.24	17	-0.09	0	Q2298	QPSK	50	0	10 mm	bottom	1:1	0.685	1.062	0.727	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.11	17	-0.03	0	Q2298	QPSK	50	0	10 mm	bottom	1:1	0.741	1.094	0.811	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	-0.08	0	Q2298	QPSK	50	0	10 mm	bottom	1:1	0.908	1.050	0.953	A54
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.20	17	-0.02	0	Q2298	QPSK	100	0	10 mm	bottom	1:1	0.899	1.072	0.964	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	0.16	0	Q2298	QPSK	1	0	10 mm	right	1:1	0.080	1.000	0.080	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	-0.04	0	Q2298	QPSK	50	0	10 mm	right	1:1	0.087	1.050	0.091	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	-0.04	0	Q2298	QPSK	1	0	10 mm	left	1:1	0.059	1.000	0.059	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	-0.01	0	Q2298	QPSK	50	0	10 mm	left	1:1	0.059	1.050	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

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**Table 11-40
LTE Band 30 Hotspot SAR**



MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2310.00	27710	Md	LTE Band 30	10	21.0	20.62	0.07	0	Ant B	Q2289	QPSK	1	0	10 mm	back	1:1	0.462	1.091	0.504	
2310.00	27710	Md	LTE Band 30	10	21.0	20.55	0.01	0	Ant B	Q2289	QPSK	25	0	10 mm	back	1:1	0.459	1.109	0.509	
2310.00	27710	Md	LTE Band 30	10	21.0	20.62	0.02	0	Ant B	Q2289	QPSK	1	0	10 mm	front	1:1	0.393	1.091	0.429	
2310.00	27710	Md	LTE Band 30	10	21.0	20.55	0.04	0	Ant B	Q2289	QPSK	25	0	10 mm	front	1:1	0.380	1.109	0.421	
2310.00	27710	Md	LTE Band 30	10	21.0	20.62	-0.05	0	Ant B	Q2289	QPSK	1	0	10 mm	bottom	1:1	0.950	1.091	1.036	
2310.00	27710	Md	LTE Band 30	10	21.0	20.55	-0.03	0	Ant B	Q2289	QPSK	25	0	10 mm	bottom	1:1	0.942	1.109	1.045	
2310.00	27710	Md	LTE Band 30	10	21.0	20.42	-0.02	0	Ant B	Q2289	QPSK	50	0	10 mm	bottom	1:1	0.936	1.143	1.070	
2310.00	27710	Md	LTE Band 30	10	21.0	20.62	-0.07	0	Ant B	Q2289	QPSK	1	0	10 mm	left	1:1	0.145	1.091	0.158	
2310.00	27710	Md	LTE Band 30	10	21.0	20.55	-0.08	0	Ant B	Q2289	QPSK	25	0	10 mm	left	1:1	0.138	1.109	0.153	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	0.08	0	Ant A	Q2289	QPSK	1	0	10 mm	back	1:1	0.477	1.094	0.522	
2310.00	27710	Md	LTE Band 30	10	21.0	20.53	-0.04	0	Ant A	Q2289	QPSK	25	0	10 mm	back	1:1	0.467	1.114	0.520	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	-0.02	0	Ant A	Q2289	QPSK	1	0	10 mm	front	1:1	0.451	1.094	0.493	
2310.00	27710	Md	LTE Band 30	10	21.0	20.53	0.07	0	Ant A	Q2289	QPSK	25	0	10 mm	front	1:1	0.445	1.114	0.496	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	0.02	0	Ant A	Q2289	QPSK	1	0	10 mm	bottom	1:1	1.060	1.094	1.160	
2310.00	27710	Md	LTE Band 30	10	21.0	20.53	-0.04	0	Ant A	Q2289	QPSK	25	0	10 mm	bottom	1:1	1.050	1.114	1.170	
2310.00	27710	Md	LTE Band 30	10	21.0	20.47	0.02	0	Ant A	Q2289	QPSK	50	0	10 mm	bottom	1:1	1.040	1.130	1.175	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	-0.11	0	Ant A	Q2289	QPSK	1	0	10 mm	right	1:1	0.055	1.094	0.060	
2310.00	27710	Md	LTE Band 30	10	21.0	20.53	0.08	0	Ant A	Q2289	QPSK	25	0	10 mm	right	1:1	0.053	1.114	0.059	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	0.21	0	Ant A	Q2289	QPSK	1	0	10 mm	left	1:1	0.061	1.094	0.067	
2310.00	27710	Md	LTE Band 30	10	21.0	20.53	0.03	0	Ant A	Q2289	QPSK	25	0	10 mm	left	1:1	0.061	1.114	0.068	
2310.00	27710	Md	LTE Band 30	10	21.0	20.61	-0.09	0	Ant A	Q2289	QPSK	1	0	10 mm	bottom	1:1	1.080	1.094	1.182	A56
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.

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**Table 11-41
LTE Band 7 Hotspot SAR**



MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	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)		
2535.00	21100	Mid	LTE Band 7	20	20.5	20.05	-0.02	0	Ant B	Q2289	QPSK	1	0	10 mm	back	1:1	0.519	1.109	0.576	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.02	-0.01	0	Ant B	Q2289	QPSK	50	0	10 mm	back	1:1	0.519	1.117	0.580	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.05	-0.02	0	Ant B	Q2289	QPSK	1	0	10 mm	front	1:1	0.455	1.109	0.505	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.02	-0.03	0	Ant B	Q2289	QPSK	50	0	10 mm	front	1:1	0.452	1.117	0.505	
2510.00	20850	Low	LTE Band 7	20	20.5	20.03	-0.04	0	Ant B	Q2289	QPSK	1	0	10 mm	bottom	1:1	1.020	1.114	1.136	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.05	-0.01	0	Ant B	Q2289	QPSK	1	0	10 mm	bottom	1:1	1.070	1.109	1.187	
2560.00	21350	High	LTE Band 7	20	20.5	20.02	-0.02	0	Ant B	Q2289	QPSK	1	0	10 mm	bottom	1:1	1.140	1.117	1.273	A58
2510.00	20850	Low	LTE Band 7	20	20.5	19.89	-0.03	0	Ant B	Q2289	QPSK	50	0	10 mm	bottom	1:1	1.030	1.151	1.186	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.02	-0.01	0	Ant B	Q2289	QPSK	50	0	10 mm	bottom	1:1	1.090	1.117	1.218	
2560.00	21350	High	LTE Band 7	20	20.5	19.94	-0.05	0	Ant B	Q2289	QPSK	50	0	10 mm	bottom	1:1	1.110	1.138	1.263	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.00	-0.04	0	Ant B	Q2289	QPSK	100	0	10 mm	bottom	1:1	1.080	1.122	1.212	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.05	-0.11	0	Ant B	Q2289	QPSK	1	0	10 mm	left	1:1	0.095	1.109	0.105	
2535.00	21100	Mid	LTE Band 7	20	20.5	20.02	-0.02	0	Ant B	Q2289	QPSK	50	0	10 mm	left	1:1	0.089	1.117	0.099	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.80	0.01	0	Ant A	Q2289	QPSK	1	0	10 mm	back	1:1	0.137	1.175	0.161	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.72	0.04	0	Ant A	Q2289	QPSK	50	0	10 mm	back	1:1	0.136	1.197	0.163	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.80	0.10	0	Ant A	Q2289	QPSK	1	0	10 mm	front	1:1	0.115	1.175	0.135	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.72	0.02	0	Ant A	Q2289	QPSK	50	0	10 mm	front	1:1	0.115	1.197	0.138	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.80	-0.10	0	Ant A	Q2289	QPSK	1	0	10 mm	bottom	1:1	0.328	1.175	0.385	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.72	-0.06	0	Ant A	Q2289	QPSK	50	0	10 mm	bottom	1:1	0.327	1.197	0.391	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.80	0.21	0	Ant A	Q2289	QPSK	1	0	10 mm	right	1:1	0.034	1.175	0.040	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.72	0.13	0	Ant A	Q2289	QPSK	50	0	10 mm	right	1:1	0.034	1.197	0.041	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.80	0.10	0	Ant A	Q2289	QPSK	1	0	10 mm	left	1:1	0.035	1.175	0.041	
2535.00	21100	Mid	LTE Band 7	20	20.5	19.72	0.03	0	Ant A	Q2289	QPSK	50	0	10 mm	left	1:1	0.034	1.197	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											

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**Table 11-42
LTE Band 41 Hotspot SAR**

MEASUREMENT RESULTS																				
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth (MHz)	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																	
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.34	0.05	0	Q2297	QPSK	1	0	10 mm	back	1:1.58	0.432	1.038	0.448
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.30	0.07	0	Q2297	QPSK	50	0	10 mm	back	1:1.58	0.421	1.047	0.441
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.34	0.06	0	Q2297	QPSK	1	0	10 mm	front	1:1.58	0.310	1.038	0.322
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.30	0.03	0	Q2297	QPSK	50	0	10 mm	front	1:1.58	0.309	1.047	0.324
1 CC Uplink - Power Class 3	NA	2506.00	39750	Low	LTE Band 41	20	22.5	21.91	0.01	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.050	1.146	1.203
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	22.5	21.90	-0.05	0	Q2297	QPSK	1	99	10 mm	bottom	1:1.58	1.130	1.148	1.297
	SCC	2525.80	39948	Low								QPSK	1	0						
1 CC Uplink - Power Class 3	NA	2549.50	40185	Low-Md	LTE Band 41	20	22.5	22.11	0.03	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.200	1.094	1.313
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Md	LTE Band 41	20	22.5	22.03	-0.06	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.210	1.114	1.348
	SCC	2529.70	39987	Low-Md								QPSK	1	99						
1 CC Uplink - Power Class 3	NA	2593.00	40620	Mid	LTE Band 41	20	22.5	22.28	0.02	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.160	1.052	1.220
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	22.5	22.24	-0.09	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.130	1.062	1.200
	SCC	2573.20	40422	Mid								QPSK	1	99						
1 CC Uplink - Power Class 3	NA	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.32	-0.08	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.040	1.042	1.084
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.18	-0.09	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	1.050	1.076	1.130
	SCC	2616.70	40857	High								QPSK	1	99						
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.34	-0.05	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	0.852	1.038	0.884
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	22.5	22.23	-0.06	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	0.866	1.064	0.921
	SCC	2660.20	41292	High								QPSK	1	99						
1 CC Uplink - Power Class 3	NA	2506.00	39750	Low	LTE Band 41	20	22.5	21.87	0.02	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.080	1.156	1.248
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	22.5	22.01	-0.03	0	Q2297	QPSK	50	50	10 mm	bottom	1:1.58	1.050	1.119	1.175
	SCC	2525.80	39948	Low								QPSK	50	0						
1 CC Uplink - Power Class 3	NA	2549.50	40185	Low-Md	LTE Band 41	20	22.5	22.15	0.01	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.220	1.084	1.322
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Md	LTE Band 41	20	22.5	22.20	-0.14	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.180	1.072	1.265
	SCC	2529.70	39987	Low-Md								QPSK	50	50						
1 CC Uplink - Power Class 3	NA	2593.00	40620	Mid	LTE Band 41	20	22.5	22.18	0.03	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.110	1.076	1.194
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	22.5	22.36	-0.16	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.140	1.033	1.178
	SCC	2573.20	40422	Mid								QPSK	50	50						
1 CC Uplink - Power Class 3	NA	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.29	0.02	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	0.985	1.050	1.034
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.35	-0.07	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	0.929	1.035	0.962
	SCC	2616.70	40857	Mid-High								QPSK	50	50						
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.30	0.04	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	0.829	1.047	0.868
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	22.5	22.27	0.15	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	0.750	1.054	0.791
	SCC	2660.20	41292	High								QPSK	50	50						
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.20	0.01	0	Q2297	QPSK	100	0	10 mm	bottom	1:1.58	0.806	1.072	0.864
1 CC Uplink - Power Class 2	NA	2549.50	40185	Low-Md	LTE Band 41	20	22.5	21.89	-0.01	0	Q2297	QPSK	50	0	10 mm	bottom	1:2.31	0.747	1.151	0.860
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.34	-0.02	0	Q2297	QPSK	1	0	10 mm	left	1:1.58	0.131	1.038	0.136
1 CC Uplink - Power Class 3	NA	2680.00	41490	High	LTE Band 41	20	22.5	22.30	0.00	0	Q2297	QPSK	50	0	10 mm	left	1:1.58	0.131	1.047	0.137
1 CC Uplink - Power Class 3	NA	2549.50	40185	Low-Md	LTE Band 41	20	22.5	22.15	0.00	0	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	1.200	1.084	1.301
ANSI / IEEE C95.1 1992 - SAFETY LIMIT												Body								
Spatial Peak												1.6 W/kg (mW/g)								
Uncontrolled Exposure/General Population												averaged over 1 gram								

Note: Blue entry represents variability measurement.

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**Table 11-43
WLAN Hotspot SAR**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.0	20.77	-0.06	10 mm	1	Q2311	1	back	99.0	0.278	0.242	1.054	1.010	0.258	
2437	6	802.11b	DSSS	22	21.0	20.77	0.12	10 mm	1	Q2311	1	front	99.0	0.168	0.139	1.054	1.010	0.148	
2437	6	802.11b	DSSS	22	21.0	20.77	-0.03	10 mm	1	Q2311	1	top	99.0	0.341	0.289	1.054	1.010	0.308	
2437	6	802.11b	DSSS	22	21.0	20.77	0.02	10 mm	1	Q2311	1	left	99.0	0.158	-	1.054	1.010	-	
2437	6	802.11b	DSSS	22	21.0	20.24	0.16	10 mm	2	Q2311	1	back	99.0	0.364	0.280	1.191	1.010	0.337	
2437	6	802.11b	DSSS	22	21.0	20.24	0.13	10 mm	2	Q2311	1	front	99.0	0.286	0.256	1.191	1.010	0.308	
2437	6	802.11b	DSSS	22	21.0	20.24	-0.02	10 mm	2	Q2311	1	top	99.0	0.424	0.355	1.191	1.010	0.427	
2437	6	802.11b	DSSS	22	21.0	20.24	0.08	10 mm	2	Q2311	1	left	99.0	0.222	-	1.191	1.010	-	
5785	157	802.11a	OFDM	20	17.5	16.70	0.12	10 mm	1	Q2311	6	back	98.7	0.552	0.222	1.202	1.013	0.270	
5785	157	802.11a	OFDM	20	17.5	16.70	0.01	10 mm	1	Q2311	6	front	98.7	0.037	0.013	1.202	1.013	0.016	
5785	157	802.11a	OFDM	20	17.5	16.70	-0.18	10 mm	1	Q2311	6	top	98.7	0.124	-	1.202	1.013	-	
5785	157	802.11a	OFDM	20	17.5	16.70	0.00	10 mm	1	Q2311	6	left	98.7	0.026	-	1.202	1.013	-	
5785	157	802.11a	OFDM	20	17.5	17.26	0.12	10 mm	2	Q2311	6	back	98.8	0.635	0.271	1.057	1.012	0.290	
5785	157	802.11a	OFDM	20	17.5	17.26	0.20	10 mm	2	Q2311	6	front	98.8	0.172	0.065	1.057	1.012	0.070	
5785	157	802.11a	OFDM	20	17.5	17.26	0.08	10 mm	2	Q2311	6	top	98.8	0.102	-	1.057	1.012	-	
5785	157	802.11a	OFDM	20	17.5	17.26	0.19	10 mm	2	Q2311	6	left	98.8	0.191	-	1.057	1.012	-	
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 11-44
DTS MIMO Hotspot SAR**



MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2417	2	802.11n	OFDM	20	18.0	17.41	18.0	17.98	-0.01	10 mm	MIMO	Q2311	13	back	98.6	0.408	0.340	1.146	1.014	0.395	
2417	2	802.11n	OFDM	20	18.0	17.41	18.0	17.98	0.12	10 mm	MIMO	Q2311	13	front	98.6	0.234	-	1.146	1.014	-	
2417	2	802.11n	OFDM	20	18.0	17.41	18.0	17.98	0.18	10 mm	MIMO	Q2311	13	top	98.6	0.459	0.403	1.146	1.014	0.468	A62
2417	2	802.11n	OFDM	20	18.0	17.41	18.0	17.98	0.06	10 mm	MIMO	Q2311	13	left	98.6	0.244	-	1.146	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram													

To achieve the 21 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18 dBm.

**Table 11-45
NII MIMO Hotspot SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5745	149	802.11n	OFDM	20	17.5	15.99	17.5	16.25	0.07	10 mm	MIMO	Q2311	13	back	98.6	0.745	0.324	1.416	1.014	0.465	A64
5745	149	802.11n	OFDM	20	17.5	15.99	17.5	16.25	0.19	10 mm	MIMO	Q2311	13	front	98.6	0.171	-	1.416	1.014	-	
5745	149	802.11n	OFDM	20	17.5	15.99	17.5	16.25	0.00	10 mm	MIMO	Q2311	13	top	98.6	0.241	0.083	1.416	1.014	0.119	
5745	149	802.11n	OFDM	20	17.5	15.99	17.5	16.25	0.09	10 mm	MIMO	Q2311	13	left	98.6	0.201	-	1.416	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram													

To achieve the 20.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.5 dBm.

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**Table 11-46
DTS MIMO Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)	(W/kg)			(W/kg)	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	0.02	10 mm	MIMO	Q2311	13	back	98.6	0.197	0.163	1.146	1.014	0.189	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	0.13	10 mm	MIMO	Q2311	13	front	98.6	0.156	-	1.146	1.014	-	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	0.15	10 mm	MIMO	Q2311	13	top	98.6	0.186	-	1.146	1.014	-	
2462	11	802.11n	OFDM	20	17.0	16.41	17.0	16.83	0.14	10 mm	MIMO	Q2311	13	left	98.6	0.117	-	1.146	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

DTS MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WIFI was not transmitting during the above evaluations.



**Table 11-47
NII MIMO Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)	(W/kg)			(W/kg)	
5775	155	802.11ac	OFDM	80	14.0	13.53	14.0	13.43	0.21	10 mm	MIMO	Q2311	58.5	back	94.0	0.387	0.157	1.140	1.064	0.190	
5775	155	802.11ac	OFDM	80	14.0	13.53	14.0	13.43	0.00	10 mm	MIMO	Q2311	58.5	front	94.0	0.050	-	1.140	1.064	-	
5775	155	802.11ac	OFDM	80	14.0	13.53	14.0	13.43	0.10	10 mm	MIMO	Q2311	58.5	top	94.0	0.081	-	1.140	1.064	-	
5775	155	802.11ac	OFDM	80	14.0	13.53	14.0	13.43	0.00	10 mm	MIMO	Q2311	58.5	left	94.0	0.071	-	1.140	1.064	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

NII MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WIFI was not transmitting during the above evaluations.

**Table 11-48
DSS Hotspot SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	16.5	16.50	-0.15	10 mm	Q2311	1	back	77.3	0.123	1.000	1.294	0.159	
2480	78	Bluetooth	FHSS	16.5	16.50	0.01	10 mm	Q2311	1	front	77.3	0.122	1.000	1.294	0.158	
2480	78	Bluetooth	FHSS	16.5	16.50	-0.01	10 mm	Q2311	1	top	77.3	0.131	1.000	1.294	0.170	A66
2480	78	Bluetooth	FHSS	16.5	16.50	-0.04	10 mm	Q2311	1	left	77.3	0.083	1.000	1.294	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram						



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11.4 Standalone Phablet SAR Data

**Table 11-49
GPRS/UMTS/CDMA Phablet SAR Data**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	0.02	7 mm	Q2293	N/A	1:1	back	0.704	1.175	0.827	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	0.02	5 mm	Q2293	N/A	1:1	front	0.901	1.175	1.059	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	-0.02	10 mm	Q2293	N/A	1:1	bottom	0.745	1.175	0.875	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	-0.05	0 mm	Q2293	N/A	1:1	right	0.230	1.175	0.270	
1732.40	1412	UMTS 1750	RMC	25.5	24.80	17	-0.10	0 mm	Q2293	N/A	1:1	left	0.418	1.175	0.491	
1732.40	1412	UMTS 1750	RMC	22.0	21.20	17	-0.01	0 mm	Q2292	N/A	1:1	back	1.250	1.202	1.503	
1732.40	1412	UMTS 1750	RMC	22.0	21.20	17	-0.04	0 mm	Q2292	N/A	1:1	front	1.040	1.202	1.250	
1712.40	1312	UMTS 1750	RMC	22.0	21.19	17	0.01	0 mm	Q2292	N/A	1:1	bottom	1.910	1.205	2.302	
1732.40	1412	UMTS 1750	RMC	22.0	21.20	17	0.01	0 mm	Q2292	N/A	1:1	bottom	1.940	1.202	2.332	
1752.60	1513	UMTS 1750	RMC	22.0	21.21	17	-0.01	0 mm	Q2292	N/A	1:1	bottom	2.040	1.199	2.446	A67
1880.00	661	GSM 1900	GPRS	25.5	25.18	N/A	-0.13	7 mm	Q2293	4	1:2.076	back	0.464	1.076	0.499	
1880.00	661	GSM 1900	GPRS	25.5	25.18	N/A	0.02	5 mm	Q2293	4	1:2.076	front	0.600	1.076	0.646	
1880.00	661	GSM 1900	GPRS	25.5	25.18	N/A	-0.07	10 mm	Q2293	4	1:2.076	bottom	0.616	1.076	0.663	
1880.00	661	GSM 1900	GPRS	25.5	25.18	N/A	-0.03	0 mm	Q2293	4	1:2.076	right	0.199	1.076	0.214	
1880.00	661	GSM 1900	GPRS	25.5	25.18	N/A	-0.09	0 mm	Q2293	4	1:2.076	left	0.208	1.076	0.224	
1880.00	661	GSM 1900	GPRS	23.8	22.53	N/A	-0.01	0 mm	Q2292	3	1:2.76	back	0.726	1.340	0.973	
1880.00	661	GSM 1900	GPRS	23.8	22.53	N/A	0.13	0 mm	Q2292	3	1:2.76	front	0.630	1.340	0.844	
1850.20	512	GSM 1900	GPRS	23.8	22.60	N/A	-0.10	0 mm	Q2292	3	1:2.76	bottom	1.440	1.318	1.898	
1880.00	661	GSM 1900	GPRS	23.8	22.53	N/A	-0.11	0 mm	Q2292	3	1:2.76	bottom	1.350	1.340	1.809	
1909.80	810	GSM 1900	GPRS	23.8	22.41	N/A	-0.07	0 mm	Q2292	3	1:2.76	bottom	1.600	1.377	2.203	A68
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	-0.01	7 mm	Q2293	N/A	1:1	back	1.050	1.208	1.268	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	-0.01	5 mm	Q2293	N/A	1:1	front	1.310	1.208	1.582	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	-0.01	10 mm	Q2293	N/A	1:1	bottom	1.310	1.208	1.582	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	0.02	0 mm	Q2293	N/A	1:1	right	0.386	1.208	0.466	
1880.00	9400	UMTS 1900	RMC	25.2	24.38	17	0.02	0 mm	Q2293	N/A	1:1	left	0.443	1.208	0.535	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	-0.09	0 mm	Q2292	N/A	1:1	back	1.690	1.094	1.849	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	0.02	0 mm	Q2292	N/A	1:1	front	1.330	1.094	1.455	
1852.40	9262	UMTS 1900	RMC	20.5	20.34	17	-0.08	0 mm	Q2292	N/A	1:1	bottom	2.970	1.038	3.083	
1880.00	9400	UMTS 1900	RMC	20.5	20.11	17	-0.06	0 mm	Q2292	N/A	1:1	bottom	2.980	1.094	3.260	
1907.60	9538	UMTS 1900	RMC	20.5	20.30	17	-0.05	0 mm	Q2292	N/A	1:1	bottom	3.150	1.047	3.298	A69
1907.60	9538	UMTS 1900	RMC	20.5	20.30	17	-0.14	0 mm	Q2292	N/A	1:1	bottom	3.150	1.047	3.298	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.92	17	0.00	7 mm	Q2322	N/A	1:1	back	1.090	1.019	1.111	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.92	17	0.00	5 mm	Q2322	N/A	1:1	front	1.320	1.019	1.345	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.92	17	0.03	10 mm	Q2322	N/A	1:1	bottom	1.380	1.019	1.406	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.92	17	-0.05	0 mm	Q2322	N/A	1:1	right	0.508	1.019	0.518	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.92	17	-0.07	0 mm	Q2322	N/A	1:1	left	0.558	1.019	0.569	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.02	0 mm	Q2292	N/A	1:1	back	1.570	1.122	1.762	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	0.02	0 mm	Q2292	N/A	1:1	front	1.190	1.122	1.335	
1851.25	25	PCS CDMA	EVDO Rev. 0	21.0	20.65	17	-0.03	0 mm	Q2292	N/A	1:1	bottom	2.790	1.084	3.024	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.50	17	-0.05	0 mm	Q2292	N/A	1:1	bottom	2.860	1.122	3.209	
1908.75	1175	PCS CDMA	EVDO Rev. 0	21.0	20.70	17	-0.03	0 mm	Q2292	N/A	1:1	bottom	3.020	1.072	3.237	A70
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.

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**Table 11-50
LTE Band 66/25 Phablet SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Reported SAR (10g) (W/kg)	Plot #	
Mhz	Ch.																			
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.00	0	Q2299	QPSK	1	0	7 mm	back	1:1	0.634	1.337	0.848	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.02	1	Q2299	QPSK	50	0	7 mm	back	1:1	0.499	1.340	0.669	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.01	0	Q2299	QPSK	1	0	5 mm	front	1:1	0.702	1.337	0.939	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.01	1	Q2299	QPSK	50	0	5 mm	front	1:1	0.551	1.340	0.738	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.00	0	Q2299	QPSK	1	0	10 mm	bottom	1:1	0.752	1.337	1.005	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	-0.03	1	Q2299	QPSK	50	0	10 mm	bottom	1:1	0.577	1.340	0.773	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	0.16	0	Q2299	QPSK	1	0	0 mm	right	1:1	0.197	1.337	0.263	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	0.04	1	Q2299	QPSK	50	0	0 mm	right	1:1	0.155	1.340	0.208	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	24.24	17	-0.10	0	Q2299	QPSK	1	0	0 mm	left	1:1	0.323	1.337	0.432	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.5	23.23	17	-0.13	1	Q2299	QPSK	50	0	0 mm	left	1:1	0.261	1.340	0.350	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.50	17	-0.02	0	Q2308	QPSK	1	0	0 mm	back	1:1	1.460	1.122	1.638	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.40	17	0.01	0	Q2308	QPSK	50	0	0 mm	back	1:1	1.450	1.148	1.665	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.50	17	0.00	0	Q2308	QPSK	1	0	0 mm	front	1:1	1.100	1.122	1.234	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.40	17	-0.05	0	Q2308	QPSK	50	0	0 mm	front	1:1	1.100	1.148	1.263	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.50	17	0.04	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.040	1.122	2.289	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.48	17	0.03	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.080	1.127	2.344	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	21.45	17	0.00	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.230	1.135	2.531	
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.40	17	-0.01	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.040	1.148	2.342	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.36	17	0.01	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.100	1.159	2.434	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	21.39	17	0.01	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.270	1.151	2.613	A71
1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.39	17	0.00	0	Q2308	QPSK	100	0	0 mm	bottom	1:1	2.080	1.151	2.394	
1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	21.39	17	0.04	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.260	1.151	2.601	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.03	0	Q2299	QPSK	1	0	7 mm	back	1:1	1.090	1.175	1.281	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	-0.02	1	Q2299	QPSK	50	50	7 mm	back	1:1	0.857	1.191	1.021	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	-0.03	0	Q2299	QPSK	1	0	5 mm	front	1:1	1.150	1.175	1.351	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	0.00	1	Q2299	QPSK	50	50	5 mm	front	1:1	0.903	1.191	1.075	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	-0.01	0	Q2299	QPSK	1	0	10 mm	bottom	1:1	1.250	1.175	1.469	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	-0.02	1	Q2299	QPSK	50	50	10 mm	bottom	1:1	1.010	1.191	1.203	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	0.03	0	Q2299	QPSK	1	0	0 mm	right	1:1	0.442	1.175	0.519	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	0.02	1	Q2299	QPSK	50	50	0 mm	right	1:1	0.352	1.191	0.419	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.2	24.50	17	-0.01	0	Q2299	QPSK	1	0	0 mm	left	1:1	0.409	1.175	0.481	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	23.44	17	-0.02	1	Q2299	QPSK	50	50	0 mm	left	1:1	0.315	1.191	0.375	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	-0.05	0	Q2308	QPSK	1	0	0 mm	back	1:1	1.050	1.000	1.050	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	-0.11	0	Q2308	QPSK	50	0	0 mm	back	1:1	1.020	1.050	1.071	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	0.04	0	Q2308	QPSK	1	0	0 mm	front	1:1	0.924	1.000	0.924	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	0.01	0	Q2308	QPSK	50	0	0 mm	front	1:1	0.899	1.050	0.944	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.41	17	-0.07	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.130	1.021	2.175	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.42	17	-0.15	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.160	1.019	2.201	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.50	17	-0.12	0	Q2308	QPSK	1	0	0 mm	bottom	1:1	2.340	1.000	2.340	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.24	17	-0.01	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.110	1.062	2.241	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.11	17	-0.14	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.150	1.094	2.352	
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.29	17	-0.13	0	Q2308	QPSK	50	0	0 mm	bottom	1:1	2.380	1.050	2.499	A72
1905.00	26590	High	LTE Band 25 (PCS)	20	20.5	20.20	17	-0.13	0	Q2308	QPSK	100	0	0 mm	bottom	1:1	2.360	1.072	2.530	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak										Phablet 4.0 W/kg (mW/g) averaged over 10 grams										
Uncontrolled Exposure/General Population																				



Note: Blue entry represents variability measurement.

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**Table 11-51
LTE Band 30 Phablet SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	0.06	0	Ant A	Q2290	QPSK	1	0	7 mm	back	1:1	0.760	1.202	0.914	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	-0.02	0	Ant B	Q2290	QPSK	1	0	7 mm	back	1:1	0.603	1.169	0.705	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.04	1	Ant A	Q2290	QPSK	25	0	7 mm	back	1:1	0.573	1.227	0.703	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	-0.02	1	Ant B	Q2290	QPSK	25	0	7 mm	back	1:1	0.483	1.164	0.562	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	-0.08	0	Ant A	Q2290	QPSK	1	0	5 mm	front	1:1	0.889	1.202	1.069	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	0.14	0	Ant B	Q2290	QPSK	1	0	5 mm	front	1:1	0.839	1.169	0.981	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	0.06	1	Ant A	Q2290	QPSK	25	0	5 mm	front	1:1	0.678	1.227	0.832	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.00	1	Ant B	Q2290	QPSK	25	0	5 mm	front	1:1	0.662	1.164	0.771	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	-0.03	0	Ant A	Q2290	QPSK	1	0	10 mm	bottom	1:1	1.030	1.202	1.238	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	-0.02	0	Ant B	Q2290	QPSK	1	0	10 mm	bottom	1:1	0.875	1.169	1.023	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	-0.05	1	Ant A	Q2290	QPSK	25	0	10 mm	bottom	1:1	0.790	1.227	0.969	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	-0.01	1	Ant B	Q2290	QPSK	25	0	10 mm	bottom	1:1	0.689	1.164	0.802	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	-0.01	0	Ant A	Q2290	QPSK	1	0	0 mm	right	1:1	0.252	1.202	0.303	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	-0.01	1	Ant A	Q2290	QPSK	25	0	0 mm	right	1:1	0.191	1.227	0.234	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.70	-0.08	0	Ant A	Q2290	QPSK	1	0	0 mm	left	1:1	0.443	1.202	0.532	
2310.00	27710	Mid	LTE Band 30	10	24.5	23.82	-0.02	0	Ant B	Q2290	QPSK	1	0	0 mm	left	1:1	1.130	1.169	1.321	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.61	-0.02	1	Ant A	Q2290	QPSK	25	0	0 mm	left	1:1	0.339	1.227	0.416	
2310.00	27710	Mid	LTE Band 30	10	23.5	22.84	0.01	1	Ant B	Q2290	QPSK	25	0	0 mm	left	1:1	0.898	1.164	1.045	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.06	0.03	0	Ant A	Q2284	QPSK	1	0	0 mm	back	1:1	1.490	1.107	1.649	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.81	-0.14	0	Ant B	Q2284	QPSK	1	0	0 mm	back	1:1	1.800	1.172	2.110	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.07	0.01	0	Ant A	Q2284	QPSK	25	0	0 mm	back	1:1	1.510	1.104	1.667	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.72	-0.10	0	Ant B	Q2284	QPSK	25	0	0 mm	back	1:1	1.760	1.197	2.107	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.66	-0.03	0	Ant B	Q2284	QPSK	50	0	0 mm	back	1:1	1.780	1.213	2.159	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.06	0.08	0	Ant A	Q2284	QPSK	1	0	0 mm	front	1:1	1.770	1.107	1.959	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.81	0.00	0	Ant B	Q2284	QPSK	1	0	0 mm	front	1:1	1.630	1.172	1.910	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.07	0.04	0	Ant A	Q2284	QPSK	25	0	0 mm	front	1:1	1.780	1.104	1.965	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.72	0.00	0	Ant B	Q2284	QPSK	25	0	0 mm	front	1:1	1.590	1.197	1.903	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.06	-0.02	0	Ant A	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.240	1.107	2.480	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.81	-0.01	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.450	1.172	2.871	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.07	-0.05	0	Ant A	Q2284	QPSK	25	0	0 mm	bottom	1:1	2.260	1.104	2.495	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.72	0.00	0	Ant B	Q2284	QPSK	25	0	0 mm	bottom	1:1	2.410	1.197	2.885	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.01	-0.06	0	Ant A	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.220	1.119	2.484	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.66	-0.07	0	Ant B	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.410	1.213	2.923	
2310.00	27710	Mid	LTE Band 30	10	22.5	21.81	-0.03	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.460	1.172	2.883	A73
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.

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**Table 11-52
LTE Band 7 Phablet SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.03	0	Ant A	Q2290	QPSK	1	0	7 mm	back	1:1	0.253	1.194	0.302	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	-0.06	0	Ant B	Q2290	QPSK	1	0	7 mm	back	1:1	0.871	1.091	0.950	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	0.01	1	Ant A	Q2290	QPSK	50	0	7 mm	back	1:1	0.191	1.189	0.227	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	-0.01	1	Ant B	Q2290	QPSK	50	0	7 mm	back	1:1	0.694	1.119	0.777	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.02	0	Ant A	Q2290	QPSK	1	0	5 mm	front	1:1	0.280	1.194	0.334	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	-0.06	0	Ant B	Q2290	QPSK	1	0	5 mm	front	1:1	1.120	1.091	1.222	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	-0.05	1	Ant A	Q2290	QPSK	50	0	5 mm	front	1:1	0.216	1.189	0.257	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	-0.07	1	Ant B	Q2290	QPSK	50	0	5 mm	front	1:1	0.873	1.119	0.977	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	-0.04	0	Ant A	Q2290	QPSK	1	0	10 mm	bottom	1:1	0.292	1.194	0.349	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	0.02	0	Ant B	Q2290	QPSK	1	0	10 mm	bottom	1:1	1.200	1.091	1.309	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	-0.03	1	Ant A	Q2290	QPSK	50	0	10 mm	bottom	1:1	0.230	1.189	0.273	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	-0.02	1	Ant B	Q2290	QPSK	50	0	10 mm	bottom	1:1	0.933	1.119	1.044	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	0.03	0	Ant A	Q2290	QPSK	1	0	0 mm	right	1:1	0.202	1.194	0.241	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	-0.09	1	Ant A	Q2290	QPSK	50	0	0 mm	right	1:1	0.155	1.189	0.184	
2510.00	20850	Low	LTE Band 7	20	24.0	23.23	-0.12	0	Ant A	Q2290	QPSK	1	0	0 mm	left	1:1	0.205	1.194	0.245	
2560.00	21350	High	LTE Band 7	20	24.0	23.62	-0.12	0	Ant B	Q2290	QPSK	1	0	0 mm	left	1:1	0.790	1.091	0.862	
2510.00	20850	Low	LTE Band 7	20	23.0	22.25	-0.01	1	Ant A	Q2290	QPSK	50	0	0 mm	left	1:1	0.160	1.189	0.190	
2560.00	21350	High	LTE Band 7	20	23.0	22.51	-0.21	1	Ant B	Q2290	QPSK	50	0	0 mm	left	1:1	0.638	1.119	0.714	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	0.10	0	Ant A	Q2284	QPSK	1	0	0 mm	back	1:1	0.671	1.151	0.772	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.15	-0.14	0	Ant B	Q2284	QPSK	1	0	0 mm	back	1:1	1.340	1.216	1.629	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.29	0.09	0	Ant A	Q2284	QPSK	50	0	0 mm	back	1:1	0.684	1.178	0.806	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.11	-0.12	0	Ant B	Q2284	QPSK	50	0	0 mm	back	1:1	1.330	1.227	1.632	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	0.00	0	Ant A	Q2284	QPSK	1	0	0 mm	front	1:1	0.429	1.151	0.494	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.15	-0.12	0	Ant B	Q2284	QPSK	1	0	0 mm	front	1:1	1.300	1.216	1.581	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.29	-0.01	0	Ant A	Q2284	QPSK	50	0	0 mm	front	1:1	0.423	1.178	0.498	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.11	-0.01	0	Ant B	Q2284	QPSK	50	0	0 mm	front	1:1	1.260	1.227	1.546	
2510.00	20850	Low	LTE Band 7	20	21.0	19.96	-0.03	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.120	1.271	2.695	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	-0.18	0	Ant A	Q2284	QPSK	1	0	0 mm	bottom	1:1	0.701	1.151	0.807	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.15	-0.01	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.550	1.216	3.101	A74
2560.00	21350	High	LTE Band 7	20	21.0	20.03	-0.05	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.290	1.250	2.863	
2510.00	20850	Low	LTE Band 7	20	21.0	19.83	-0.02	0	Ant B	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.180	1.309	2.854	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.29	-0.13	0	Ant A	Q2284	QPSK	50	0	0 mm	bottom	1:1	0.715	1.178	0.842	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.11	-0.01	0	Ant B	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.540	1.227	3.117	
2560.00	21350	High	LTE Band 7	20	21.0	19.95	0.00	0	Ant B	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.260	1.274	2.879	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.07	0.01	0	Ant B	Q2284	QPSK	100	0	0 mm	bottom	1:1	2.470	1.239	3.060	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.15	-0.07	0	Ant B	Q2284	QPSK	1	0	0 mm	bottom	1:1	2.520	1.216	3.064	
2510.00	20850	Low	LTE Band 7	20	21.0	19.83	-0.03	0	Ant B	Q2284	QPSK	50	0	0 mm	bottom	1:1	2.140	1.309	2.802	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Phablet										
Spatial Peak										4.0 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 10 grams										

Note: Blue entry represents variability measurement.

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**Table 11-53
LTE Band 41 Phablet SAR**

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.02	0	Q2297	QPSK	1	0	7 mm	back	1:1.58	0.459	1.297	0.595	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	-0.01	1	Q2297	QPSK	50	0	7 mm	back	1:1.58	0.351	1.334	0.468	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.02	0	Q2297	QPSK	1	0	5 mm	front	1:1.58	0.562	1.297	0.729	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	0.05	1	Q2297	QPSK	50	0	5 mm	front	1:1.58	0.434	1.334	0.579	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	-0.12	0	Q2297	QPSK	1	0	10 mm	bottom	1:1.58	0.538	1.297	0.698	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	-0.06	1	Q2297	QPSK	50	0	10 mm	bottom	1:1.58	0.421	1.334	0.562	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	25.0	23.87	-0.11	0	Q2297	QPSK	1	0	0 mm	left	1:1.58	0.665	1.297	0.863	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.75	-0.05	1	Q2297	QPSK	50	0	0 mm	left	1:1.58	0.519	1.334	0.692	
1 CC Uplink - Power Class 3	N/A	2960.00	39750	Low	LTE Band 41	20	24.0	22.58	-0.16	0	Q2284	QPSK	1	0	0 mm	back	1:1.58	1.300	1.387	1.803	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.79	-0.11	0	Q2284	QPSK	1	0	0 mm	back	1:1.58	1.220	1.321	1.612	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.86	-0.21	0	Q2284	QPSK	1	0	0 mm	back	1:1.58	1.090	1.300	1.417	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.94	-0.14	0	Q2284	QPSK	1	0	0 mm	back	1:1.58	1.110	1.276	1.416	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	23.03	-0.19	0	Q2284	QPSK	1	0	0 mm	back	1:1.58	1.250	1.250	1.563	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.0	22.57	-0.18	0	Q2284	QPSK	50	0	0 mm	back	1:1.58	1.310	1.390	1.821	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.76	-0.14	0	Q2284	QPSK	50	0	0 mm	back	1:1.58	1.220	1.330	1.623	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.77	-0.08	0	Q2284	QPSK	50	0	0 mm	back	1:1.58	1.070	1.327	1.420	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.87	-0.19	0	Q2284	QPSK	50	0	0 mm	back	1:1.58	1.060	1.297	1.375	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.96	-0.13	0	Q2284	QPSK	50	0	0 mm	back	1:1.58	1.220	1.271	1.551	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.89	-0.21	0	Q2284	QPSK	100	0	0 mm	back	1:1.58	1.460	1.291	1.885	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.0	22.58	0.00	0	Q2284	QPSK	1	0	0 mm	front	1:1.58	0.852	1.387	1.182	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.79	0.07	0	Q2284	QPSK	1	0	0 mm	front	1:1.58	0.925	1.321	1.222	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.86	0.16	0	Q2284	QPSK	1	0	0 mm	front	1:1.58	1.030	1.300	1.339	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.94	0.16	0	Q2284	QPSK	1	0	0 mm	front	1:1.58	1.080	1.276	1.378	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	23.03	0.09	0	Q2284	QPSK	1	0	0 mm	front	1:1.58	1.310	1.250	1.638	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.0	22.57	0.09	0	Q2284	QPSK	50	0	0 mm	front	1:1.58	0.831	1.390	1.155	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.76	0.18	0	Q2284	QPSK	50	0	0 mm	front	1:1.58	0.921	1.330	1.225	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.77	0.13	0	Q2284	QPSK	50	0	0 mm	front	1:1.58	1.020	1.327	1.354	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.87	0.12	0	Q2284	QPSK	50	0	0 mm	front	1:1.58	1.070	1.297	1.388	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.96	0.05	0	Q2284	QPSK	50	0	0 mm	front	1:1.58	1.320	1.271	1.678	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.89	-0.01	0	Q2284	QPSK	100	0	0 mm	front	1:1.58	1.280	1.291	1.652	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.0	22.58	-0.10	0	Q2284	QPSK	1	0	0 mm	bottom	1:1.58	2.110	1.387	2.927	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.79	-0.13	0	Q2284	QPSK	1	0	0 mm	bottom	1:1.58	2.250	1.321	2.972	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.86	0.16	0	Q2284	QPSK	1	0	0 mm	bottom	1:1.58	2.240	1.300	2.912	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.94	-0.15	0	Q2284	QPSK	1	0	0 mm	bottom	1:1.58	2.020	1.276	2.578	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	23.03	-0.13	0	Q2284	QPSK	1	0	0 mm	bottom	1:1.58	1.790	1.250	2.238	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.0	22.57	-0.13	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	2.130	1.390	2.961	
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	24.0	22.26	-0.17	0	Q2284	QPSK	50	50	0 mm	bottom	1:1.58	1.790	1.493	2.672	
	SCC	2525.80	39948	Low									50	0							
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.76	-0.10	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	2.320	1.330	3.086	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.82	-0.18	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	2.460	1.312	3.228	A75
	SCC	2529.70	39987	Low-Mid									50	50							
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	22.77	-0.15	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	2.230	1.327	2.959	
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	24.0	22.58	-0.15	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	1.950	1.387	2.705	
	SCC	2573.20	40422	Mid									50	50							
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.87	-0.15	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	1.990	1.297	2.581	
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.72	-0.13	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	1.750	1.343	2.350	
	SCC	2616.70	40857	Mid-High									50	50							
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.96	-0.10	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	1.780	1.271	2.262	
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	24.0	22.63	-0.19	0	Q2284	QPSK	50	0	0 mm	bottom	1:1.58	1.550	1.371	2.125	
	SCC	2660.20	41292	High									50	50							
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.0	22.89	-0.19	0	Q2284	QPSK	100	0	0 mm	bottom	1:1.58	1.720	1.291	2.221	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	22.81	-0.20	0	Q2284	QPSK	50	0	0 mm	bottom	1:2.31	1.480	1.315	1.946	

ANSI / IEEE C86.1 1992 - SAFETY LIMIT
Spatial Peak
Uncontrolled Exposure/General Population

Phablet
4.0 W/kg (mW/g)
averaged over 10 grams

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**Table 11-54
WLAN Phablet SAR**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	18.0	17.15	0.00	0 mm	1	Q2311	6	back	98.7	3.268	1.030	1.216	1.013	1.269	
5300	60	802.11a	OFDM	20	18.0	17.15	0.19	0 mm	1	Q2311	6	front	98.7	0.317	-	1.216	1.013	-	
5300	60	802.11a	OFDM	20	18.0	17.15	-0.19	0 mm	1	Q2311	6	top	98.7	0.821	0.093	1.216	1.013	0.115	
5300	60	802.11a	OFDM	20	18.0	17.15	0.00	0 mm	1	Q2311	6	left	98.7	0.197	-	1.216	1.013	-	
5260	52	802.11a	OFDM	20	18.0	16.95	0.19	0 mm	2	Q2311	6	back	98.8	5.858	0.996	1.274	1.012	1.284	
5260	52	802.11a	OFDM	20	18.0	16.95	0.21	0 mm	2	Q2311	6	front	98.8	3.521	0.348	1.274	1.012	0.449	
5260	52	802.11a	OFDM	20	18.0	16.95	0.18	0 mm	2	Q2311	6	top	98.8	1.169	-	1.274	1.012	-	
5260	52	802.11a	OFDM	20	18.0	16.95	0.09	0 mm	2	Q2311	6	left	98.8	0.862	-	1.274	1.012	-	
5720	144	802.11a	OFDM	20	17.5	16.62	-0.12	0 mm	1	Q2311	6	back	98.7	4.072	0.935	1.225	1.013	1.160	
5720	144	802.11a	OFDM	20	17.5	16.62	0.16	0 mm	1	Q2311	6	front	98.7	0.378	-	1.225	1.013	-	
5720	144	802.11a	OFDM	20	17.5	16.62	-0.19	0 mm	1	Q2311	6	top	98.7	0.847	0.079	1.225	1.013	0.098	
5720	144	802.11a	OFDM	20	17.5	16.62	0.02	0 mm	1	Q2311	6	left	98.7	0.072	-	1.225	1.013	-	
5720	144	802.11a	OFDM	20	17.5	17.35	0.14	0 mm	2	Q2311	6	back	98.8	11.466	1.050	1.035	1.012	1.100	
5720	144	802.11a	OFDM	20	17.5	17.35	0.05	0 mm	2	Q2311	6	front	98.8	6.589	0.494	1.035	1.012	0.517	
5720	144	802.11a	OFDM	20	17.5	17.35	-0.10	0 mm	2	Q2311	6	top	98.8	3.198	-	1.035	1.012	-	
5720	144	802.11a	OFDM	20	17.5	17.35	0.00	0 mm	2	Q2311	6	left	98.8	1.154	-	1.035	1.012	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams									



**Table 11-55
WLAN MIMO Phablet SAR**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5300	60	802.11n	OFDM	20	18.0	17.04	18.0	16.91	0.19	0 mm	MIMO	Q2311	13	back	98.6	17.609	2.020	1.285	1.014	2.632	
5320	64	802.11n	OFDM	20	18.0	17.21	18.0	16.89	0.14	0 mm	MIMO	Q2311	13	back	98.6	15.936	2.070	1.291	1.014	2.710	
5320	64	802.11n	OFDM	20	18.0	17.21	18.0	16.89	0.18	0 mm	MIMO	Q2311	13	front	98.6	3.310	0.342	1.291	1.014	0.448	
5320	64	802.11n	OFDM	20	18.0	17.21	18.0	16.89	0.02	0 mm	MIMO	Q2311	13	top	98.6	1.631	-	1.291	1.014	-	
5320	64	802.11n	OFDM	20	18.0	17.21	18.0	16.89	0.19	0 mm	MIMO	Q2311	13	left	98.6	1.112	0.142	1.291	1.014	0.186	
5500	100	802.11n	OFDM	20	17.5	15.94	17.5	16.02	-0.14	0 mm	MIMO	Q2311	13	back	98.6	38.369	2.190	1.432	1.014	3.180	
5600	120	802.11n	OFDM	20	17.5	15.97	17.5	16.40	0.13	0 mm	MIMO	Q2311	13	back	98.6	12.351	2.230	1.422	1.014	3.215	A76
5720	144	802.11n	OFDM	20	17.5	15.89	17.5	16.42	0.07	0 mm	MIMO	Q2311	13	back	98.6	11.614	1.840	1.449	1.014	2.703	
5600	120	802.11n	OFDM	20	17.5	15.97	17.5	16.40	0.15	0 mm	MIMO	Q2311	13	front	98.6	6.029	0.548	1.422	1.014	0.790	
5600	120	802.11n	OFDM	20	17.5	15.97	17.5	16.40	0.10	0 mm	MIMO	Q2311	13	top	98.6	3.485	-	1.422	1.014	-	
5600	120	802.11n	OFDM	20	17.5	15.97	17.5	16.40	0.00	0 mm	MIMO	Q2311	13	left	98.6	1.507	0.193	1.422	1.014	0.278	
5320	64	802.11n	OFDM	20	18.0	17.21	18.0	16.89	0.09	0 mm	MIMO	Q2311	13	back	98.6	8.011	2.100	1.291	1.014	2.749	
5600	120	802.11n	OFDM	20	17.5	15.97	17.5	16.40	0.06	0 mm	MIMO	Q2311	13	back	98.6	11.676	2.050	1.422	1.014	2.956	
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.

For channels 60 and 64, to achieve the 21 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18 dBm. For channels 100, 120, and 144, to achieve the 20.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 17.5 dBm.

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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 15 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.
11. This device supports dynamic antenna tuning for some bands. Per FCC Guidance, SAR was measured according to the normally required SAR measurement configurations with tuner active. The auto-tune state determined by the device was verified before and after each SAR measurement and is listed in tables above. Please see Section 14 for supplemental data.
12. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
13. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
14. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

GSM Test Notes:

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

CDMA Notes:

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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 $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.
6. CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

UMTS Notes:

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

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC

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Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.



8. For LTE Band 41, per Fall 2017 TCB Workshop Notes, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power. When the reported 1g SAR was >1.2 W/kg or the reported 10g SAR was > 3.0 W/kg, all required test channels were additionally evaluated.
9. For LTE Band 7 and LTE Band 30 Antenna A operations, the device was connected in a radiated downlink carrier aggregation scenario per FCC Guidance. Combination CA_2A-7A was used for LTE Band 7 Antenna A and CA_2A-30A for LTE Band 30 Antenna A.

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. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.
5. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
6. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
7. When 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Bluetooth Notes

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

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction



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

12.2 Simultaneous Transmission Procedures

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

(*) For 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 condition was used for simultaneous transmission analysis.



Per FCC KDB Publication 648474 D04 Handset SAR v01r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR (“-”).

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12.3 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Head SAR	GSM 850	0.170	0.335	1.049	0.505	1.219
	UMTS 850	0.272	0.335	1.049	0.607	1.321
	CDMA/EVDO BC10 (§90S)	0.250	0.335	1.049	0.585	1.299
	CDMA/EVDO BC0 (§22H)	0.262	0.335	1.049	0.597	1.311
	UMTS 1750	0.110	0.335	1.049	0.445	1.159
	GSM 1900	0.074	0.335	1.049	0.409	1.123
	UMTS 1900	0.174	0.335	1.049	0.509	1.223
	PCS CDMA/EVDO	0.166	0.335	1.049	0.501	1.215
	LTE Band 71	0.154	0.335	1.049	0.489	1.203
	LTE Band 12	0.205	0.335	1.049	0.540	1.254
	LTE Band 13	0.230	0.335	1.049	0.565	1.279
	LTE Band 14	0.235	0.335	1.049	0.570	1.284
	LTE Band 26 (Cell)	0.239	0.335	1.049	0.574	1.288
	LTE Band 5 (Cell)	0.239	0.335	1.049	0.574	1.288
	LTE Band 66 (AWS)	0.115	0.335	1.049	0.450	1.164
	LTE Band 25 (PCS)	0.141	0.335	1.049	0.476	1.190
	LTE Band 30	0.131	0.335	1.049	0.466	1.180
	LTE Band 7	0.123	0.335	1.049	0.458	1.172
LTE Band 41	0.122	0.335	1.049	0.457	1.171	

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Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.170	1.319	1.489
	UMTS 850	0.272	1.319	1.591
	CDMA/EVDO BC10 (§90S)	0.250	1.319	1.569
	CDMA/EVDO BC0 (§22H)	0.262	1.319	1.581
	UMTS 1750	0.110	1.319	1.429
	GSM 1900	0.074	1.319	1.393
	UMTS 1900	0.174	1.319	1.493
	PCS CDMA/EVDO	0.166	1.319	1.485
	LTE Band 71	0.154	1.319	1.473
	LTE Band 12	0.205	1.319	1.524
	LTE Band 13	0.230	1.319	1.549
	LTE Band 14	0.235	1.319	1.554
	LTE Band 26 (Cell)	0.239	1.319	1.558
	LTE Band 5 (Cell)	0.239	1.319	1.558
	LTE Band 66 (AWS)	0.115	1.319	1.434
	LTE Band 25 (PCS)	0.141	1.319	1.460
	LTE Band 30	0.131	1.319	1.450
	LTE Band 7	0.123	1.319	1.442
LTE Band 41	0.122	1.319	1.441	

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	0.170	0.058	0.429	0.228	0.599	0.657
	UMTS 850	0.272	0.058	0.429	0.330	0.701	0.759
	CDMA/EVDO BC10 (§90S)	0.250	0.058	0.429	0.308	0.679	0.737
	CDMA/EVDO BC0 (§22H)	0.262	0.058	0.429	0.320	0.691	0.749
	UMTS 1750	0.110	0.058	0.429	0.168	0.539	0.597
	GSM 1900	0.074	0.058	0.429	0.132	0.503	0.561
	UMTS 1900	0.174	0.058	0.429	0.232	0.603	0.661
	PCS CDMA/EVDO	0.166	0.058	0.429	0.224	0.595	0.653
	LTE Band 71	0.154	0.058	0.429	0.212	0.583	0.641
	LTE Band 12	0.205	0.058	0.429	0.263	0.634	0.692
	LTE Band 13	0.230	0.058	0.429	0.288	0.659	0.717
	LTE Band 14	0.235	0.058	0.429	0.293	0.664	0.722
	LTE Band 26 (Cell)	0.239	0.058	0.429	0.297	0.668	0.726
	LTE Band 5 (Cell)	0.239	0.058	0.429	0.297	0.668	0.726
	LTE Band 66 (AWS)	0.115	0.058	0.429	0.173	0.544	0.602
	LTE Band 25 (PCS)	0.141	0.058	0.429	0.199	0.570	0.628
	LTE Band 30	0.131	0.058	0.429	0.189	0.560	0.618
	LTE Band 7	0.123	0.058	0.429	0.181	0.552	0.610
LTE Band 41	0.122	0.058	0.429	0.180	0.551	0.609	





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Table 12-3



Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO and 5 GHz WLAN MIMO (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 16 dBm SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	GSM 850	0.170	0.657	0.058	0.429	1.314
	UMTS 850	0.272	0.657	0.058	0.429	1.416
	CDMA/EVDO BC10 (§90S)	0.250	0.657	0.058	0.429	1.394
	CDMA/EVDO BC0 (§22H)	0.262	0.657	0.058	0.429	1.406
	UMTS 1750	0.110	0.657	0.058	0.429	1.254
	GSM 1900	0.074	0.657	0.058	0.429	1.218
	UMTS 1900	0.174	0.657	0.058	0.429	1.318
	PCS CDMA/EVDO	0.166	0.657	0.058	0.429	1.310
	LTE Band 71	0.154	0.657	0.058	0.429	1.298
	LTE Band 12	0.205	0.657	0.058	0.429	1.349
	LTE Band 13	0.230	0.657	0.058	0.429	1.374
	LTE Band 14	0.235	0.657	0.058	0.429	1.379
	LTE Band 26 (Cell)	0.239	0.657	0.058	0.429	1.383
	LTE Band 5 (Cell)	0.239	0.657	0.058	0.429	1.383
	LTE Band 66 (AWS)	0.115	0.657	0.058	0.429	1.259
	LTE Band 25 (PCS)	0.141	0.657	0.058	0.429	1.285
	LTE Band 30	0.131	0.657	0.058	0.429	1.275
	LTE Band 7	0.123	0.657	0.058	0.429	1.267
LTE Band 41	0.122	0.657	0.058	0.429	1.266	

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



Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.170	1.020	1.190
	UMTS 850	0.272	1.020	1.292
	CDMA/EVDO BC10 (§90S)	0.250	1.020	1.270
	CDMA/EVDO BC0 (§22H)	0.262	1.020	1.282
	UMTS 1750	0.110	1.020	1.130
	GSM 1900	0.074	1.020	1.094
	UMTS 1900	0.174	1.020	1.194
	PCS CDMA/EVDO	0.166	1.020	1.186
	LTE Band 71	0.154	1.020	1.174
	LTE Band 12	0.205	1.020	1.225
	LTE Band 13	0.230	1.020	1.250
	LTE Band 14	0.235	1.020	1.255
	LTE Band 26 (Cell)	0.239	1.020	1.259
	LTE Band 5 (Cell)	0.239	1.020	1.259
	LTE Band 66 (AWS)	0.115	1.020	1.135
	LTE Band 25 (PCS)	0.141	1.020	1.161
	LTE Band 30	0.131	1.020	1.151
	LTE Band 7	0.123	1.020	1.143
LTE Band 41	0.122	1.020	1.142	

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12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.389	0.123	0.142	0.512	0.531	0.654
	UMTS 850	0.517	0.123	0.142	0.640	0.659	0.782
	CDMA BC10 (\$90S)	0.334	0.123	0.142	0.457	0.476	0.599
	CDMA BC0 (\$22H)	0.467	0.123	0.142	0.590	0.609	0.732
	UMTS 1750	0.513	0.123	0.142	0.636	0.655	0.778
	GSM 1900	0.318	0.123	0.142	0.441	0.460	0.583
	UMTS 1900	0.712	0.123	0.142	0.835	0.854	0.977
	PCS CDMA	0.749	0.123	0.142	0.872	0.891	1.014
	LTE Band 71	0.359	0.123	0.142	0.482	0.501	0.624
	LTE Band 12	0.387	0.123	0.142	0.510	0.529	0.652
	LTE Band 13	0.382	0.123	0.142	0.505	0.524	0.647
	LTE Band 14	0.425	0.123	0.142	0.548	0.567	0.690
	LTE Band 26 (Cell)	0.494	0.123	0.142	0.617	0.636	0.759
	LTE Band 5 (Cell)	0.517	0.123	0.142	0.640	0.659	0.782
	LTE Band 66 (AWS)	0.541	0.123	0.142	0.664	0.683	0.806
	LTE Band 25 (PCS)	0.764	0.123	0.142	0.887	0.906	1.029
	LTE Band 30	0.589	0.123	0.142	0.712	0.731	0.854
	LTE Band 7	0.652	0.123	0.142	0.775	0.794	0.917
LTE Band 41	0.548	0.123	0.142	0.671	0.690	0.813	

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**Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.5 cm)**

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.389	0.200	0.295	0.589	0.684	0.884
	UMTS 850	0.517	0.200	0.295	0.717	0.812	1.012
	CDMA BC10 (\$90S)	0.334	0.200	0.295	0.534	0.629	0.829
	CDMA BC0 (\$22H)	0.467	0.200	0.295	0.667	0.762	0.962
	UMTS 1750	0.513	0.200	0.295	0.713	0.808	1.008
	GSM 1900	0.318	0.200	0.295	0.518	0.613	0.813
	UMTS 1900	0.712	0.200	0.295	0.912	1.007	1.207
	PCS CDMA	0.749	0.200	0.295	0.949	1.044	1.244
	LTE Band 71	0.359	0.200	0.295	0.559	0.654	0.854
	LTE Band 12	0.387	0.200	0.295	0.587	0.682	0.882
	LTE Band 13	0.382	0.200	0.295	0.582	0.677	0.877
	LTE Band 14	0.425	0.200	0.295	0.625	0.720	0.920
	LTE Band 26 (Cell)	0.494	0.200	0.295	0.694	0.789	0.989
	LTE Band 5 (Cell)	0.517	0.200	0.295	0.717	0.812	1.012
	LTE Band 66 (AWS)	0.541	0.200	0.295	0.741	0.836	1.036
	LTE Band 25 (PCS)	0.764	0.200	0.295	0.964	1.059	1.259
	LTE Band 30	0.589	0.200	0.295	0.789	0.884	1.084
	LTE Band 7	0.652	0.200	0.295	0.852	0.947	1.147
LTE Band 41	0.548	0.200	0.295	0.748	0.843	1.043	



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Table 12-7
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO and 5 GHz WLAN MIMO (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body-Worn	GSM 850	0.389	0.123	0.142	0.200	0.295	1.149
	UMTS 850	0.517	0.123	0.142	0.200	0.295	1.277
	CDMA BC10 (§90S)	0.334	0.123	0.142	0.200	0.295	1.094
	CDMA BC0 (§22H)	0.467	0.123	0.142	0.200	0.295	1.227
	UMTS 1750	0.513	0.123	0.142	0.200	0.295	1.273
	GSM 1900	0.318	0.123	0.142	0.200	0.295	1.078
	UMTS 1900	0.712	0.123	0.142	0.200	0.295	1.472
	PCS CDMA	0.749	0.123	0.142	0.200	0.295	1.509
	LTE Band 71	0.359	0.123	0.142	0.200	0.295	1.119
	LTE Band 12	0.387	0.123	0.142	0.200	0.295	1.147
	LTE Band 13	0.382	0.123	0.142	0.200	0.295	1.142
	LTE Band 14	0.425	0.123	0.142	0.200	0.295	1.185
	LTE Band 26 (Cell)	0.494	0.123	0.142	0.200	0.295	1.254
	LTE Band 5 (Cell)	0.517	0.123	0.142	0.200	0.295	1.277
	LTE Band 66 (AWS)	0.541	0.123	0.142	0.200	0.295	1.301
	LTE Band 25 (PCS)	0.764	0.123	0.142	0.200	0.295	1.524
	LTE Band 30	0.589	0.123	0.142	0.200	0.295	1.349
	LTE Band 7	0.652	0.123	0.142	0.200	0.295	1.412
LTE Band 41	0.548	0.123	0.142	0.200	0.295	1.308	





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Table 12-8
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.5 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 850	0.389	0.062	0.451
	UMTS 850	0.517	0.062	0.579
	CDMA BC10 (§90S)	0.334	0.062	0.396
	CDMA BC0 (§22H)	0.467	0.062	0.529
	UMTS 1750	0.513	0.062	0.575
	GSM 1900	0.318	0.062	0.380
	UMTS 1900	0.712	0.062	0.774
	PCS CDMA	0.749	0.062	0.811
	LTE Band 71	0.359	0.062	0.421
	LTE Band 12	0.387	0.062	0.449
	LTE Band 13	0.382	0.062	0.444
	LTE Band 14	0.425	0.062	0.487
	LTE Band 26 (Cell)	0.494	0.062	0.556
	LTE Band 5 (Cell)	0.517	0.062	0.579
	LTE Band 66 (AWS)	0.541	0.062	0.603
	LTE Band 25 (PCS)	0.764	0.062	0.826
	LTE Band 30	0.589	0.062	0.651
LTE Band 7	0.652	0.062	0.714	
LTE Band 41	0.548	0.062	0.610	



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12.5 Hotspot SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.308	1.138
	UMTS 850	1.078	0.308	1.386
	EVDO BC10 (§90S)	0.840	0.308	1.148
	EVDO BC0 (§22H)	0.931	0.308	1.239
	UMTS 1750	0.490	0.308	0.798
	GPRS 1900	0.596	0.308	0.904
	UMTS 1900	0.866	0.308	1.174
	PCS EVDO	1.002	0.308	1.310
	LTE Band 71	0.542	0.308	0.850
	LTE Band 12	0.716	0.308	1.024
	LTE Band 13	0.892	0.308	1.200
	LTE Band 14	0.842	0.308	1.150
	LTE Band 26 (Cell)	1.063	0.308	1.371
	LTE Band 5 (Cell)	1.180	0.308	1.488
	LTE Band 66 (AWS)	0.610	0.308	0.918
	LTE Band 25 (PCS)	0.964	0.308	1.272
	LTE Band 30	1.182	0.308	1.490
	LTE Band 7	1.273	0.308	1.581
	LTE Band 41	1.348	0.308	See Table Below

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.448	0.258	0.706
	Front	0.324	0.148	0.472
	Top	-	0.308	0.308
	Bottom	1.348	-	1.348
	Right	-	-	-
	Left	0.137	0.308*	0.445

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Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	
Hotspot SAR	GPRS 850	0.830	0.427	1.257
	UMTS 850	1.078	0.427	1.505
	EVDO BC10 (§90S)	0.840	0.427	1.267
	EVDO BC0 (§22H)	0.931	0.427	1.358
	UMTS 1750	0.490	0.427	0.917
	GPRS 1900	0.596	0.427	1.023
	UMTS 1900	0.866	0.427	1.293
	PCS EVDO	1.002	0.427	1.429
	LTE Band 71	0.542	0.427	0.969
	LTE Band 12	0.716	0.427	1.143
	LTE Band 13	0.892	0.427	1.319
	LTE Band 14	0.842	0.427	1.269
	LTE Band 26 (Cell)	1.063	0.427	1.490
	LTE Band 5 (Cell)	1.180	0.427	See Table Below
	LTE Band 66 (AWS)	0.610	0.427	1.037
	LTE Band 25 (PCS)	0.964	0.427	1.391
	LTE Band 30	1.182	0.427	See Table Below
LTE Band 7	1.273	0.427	See Table Below	
LTE Band 41	1.348	0.427	See Table Below	

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	1.180	0.337	1.517	Hotspot SAR	Back	0.522	0.337	0.859
	Front	0.702	0.308	1.010		Front	0.496	0.308	0.804
	Top	-	0.427	0.427		Top	-	0.427	0.427
	Bottom	0.527	-	0.527		Bottom	1.182	-	1.182
	Right	0.358	-	0.358		Right	0.060	-	0.060
	Left	0.132	0.427*	0.559	Left	0.158	0.427*	0.585	

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.580	0.337	0.917	Hotspot SAR	Back	0.448	0.337	0.785
	Front	0.505	0.308	0.813		Front	0.324	0.308	0.632
	Top	-	0.427	0.427		Top	-	0.427	0.427
	Bottom	1.273	-	1.273		Bottom	1.348	-	1.348
	Right	0.041	-	0.041		Right	-	-	-
	Left	0.105	0.427*	0.532		Left	0.137	0.427*	0.564



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Table 12-10
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.468	1.298
	UMTS 850	1.078	0.468	1.546
	EVDO BC10 (§90S)	0.840	0.468	1.308
	EVDO BC0 (§22H)	0.931	0.468	1.399
	UMTS 1750	0.490	0.468	0.958
	GPRS 1900	0.596	0.468	1.064
	UMTS 1900	0.866	0.468	1.334
	PCS EVDO	1.002	0.468	1.470
	LTE Band 71	0.542	0.468	1.010
	LTE Band 12	0.716	0.468	1.184
	LTE Band 13	0.892	0.468	1.360
	LTE Band 14	0.842	0.468	1.310
	LTE Band 26 (Cell)	1.063	0.468	1.531
	LTE Band 5 (Cell)	1.180	0.468	See Table Below
	LTE Band 66 (AWS)	0.610	0.468	1.078
	LTE Band 25 (PCS)	0.964	0.468	1.432
	LTE Band 30	1.182	0.468	See Table Below
LTE Band 7	1.273	0.468	See Table Below	
LTE Band 41	1.348	0.468	See Table Below	

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	1.180	0.395	1.575	Hotspot SAR	Back	0.522	0.395	0.917
	Front	0.702	0.468*	1.170		Front	0.496	0.468*	0.964
	Top	-	0.468	0.468		Top	-	0.468	0.468
	Bottom	0.527	-	0.527		Bottom	1.182	-	1.182
	Right	0.358	-	0.358		Right	0.060	-	0.060
	Left	0.132	0.468*	0.600		Left	0.158	0.468*	0.626
Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.580	0.395	0.975	Hotspot SAR	Back	0.448	0.395	0.843
	Front	0.505	0.468*	0.973		Front	0.324	0.468*	0.792
	Top	-	0.468	0.468		Top	-	0.468	0.468
	Bottom	1.273	-	1.273		Bottom	1.348	-	1.348
	Right	0.041	-	0.041		Right	-	-	-
	Left	0.105	0.468*	0.573		Left	0.137	0.468*	0.605



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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)				
		1	2	3	1+2	1+3			
Hotspot SAR	GPRS 850	0.830	0.270	0.290	1.100	1.120			
	UMTS 850	1.078	0.270	0.290	1.348	1.368			
	EVDO BC10 (\$90S)	0.840	0.270	0.290	1.110	1.130			
	EVDO BC0 (\$22H)	0.931	0.270	0.290	1.201	1.221			
	UMTS 1750	0.490	0.270	0.290	0.760	0.780			
	GPRS 1900	0.596	0.270	0.290	0.866	0.886			
	UMTS 1900	0.866	0.270	0.290	1.136	1.156			
	PCS EVDO	1.002	0.270	0.290	1.272	1.292			
	LTE Band 71	0.542	0.270	0.290	0.812	0.832			
	LTE Band 12	0.716	0.270	0.290	0.986	1.006			
	LTE Band 13	0.892	0.270	0.290	1.162	1.182			
	LTE Band 14	0.842	0.270	0.290	1.112	1.132			
	LTE Band 26 (Cell)	1.063	0.270	0.290	1.333	1.353			
	LTE Band 5 (Cell)	1.180	0.270	0.290	1.450	1.470			
	LTE Band 66 (AWS)	0.610	0.270	0.290	0.880	0.900			
	LTE Band 25 (PCS)	0.964	0.270	0.290	1.234	1.254			
	LTE Band 30	1.182	0.270	0.290	1.452	1.472			
	LTE Band 7	1.273	0.270	0.290	1.543	1.563			
LTE Band 41	1.348	0.270	0.290	See Table Below	See Table Below				
Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.448	0.270	0.718	Hotspot SAR	Back	0.448	0.290	0.738
	Front	0.324	0.016	0.340		Front	0.324	0.070	0.394
	Top	-	0.270*	0.270		Top	-	0.290*	0.290
	Bottom	1.348	-	1.348		Bottom	1.348	-	1.348
	Right	-	-	-		Right	-	-	-
	Left	0.137	0.270*	0.407		Left	0.137	0.290*	0.427



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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.465	1.295
	UMTS 850	1.078	0.465	1.543
	EVDO BC10 (§90S)	0.840	0.465	1.305
	EVDO BC0 (§22H)	0.931	0.465	1.396
	UMTS 1750	0.490	0.465	0.955
	GPRS 1900	0.596	0.465	1.061
	UMTS 1900	0.866	0.465	1.331
	PCS EVDO	1.002	0.465	1.467
	LTE Band 71	0.542	0.465	1.007
	LTE Band 12	0.716	0.465	1.181
	LTE Band 13	0.892	0.465	1.357
	LTE Band 14	0.842	0.465	1.307
	LTE Band 26 (Cell)	1.063	0.465	1.528
	LTE Band 5 (Cell)	1.180	0.465	See Table Below
	LTE Band 66 (AWS)	0.610	0.465	1.075
	LTE Band 25 (PCS)	0.964	0.465	1.429
	LTE Band 30	1.182	0.465	See Table Below
	LTE Band 7	1.273	0.465	See Table Below
LTE Band 41	1.348	0.465	See Table Below	

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2				1+2	1	2
Hotspot SAR	Back	1.180	0.465	See Note 1	0.01	Hotspot SAR	Back	0.522	0.465	0.987
	Front	0.702	0.465*	1.167	N/A		Front	0.496	0.465*	0.961
	Top	-	0.119	0.119	N/A		Top	-	0.119	0.119
	Bottom	0.527	-	0.527	N/A		Bottom	1.182	-	1.182
	Right	0.358	-	0.358	N/A		Right	0.060	-	0.060
	Left	0.132	0.465*	0.597	N/A		Left	0.158	0.465*	0.623

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Hotspot SAR	Back	0.580	0.465	1.045	Hotspot SAR	Back	0.448	0.465	0.913
	Front	0.505	0.465*	0.970		Front	0.324	0.465*	0.789
	Top	-	0.119	0.119		Top	-	0.119	0.119
	Bottom	1.273	-	1.273		Bottom	1.348	-	1.348
	Right	0.041	-	0.041		Right	-	-	-
	Left	0.105	0.465*	0.570		Left	0.137	0.465*	0.602



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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN MIMO at 16 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	
Hotspot SAR	GPRS 850	0.830	0.189	0.190	1.209
	UMTS 850	1.078	0.189	0.190	1.457
	EVDO BC10 (§90S)	0.840	0.189	0.190	1.219
	EVDO BC0 (§22H)	0.931	0.189	0.190	1.310
	UMTS 1750	0.490	0.189	0.190	0.869
	GPRS 1900	0.596	0.189	0.190	0.975
	UMTS 1900	0.866	0.189	0.190	1.245
	PCS EVDO	1.002	0.189	0.190	1.381
	LTE Band 71	0.542	0.189	0.190	0.921
	LTE Band 12	0.716	0.189	0.190	1.095
	LTE Band 13	0.892	0.189	0.190	1.271
	LTE Band 14	0.842	0.189	0.190	1.221
	LTE Band 26 (Cell)	1.063	0.189	0.190	1.442
	LTE Band 5 (Cell)	1.180	0.189	0.190	1.559
	LTE Band 66 (AWS)	0.610	0.189	0.190	0.989
	LTE Band 25 (PCS)	0.964	0.189	0.190	1.343
	LTE Band 30	1.182	0.189	0.190	1.561
	LTE Band 7	1.273	0.189	0.190	See Table Below
LTE Band 41	1.348	0.189	0.190	See Table Below	

Simult Tx	Configuration	LTE Band 7 Ant A SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN MIMO at 16 dBm SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 7 Ant B SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN MIMO at 16 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.163	0.189	0.190	0.542	Hotspot SAR	Back	0.580	0.189	0.190	0.959
	Front	0.138	0.189*	0.190*	0.517		Front	0.505	0.189*	0.190*	0.884
	Top	-	0.189*	0.190*	0.379		Top	-	0.189*	0.190*	0.379
	Bottom	0.391	-	-	0.391		Bottom	1.273	-	-	1.273
	Right	0.041	-	-	0.041		Right	-	-	-	-
	Left	0.041	0.189*	0.190*	0.420		Left	0.105	0.189*	0.190*	0.484

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN MIMO at 16 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.448	0.189	0.190	0.827
	Front	0.324	0.189*	0.190*	0.703
	Top	-	0.189*	0.190*	0.379
	Bottom	1.348	-	-	1.348
	Right	-	-	-	-
	Left	0.137	0.189*	0.190*	0.516





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Table 12-14
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.830	0.170	1.000
	UMTS 850	1.078	0.170	1.248
	EVDO BC10 (\$90S)	0.840	0.170	1.010
	EVDO BC0 (\$22H)	0.931	0.170	1.101
	UMTS 1750	0.490	0.170	0.660
	GPRS 1900	0.596	0.170	0.766
	UMTS 1900	0.866	0.170	1.036
	PCS EVDO	1.002	0.170	1.172
	LTE Band 71	0.542	0.170	0.712
	LTE Band 12	0.716	0.170	0.886
	LTE Band 13	0.892	0.170	1.062
	LTE Band 14	0.842	0.170	1.012
	LTE Band 26 (Cell)	1.063	0.170	1.233
	LTE Band 5 (Cell)	1.180	0.170	1.350
	LTE Band 66 (AWS)	0.610	0.170	0.780
	LTE Band 25 (PCS)	0.964	0.170	1.134
	LTE Band 30	1.182	0.170	1.352
	LTE Band 7	1.273	0.170	1.443
LTE Band 41	1.348	0.170	1.518	

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

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	UMTS 1750	2.446	1.269	3.715
	GPRS 1900	2.203	1.269	3.472
	UMTS 1900	3.298	1.269	See Table Below
	PCS EVDO	3.237	1.269	See Table Below
	LTE Band 66 (AWS)	2.613	1.269	3.882
	LTE Band 25 (PCS)	2.530	1.269	3.799
	LTE Band 30	2.923	1.269	See Table Below
	LTE Band 7	3.117	1.269	See Table Below
	LTE Band 41	3.228	1.269	See Table Below



Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	1.849	1.269	3.118
	Front	1.582	1.269*	2.851
	Top	-	0.115	0.115
	Bottom	3.298	-	3.298
	Right	0.466	-	0.466
	Left	0.535	1.269*	1.804

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	1.762	1.269	3.031
	Front	1.345	1.269*	2.614
	Top	-	0.115	0.115
	Bottom	3.237	-	3.237
	Right	0.518	-	0.518
	Left	0.569	1.269*	1.838

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Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Phablet SAR	Back	2.159	1.269	3.428	Phablet SAR	Back	1.632	1.269	2.901
	Front	1.965	1.269*	3.234		Front	1.581	1.269*	2.850
	Top	-	0.115	0.115		Top	-	0.115	0.115
	Bottom	2.923	-	2.923		Bottom	3.117	-	3.117
	Right	0.303	-	0.303		Right	0.241	-	0.241
	Left	1.321	1.269*	2.590		Left	0.862	1.269*	2.131

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	Back	1.885	1.269	3.154
	Front	1.678	1.269*	2.947
	Top	-	0.115	0.115
	Bottom	3.228	-	3.228
	Right	-	-	-
	Left	0.863	1.269*	2.132

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Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	
Phablet SAR	UMTS 1750	2.446	1.284	3.730
	GPRS 1900	2.203	1.284	3.487
	UMTS 1900	3.298	1.284	See Table Below
	PCS EVDO	3.237	1.284	See Table Below
	LTE Band 66 (AWS)	2.613	1.284	3.897
	LTE Band 25 (PCS)	2.530	1.284	3.814
	LTE Band 30	2.923	1.284	See Table Below
	LTE Band 7	3.117	1.284	See Table Below
	LTE Band 41	3.228	1.284	See Table Below

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2				1+2	1	
Phablet SAR	Back	1.849	1.284	3.133	Phablet SAR	Back	1.762	1.284	3.046
	Front	1.582	0.517	2.099		Front	1.345	0.517	1.862
	Top	-	1.284*	1.284		Top	-	1.284*	1.284
	Bottom	3.298	-	3.298		Bottom	3.237	-	3.237
	Right	0.466	-	0.466		Right	0.518	-	0.518
	Left	0.535	1.284*	1.819		Left	0.569	1.284*	1.853

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2				1+2	1	
Phablet SAR	Back	2.159	1.284	3.443	Phablet SAR	Back	1.632	1.284	2.916
	Front	1.965	0.517	2.482		Front	1.581	0.517	2.098
	Top	-	1.284*	1.284		Top	-	1.284*	1.284
	Bottom	2.923	-	2.923		Bottom	3.117	-	3.117
	Right	0.303	-	0.303		Right	0.241	-	0.241
	Left	1.321	1.284*	2.605		Left	0.862	1.284*	2.146

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	
Phablet SAR	Back	1.885	1.284	3.169
	Front	1.678	0.517	2.195
	Top	-	1.284*	1.284
	Bottom	3.228	-	3.228
	Right	-	-	-
	Left	0.863	1.284*	2.147





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

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2			1	2	1+2	1+2
Phablet SAR	Back	1.503	3.215	See Note 1	0.06	Phablet SAR	Back	0.973	3.215	See Note 1	0.05
	Front	1.250	0.790	2.040	N/A		Front	0.844	0.790	1.634	N/A
	Top	-	3.215*	3.215	N/A		Top	-	3.215*	3.215	N/A
	Bottom	2.446	-	2.446	N/A		Bottom	2.203	-	2.203	N/A
	Right	0.270	-	0.270	N/A		Right	0.214	-	0.214	N/A
	Left	0.491	0.278	0.769	N/A		Left	0.224	0.278	0.502	N/A
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2			1	2	1+2	1+2
Phablet SAR	Back	1.849	3.215	See Note 1	0.07	Phablet SAR	Back	1.762	3.215	See Note 1	0.07
	Front	1.582	0.790	2.372	N/A		Front	1.345	0.790	2.135	N/A
	Top	-	3.215*	3.215	N/A		Top	-	3.215*	3.215	N/A
	Bottom	3.298	-	3.298	N/A		Bottom	3.237	-	3.237	N/A
	Right	0.466	-	0.466	N/A		Right	0.518	-	0.518	N/A
	Left	0.535	0.278	0.813	N/A		Left	0.569	0.278	0.847	N/A
Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2			1	2	1+2	1+2
Phablet SAR	Back	1.665	3.215	See Note 1	0.07	Phablet SAR	Back	1.281	3.215	See Note 1	0.06
	Front	1.263	0.790	2.053	N/A		Front	1.351	0.790	2.141	N/A
	Top	-	3.215*	3.215	N/A		Top	-	3.215*	3.215	N/A
	Bottom	2.613	-	2.613	N/A		Bottom	2.530	-	2.530	N/A
	Right	0.263	-	0.263	N/A		Right	0.519	-	0.519	N/A
	Left	0.432	0.278	0.710	N/A		Left	0.481	0.278	0.759	N/A
Simult Tx	Configuration	LTE Band 30 Ant A SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 30 Ant B SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2			1	2	1+2	1+2
Phablet SAR	Back	1.667	3.215	See Note 1	0.07	Phablet SAR	Back	2.159	3.215	See Note 1	0.08
	Front	1.965	0.790	2.755	N/A		Front	1.910	0.790	2.700	N/A
	Top	-	3.215*	3.215	N/A		Top	-	3.215*	3.215	N/A
	Bottom	2.495	-	2.495	N/A		Bottom	2.923	-	2.923	N/A
	Right	0.303	-	0.303	N/A		Right	-	-	-	N/A
	Left	0.532	0.278	0.810	N/A		Left	1.321	0.278	1.599	N/A

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Simult Tx	Configuration	LTE Band 7 Ant A SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 7 Ant B SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2			1	2	1+2	1+2
Phablet SAR	Back	0.806	3.215	See Note 1	0.05	Phablet SAR	Back	1.632	3.215	See Note 1	0.07
	Front	0.498	0.790	1.288	N/A		Front	1.581	0.790	2.371	N/A
	Top	-	3.215*	3.215	N/A		Top	-	3.215*	3.215	N/A
	Bottom	0.842	-	0.842	N/A		Bottom	3.117	-	3.117	N/A
	Right	0.241	-	0.241	N/A		Right	-	-	-	N/A
	Left	0.245	0.278	0.523	N/A		Left	0.862	0.278	1.140	N/A
Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR						
		1	2	1+2	1+2						
Phablet SAR	Back	1.885	3.215	See Note 1	0.08						
	Front	1.678	0.790	2.468	N/A						
	Top	-	3.215*	3.215	N/A						
	Bottom	3.228	-	3.228	N/A						
	Right	-	-	-	N/A						
	Left	0.863	0.278	1.141	N/A						

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

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12.7 SPLSR Evaluation and Analysis

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

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

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

12.7.1 Hotspot Back Side SPLSR Evaluation and Analysis

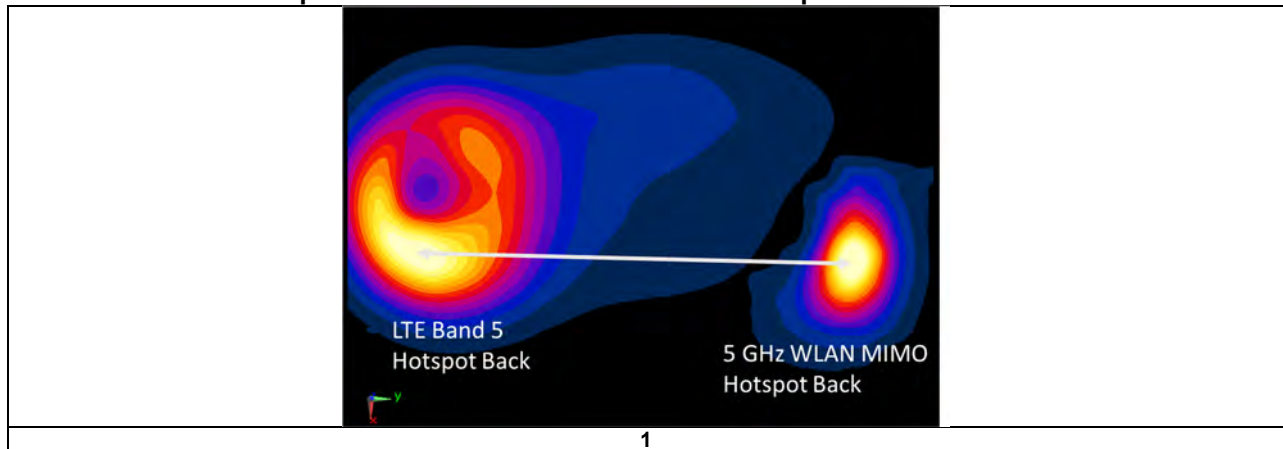
Table 12-17
Peak SAR Locations for Hotspot Back Side



Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	0.00	73.00
LTE Band 5 (Cell)	-12.00	-81.50

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

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D _{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN MIMO	LTE Band 5 (Cell)	0.465	1.18	1.645	154.97	0.01	1

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



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12.7.2



Phablet Side SPLSR Evaluation and Analysis

Table 12-20
Peak SAR Locations for Phablet Back Side

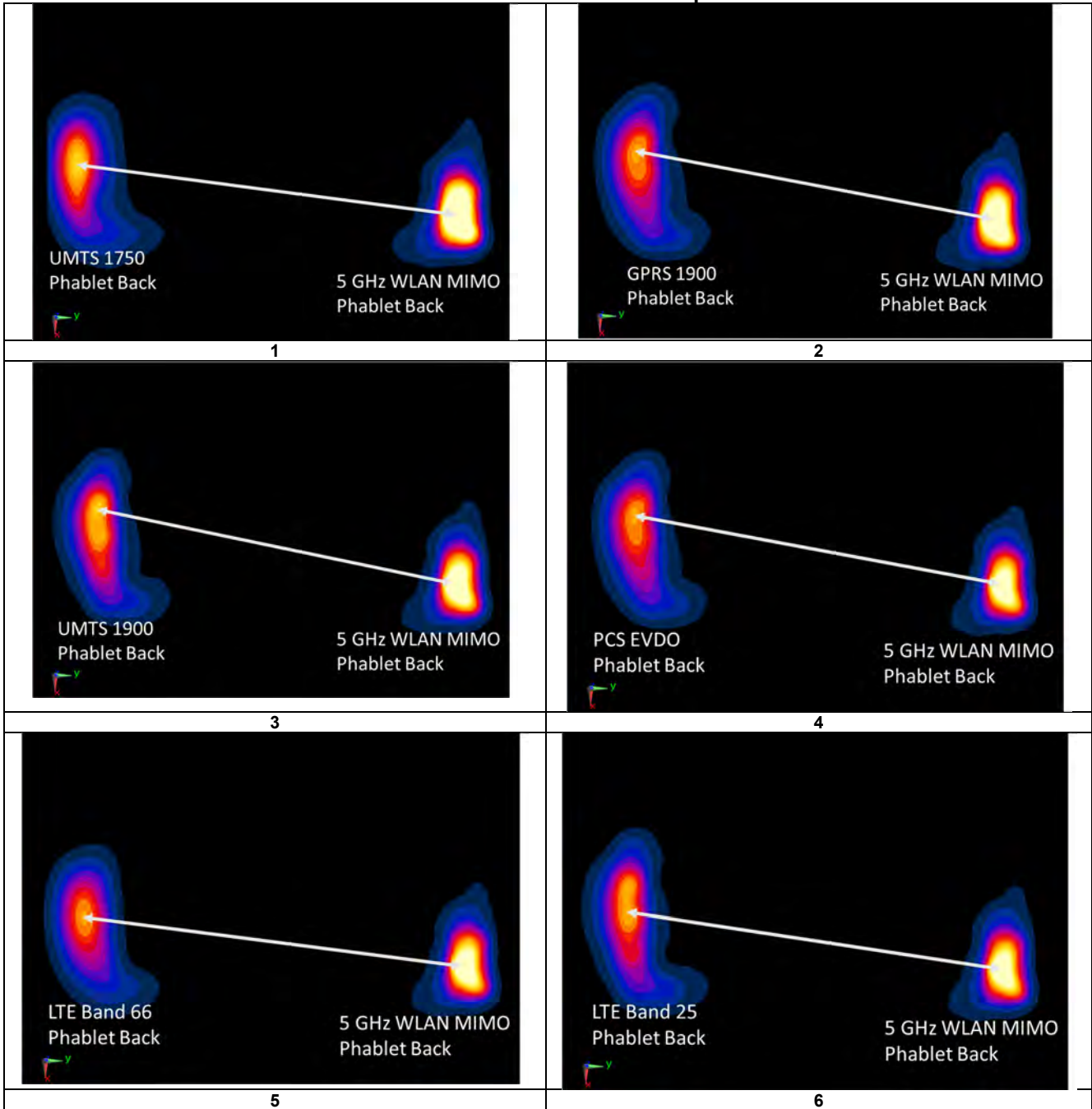
Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	-2.00	75.00
UMTS 1750	-25.00	-87.00
GRPS 1900	-34.00	-79.50
UMTS 1900	-35.50	-76.50
PCS EVDO	-34.00	-79.50
LTE Band 66	-23.50	-81.00
LTE Band 25	-34.00	-76.50
LTE Band 30 Ant A	-35.80	-74.40
LTE Band 30 Ant B	6.20	-80.60
LTE Band 7 Ant A	-4.60	-76.80
LTE Band 7 Ant B	3.80	-79.40
LTE Band 41	0.30	-75.60



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

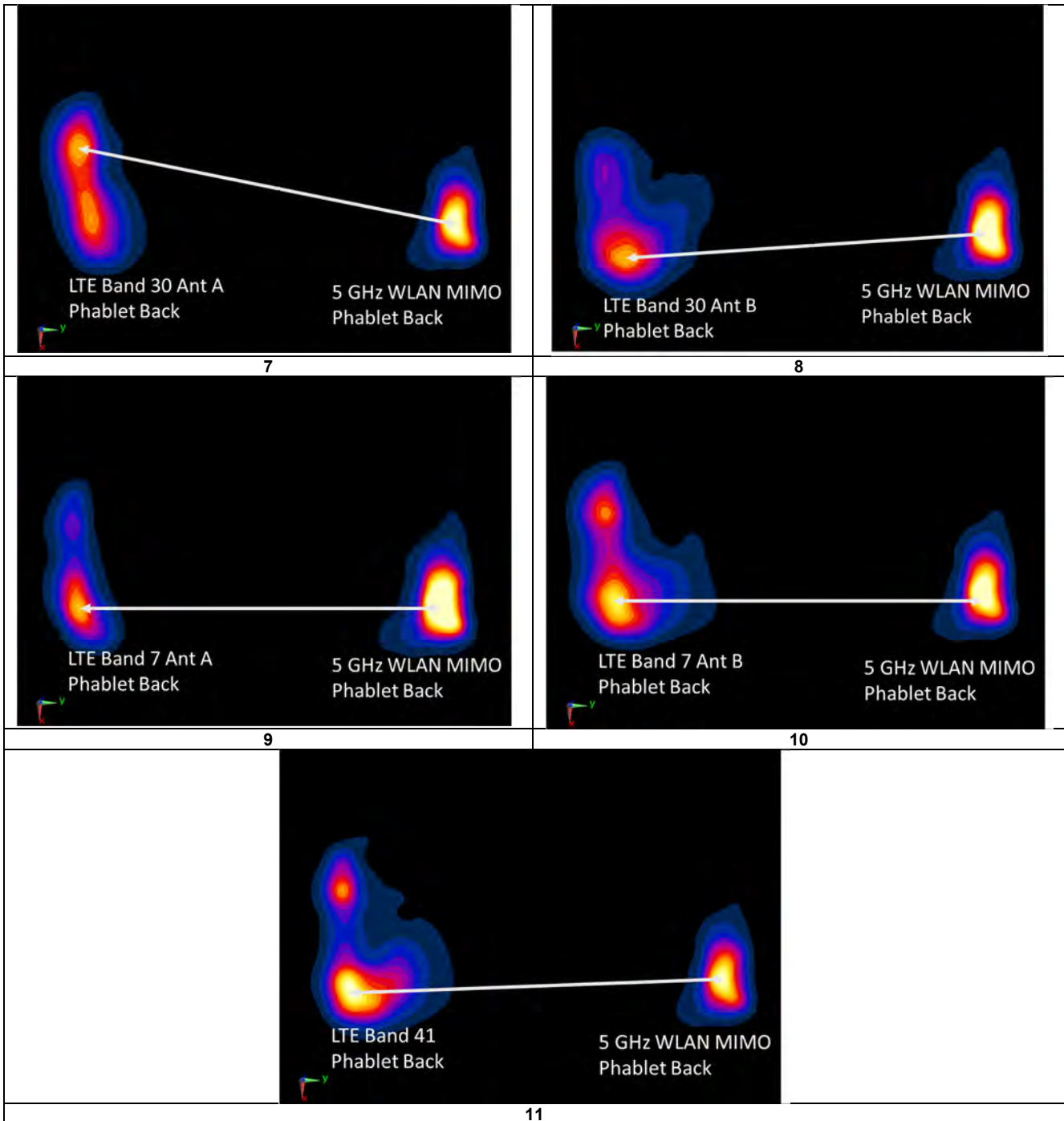
Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)		Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	a+b	D _{a-b}	(a+b) ^{1.5} /D _{a-b}	
5 GHz WLAN MIMO	UMTS 1750	3.215	1.503	4.718	4.718	163.62	0.06	1
5 GHz WLAN MIMO	GRPS 1900	3.215	0.973	4.188	4.188	157.78	0.05	2
5 GHz WLAN MIMO	UMTS 1900	3.215	1.849	5.064	5.064	155.16	0.07	3
5 GHz WLAN MIMO	PCS EVDO	3.215	1.762	4.977	4.977	157.78	0.07	4
5 GHz WLAN MIMO	LTE Band 66	3.215	1.665	4.88	4.880	157.47	0.07	5
5 GHz WLAN MIMO	LTE Band 25	3.215	1.281	4.496	4.496	154.84	0.06	6
5 GHz WLAN MIMO	LTE Band 30 Ant A	3.215	1.667	4.882	4.882	153.18	0.07	7
5 GHz WLAN MIMO	LTE Band 30 Ant B	3.215	2.159	5.374	5.374	155.82	0.08	8
5 GHz WLAN MIMO	LTE Band 7 Ant A	3.215	0.806	4.021	4.021	151.82	0.05	9
5 GHz WLAN MIMO	LTE Band 7 Ant B	3.215	1.632	4.847	4.847	154.51	0.07	10
5 GHz WLAN MIMO	LTE Band 41	3.215	1.885	5.1	5.100	150.62	0.08	11

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





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12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.

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13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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



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

**Table 13-1
Head SAR Measurement Variability Results**

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode/Band	Service	Side	Test Position	Data Rate (Mbps)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2412.00	1	802.11n, 20 MHz Bandwidth	OFDM, MIMO	Right	Cheek	13	1.170	1.160	1.01	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)	
835	836.50	20525	LTE Band 5 (Cell), 10 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	10 mm	0.895	0.787	1.14	N/A	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	bottom	10 mm	0.935	0.908	1.03	N/A	N/A	N/A	N/A
2300	2310.00	27710	LTE Band 30 Ant A, 10 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	1.060	1.080	1.02	N/A	N/A	N/A	N/A
2600	2549.50	40185	LTE Band 41, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	10 mm	1.220	1.200	1.02	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							



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**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	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	N/A	bottom	0 mm	2.270	2.260	1.00	N/A	N/A	N/A	N/A
1900	1907.60	9538	UMTS 1900	RMC	N/A	bottom	0 mm	3.150	3.150	1.00	N/A	N/A	N/A	N/A
2300	2310.00	27710	LTE Band 30 Ant B, 10 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	0 mm	2.450	2.460	1.00	N/A	N/A	N/A	N/A
2450	2510.00	20850	LTE Band 7, Ant B, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	N/A	bottom	0 mm	2.180	2.140	1.02	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, Ant B, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	bottom	0 mm	2.550	2.520	1.01	N/A	N/A	N/A	N/A
5250	5320.00	64	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.070	2.100	1.01	N/A	N/A	N/A	N/A
5600	5600.00	120	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.230	2.050	1.09	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.

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14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 Tuner Testing

The following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence to the antenna characteristics, other than impedance matching.

To evaluate all of the tuner states, the 80 tuner states were divided among the aggregate band, mode and exposure combinations so that each combination was evaluated for at least 20 tuner states and also so that at least 3 single point SAR measurements were made for every available tuner state. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band/mode/exposure condition, point SAR measurements were made for all 80 states.

Per FCC Guidance, several bands/modes were combined to be treated as a single aggregate band. For CDMA BC0 and BC10, the highest reported SAR configuration per exposure condition was considered for point SAR measurements. For the LTE Band 5 and 26 pair, the highest reported SAR configuration per exposure condition was evaluated. Additionally, LTE bands 12/17 and 13 were considered as an aggregated band to select single point measurement configurations. The wireless configuration and exposure condition combinations were divided evenly among the three bands (i.e., the number of required single point measurements (at least 20) apply to the aggregated band). All other bands were treated independently.

The operational description contains more information about the design and implementation of the dynamic antenna tuning.



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Table 14-1
UMTS/CDMA Supplemental Head SAR Data

Supplemental Head SAR Data									
UMTS 850		UMTS 1750		UMTS 1900		CDMA BC0		CDMA BC1	
RMC		RMC		RMC		RC3/SO55		EVDO Rev. A	
Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	836.60	Frequency (MHz)	1732.40	Frequency (MHz)	1880.00	Frequency (MHz)	836.52	Frequency (MHz)	1880.00
Channel	4183	Channel	1412	Channel	9400	Channel	384	Channel	600
Measured 1g SAR (W/kg)	0.216	Measured 1g SAR (W/kg)	0.094	Measured 1g SAR (W/kg)	0.144	Measured 1g SAR (W/kg)	0.195	Measured 1g SAR (W/kg)	0.163
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 76)	0.235	Auto-tune (State 17)	0.107	Auto-tune (State 16)	0.189	Auto-tune (State 76)	0.220	Auto-tune (State 17)	0.192
Default (State 0)	0.226	Default (State 16)	0.112	Default (State 16)	0.189	Default (State 0)	0.219	Default (State 16)	0.186
State 0	0.226	State 4	0.086	State 4	0.136	State 0	0.219	State 1	0.160
State 5	0.219	State 7	0.078	State 6	0.125	State 2	0.216	State 2	0.139
State 17	0.120	State 8	0.078	State 7	0.121	State 3	0.213	State 5	0.129
State 18	0.127	State 10	0.064	State 9	0.108	State 9	0.180	State 7	0.117
State 21	0.125	State 11	0.056	State 16	0.189	State 11	0.140	State 11	0.082
State 22	0.120	State 13	0.040	State 24	0.152	State 17	0.105	State 12	0.065
State 25	0.102	State 16	0.112	State 26	0.127	State 22	0.107	State 16	0.186
State 27	0.071	State 17	0.112	State 29	0.079	State 23	0.104	State 17	0.188
State 28	0.051	State 24	0.100	State 33	0.034	State 29	0.035	State 18	0.168
State 29	0.039	State 27	0.098	State 42	0.021	State 32	0.186	State 25	0.135
State 33	0.199	State 30	0.071	State 44	0.012	State 35	0.160	State 31	0.048
State 35	0.177	State 36	0.018	State 47	0.002	State 40	0.138	State 32	0.035
State 40	0.153	State 42	0.011	State 52	0.053	State 47	0.025	State 36	0.028
State 43	0.097	State 45	0.004	State 54	0.047	State 49	0.138	State 43	0.015
State 48	0.152	State 48	0.043	State 57	0.042	State 55	0.137	State 49	0.058
State 53	0.155	State 52	0.034	State 61	0.018	State 60	0.068	State 50	0.053
State 63	0.023	State 55	0.029	State 66	0.025	State 62	0.038	State 53	0.049
State 68	0.228	State 58	0.023	State 67	0.046	State 63	0.023	State 59	0.029
State 69	0.120	State 64	0.091	State 70	0.037	State 68	0.217	State 64	0.122
State 71	0.152	State 70	0.022	State 72	0.153	State 75	0.138	State 71	0.061
State 74	0.198	State 73	0.109	State 75	0.051	State 76	0.219	State 77	0.182
State 76	0.225	State 76	0.100	State 78	0.037	State 78	0.186	State 78	0.034



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Table 14-2
LTE Supplemental Head SAR Data

Supplemental Head SAR Data													
LTE Band 71		LTE Band 14		LTE Band 12		LTE Band 13		LTE Band 5		LTE Band 66		LTE Band 25	
QPSK, 20MHz Bandwidth, 1 RB, 50 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 0 RB Offsets	
Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek
Frequency (MHz)	680.50	Frequency (MHz)	793.00	Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	836.50	Frequency (MHz)	1720.00	Frequency (MHz)	1882.50
Channel	133297	Channel	23330	Channel	23095	Channel	23230	Channel	20525	Channel	132072	Channel	26365
Measured 1g SAR (W/kg)	0.128	Measured 1g SAR (W/kg)	0.190	Measured 1g SAR (W/kg)	0.157	Measured 1g SAR (W/kg)	0.196	Measured 1g SAR (W/kg)	0.181	Measured 1g SAR (W/kg)	0.086	Measured 1g SAR (W/kg)	0.120
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 0)	0.155	Auto-tune (State 76)	0.206	Auto-tune (State 0)	0.169	Auto-tune (State 76)	0.225	Auto-tune (State 76)	0.221	Auto-tune (State 17)	0.099	Auto-tune (State 17)	0.149
Default (State 2)	0.144	Default (State 0)	0.195	Default (State 0)	0.169	Default (State 0)	0.224	Default (State 0)	0.209	Default (State 16)	0.096	Default (State 16)	0.152
State 0	0.150	State 0	0.195	State 0	0.169	State 0	0.224	State 0	0.209	State 0	0.069	State 3	0.105
State 2	0.144	State 3	0.188	State 2	0.155	State 16	0.120	State 3	0.204	State 1	0.070	State 10	0.073
State 5	0.139	State 4	0.186	State 10	0.090	State 20	0.138	State 6	0.193	State 4	0.059	State 12	0.048
State 8	0.127	State 6	0.173	State 12	0.050	State 24	0.132	State 10	0.156	State 5	0.058	State 14	0.031
State 15	0.025	State 9	0.146	State 14	0.027	State 32	0.181	State 13	0.088	State 11	0.038	State 16	0.152
State 17	0.047	State 14	0.044	State 22	0.087	State 40	0.134	State 19	0.109	State 15	0.016	State 17	0.149
State 21	0.074	State 24	0.135	State 34	0.113	State 48	0.148	State 23	0.103	State 16	0.096	State 23	0.116
State 22	0.072	State 26	0.103	State 40	0.082	State 50	0.166	State 26	0.079	State 17	0.096	State 28	0.069
State 25	0.054	State 29	0.046	State 62	0.015	State 55	0.160	State 30	0.024	State 19	0.091	State 34	0.025
State 28	0.014	State 33	0.171	State 68	0.164	State 67	0.146	State 31	0.014	State 20	0.090	State 35	0.023
State 29	0.009	State 42	0.095	State 70	0.140	State 75	0.147	State 37	0.149	State 21	0.090	State 38	0.020
State 33	0.137	State 44	0.055	State 79	0.085	State 76	0.223	State 38	0.141	State 25	0.083	State 41	0.017
State 40	0.076	State 47	0.020					State 41	0.116	State 31	0.045	State 46	0.004
State 43	0.037	State 50	0.161					State 44	0.062	State 37	0.011	State 51	0.041
State 48	0.062	State 52	0.159					State 51	0.141	State 43	0.005	State 60	0.016
State 49	0.061	State 54	0.154					State 54	0.138	State 49	0.028	State 62	0.009
State 53	0.091	State 57	0.133					State 58	0.110	State 53	0.023	State 64	0.099
State 68	0.149	State 66	0.166					State 64	0.207	State 56	0.021	State 65	0.121
State 69	0.048	State 70	0.169					State 65	0.100	State 59	0.012	State 66	0.018
State 71	0.061	State 72	0.192					State 69	0.102	State 65	0.088	State 69	0.144
State 74	0.137	State 75	0.153					State 76	0.212	State 71	0.029	State 74	0.021
State 76	0.148	State 76	0.197					State 79	0.132	State 77	0.095	State 79	0.051



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Table 14-3
UMTS/CDMA Supplemental Body SAR Data

Supplemental Body SAR Data									
UMTS 850		UMTS 1750		UMTS 1900		CDMA BC0		CDMA BC1	
RMC		RMC		RMC		EVDO Rev. 0		EVDO Rev. 0	
Test Position	Back Side	Test Position	Back Side	Test Position	Bottom Edge	Test Position	Back Side	Test Position	Bottom Edge
Spacing	10 mm	Spacing	15 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	846.60	Frequency (MHz)	1732.40	Frequency (MHz)	1907.60	Frequency (MHz)	848.31	Frequency (MHz)	1908.75
Channel	4233	Channel	1412	Channel	9538	Channel	777	Channel	1175
Measured 1g SAR (W/kg)	0.835	Measured 1g SAR (W/kg)	0.437	Measured 1g SAR (W/kg)	0.827	Measured 1g SAR (W/kg)	0.684	Measured 1g SAR (W/kg)	0.935
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 78)	0.851	Auto-tune (State 17)	0.549	Auto-tune (State 17)	1.058	Auto-tune (State 78)	0.775	Auto-tune (State 17)	1.165
Default (State 0)	0.839	Default (State 16)	0.558	Default (State 16)	1.041	Default (State 0)	0.779	Default (State 16)	1.154
State 0	0.839	State 3	0.373	State 1	0.879	State 0	0.779	State 3	0.812
State 2	0.840	State 7	0.335	State 5	0.696	State 4	0.746	State 12	0.392
State 4	0.825	State 9	0.307	State 10	0.499	State 7	0.679	State 13	0.332
State 7	0.771	State 12	0.210	State 15	0.166	State 8	0.685	State 16	1.154
State 14	0.243	State 16	0.558	State 16	1.041	State 12	0.330	State 17	1.163
State 19	0.438	State 17	0.559	State 17	1.049	State 13	0.263	State 20	1.009
State 24	0.391	State 18	0.538	State 18	0.931	State 28	0.148	State 23	0.929
State 27	0.237	State 23	0.510	State 21	0.888	State 33	0.726	State 27	0.712
State 31	0.065	State 27	0.449	State 25	0.753	State 34	0.680	State 33	0.180
State 34	0.799	State 29	0.381	State 30	0.364	State 39	0.598	State 35	0.161
State 42	0.534	State 35	0.080	State 32	0.169	State 45	0.209	State 38	0.138
State 45	0.286	State 41	0.062	State 36	0.137	State 46	0.153	State 41	0.123
State 49	0.549	State 43	0.047	State 39	0.115	State 56	0.467	State 51	0.282
State 50	0.568	State 45	0.029	State 42	0.099	State 61	0.159	State 55	0.234
State 52	0.557	State 51	0.149	State 48	0.298	State 62	0.112	State 59	0.158
State 59	0.325	State 52	0.146	State 51	0.247	State 64	0.750	State 61	0.099
State 62	0.142	State 55	0.128	State 53	0.238	State 67	0.504	State 63	0.051
State 65	0.427	State 57	0.118	State 58	0.170	State 70	0.721	State 66	0.131
State 70	0.856	State 69	0.555	State 60	0.106	State 73	0.391	State 69	1.153
State 73	0.430	State 73	0.547	State 67	0.208	State 74	0.720	State 73	1.122
State 77	0.434	State 75	0.160	State 72	0.816	State 76	0.768	State 76	0.977
State 78	0.856	State 78	0.096	State 76	1.037	State 78	0.775	State 77	1.160





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Table 14-4
LTE Supplemental Body SAR Data

Supplemental Body SAR Data													
LTE Band 71		LTE Band 14		LTE Band 12		LTE Band 13		LTE Band 5		LTE Band 66		LTE Band 25	
QPSK, 20MHz Bandwidth, 1 RB, 50 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 100 RB, 0 RB Offsets	
Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Bottom Edge	Test Position	Bottom Edge
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	680.50	Frequency (MHz)	793.00	Frequency (MHz)	707.50	Frequency (MHz)	782.00	Frequency (MHz)	836.50	Frequency (MHz)	1720.00	Frequency (MHz)	1905.00
Channel	133297	Channel	23330	Channel	23095	Channel	23230	Channel	20525	Channel	132072	Channel	26590
Measured 1g SAR (W/kg)	0.451	Measured 1g SAR (W/kg)	0.681	Measured 1g SAR (W/kg)	0.548	Measured 1g SAR (W/kg)	0.761	Measured 1g SAR (W/kg)	0.895	Measured 1g SAR (W/kg)	0.592	Measured 1g SAR (W/kg)	0.899
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 2)	0.595	Auto-tune (State 2)	0.755	Auto-tune (State 0)	0.646	Auto-tune (State 0)	0.935	Auto-tune (State 76)	0.923	Auto-tune (State 17)	0.792	Auto-tune (State 17)	1.148
Default (State 2)	0.597	Default (State 0)	0.754	Default (State 0)	0.653	Default (State 0)	0.920	Default (State 0)	0.942	Default (State 16)	0.788	Default (State 16)	1.137
State 2	0.597	State 0	0.754	State 0	0.653	State 0	0.920	State 0	0.942	State 1	0.608	State 1	0.938
State 8	0.529	State 2	0.767	State 1	0.649	State 6	0.866	State 8	0.897	State 2	0.543	State 6	0.700
State 9	0.468	State 3	0.760	State 15	0.075	State 11	0.432	State 9	0.832	State 4	0.527	State 11	0.471
State 16	0.218	State 5	0.741	State 21	0.357	State 13	0.220	State 14	0.336	State 8	0.488	State 13	0.321
State 19	0.314	State 10	0.397	State 23	0.346	State 19	0.515	State 15	0.226	State 14	0.240	State 16	1.137
State 20	0.315	State 18	0.474	State 31	0.023	State 21	0.515	State 17	0.416	State 16	0.788	State 17	1.152
State 22	0.309	State 21	0.471	State 39	0.398	State 26	0.387	State 18	0.456	State 17	0.794	State 19	1.000
State 28	0.071	State 25	0.324	State 47	0.040	State 44	0.177	State 20	0.449	State 19	0.771	State 26	0.767
State 34	0.479	State 30	0.065	State 50	0.428	State 51	0.642	State 29	0.144	State 20	0.768	State 30	0.411
State 37	0.436	State 36	0.554	State 54	0.433	State 61	0.151	State 32	0.856	State 22	0.755	State 33	0.173
State 38	0.394	State 37	0.537	State 59	0.238	State 72	0.908	State 36	0.748	State 28	0.656	State 35	0.157
State 40	0.356	State 38	0.475	State 66	0.590	State 76	0.817	State 46	0.208	State 37	0.104	State 37	0.151
State 46	0.074	State 39	0.443					State 47	0.143	State 38	0.095	State 39	0.134
State 56	0.370	State 42	0.267					State 50	0.607	State 41	0.085	State 44	0.066
State 65	0.214	State 45	0.123					State 56	0.575	State 46	0.031	State 49	0.317
State 66	0.583	State 48	0.516					State 57	0.528	State 56	0.185	State 54	0.231
State 68	0.597	State 53	0.572					State 60	0.295	State 63	0.051	State 58	0.186
State 71	0.275	State 58	0.315					State 64	0.927	State 65	0.717	State 61	0.097
State 74	0.585	State 60	0.163					State 67	0.553	State 68	0.599	State 63	0.051
State 76	0.599	State 64	0.760					State 75	0.556	State 71	0.245	State 65	0.940
State 77	0.218	State 67	0.514					State 76	0.934	State 74	0.111	State 72	0.878
State 79	0.273	State 76	0.774					State 78	0.856	State 79	0.249	State 77	1.149

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

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

LTE Band 41 SAR testing with power class 2 at the highest power and available duty factor was additionally performed for the power class 3 configuration with the highest SAR for each exposure condition.

Table 14-5
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	28.2
Measured Output Power (dBm)	23.87	27.16
Measured SAR (W/kg)	0.072	0.096
Measured Power (mW)	243.78	520.00
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	154.31	225.16
% deviation from expected linearity		-8.62%

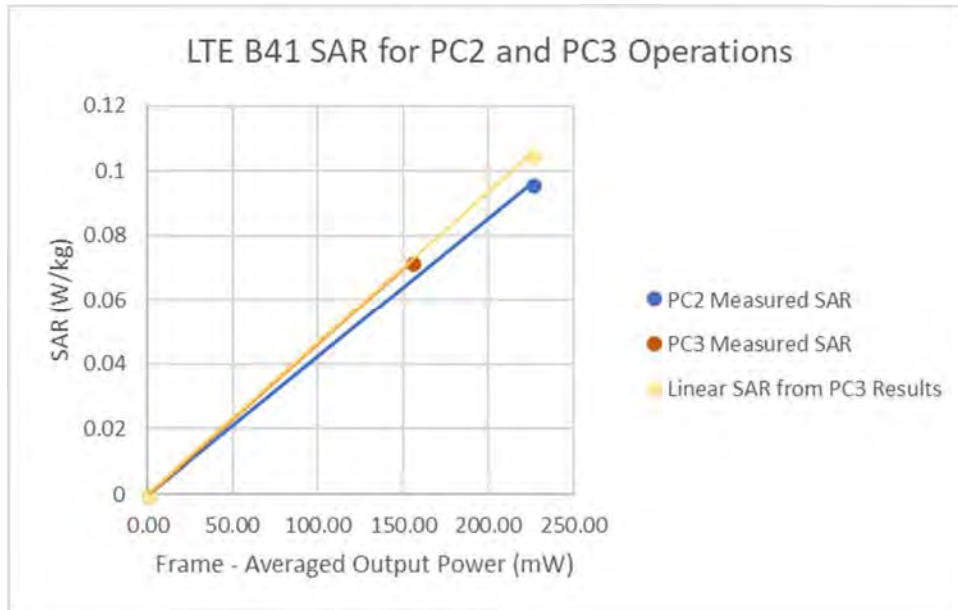


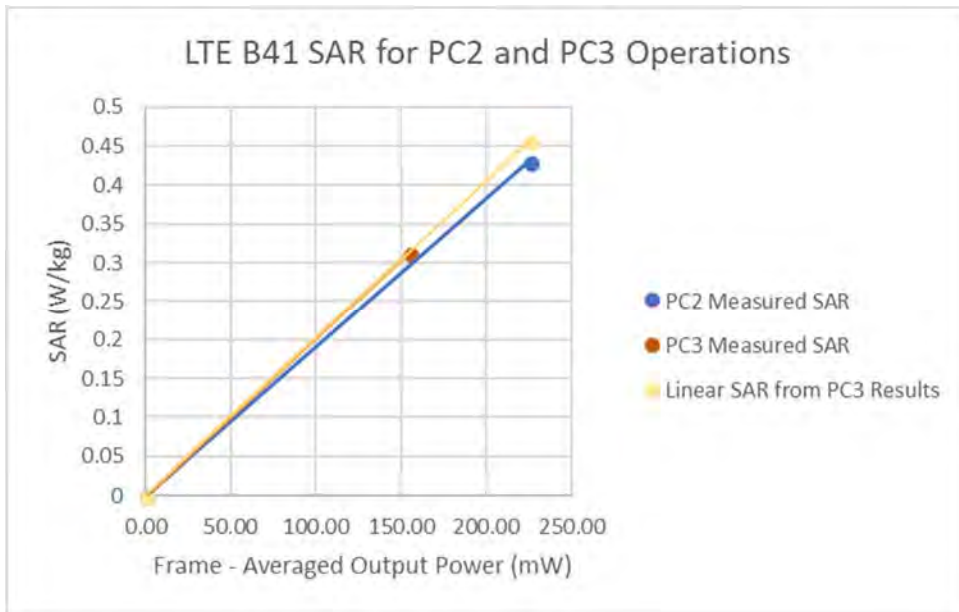


Figure 14-1
LTE Band 41 Head Linearity



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**Table 14-6
LTE Band 41 Body-Worn Linearity Data**

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	28.2
Measured Output Power (dBm)	23.87	27.16
Measured SAR (W/kg)	0.313	0.431
Measured Power (mW)	243.78	520.00
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	154.31	225.16
% deviation from expected linearity		-5.63%

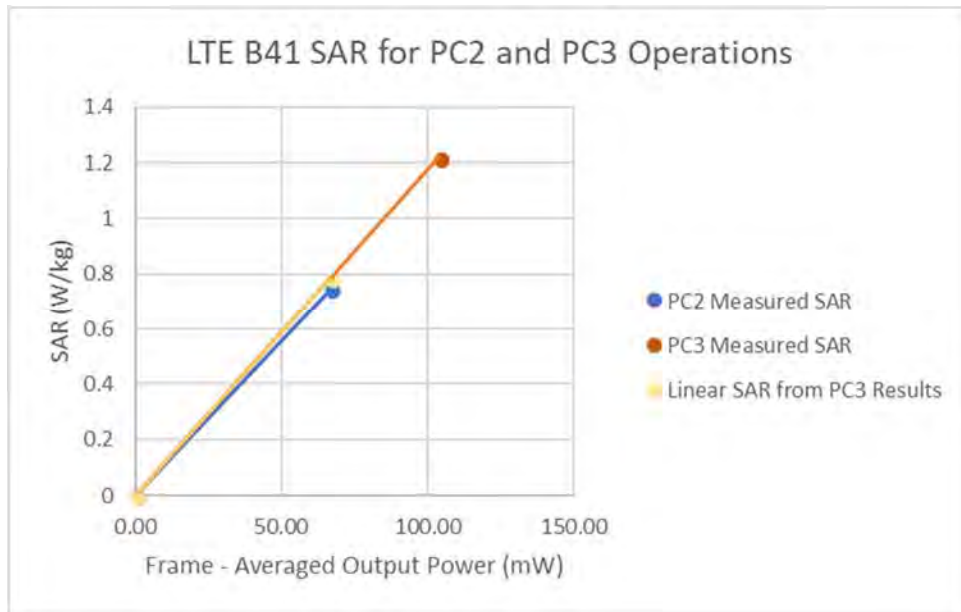


**Figure 14-2
LTE Band 41 Body-Worn Linearity**

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**Table 14-7
LTE Band 41 Hotspot Linearity Data**

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.5	22.5
Measured Output Power (dBm)	22.15	21.89
Measured SAR (W/kg)	1.22	0.747
Measured Power (mW)	164.06	154.53
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	103.85	66.91
% deviation from expected linearity		-4.97%



**Figure 14-3
LTE Band 41 Hotspot Linearity**



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Table 14-8
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24	24
Measured Output Power (dBm)	22.76	22.81
Measured SAR (W/kg)	2.32	1.48
Measured Power (mW)	188.80	190.99
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	119.51	82.70
% deviation from expected linearity		-7.81%

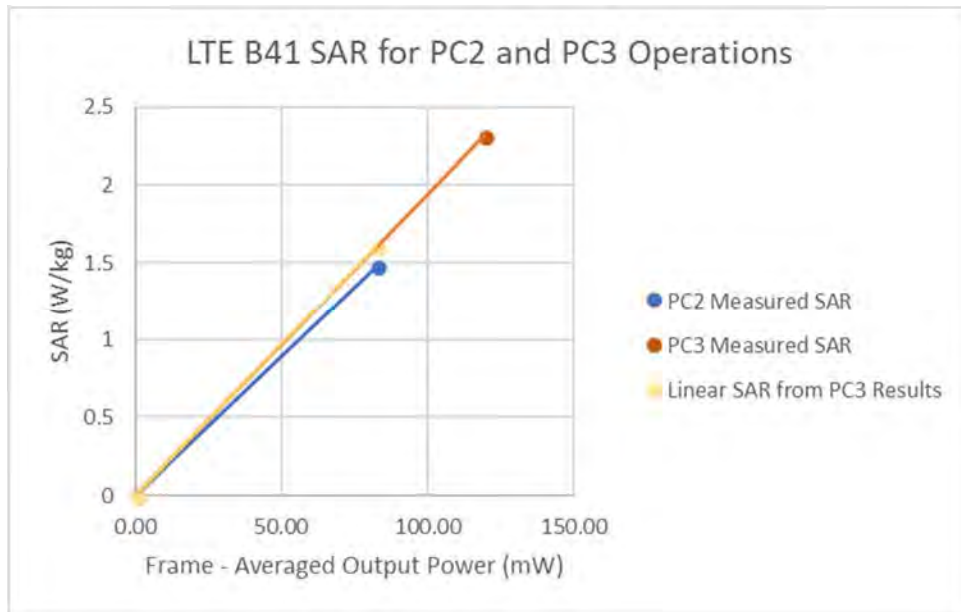




Figure 14-4
LTE Band 41 Phablet Linearity



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15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/17/2017	Annual	8/17/2018	MY40003841
Agilent	8753ES	S-Parameter Network Analyzer	9/14/2017	Annual	9/14/2018	US39170118
Agilent	E4438C	ESG Vector Signal Generator	3/21/2017	Biennial	3/21/2019	MY45090700
Agilent	E5515C	Wireless Communications Test Set	5/31/2017	Annual	5/31/2018	GB43304278
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	11/15/2017	Annual	11/15/2018	GB42230325
Agilent	E5515C	Wireless Communications Test Set	1/24/2018	Annual	1/24/2019	GB44400860
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Agilent	N5182A	MXG Vector Signal Generator	1/24/2018	Annual	1/24/2019	MY47420651
Agilent	N9020A	MXA Signal Analyzer	1/24/2018	Annual	1/24/2019	US46470561
Amplifier Research	150A100C	DC Amplifier	CBT	NA	CBT	348812
Amplifier Research	15S1G6	Amplifier	CBT	NA	CBT	433971
Anritsu	MA24106A	USB Power Sensor	6/7/2017	Annual	6/7/2018	1231538
Anritsu	MA24106A	USB Power Sensor	6/7/2017	Annual	6/7/2018	1231535
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/22/2017	Annual	10/22/2018	941001
Anritsu	MT8820C	Radio Communication Analyzer	5/23/2017	Annual	5/23/2018	6201240328
Anritsu	MT8821C	Radio Communication Analyzer	7/25/2017	Annual	7/25/2018	6201664756
Anritsu	MT8821C	Radio Communication Analyzer	11/17/2017	Annual	11/17/2018	6201381794
COMTECH	AR85729-5	Solid State Amplifier	CBT	NA	CBT	M1SSA00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	NA	CBT	M3W1A00-1002
Control Company	4040	Therm/ Clock/ Humidity Monitor	1/8/2018	Annual	1/8/2019	160473909
Control Company	4352	Ultra Low Stem Thermometer	1/8/2018	Annual	1/8/2019	160508097
Keysight	772D	Dual Directional Coupler	CBT	NA	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/1/2017	Annual	6/1/2018	MY53401181
Keysight Technologies	U3401A	Digital Multimeter	5/23/2017	Annual	5/23/2018	MY57201470
MCL	BW-N6W5+	6dB Attenuator	CBT	NA	CBT	1139
Mini Circuits	PWR-4GHS	USB Power Sensor	1/20/2018	Annual	1/20/2019	11710030663
Mini Circuits	PWR-4GHS	USB Power Sensor	1/22/2018	Annual	1/22/2019	11710030662
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	NA	CBT	R897950903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	NA	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	NA	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	NA	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	NA	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	NA	CBT	N/A
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	NA	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	NA	CBT	9406
Pasternack	PE2206-6	Bidirectional Coupler	CBT	NA	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	NA	CBT	N/A
Pasternack	PE5011-1	Torque Wrench	7/19/2017	Biennial	7/19/2019	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	5/22/2017	Annual	5/22/2018	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	11/3/2017	Annual	11/3/2018	100976
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	7/20/2017	Annual	7/20/2018	132885
Seekonk	NC-100	Torque Wrench (8" lb)	8/30/2016	Biennial	8/30/2018	N/A
Seekonk	NC-100	Torque Wrench	12/28/2017	Annual	12/28/2018	N/A
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	1/22/2018	Annual	1/22/2019	N/A
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/12/2017	Annual	9/12/2018	1091
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2018	Annual	2/9/2019	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/9/2017	Annual	8/9/2018	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/13/2017	Annual	7/13/2018	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/21/2017	Annual	6/21/2018	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/9/2017	Annual	11/9/2018	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/7/2018	Annual	3/7/2019	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/14/2017	Annual	6/14/2018	1334
SPEAG	E53DV3	SAR Probe	2/13/2018	Annual	2/13/2019	3213
SPEAG	E53DV3	SAR Probe	8/14/2017	Annual	8/14/2018	3332
SPEAG	E53DV4	SAR Probe	1/16/2018	Annual	1/16/2019	3589
SPEAG	E53DV4	SAR Probe	7/17/2017	Annual	7/17/2018	7410
SPEAG	E53DV3	SAR Probe	9/18/2017	Annual	9/18/2018	3287
SPEAG	E53DV3	SAR Probe	3/27/2018	Annual	3/27/2019	3347
SPEAG	E53DV3	SAR Probe	3/13/2018	Annual	3/13/2019	3319
SPEAG	E53DV3	SAR Probe	9/22/2017	Annual	9/22/2018	3318
SPEAG	E53DV4	SAR Probe	8/16/2017	Annual	8/16/2018	7308
SPEAG	D750V3	750 MHz SAR Dipole	7/13/2016	Biennial	7/13/2018	1161
SPEAG	D835V2	835 MHz SAR Dipole	4/10/2018	Annual	4/10/2019	44119
SPEAG	D1750V2	1750 MHz SAR Dipole	5/9/2017	Biennial	5/9/2019	1148
SPEAG	D1900V2	1900 MHz SAR Dipole	7/8/2016	Biennial	7/8/2018	54080
SPEAG	D1900V2	1900 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	54148
SPEAG	D2300V2	2300 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	1008
SPEAG	D2450V2	2450 MHz SAR Dipole	2/7/2018	Annual	2/7/2019	882
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Annual	4/11/2019	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/21/2016	Biennial	9/21/2018	1191
SPEAG	D750V3	750 MHz Dipole	3/7/2017	Biennial	3/7/2019	1054
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Annual	1/15/2019	1003
SPEAG	D835V2	835 MHz SAR Dipole	7/13/2016	Biennial	7/13/2018	48047
SPEAG	D1750V2	1750 MHz SAR Dipole	7/14/2016	Biennial	7/14/2018	1150
SPEAG	D2300V2	2300 MHz SAR Dipole	7/25/2016	Biennial	7/25/2018	1073
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Annual	9/11/2018	797
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Annual	8/17/2018	719
SPEAG	D2600V2	2600 MHz SAR Dipole	7/10/2017	Annual	7/10/2018	1126
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/15/2017	Annual	8/15/2018	1237
SPEAG	D1750V2	1750 MHz SAR Dipole	4/19/2018	Annual	4/19/2019	1051



Note:

1. 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.
2. All equipment was used solely within its calibration period.

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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 Uncertainty	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% CONFIDENCELEVEL)	k=2					23.0	22.6	



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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: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.782$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3213; ConvF(6.42, 6.42, 6.42); Calibrated: 2/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

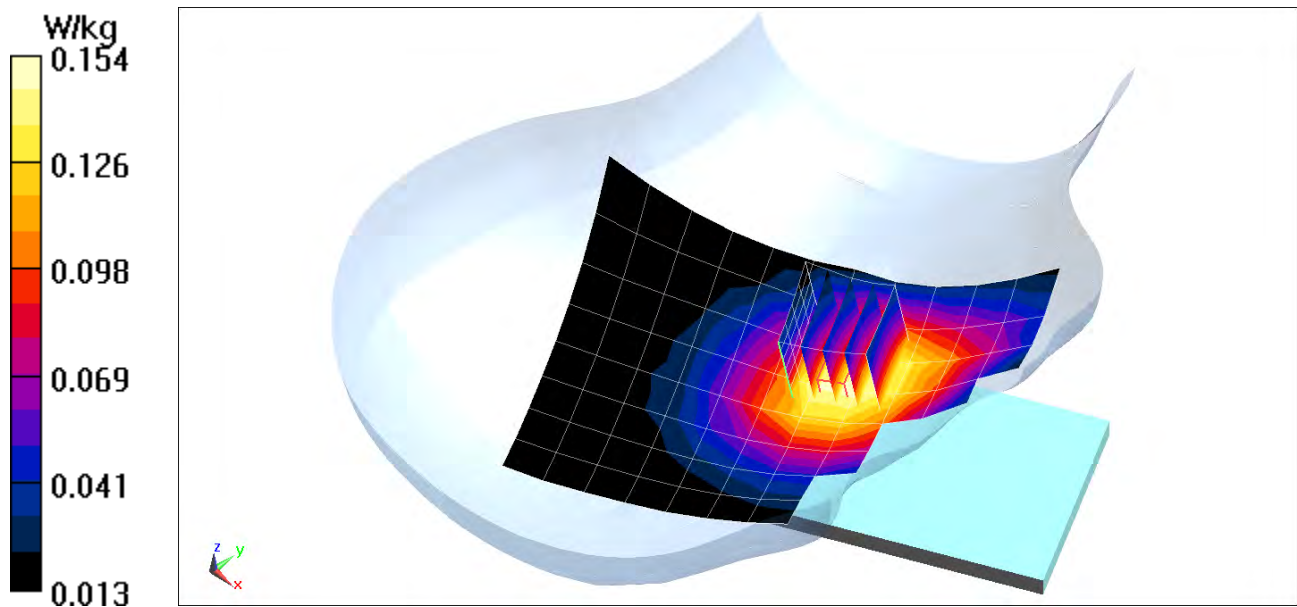
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.76 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.180 W/kg

SAR(1 g) = 0.141 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.782$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

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

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

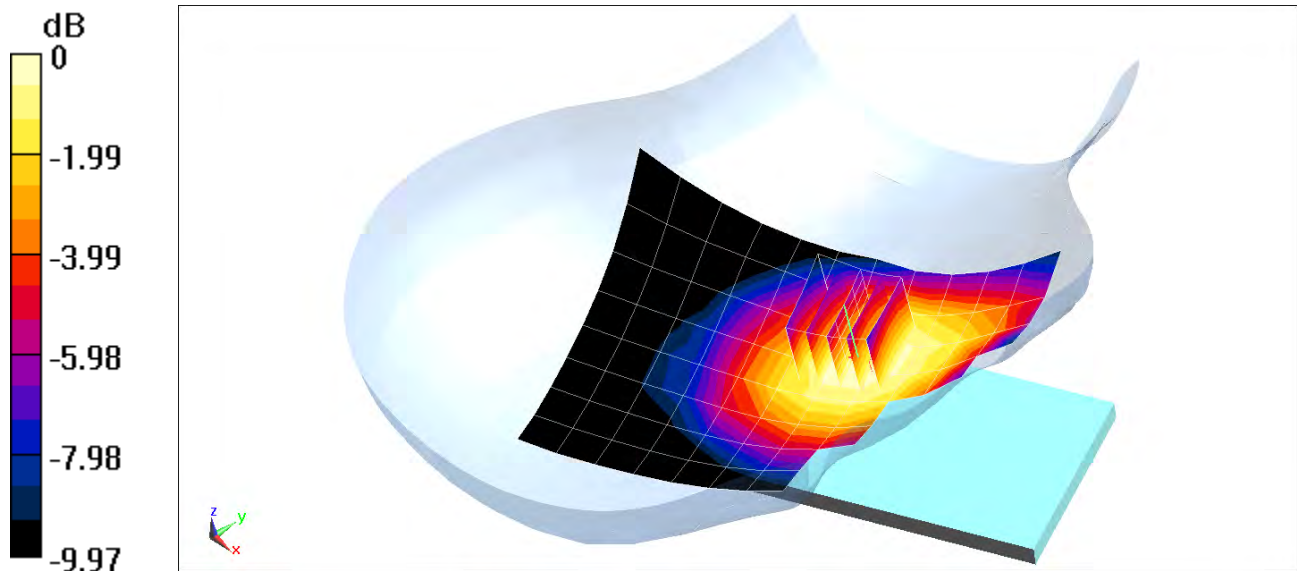
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.91 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.274 W/kg

SAR(1 g) = 0.216 W/kg



0 dB = 0.239 W/kg = -6.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

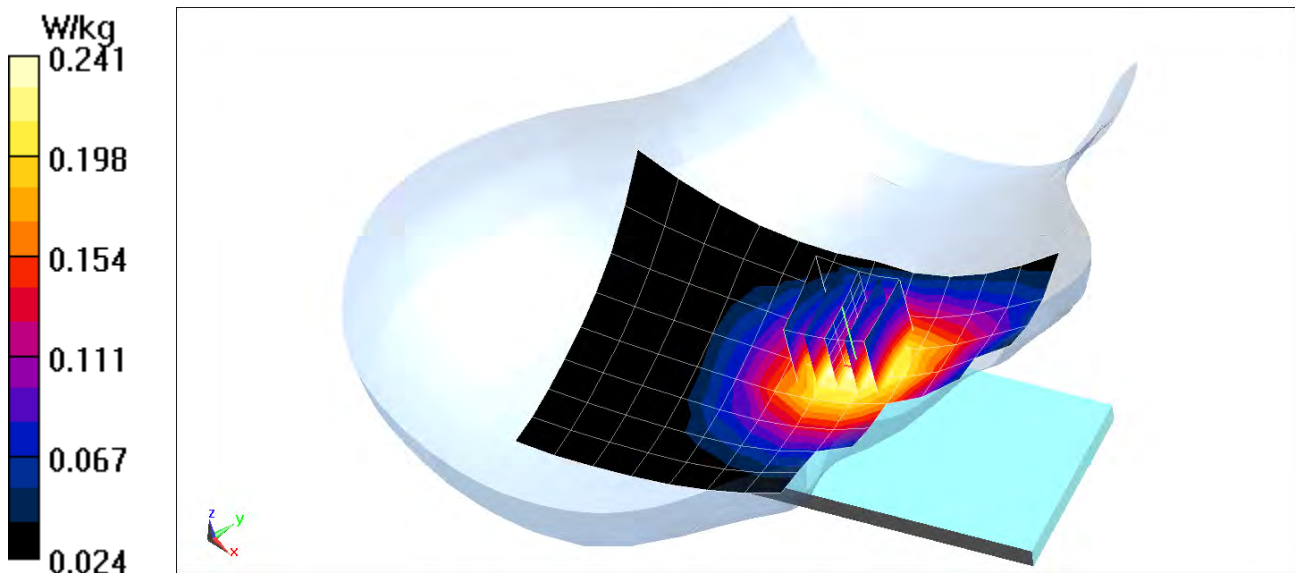
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 820.1$ MHz; $\sigma = 0.913$ S/m; $\epsilon_r = 40.851$; $\rho = 1000$ kg/m³
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

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

Mode: Cell. CDMA, Rule Part 90S, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.02 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.281 W/kg
SAR(1 g) = 0.218 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

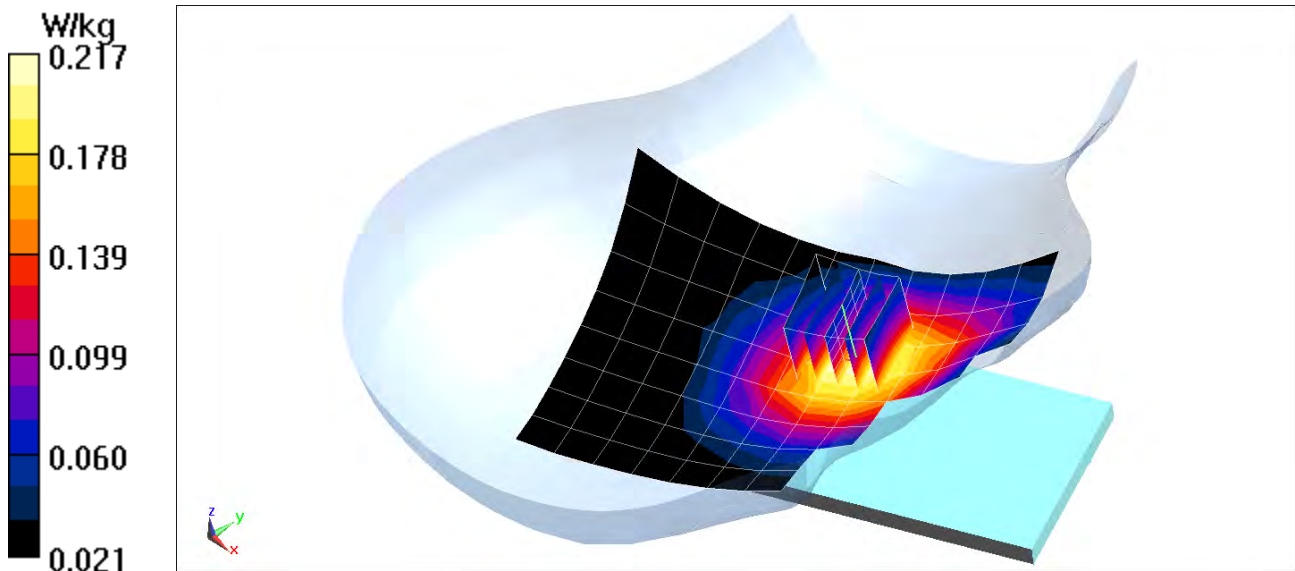
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 836.52 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.783$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

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

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.18 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.195 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
 $f = 1732.4 \text{ MHz}$; $\sigma = 1.36 \text{ S/m}$; $\epsilon_r = 39.62$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

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

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

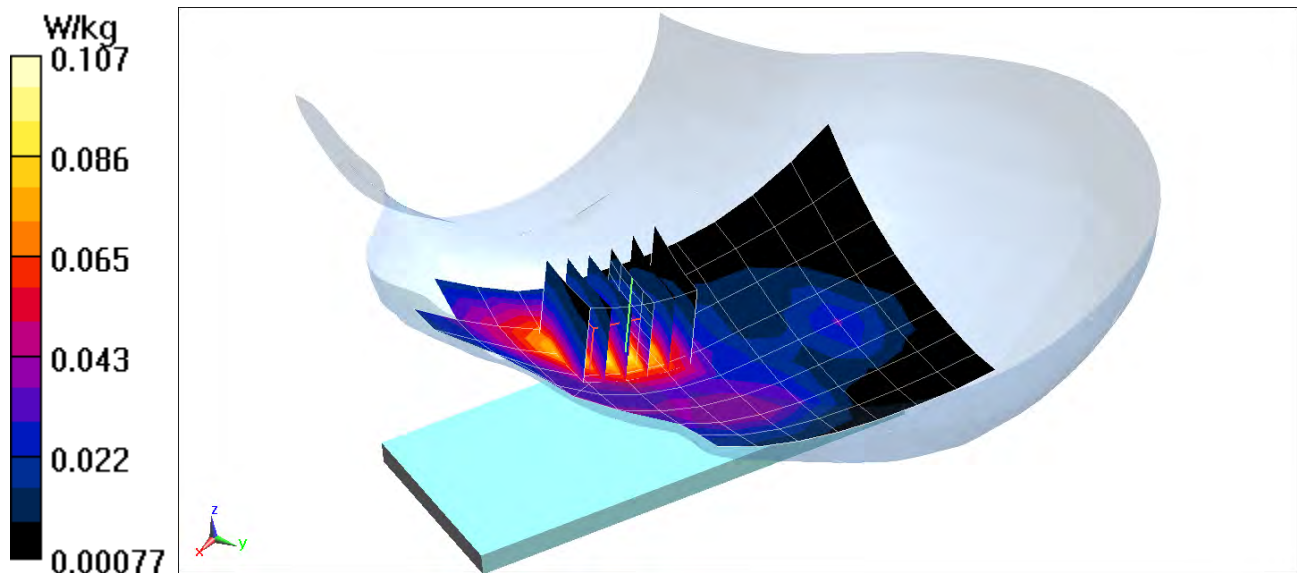
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.702 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.141 W/kg

SAR(1 g) = 0.094 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30
Medium: 1900 Head Medium parameters used:
 $f = 1880 \text{ MHz}$; $\sigma = 1.399 \text{ S/m}$; $\epsilon_r = 39.515$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-08-2018; Ambient Temp: 23.1°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3332; ConvF(5.33, 5.33, 5.33); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

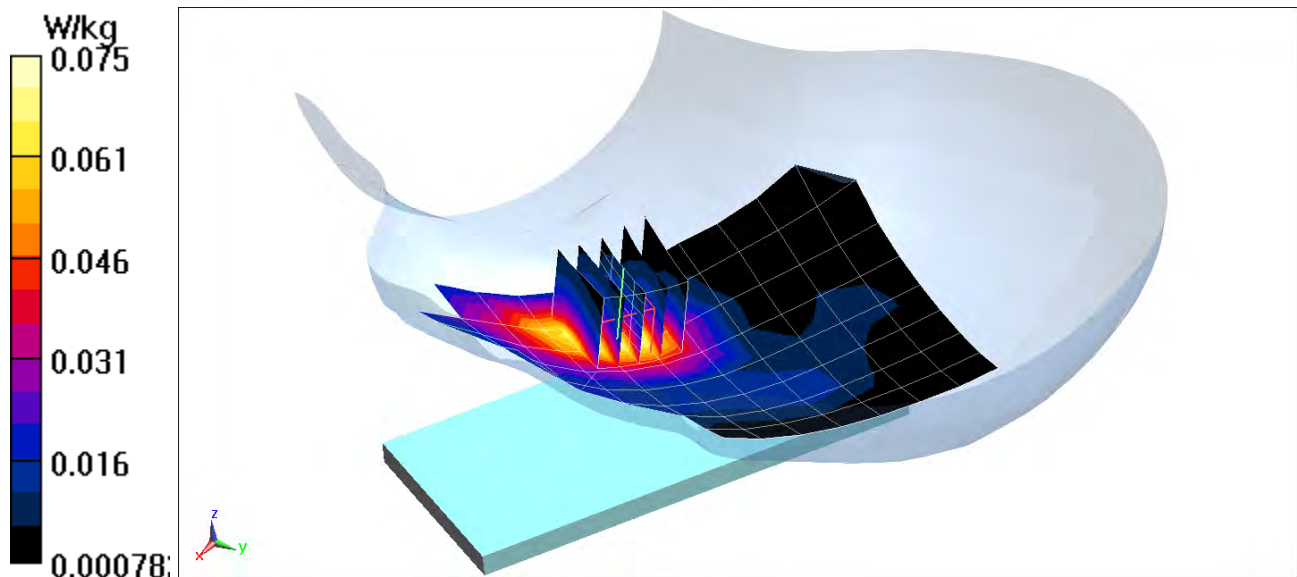
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.209 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.102 W/kg

SAR(1 g) = 0.066 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
 $f = 1880 \text{ MHz}$; $\sigma = 1.425 \text{ S/m}$; $\epsilon_r = 39.096$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-10-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3332; ConvF(5.33, 5.33, 5.33); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

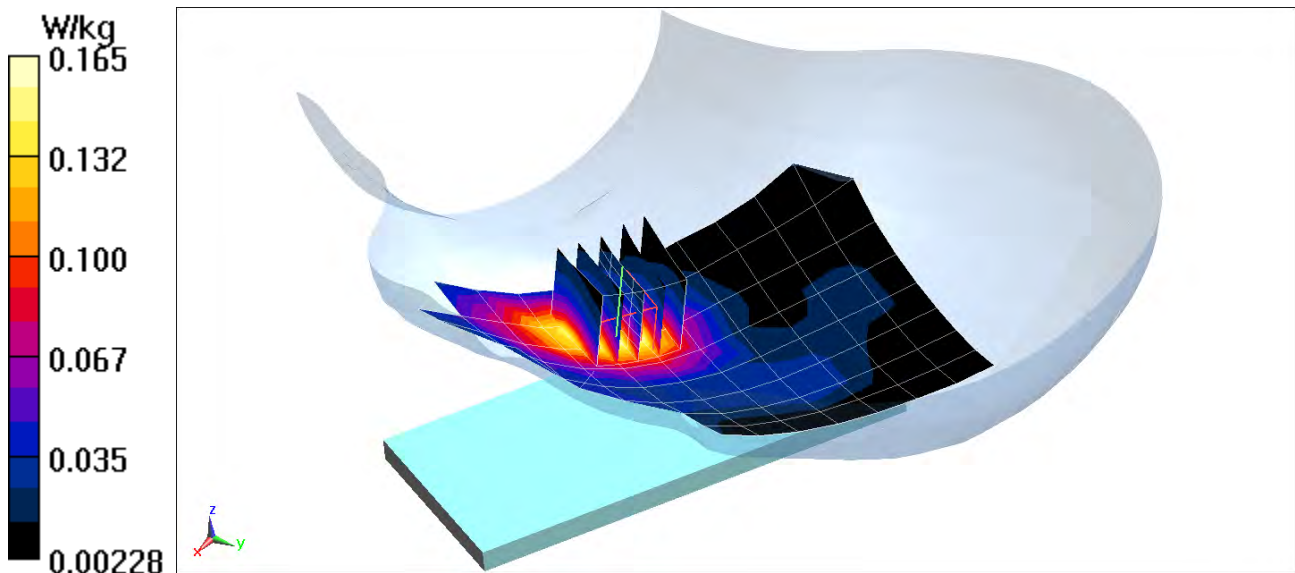
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.55 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.223 W/kg

SAR(1 g) = 0.144 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
 $f = 1880 \text{ MHz}$; $\sigma = 1.425 \text{ S/m}$; $\epsilon_r = 39.096$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-10-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3332; ConvF(5.33, 5.33, 5.33); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: PCS EVDO Rev. A, Left Head, Cheek, Mid.ch

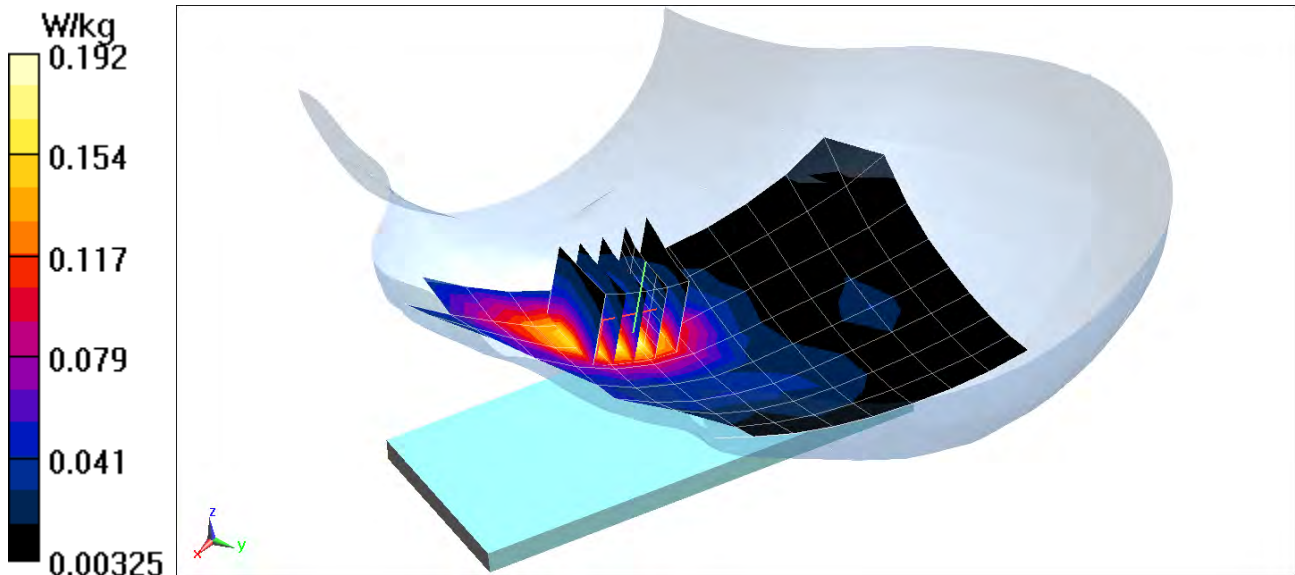
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.33 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.252 W/kg

SAR(1 g) = 0.163 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium: 750 Head Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$; $\sigma = 0.888 \text{ S/m}$; $\epsilon_r = 41.874$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3213; ConvF(6.75, 6.75, 6.75); Calibrated: 2/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 71, Right Head, Cheek, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

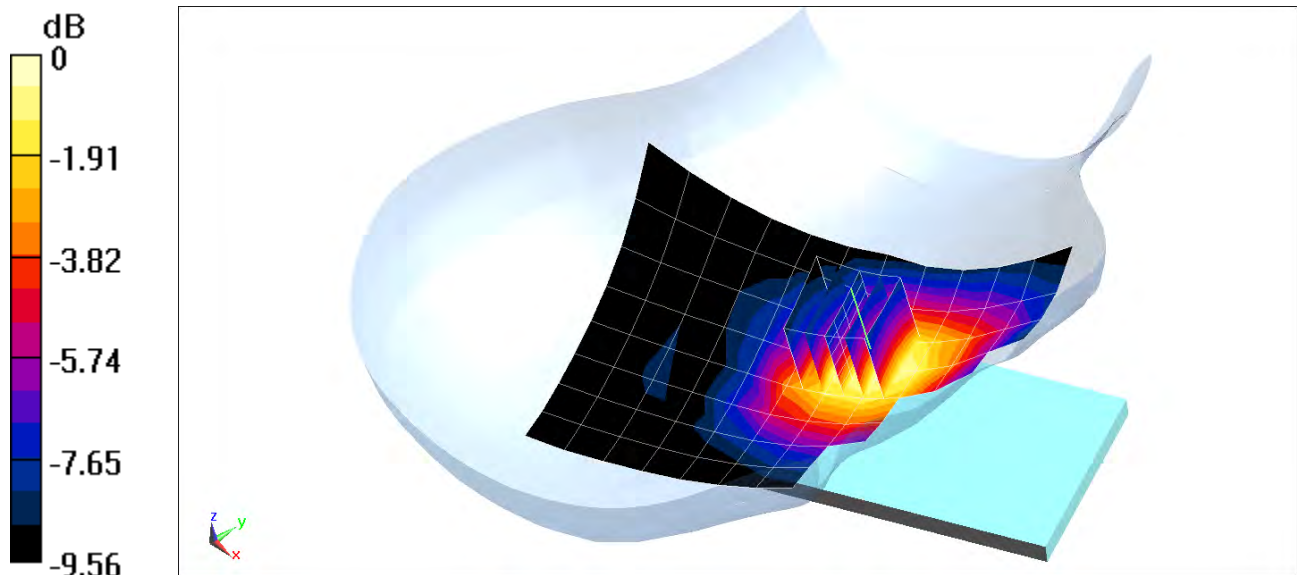
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.75 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.128 W/kg



0 dB = 0.139 W/kg = -8.57 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium: 750 Head Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.897 \text{ S/m}$; $\epsilon_r = 41.803$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3213; ConvF(6.75, 6.75, 6.75); Calibrated: 2/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

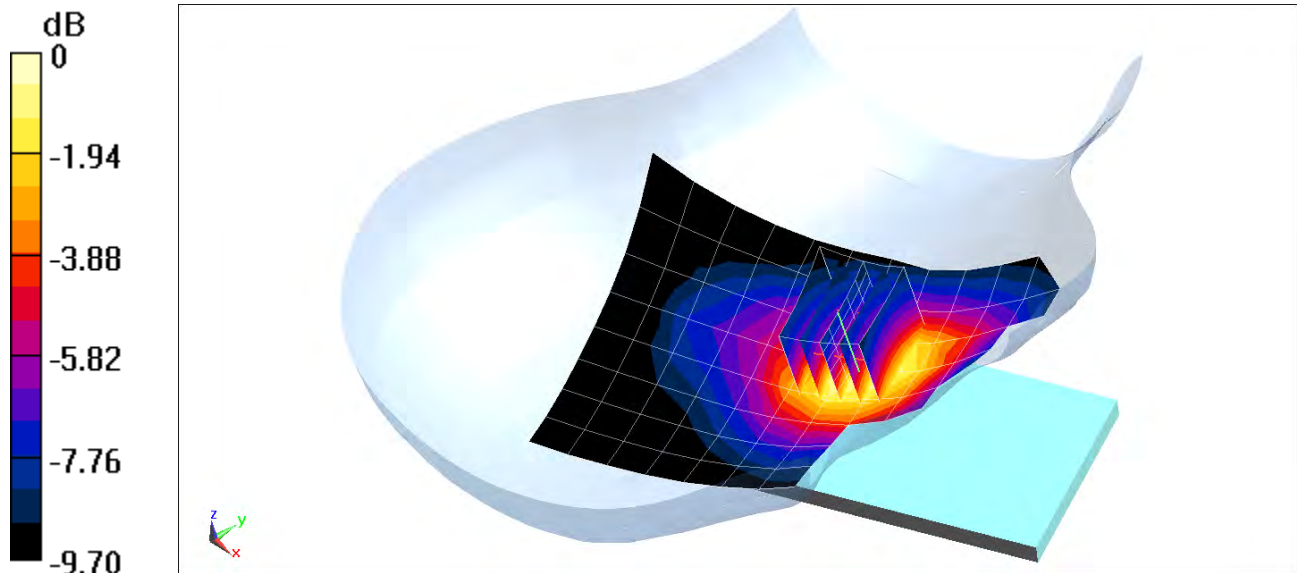
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.30 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.201 W/kg

SAR(1 g) = 0.157 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

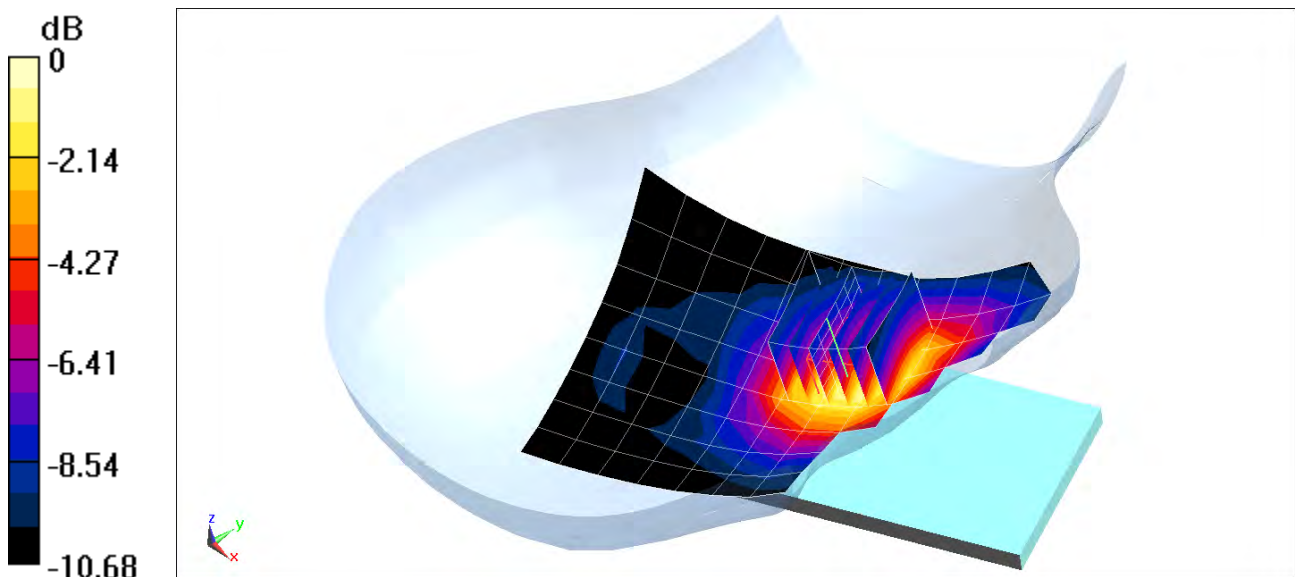
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
 $f = 782 \text{ MHz}$; $\sigma = 0.924 \text{ S/m}$; $\epsilon_r = 41.559$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

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

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

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.65 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.248 W/kg
SAR(1 g) = 0.196 W/kg



0 dB = 0.212 W/kg = -6.74 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

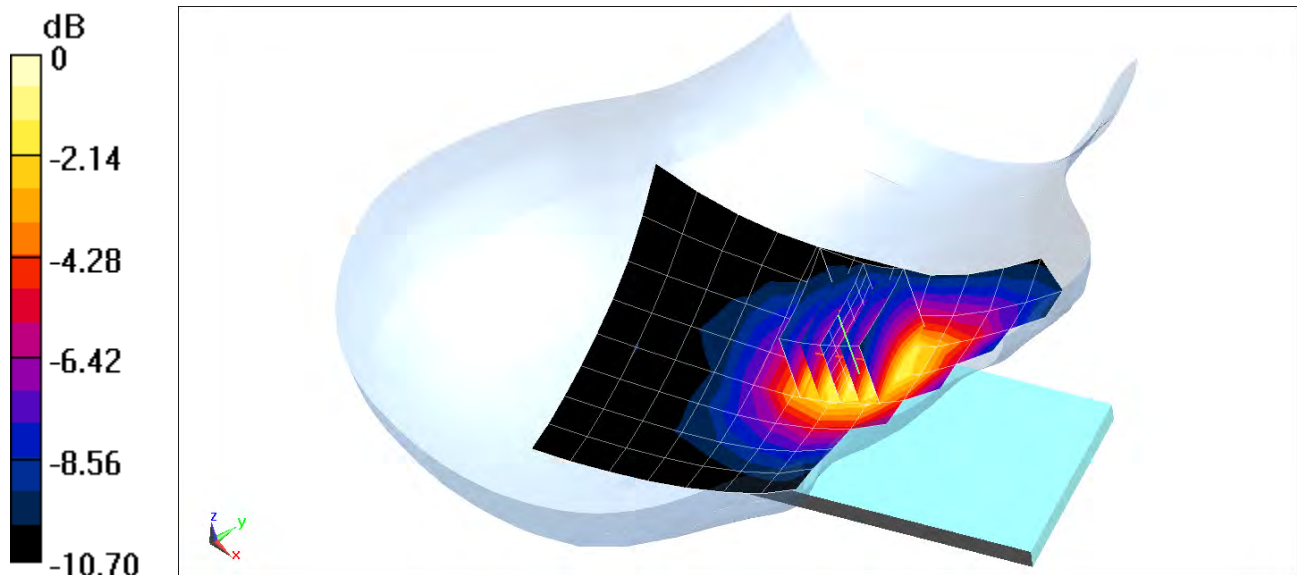
Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
 $f = 793 \text{ MHz}$; $\sigma = 0.928 \text{ S/m}$; $\epsilon_r = 41.525$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

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

**Mode: LTE Band 14, Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset**

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.33 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.241 W/kg
SAR(1 g) = 0.190 W/kg



0 dB = 0.205 W/kg = -6.88 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

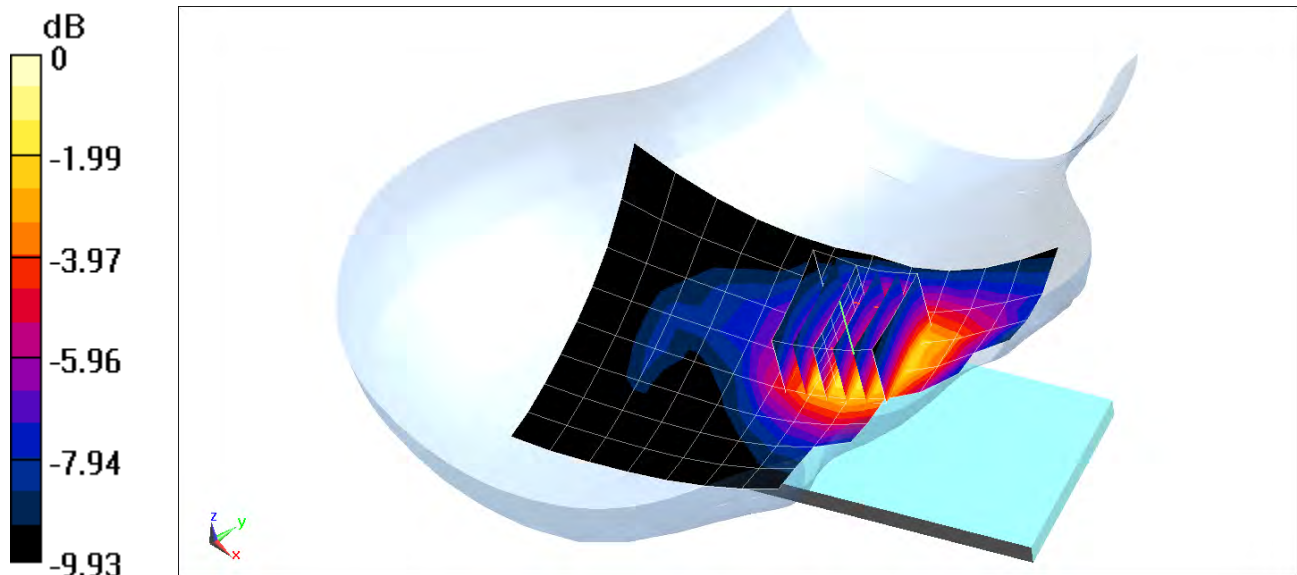
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 831.5 \text{ MHz}$; $\sigma = 0.918 \text{ S/m}$; $\epsilon_r = 40.803$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

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

**Mode: LTE Band 26 (Cell.), Right Head, Cheek, Mid.ch,
15 MHz Bandwidth, QPSK, 1 RB, 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 = 15.72 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.190 W/kg



0 dB = 0.211 W/kg = -6.76 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

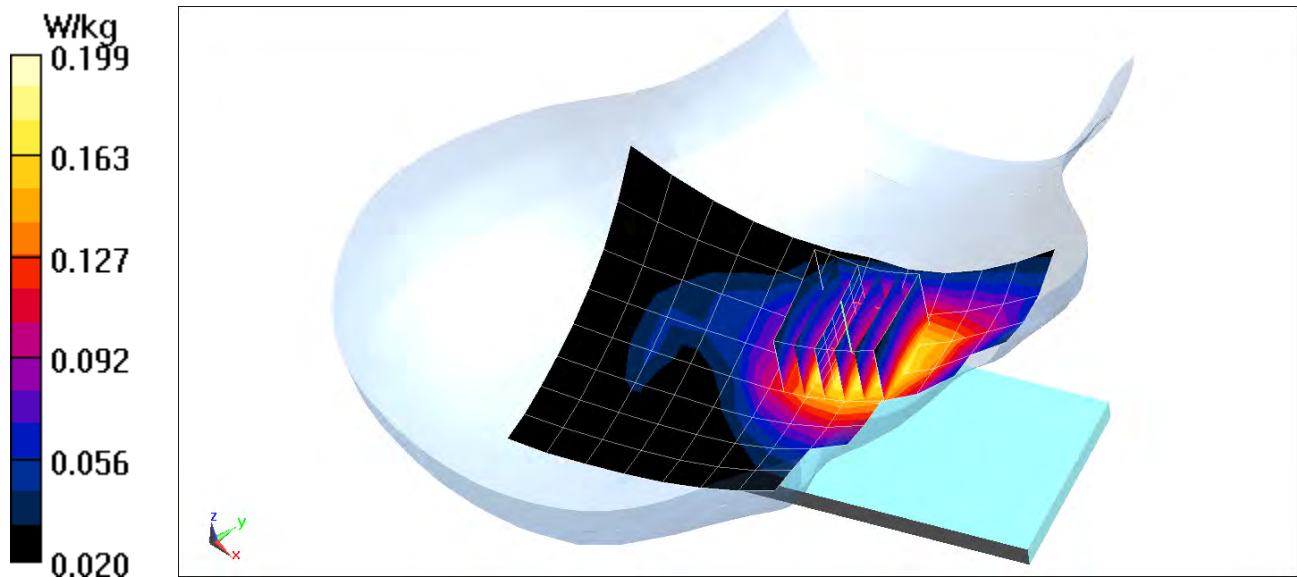
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.783$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.7°C

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

**Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 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 = 15.26 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.239 W/kg
SAR(1 g) = 0.181 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2299

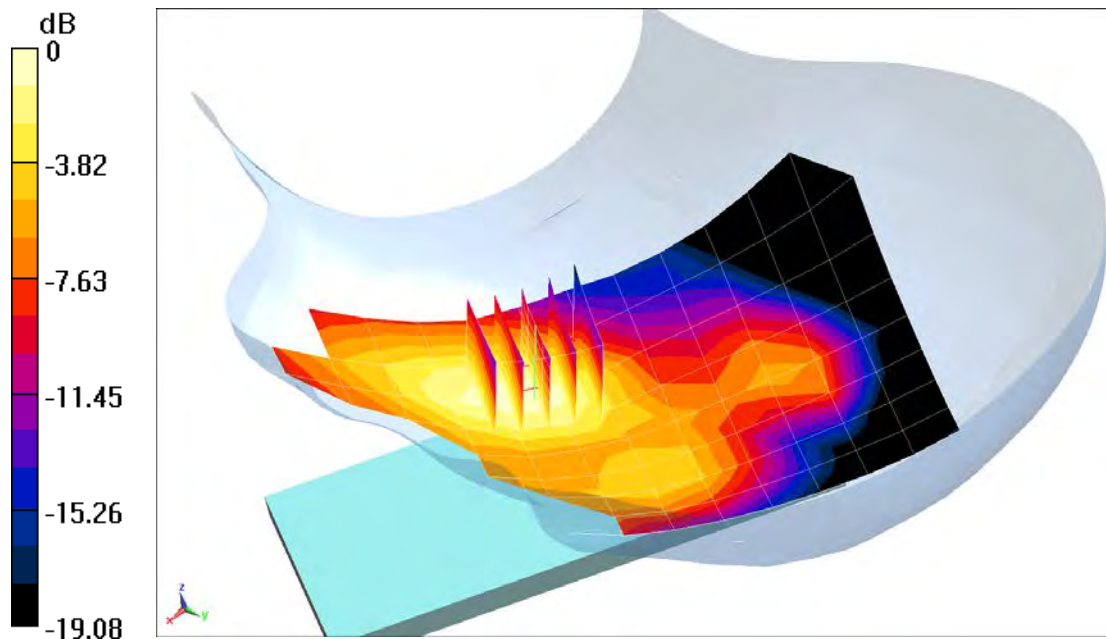
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
 $f = 1720 \text{ MHz}$; $\sigma = 1.353 \text{ S/m}$; $\epsilon_r = 39.634$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-09-2018; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

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

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

Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.812 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.129 W/kg
SAR(1 g) = 0.086 W/kg



0 dB = 0.0992 W/kg = -10.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2299

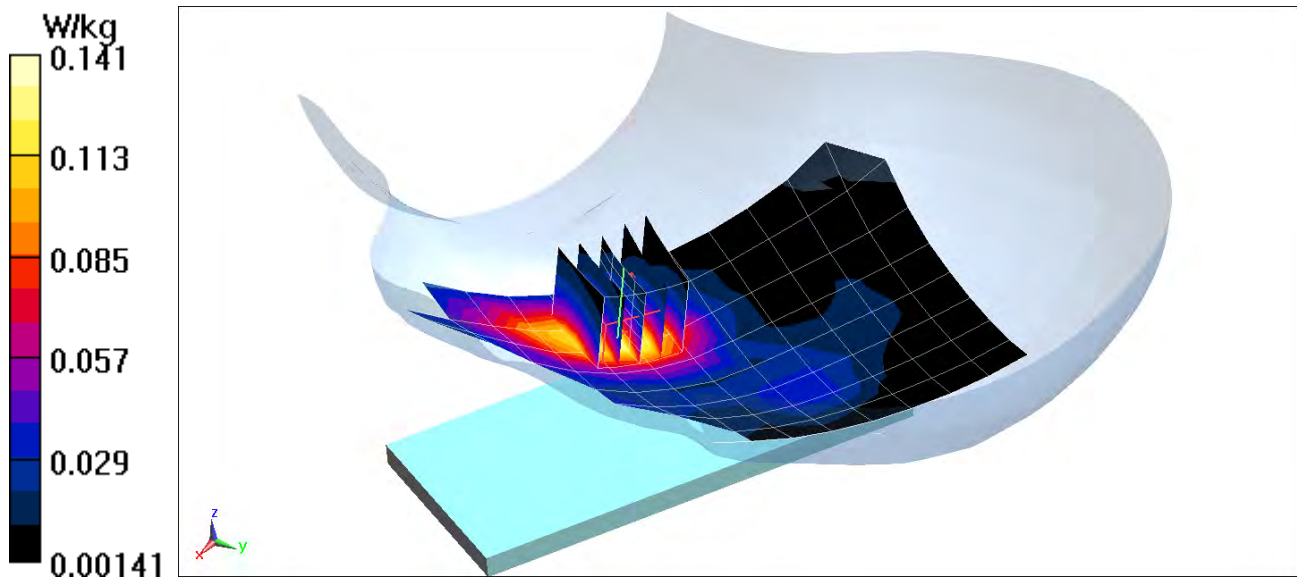
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
 $f = 1882.5 \text{ MHz}$; $\sigma = 1.427 \text{ S/m}$; $\epsilon_r = 39.084$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-10-2018; Ambient Temp: 22.4°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3332; ConvF(5.33, 5.33, 5.33); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.864 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.186 W/kg
SAR(1 g) = 0.120 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2290

Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2310$ MHz; $\sigma = 1.716$ S/m; $\epsilon_r = 39.592$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Test Date: 05-17-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3332; ConvF(4.99, 4.99, 4.99); Calibrated: 8/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 8/9/2017

Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 30, Antenna B, Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

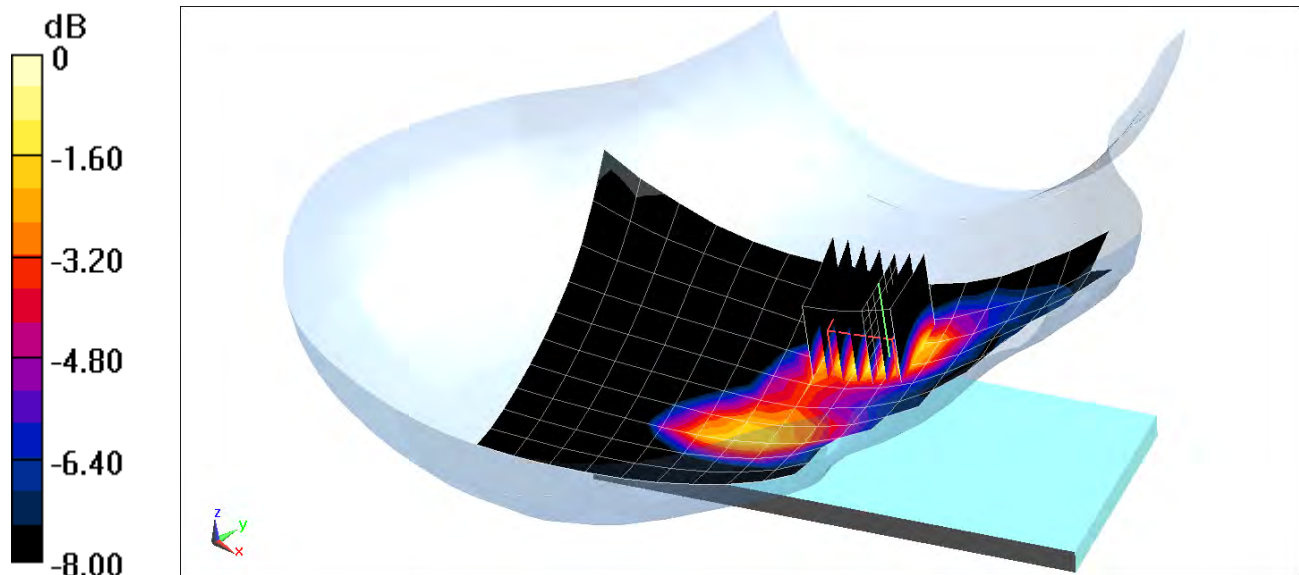
Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.507 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.112 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2290

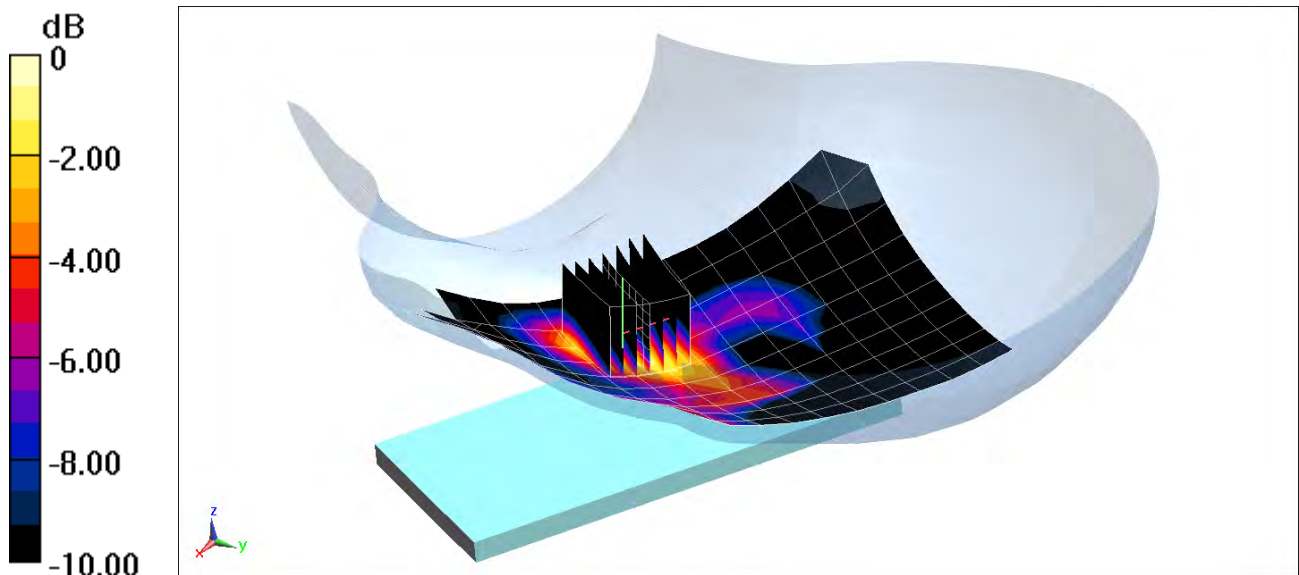
Communication System: UID 0, _LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
 $f = 2560 \text{ MHz}$; $\sigma = 1.999 \text{ S/m}$; $\epsilon_r = 38.674$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 05-17-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3332; ConvF(4.56, 4.56, 4.56); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 7, Antenna B, Left Head, Cheek, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$
Zoom Scan (8x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.890 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.216 W/kg
SAR(1 g) = 0.113 W/kg



0 dB = 0.148 W/kg = -8.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2297

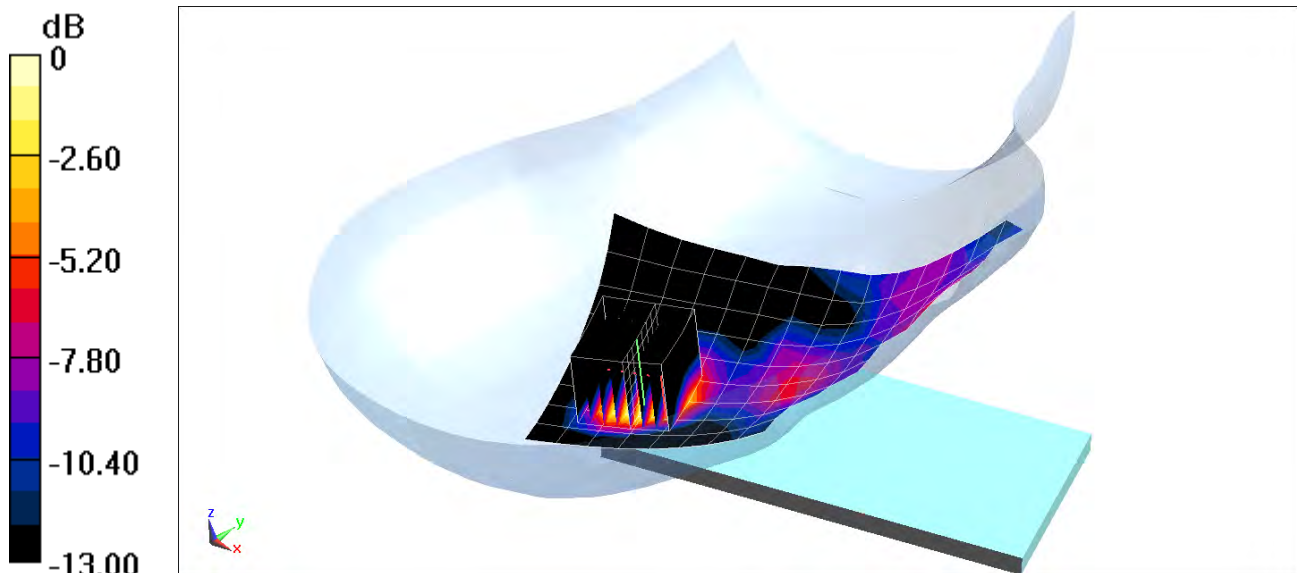
Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2680 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head Medium parameters used (interpolated):
 $f = 2680 \text{ MHz}$; $\sigma = 2.118 \text{ S/m}$; $\epsilon_r = 37.668$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 05-14-2018; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3332; ConvF(4.56, 4.56, 4.56); Calibrated: 8/14/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 8/9/2017
Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 41 PC2, Right Head, Tilt, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.763 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.096 W/kg



0 dB = 0.120 W/kg = -9.21 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, _IEEE 802.11n; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.828 \text{ S/m}$; $\epsilon_r = 39.228$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-17-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3332; ConvF(4.68, 4.68, 4.68); Calibrated: 8/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 8/9/2017

Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: IEEE 802.11n, MIMO, 20 MHz Bandwidth, Right Head, Cheek, Ch 1, 13 Mbps

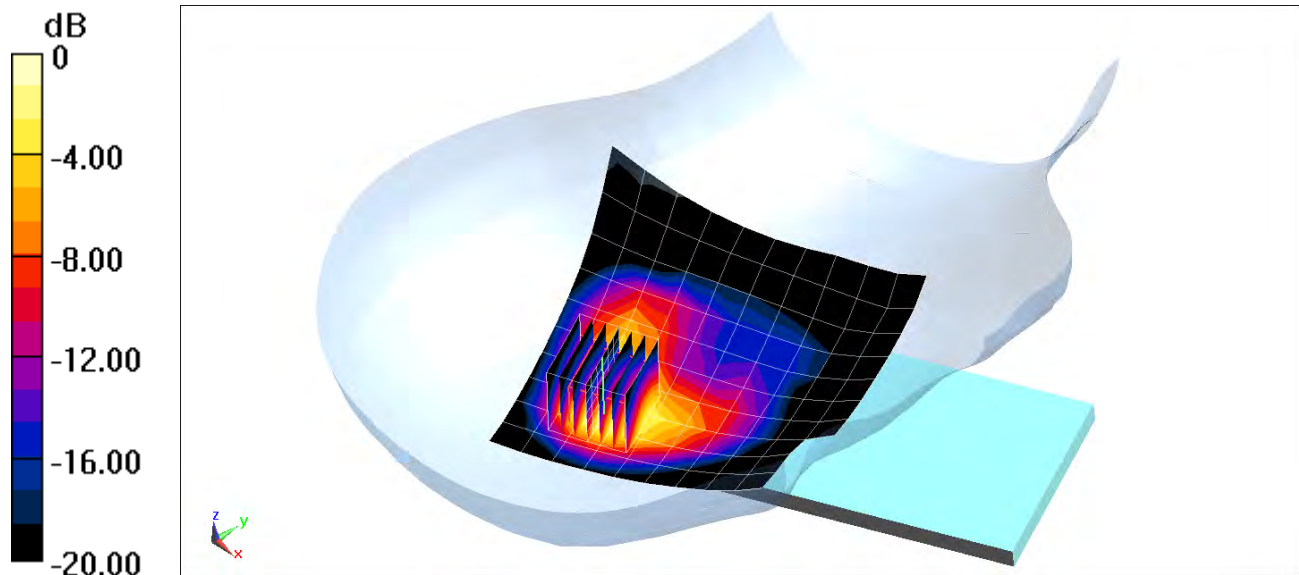
Area Scan (11x11x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.08 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 2.51 W/kg

SAR(1 g) = 1.17 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, 802.11ac 5.2-5.8 GHz Band; Frequency: 5690 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used (interpolated):
 $f = 5690 \text{ MHz}$; $\sigma = 4.973 \text{ S/m}$; $\epsilon_r = 34.07$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 5-7-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN3589; ConvF(4.42, 4.42, 4.42); Calibrated: 1/16/2018;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/13/2017
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11ac, U-NII-2C, Antenna 2, 80 MHz Bandwidth,
Right Head, Cheek, Ch 138, 29.3 Mbps**

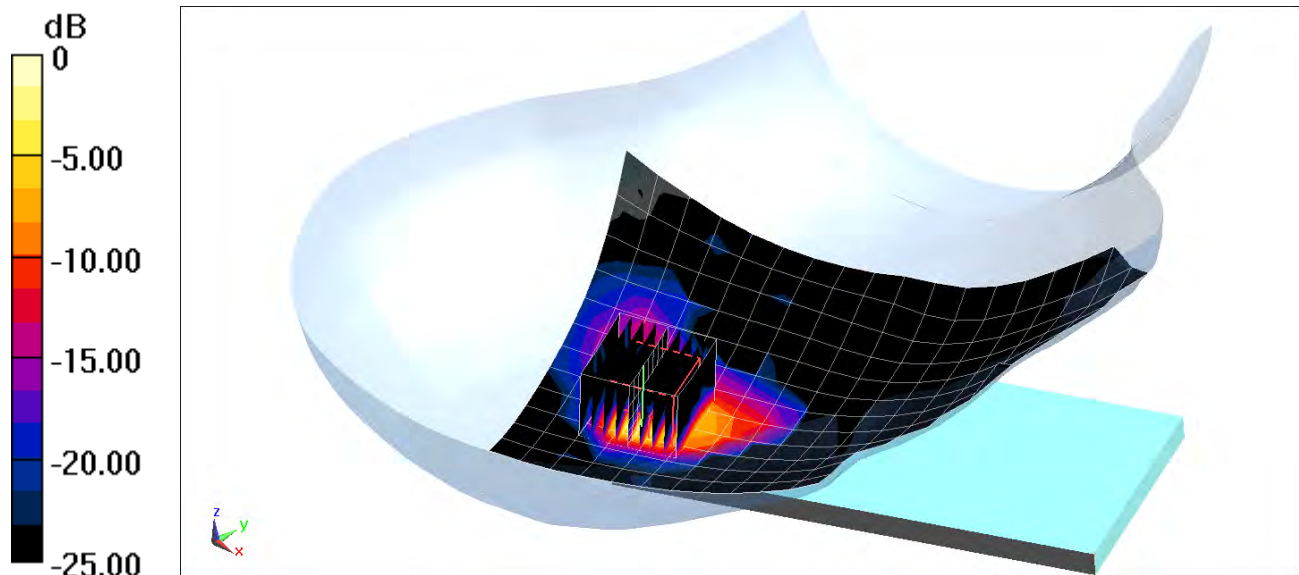
Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 1.759 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.87 W/kg

SAR(1 g) = 0.366 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.294

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$; $\sigma = 1.86 \text{ S/m}$; $\epsilon_r = 39.125$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-17-2018; Ambient Temp: 22.6°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3332; ConvF(4.68, 4.68, 4.68); Calibrated: 8/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 8/9/2017

Phantom: SAM Left; Type: QD000P40CA; Serial: TP:82355

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

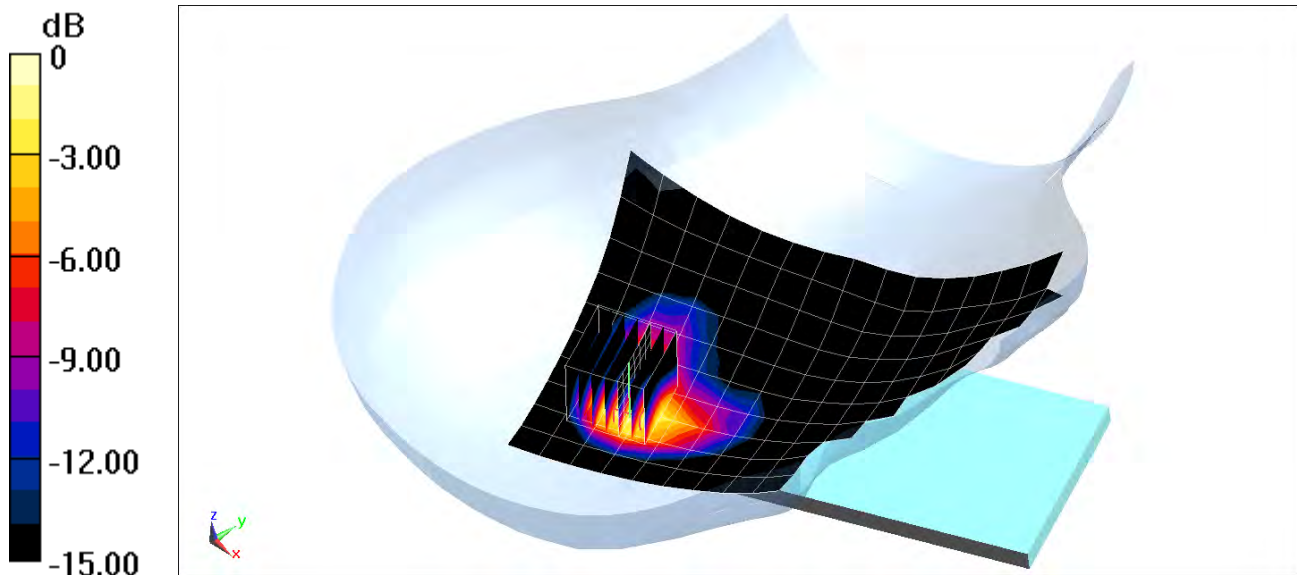
Area Scan (11x19x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.53 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 0.783 W/kg



0 dB = 1.07 W/kg = 0.29 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 53.624$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

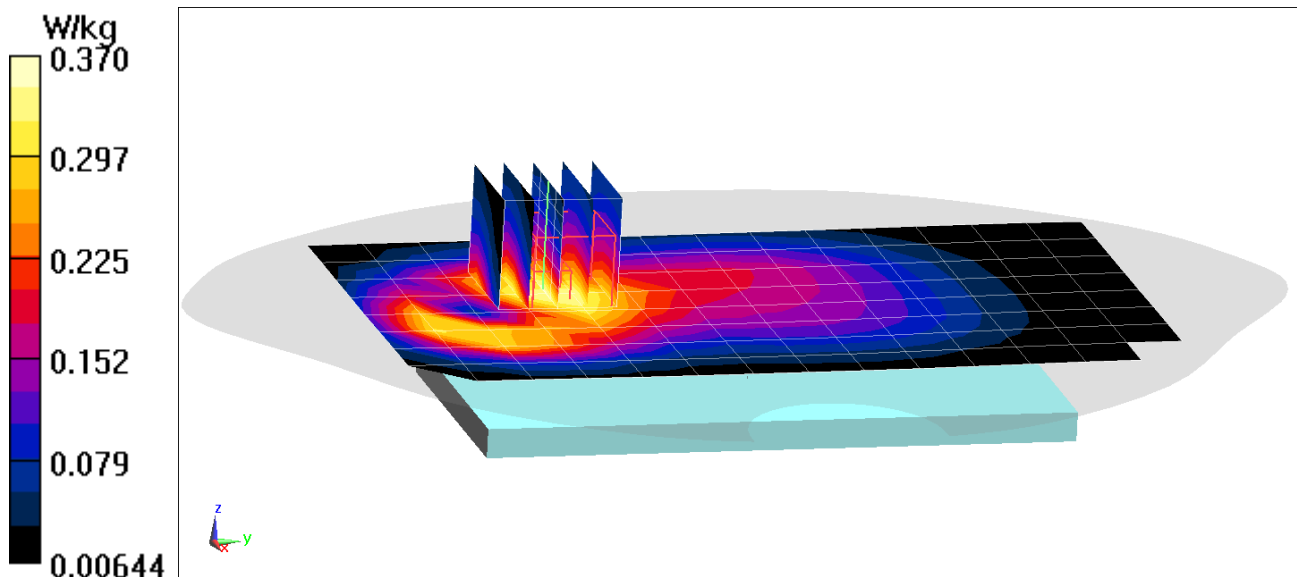
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.74 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.322 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, _GSM GPRS; 4 Tx slots; Frequency: 848.8 MHz; Duty Cycle: 1:2.076

Medium: 835 Body Medium parameters used (interpolated):

$f = 848.8 \text{ MHz}$; $\sigma = 1.005 \text{ S/m}$; $\epsilon_r = 52.901$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 6/21/2017

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: GPRS 850, Body SAR, Back side, High.ch, 4 Tx Slots

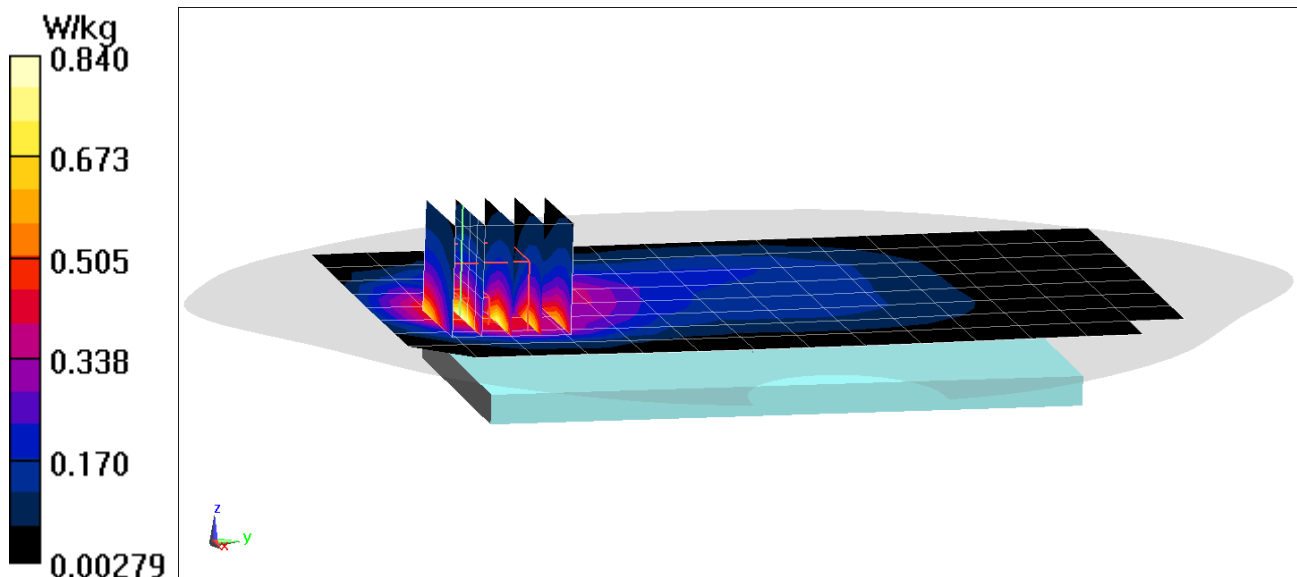
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.09 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.692 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 53.624$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

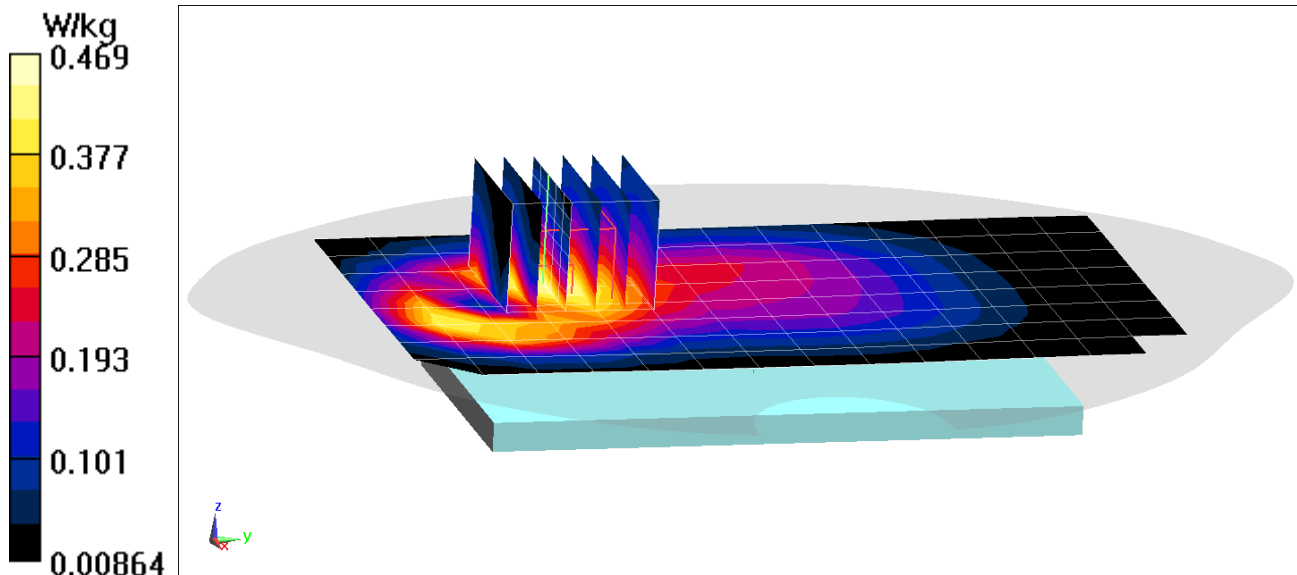
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.15 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.411 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 846.6 \text{ MHz}$; $\sigma = 1.012 \text{ S/m}$; $\epsilon_r = 53.521$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

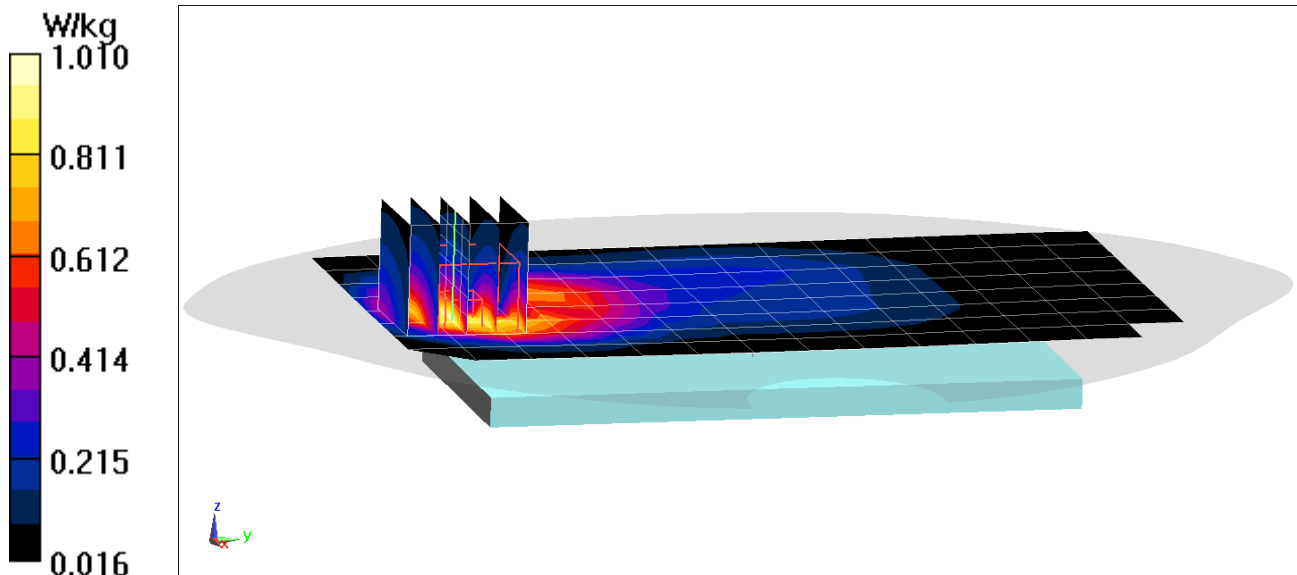
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.29 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.835 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

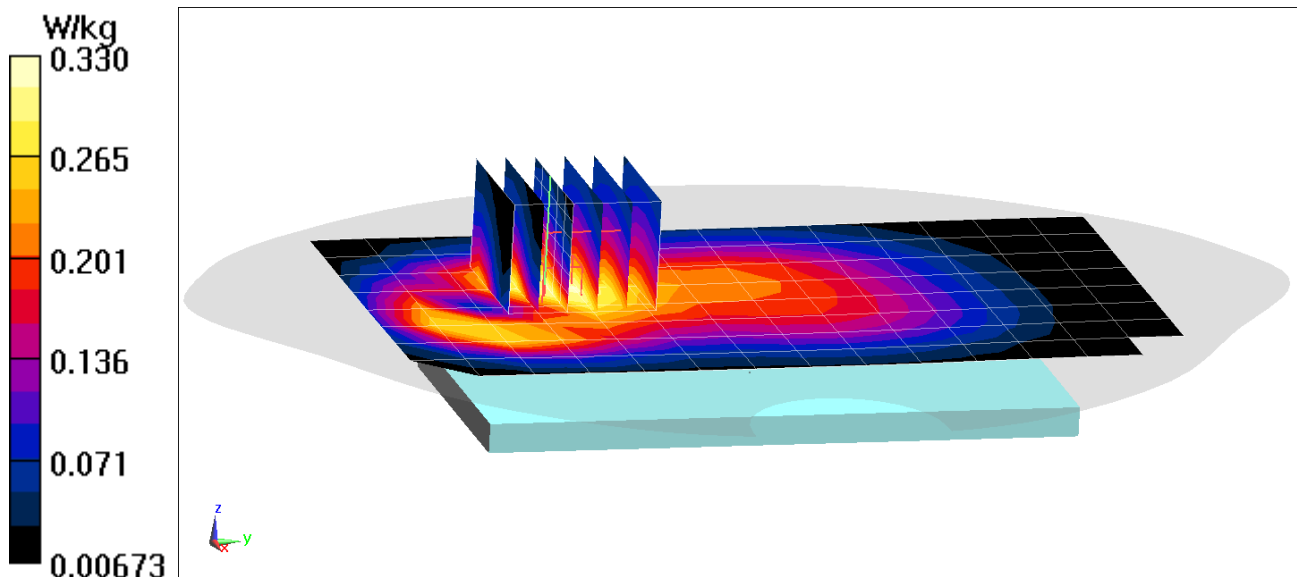
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 820.1 \text{ MHz}$; $\sigma = 0.985 \text{ S/m}$; $\epsilon_r = 53.768$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: Cell. CDMA 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 = 17.57 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.406 W/kg
SAR(1 g) = 0.292 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 820.1 \text{ MHz}$; $\sigma = 0.985 \text{ S/m}$; $\epsilon_r = 53.768$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

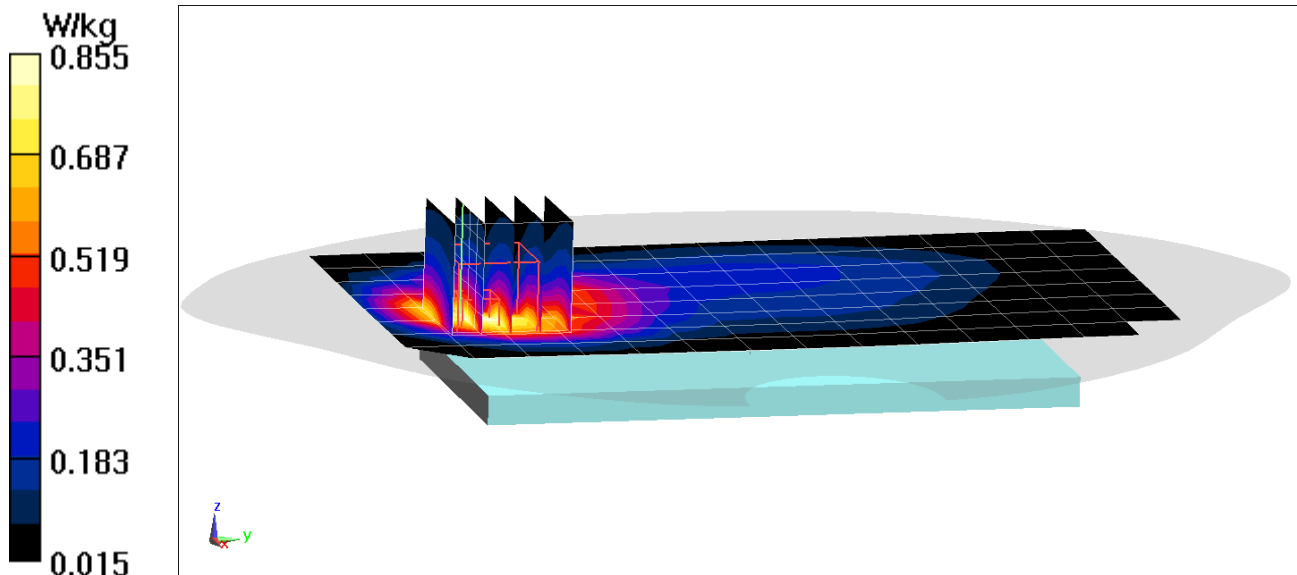
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.79 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.732 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.52$ MHz; $\sigma = 1.002$ S/m; $\epsilon_r = 53.624$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

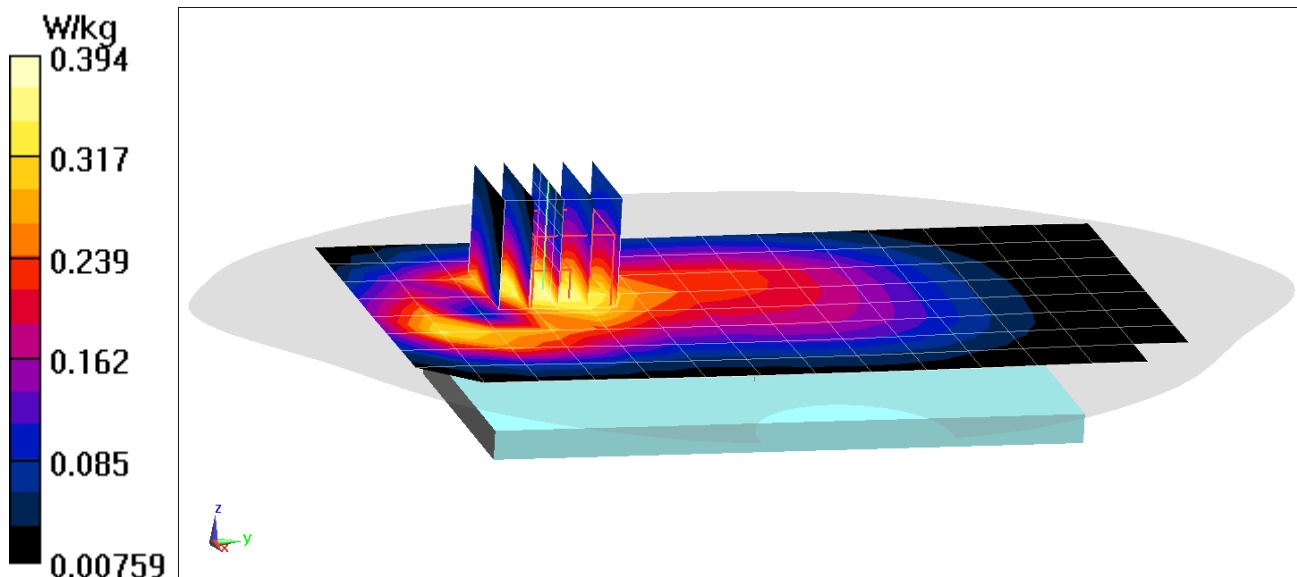
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.38 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.481 W/kg

SAR(1 g) = 0.346 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

Communication System: UID 0, CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 824.7 \text{ MHz}$; $\sigma = 0.99 \text{ S/m}$; $\epsilon_r = 53.729$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-15-2018; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

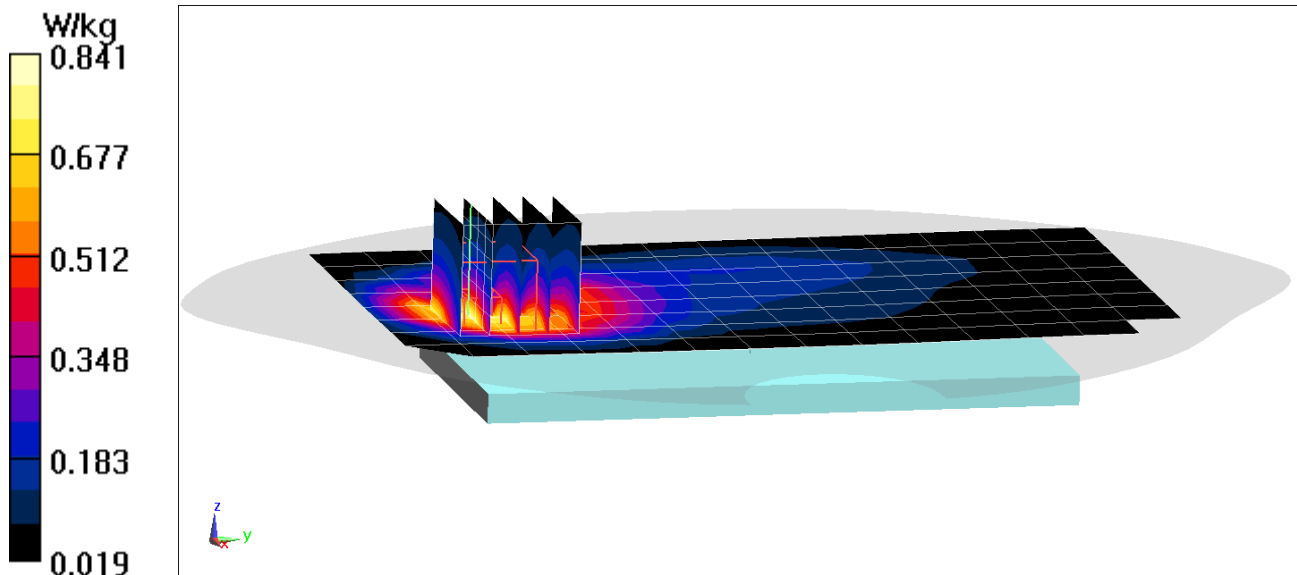
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.40 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.701 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
 $f = 1732.4$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 51.895$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-16-2018; Ambient Temp: 22.0°C; Tissue Temp: 20.2°C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 left; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

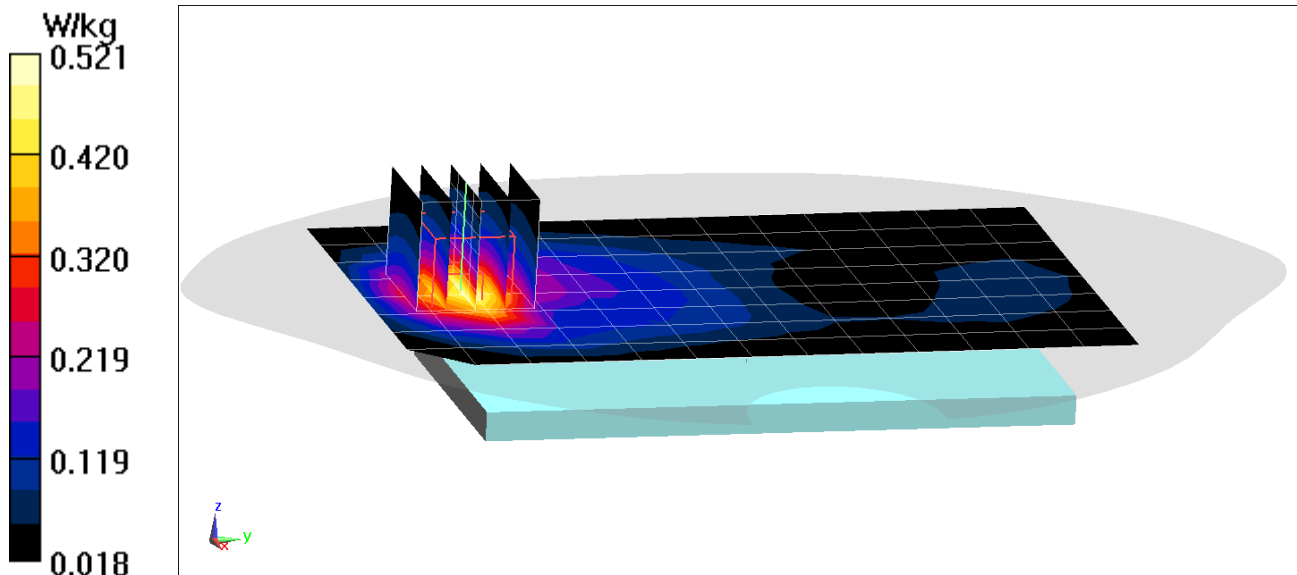
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.28 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.672 W/kg

SAR(1 g) = 0.437 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2304

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
 $f = 1732.4$ MHz; $\sigma = 1.489$ S/m; $\epsilon_r = 51.895$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-16-2018; Ambient Temp: 22.0°C; Tissue Temp: 20.2°C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 left; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

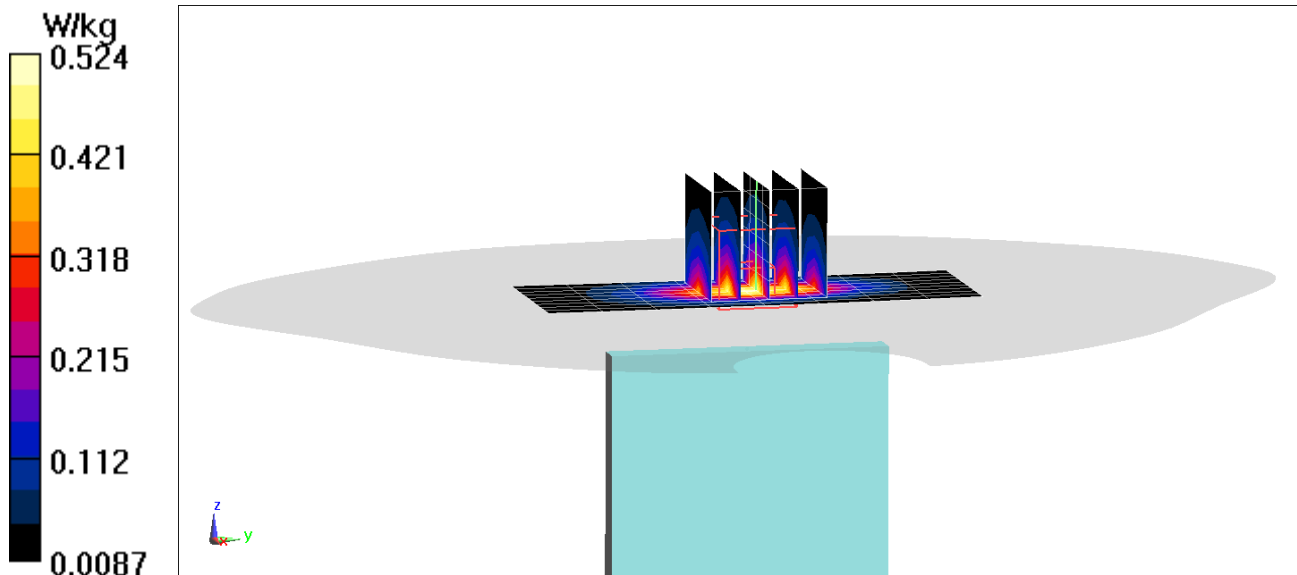
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.21 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.702 W/kg

SAR(1 g) = 0.424 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30
Medium: 1900 Body Medium parameters used:
 $f = 1880 \text{ MHz}$; $\sigma = 1.552 \text{ S/m}$; $\epsilon_r = 53.614$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

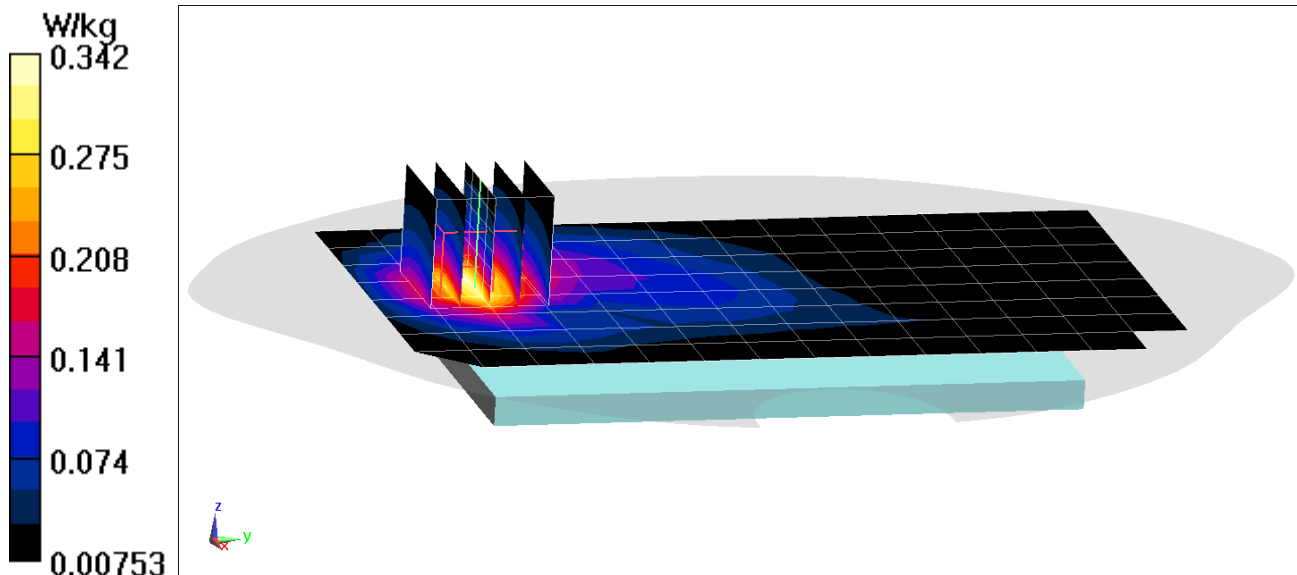
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.49 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.451 W/kg

SAR(1 g) = 0.285 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2304

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.552 \text{ S/m}$; $\epsilon_r = 53.614$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1450; Calibrated: 11/9/2017

Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

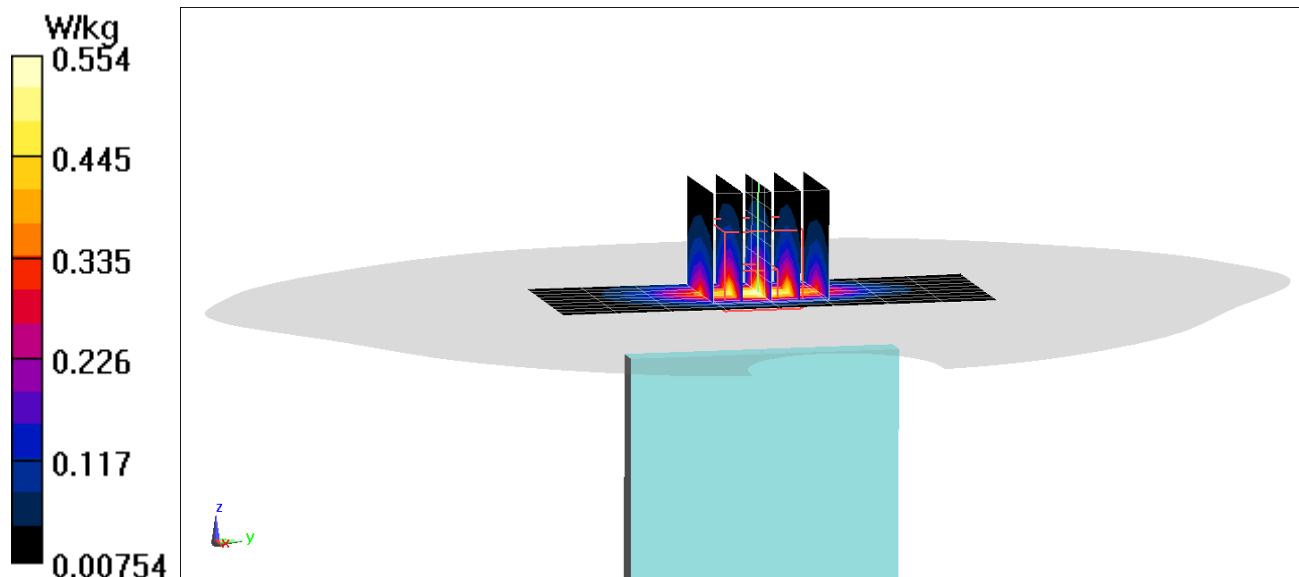
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.37 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.767 W/kg

SAR(1 g) = 0.445 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2293

Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1907.6 \text{ MHz}$; $\sigma = 1.583 \text{ S/m}$; $\epsilon_r = 53.548$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

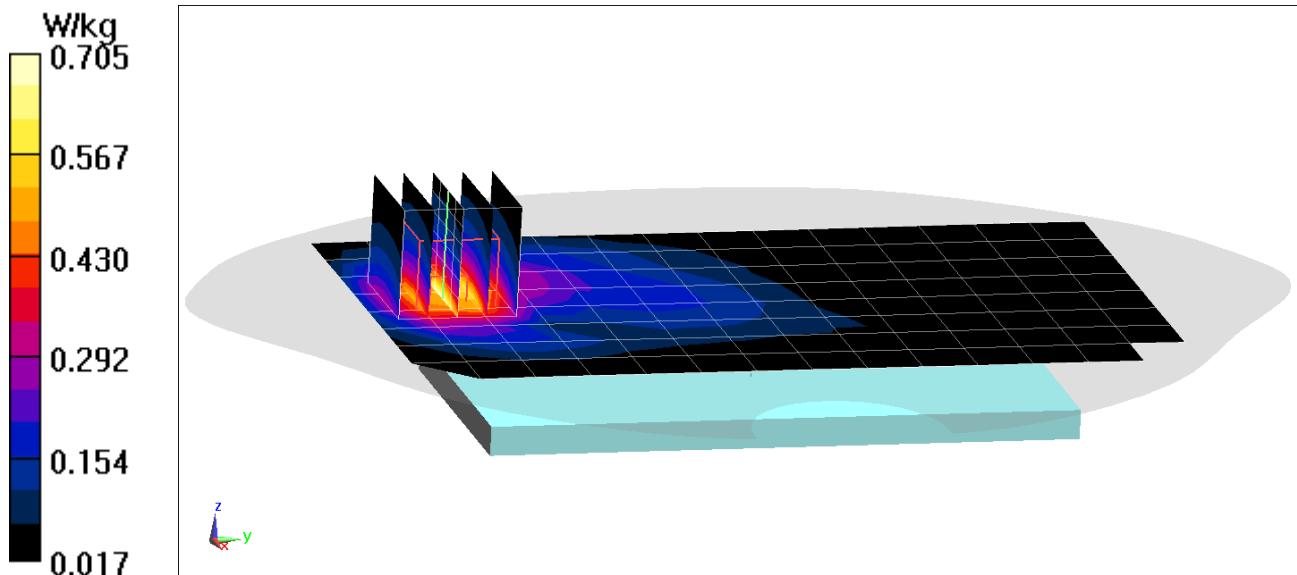
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.49 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.949 W/kg

SAR(1 g) = 0.591 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2304

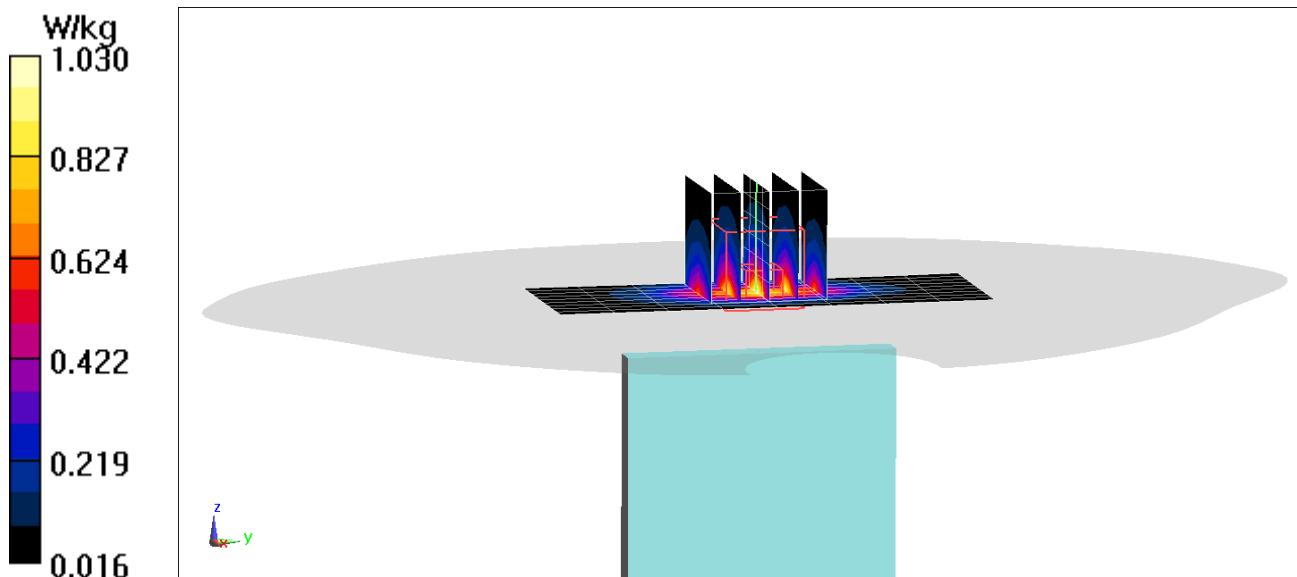
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1907.6$ MHz; $\sigma = 1.583$ S/m; $\epsilon_r = 53.548$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.74 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.827 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2322

Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1908.75$ MHz; $\sigma = 1.585$ S/m; $\epsilon_r = 53.545$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: PCS CDMA, Body SAR, Back side, High.ch

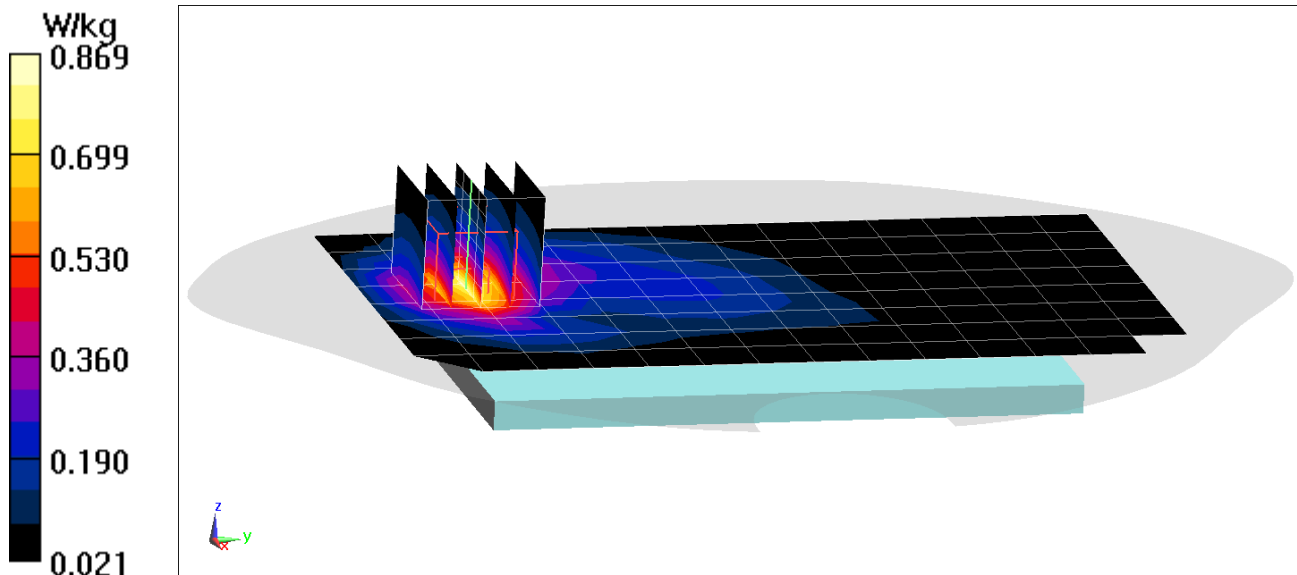
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.76 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.719 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2304

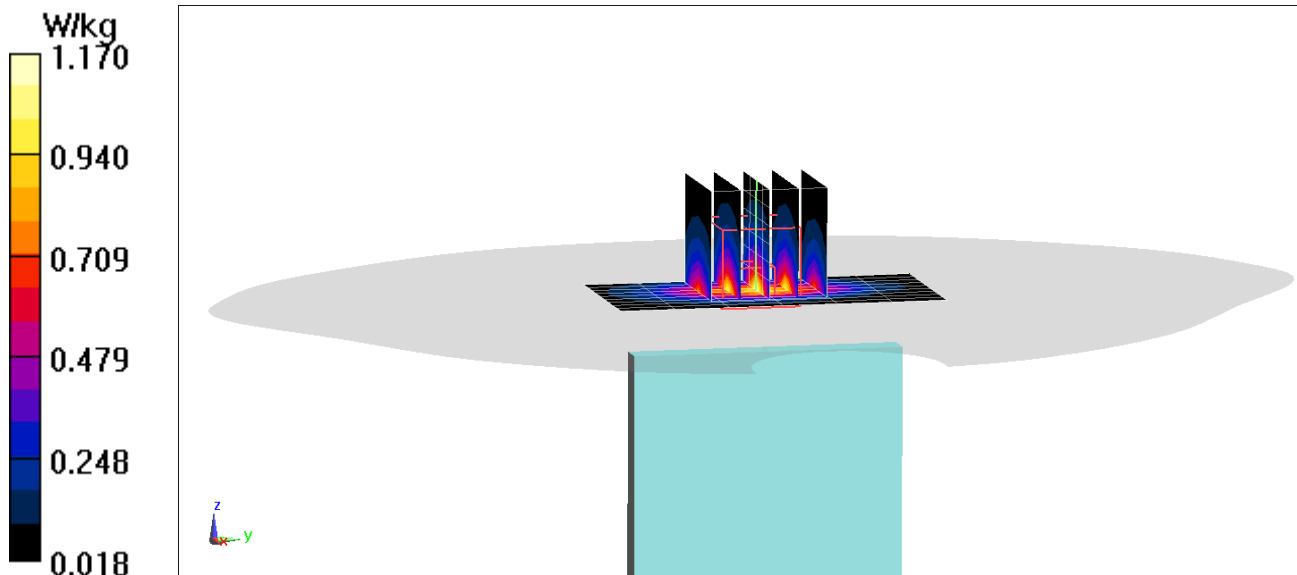
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1908.75 \text{ MHz}$; $\sigma = 1.585 \text{ S/m}$; $\epsilon_r = 53.545$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: PCS EVDO Rev. 0, 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 = 26.22 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.935 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$; $\sigma = 0.928 \text{ S/m}$; $\epsilon_r = 54.492$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 5-14-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

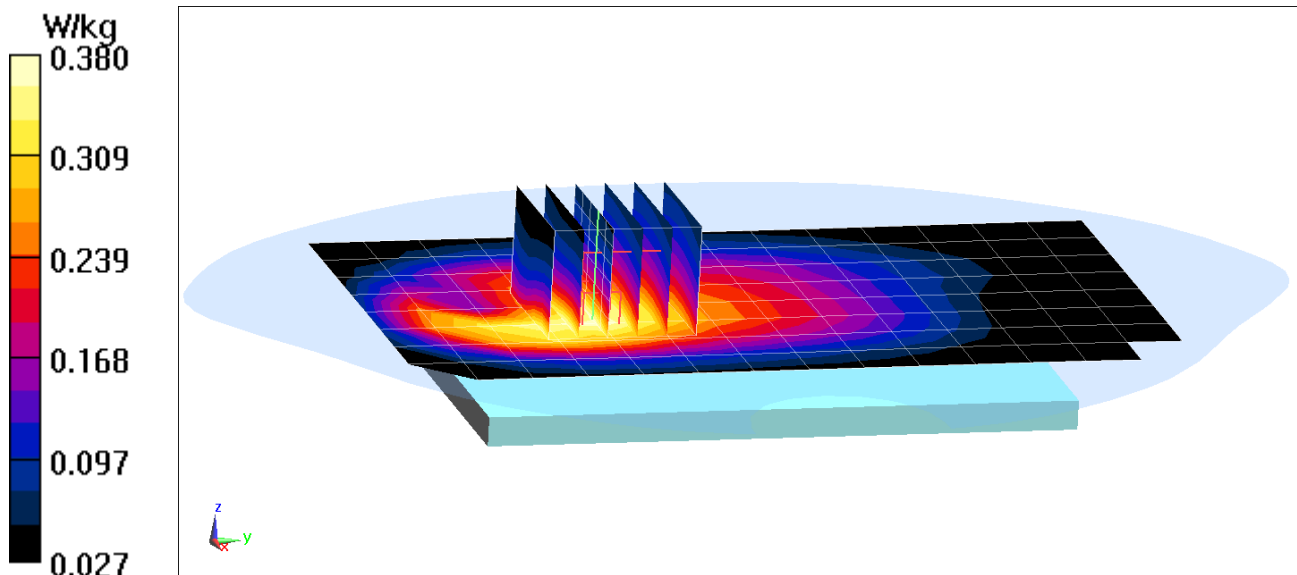
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.41 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.424 W/kg

SAR(1 g) = 0.299 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 680.5$ MHz; $\sigma = 0.928$ S/m; $\epsilon_r = 54.492$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 5-14-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

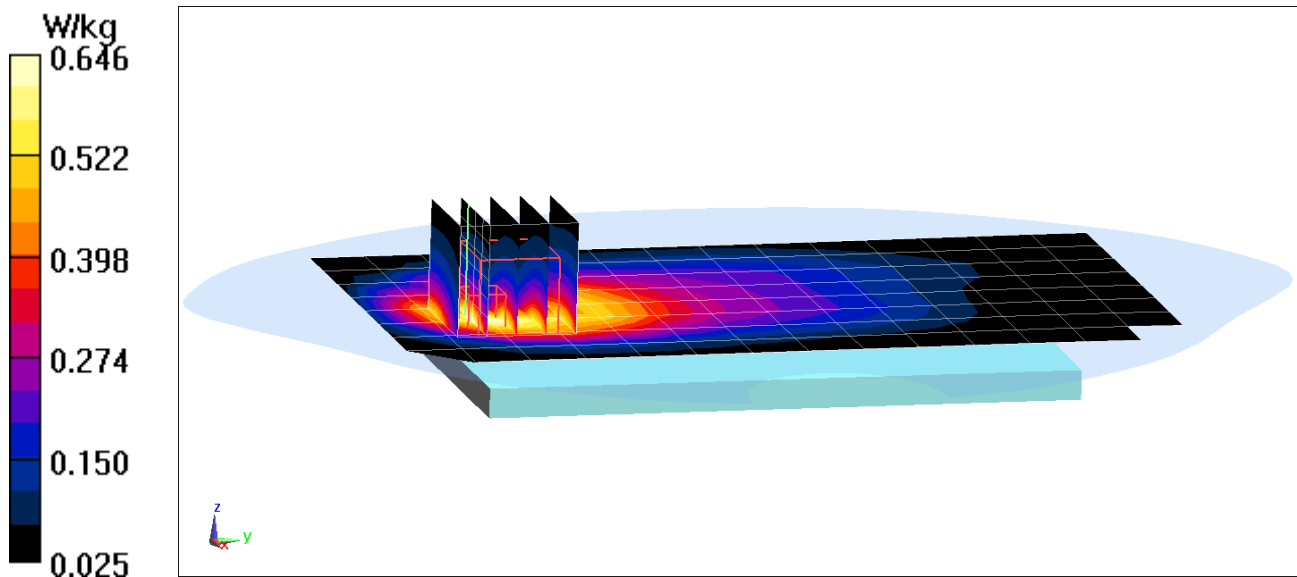
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.56 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.792 W/kg

SAR(1 g) = 0.451 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

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; $\sigma = 0.947$ S/m; $\epsilon_r = 54.247$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

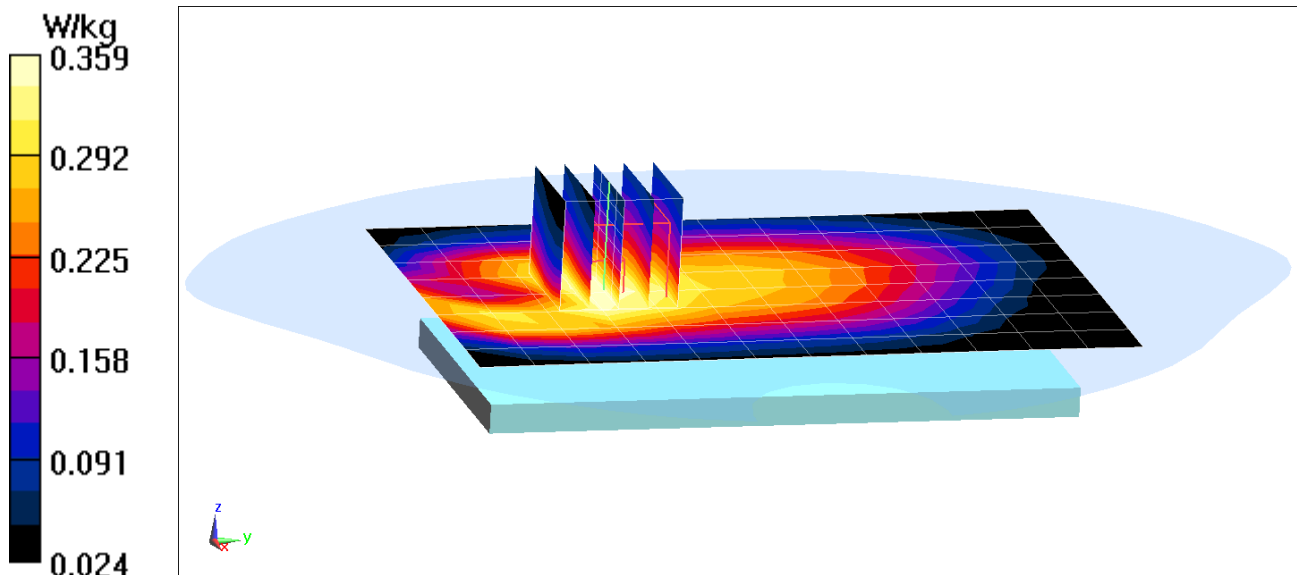
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.03 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.395 W/kg

SAR(1 g) = 0.296 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
 $f = 707.5 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 54.247$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/13/2017
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

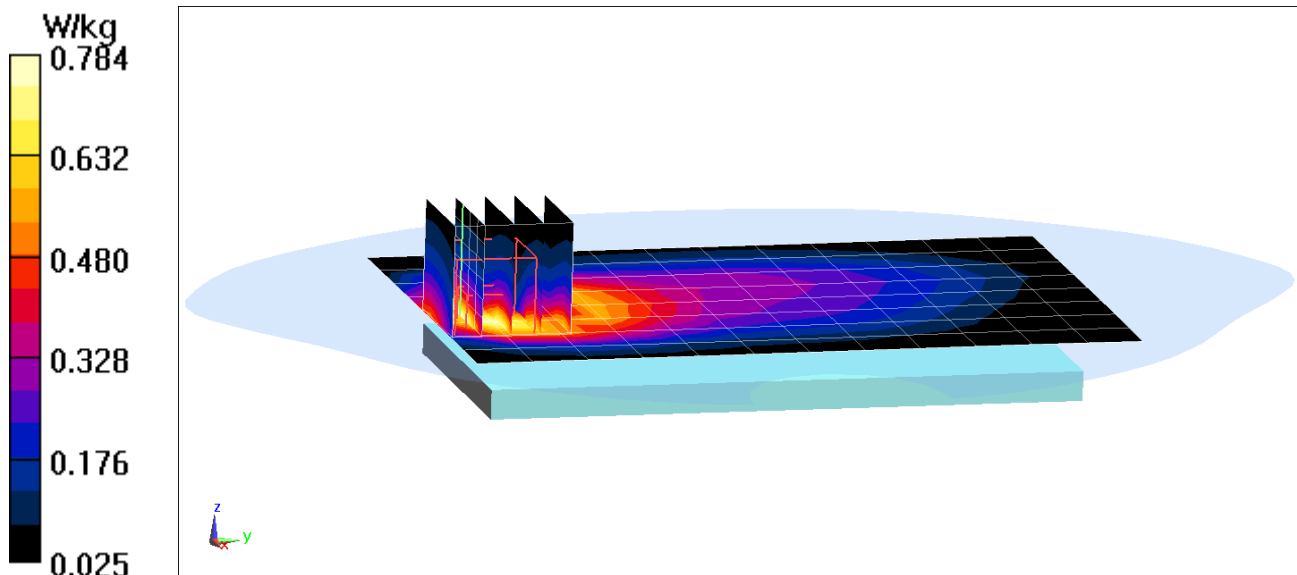
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.14 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.963 W/kg

SAR(1 g) = 0.548 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: 750 Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$; $\sigma = 0.977 \text{ S/m}$; $\epsilon_r = 54.088$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

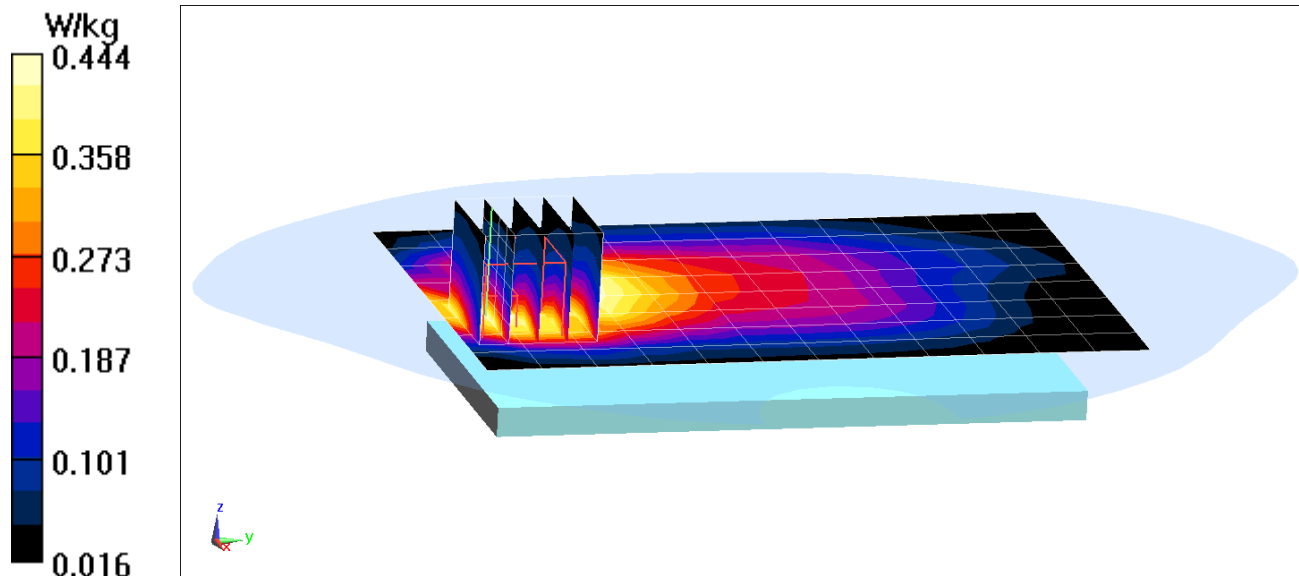
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.78 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.326 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: 750 Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$; $\sigma = 0.977 \text{ S/m}$; $\epsilon_r = 54.088$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

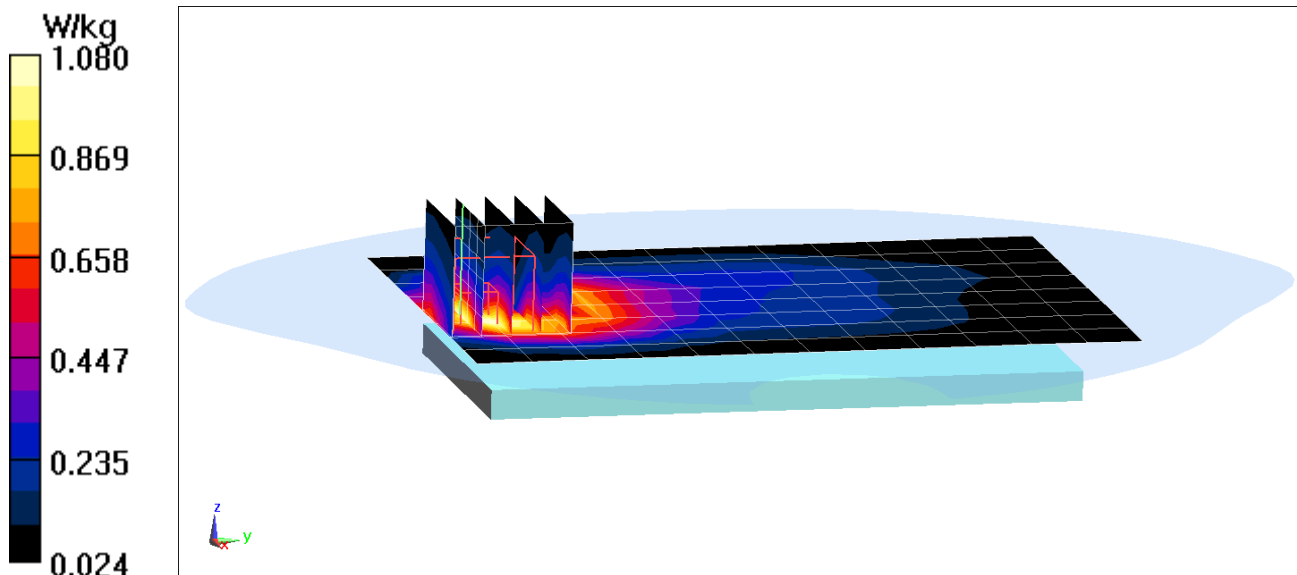
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.53 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.761 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
 $f = 793 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.055$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/13/2017
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 14, Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset**

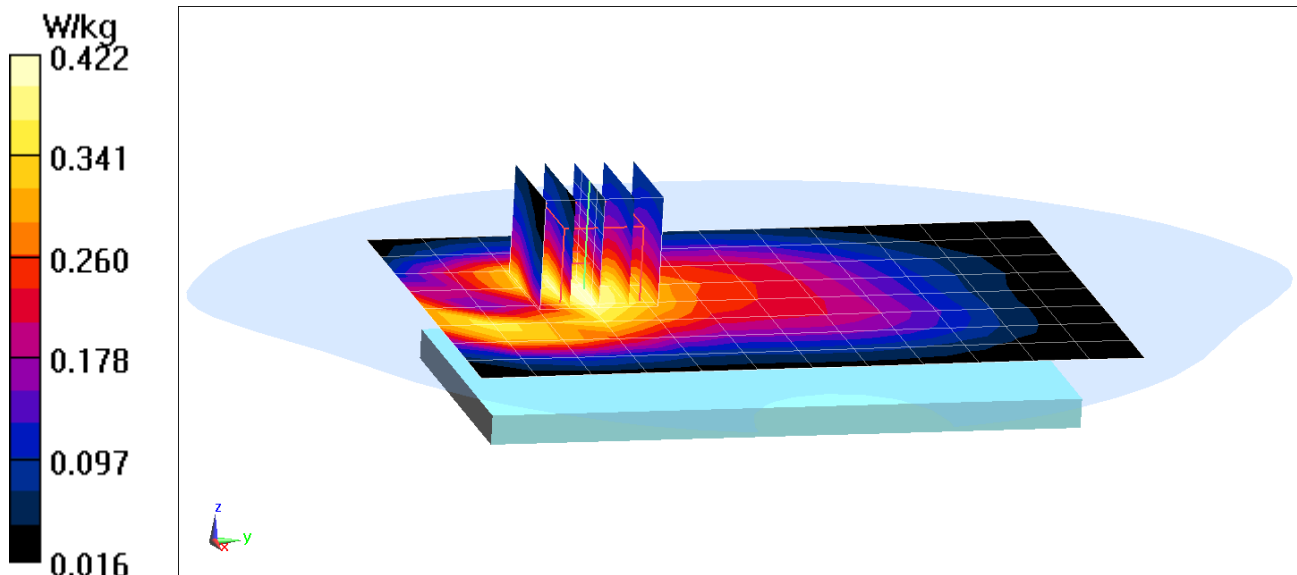
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.21 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.470 W/kg

SAR(1 g) = 0.344 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: 750 Body Medium parameters used (interpolated):

$f = 793 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.055$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 5-11-2018; Ambient Temp: 20.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7410; ConvF(10.19, 10.19, 10.19); Calibrated: 7/17/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/13/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 14, Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset**

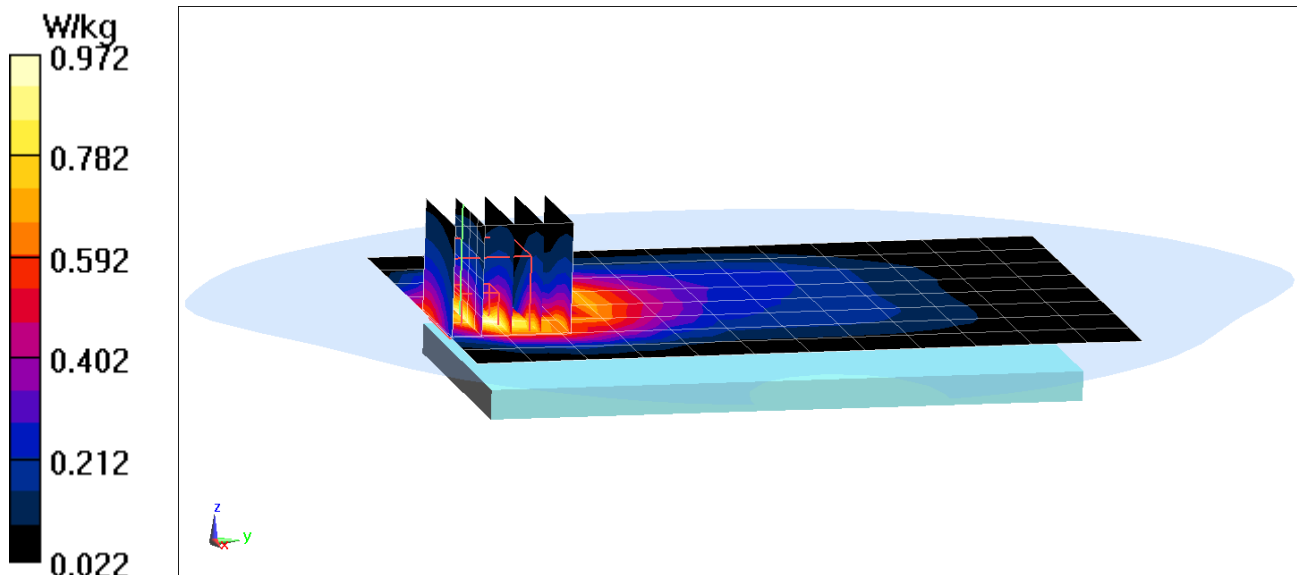
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.74 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.681 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

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; $\sigma = 0.998$ S/m; $\epsilon_r = 54.024$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-13-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 6/21/2017

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

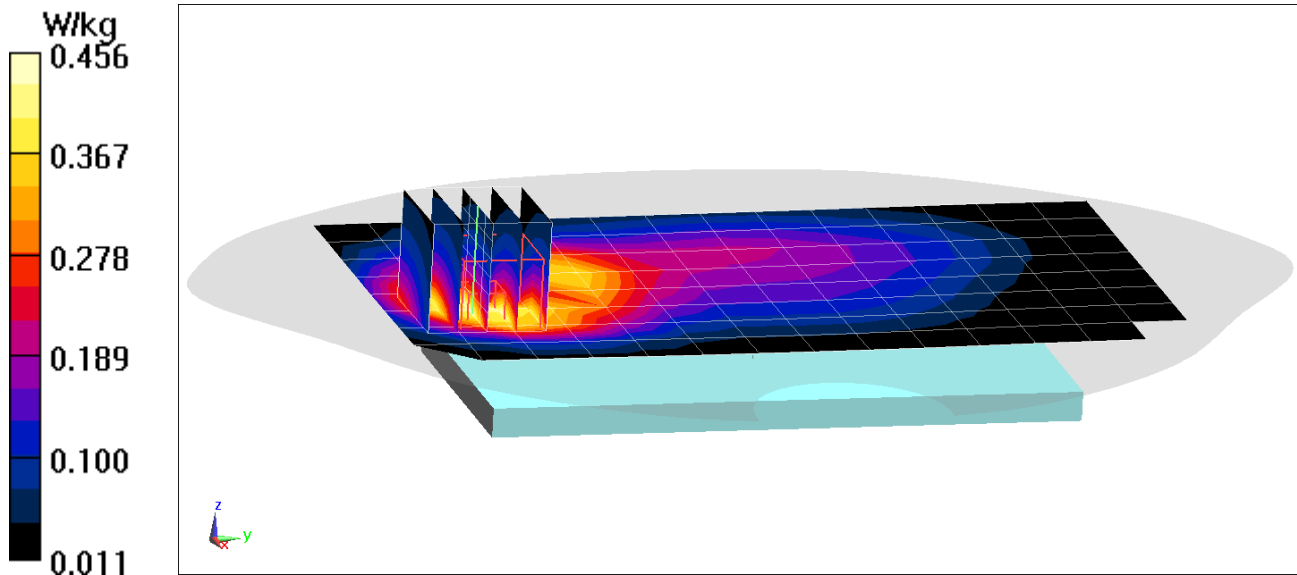
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.67 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.623 W/kg

SAR(1 g) = 0.392 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

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; $\sigma = 0.998$ S/m; $\epsilon_r = 54.024$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-13-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 6/21/2017

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

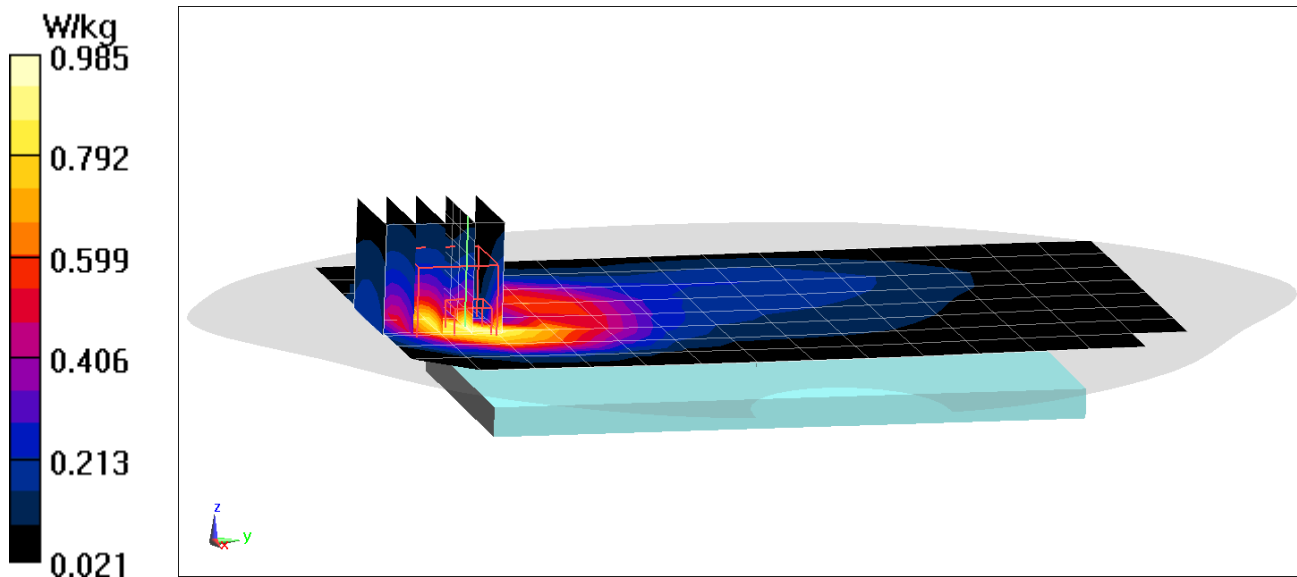
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.78 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 0.844 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

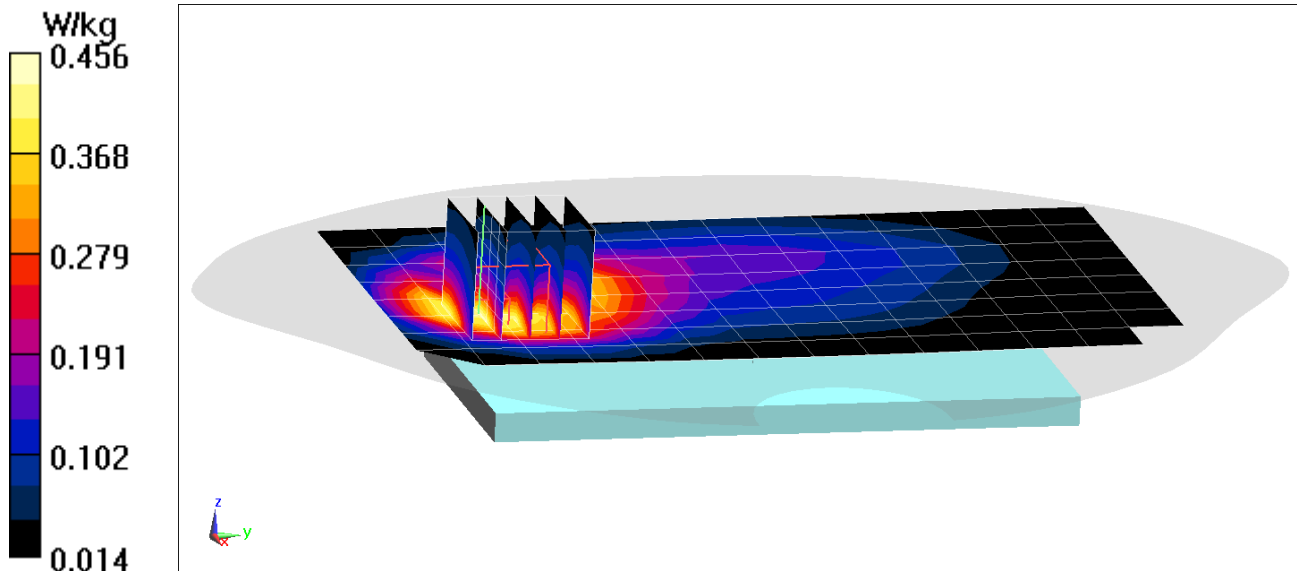
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 1.003 \text{ S/m}$; $\epsilon_r = 53.979$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-13-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch,
10 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 = 20.39 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.629 W/kg
SAR(1 g) = 0.392 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2306

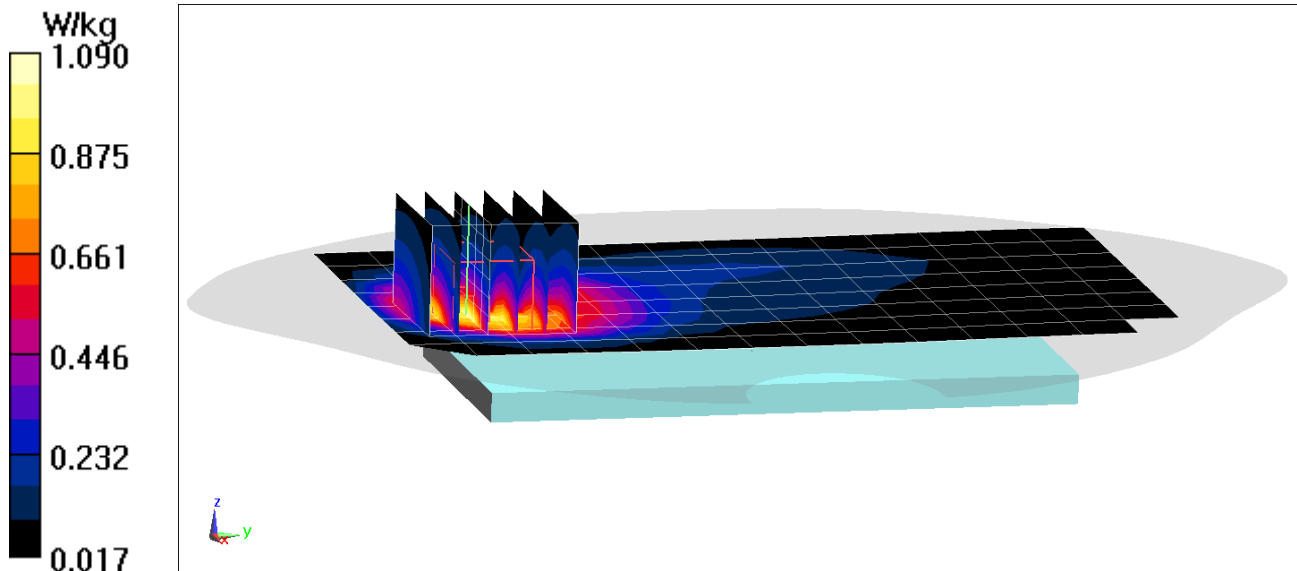
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 1.003 \text{ S/m}$; $\epsilon_r = 53.979$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-13-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3287; ConvF(6.56, 6.56, 6.56); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch,
10 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 = 30.43 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.895 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2299

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1720 \text{ MHz}$; $\sigma = 1.475 \text{ S/m}$; $\epsilon_r = 51.94$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-16-2018; Ambient Temp: 22.0°C; Tissue Temp: 20.2°C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17); Calibrated: 3/27/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1450; Calibrated: 11/9/2017

Phantom: Twin-SAM V5.0 left; Type: QD 000 P40 CD; Serial: 1692

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

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

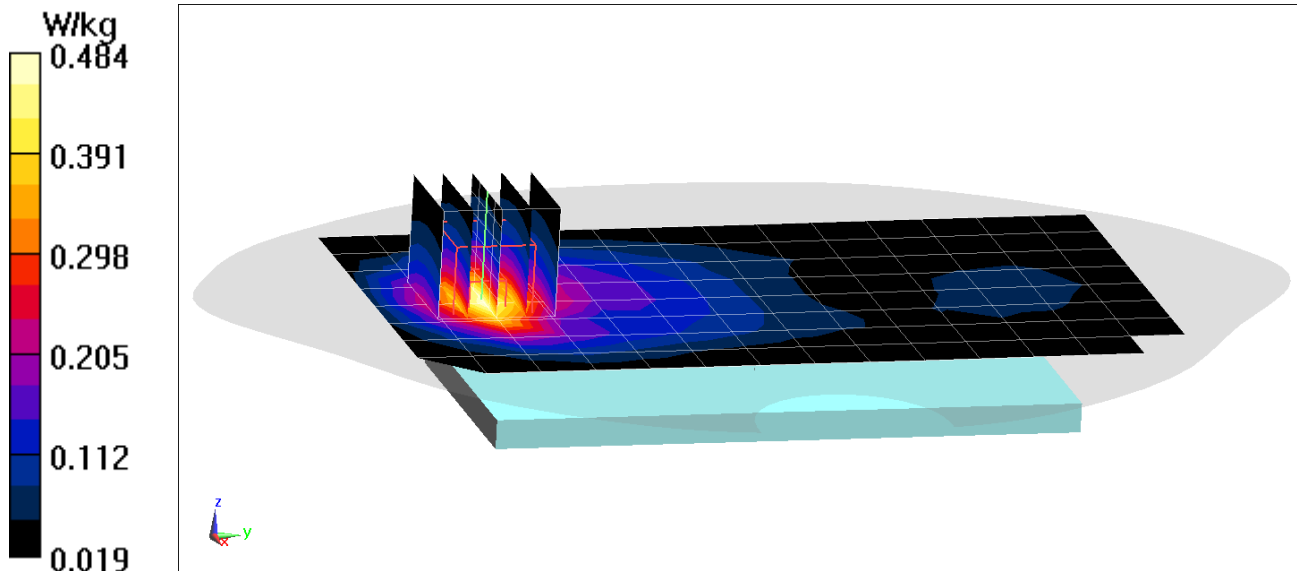
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.74 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.621 W/kg

SAR(1 g) = 0.405 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2298

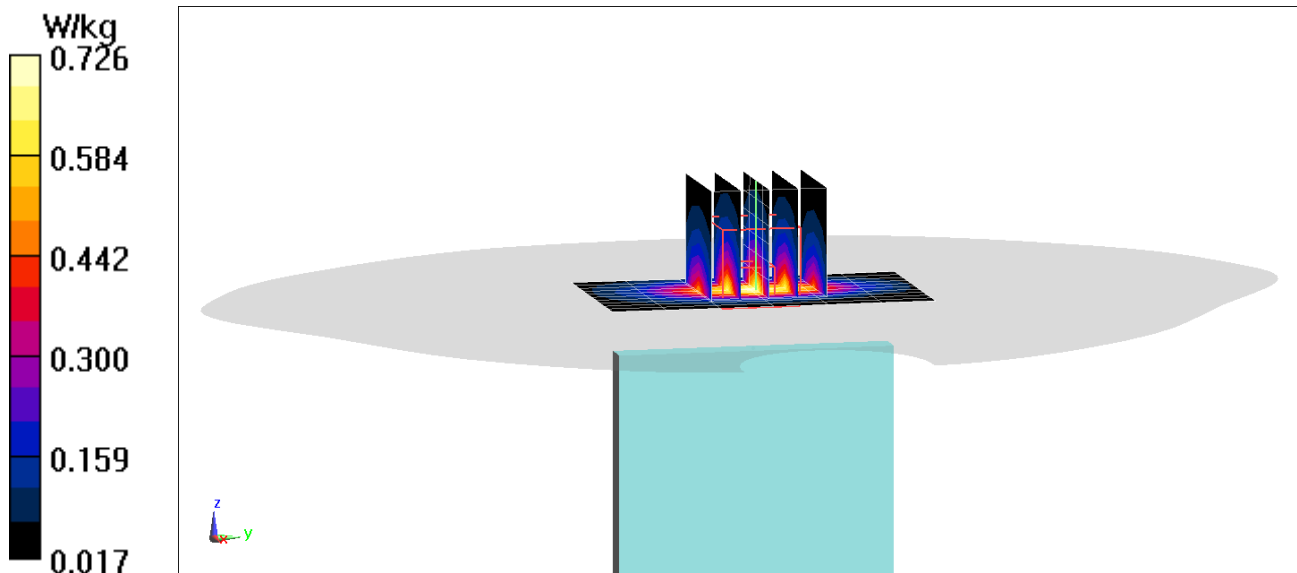
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated)
 $f = 1720 \text{ MHz}$; $\sigma = 1.436 \text{ S/m}$; $\epsilon_r = 53.796$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-22-2018; Ambient Temp: 22.5°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

Area Scan (11x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.92 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.957 W/kg
SAR(1 g) = 0.592 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2299

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1905 \text{ MHz}$; $\sigma = 1.58 \text{ S/m}$; $\epsilon_r = 53.554$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

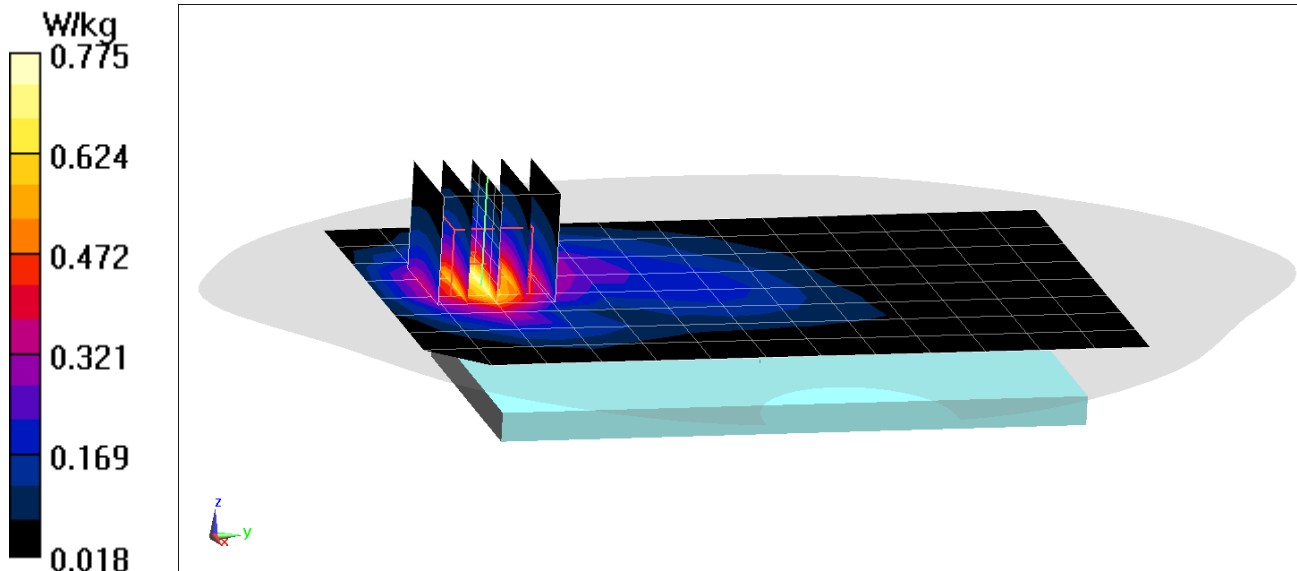
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.54 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.646 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2298

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1905 \text{ MHz}$; $\sigma = 1.58 \text{ S/m}$; $\epsilon_r = 53.554$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1450; Calibrated: 11/9/2017

Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 25 (PCS), Body SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

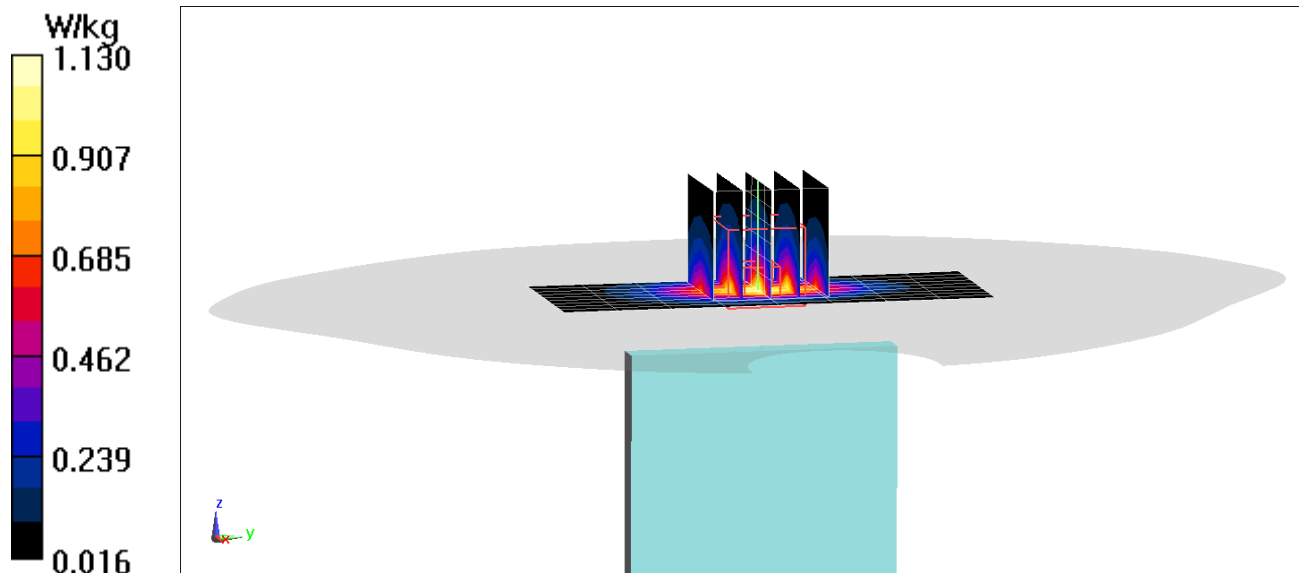
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.92 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.908 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2290

Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.877 \text{ S/m}$; $\epsilon_r = 51.822$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-22-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 30, Antenna A, Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

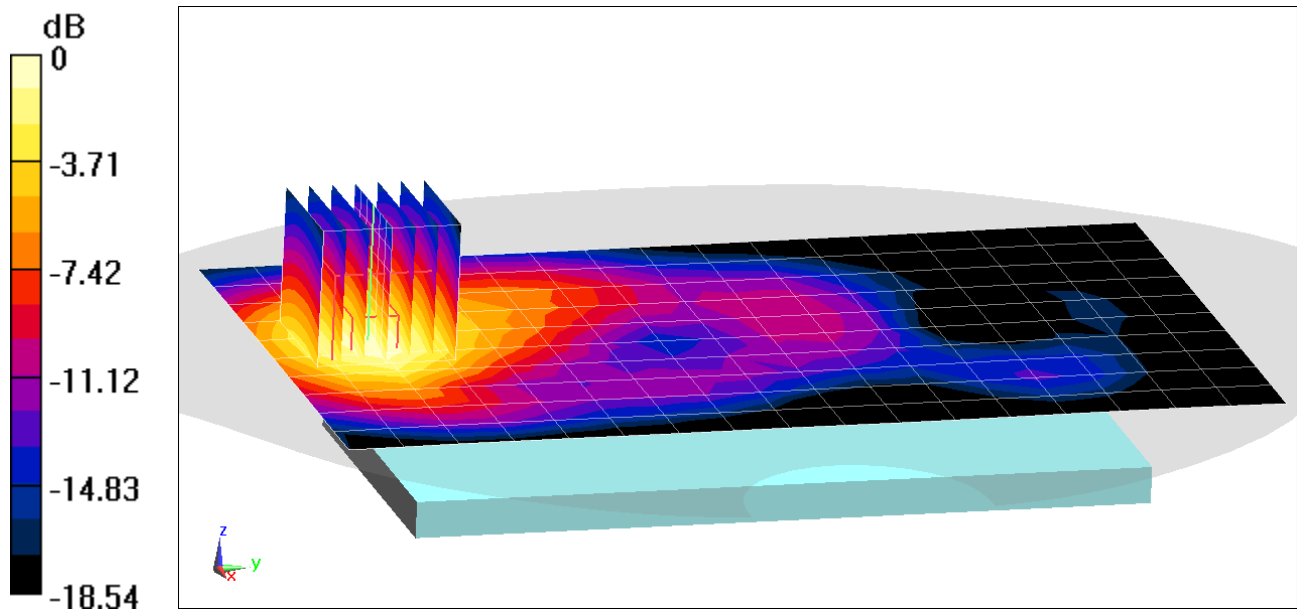
Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.30 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.853 W/kg

SAR(1 g) = 0.490 W/kg



0 dB = 0.602 W/kg = -2.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2289

Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.877 \text{ S/m}$; $\epsilon_r = 51.822$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-22-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 30, Antenna A, Body SAR, Bottom Edge, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

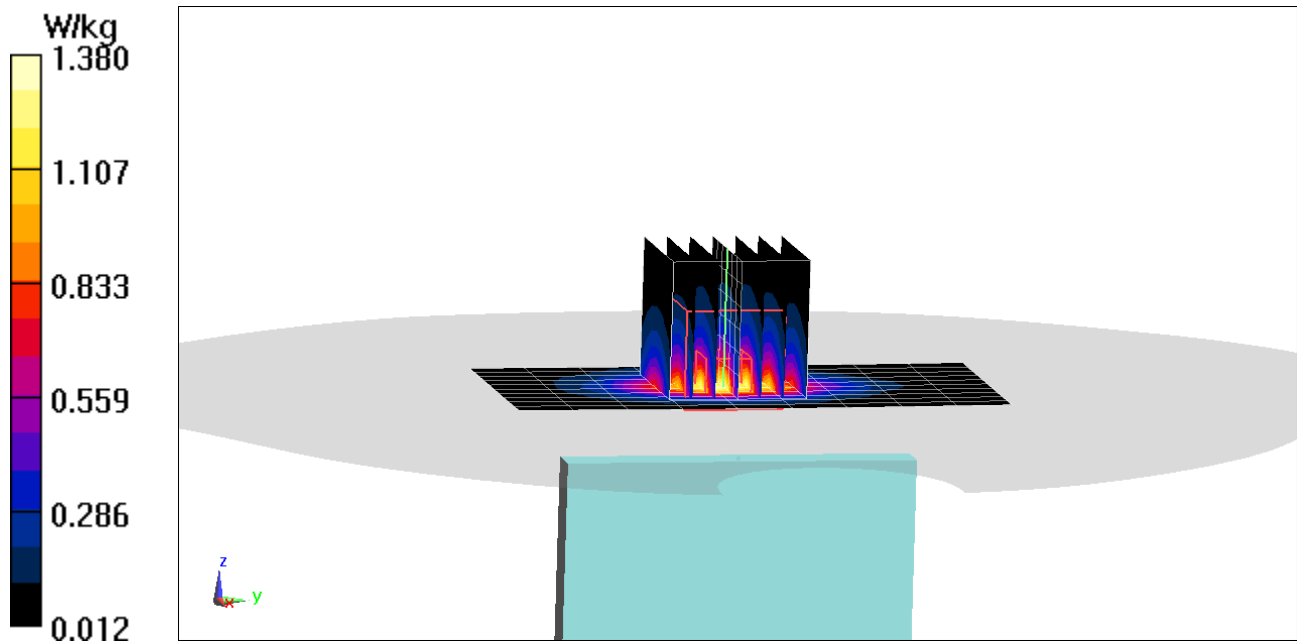
Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.17 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 2.01 W/kg

SAR(1 g) = 1.08 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2290

Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2560 \text{ MHz}$; $\sigma = 2.175 \text{ S/m}$; $\epsilon_r = 50.896$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-12-2018; Ambient Temp: 23.1°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 7, Antenna B, Body SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

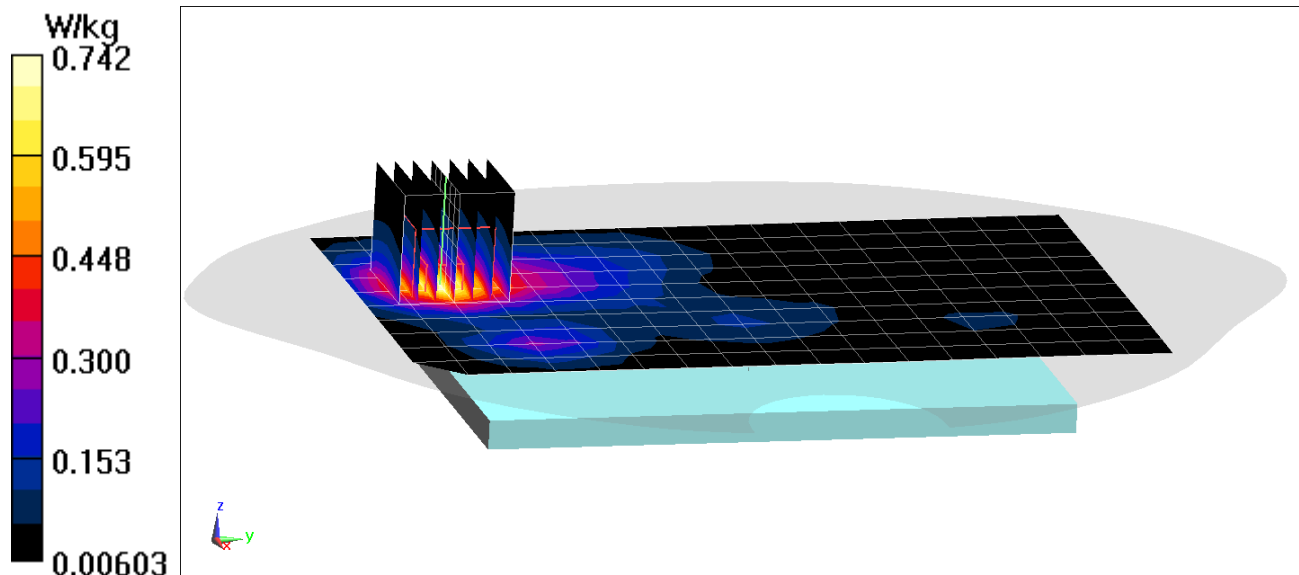
Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.57 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.593 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2289

Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2560 \text{ MHz}$; $\sigma = 2.175 \text{ S/m}$; $\epsilon_r = 50.896$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-12-2018; Ambient Temp: 23.1°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**LTE Band 7, Antenna B, Body SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

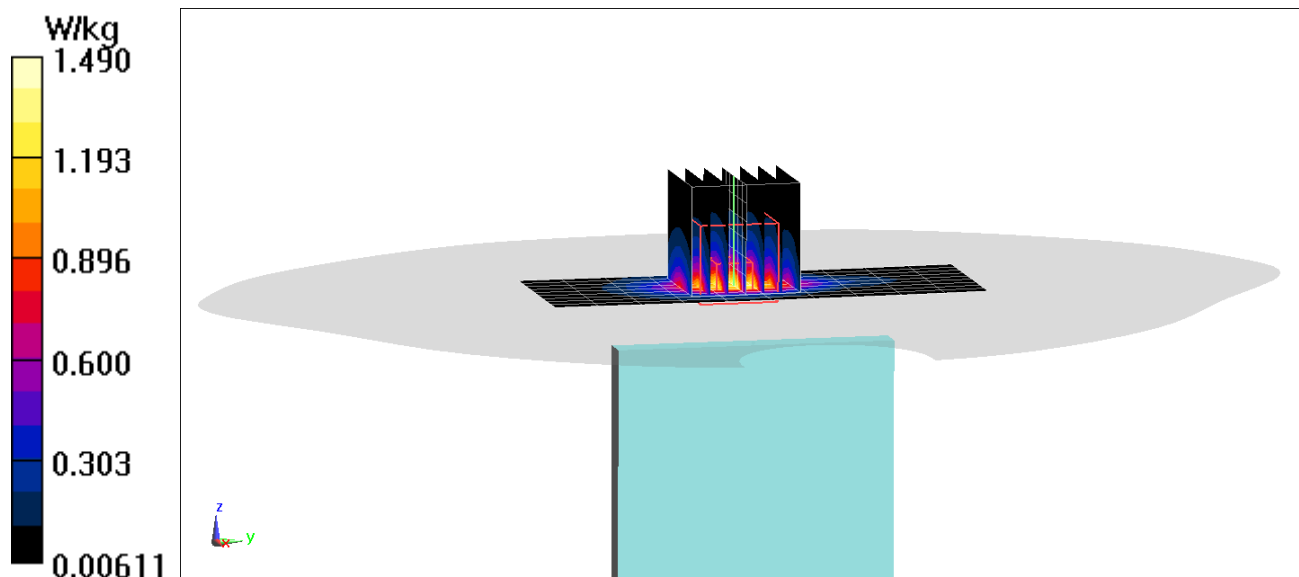
Area Scan (10x11x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.84 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 2.31 W/kg

SAR(1 g) = 1.14 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2297

Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2680 MHz; Duty Cycle: 1:2.31

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2680 \text{ MHz}$; $\sigma = 2.3 \text{ S/m}$; $\epsilon_r = 51.18$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-21-2018; Ambient Temp: 21.7°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 41 PC2, Body SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

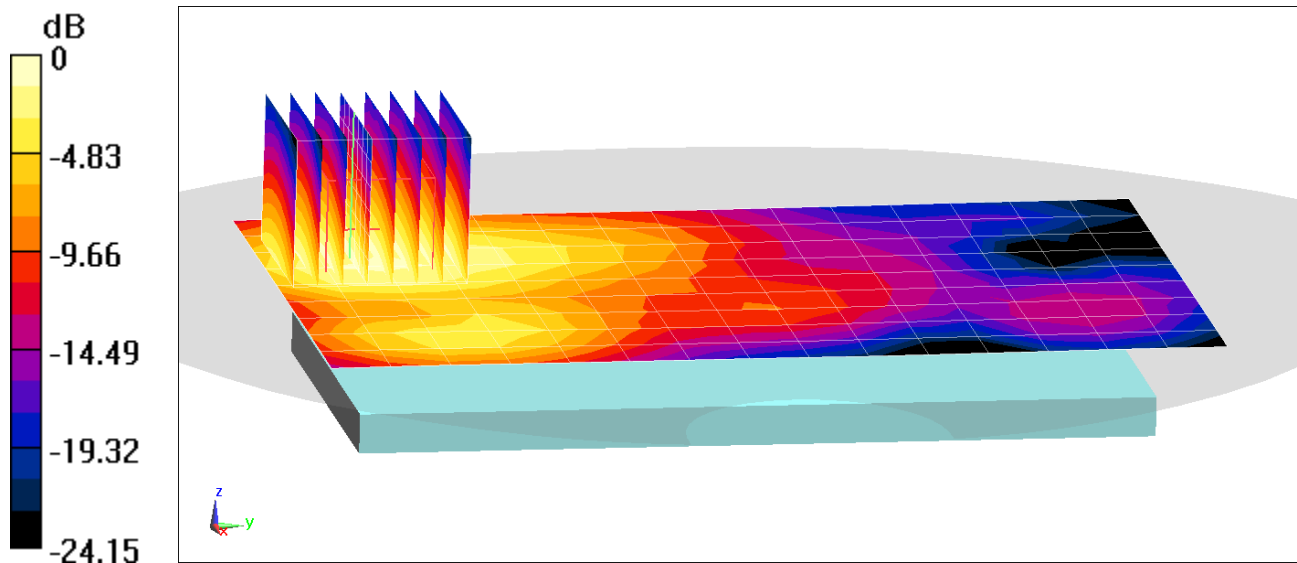
Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.33 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.831 W/kg

SAR(1 g) = 0.431 W/kg



0 dB = 0.533 W/kg = -2.73 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2297

Communication System: UID 0, _LTE Band 41; Frequency: 2549.5 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body Medium parameters used:

$f = 2550$ MHz; $\sigma = 2.153$ S/m; $\epsilon_r = 51.253$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-18-2018; Ambient Temp: 21.5°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 41 PC3, Body SAR, Bottom Edge, Low-Mid.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

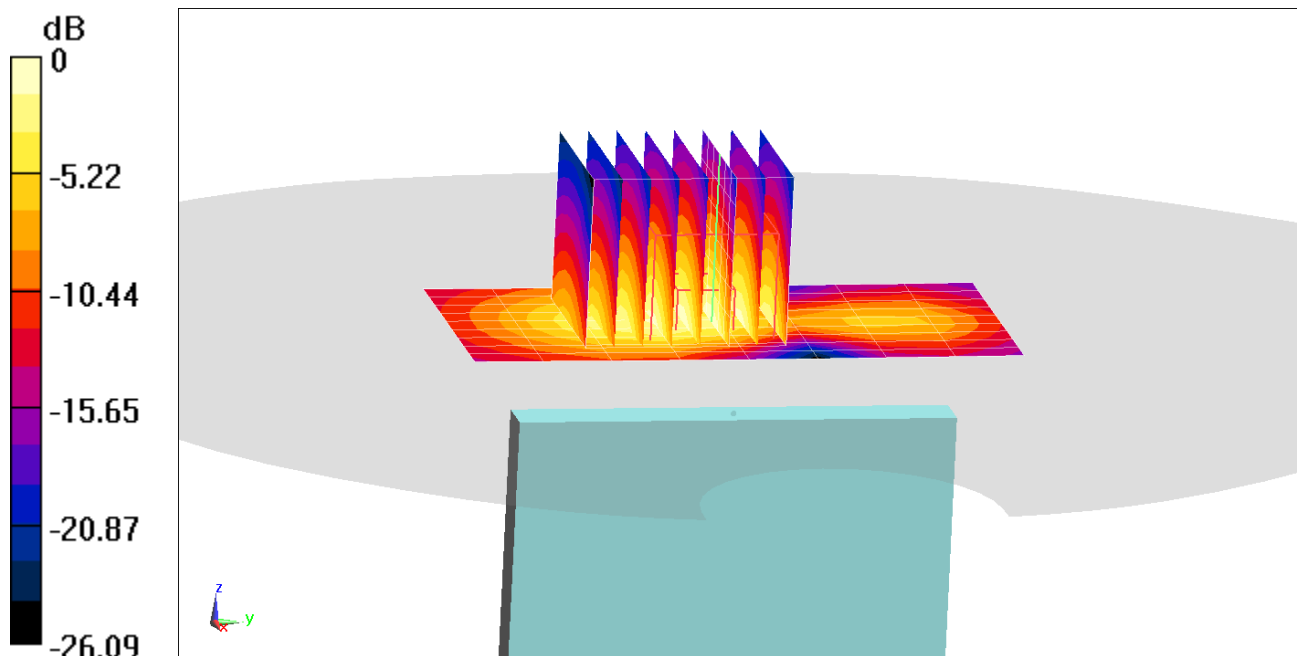
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.34 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.52 W/kg

SAR(1 g) = 1.22 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
 $f = 2437 \text{ MHz}$; $\sigma = 1.995 \text{ S/m}$; $\epsilon_r = 51.756$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-15-2018; Ambient Temp: 23.5°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3318; ConvF(4.55, 4.55, 4.55); Calibrated: 9/22/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/14/2017
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11b, Antenna 2, 22 MHz Bandwidth,
Body SAR, Ch 6, 1 Mbps, Back Side**

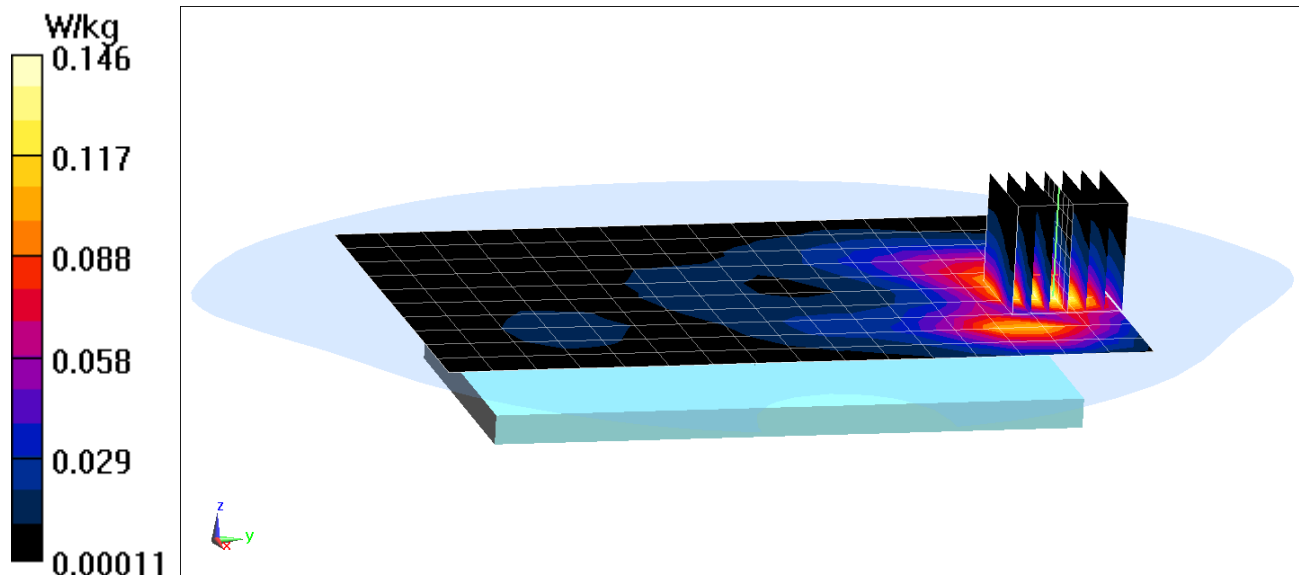
Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.015 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.228 W/kg

SAR(1 g) = 0.118 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

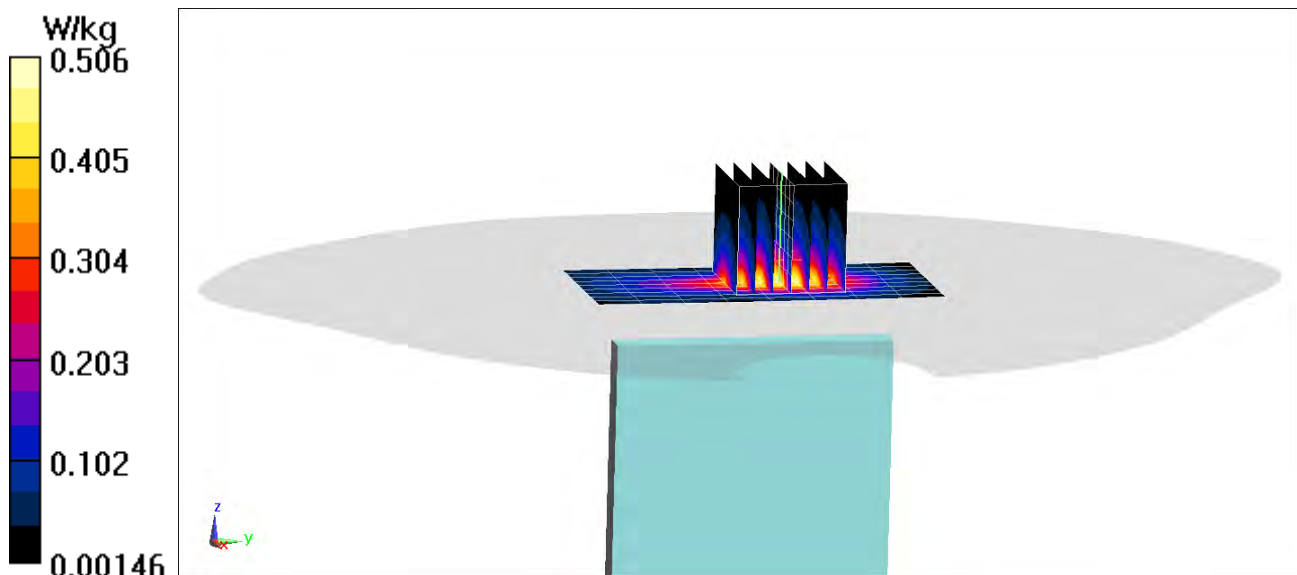
Communication System: UID 0, _IEEE 802.11n; Frequency: 2417 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
 $f = 2417 \text{ MHz}$; $\sigma = 1.986 \text{ S/m}$; $\epsilon_r = 51.948$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-21-2018; Ambient Temp: 21.7°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51); Calibrated: 3/13/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/7/2018
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11n, MIMO, 20 MHz Bandwidth,
Body SAR, Ch 02, 13 Mbps, Top Edge**

Area Scan (10x9x1): Measurement grid: $dx=5\text{mm}$, $dy=12\text{mm}$
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 13.96 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.763 W/kg
SAR(1 g) = 0.403 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5260 \text{ MHz}$; $\sigma = 5.486 \text{ S/m}$; $\epsilon_r = 48.285$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-07-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7308; ConvF(4.84, 4.84, 4.84); Calibrated: 8/16/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/14/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11a, UNII-2A, Antenna 2, 20 MHz Bandwidth,
Body SAR, Ch 52, 6 Mbps, Back Side**

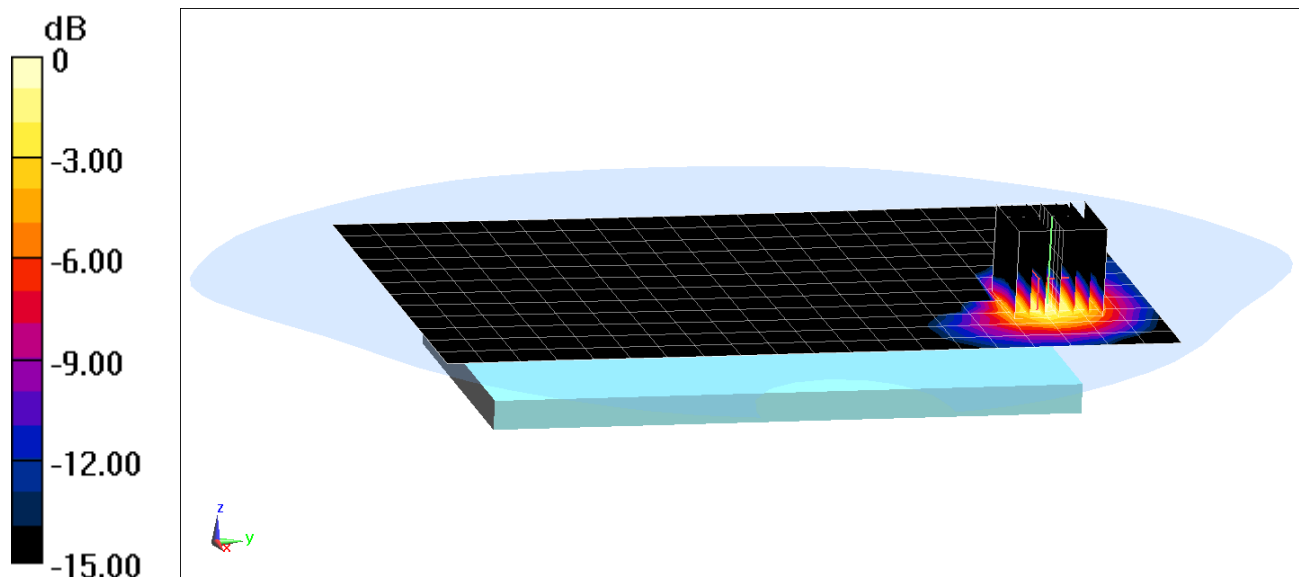
Area Scan (13x21x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 6.579 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.869 W/kg

SAR(1 g) = 0.229 W/kg



0 dB = 0.518 W/kg = -2.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 6.125 \text{ S/m}$; $\epsilon_r = 47.653$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-14-2018; Ambient Temp: 21.9°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7308; ConvF(4.5, 4.5, 4.5); Calibrated: 8/16/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/14/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11n, UNII-3, MIMO, 20 MHz Bandwidth,
Body SAR, Ch 149, 13 Mbps, Back Side**

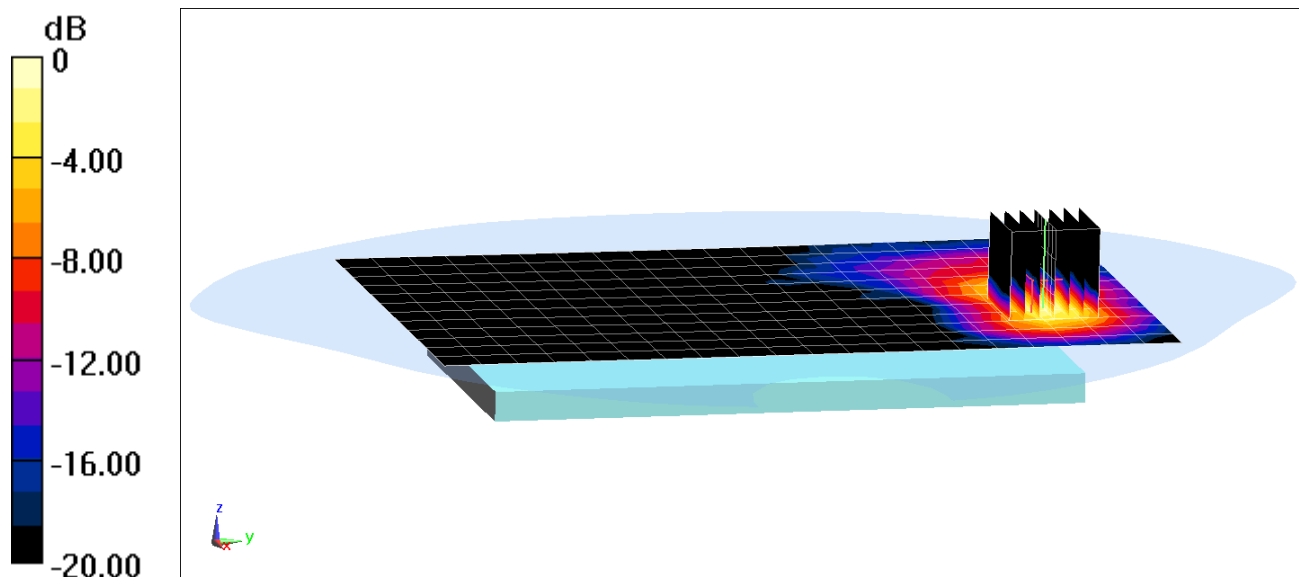
Area Scan (13x21x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 9.220 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.26 W/kg

SAR(1 g) = 0.324 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.294

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$; $\sigma = 2.07 \text{ S/m}$; $\epsilon_r = 52.005$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-17-2018; Ambient Temp: 22.5°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(4.55, 4.55, 4.55); Calibrated: 9/22/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/14/2017

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

Mode: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

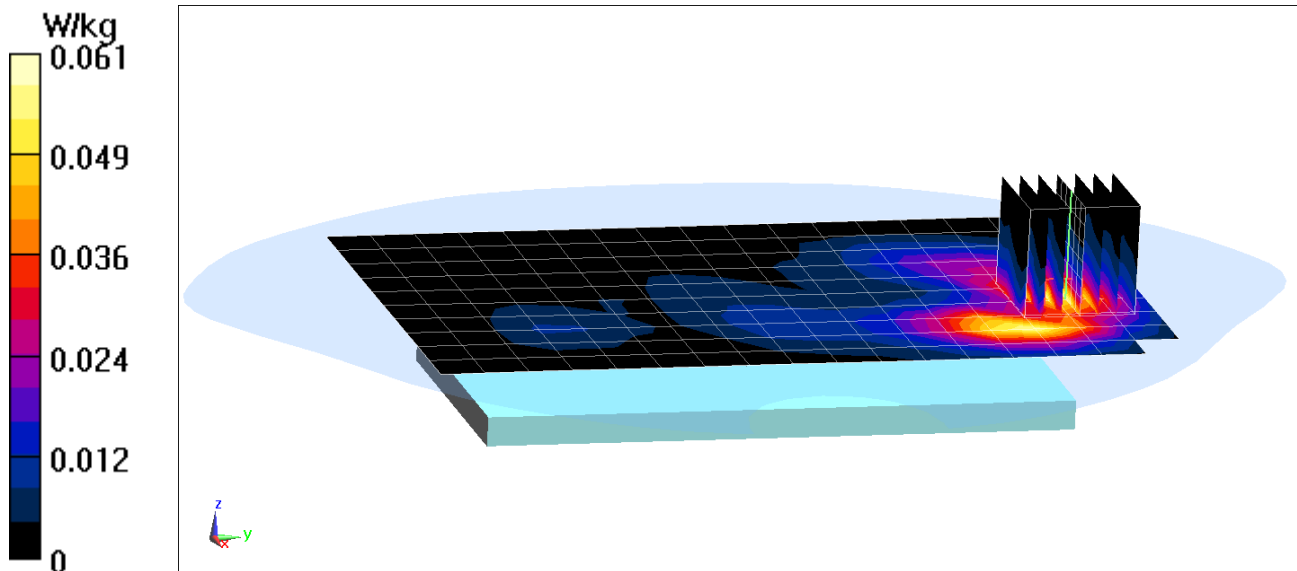
Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.110 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.0970 W/kg

SAR(1 g) = 0.048 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.294

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$; $\sigma = 2.07 \text{ S/m}$; $\epsilon_r = 52.005$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-17-2018; Ambient Temp: 22.5°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(4.55, 4.55, 4.55); Calibrated: 9/22/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/14/2017

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

Mode: Bluetooth, Body SAR, Ch 78, 1 Mbps, Top Edge

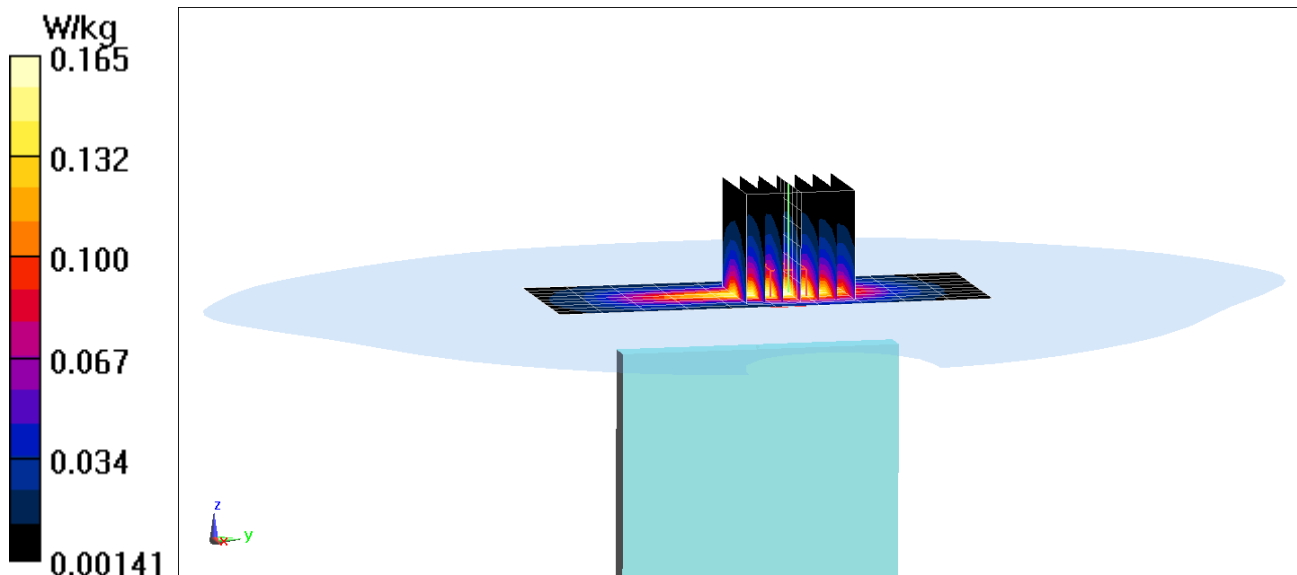
Area Scan (10x11x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.439 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.251 W/kg

SAR(1 g) = 0.131 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2292

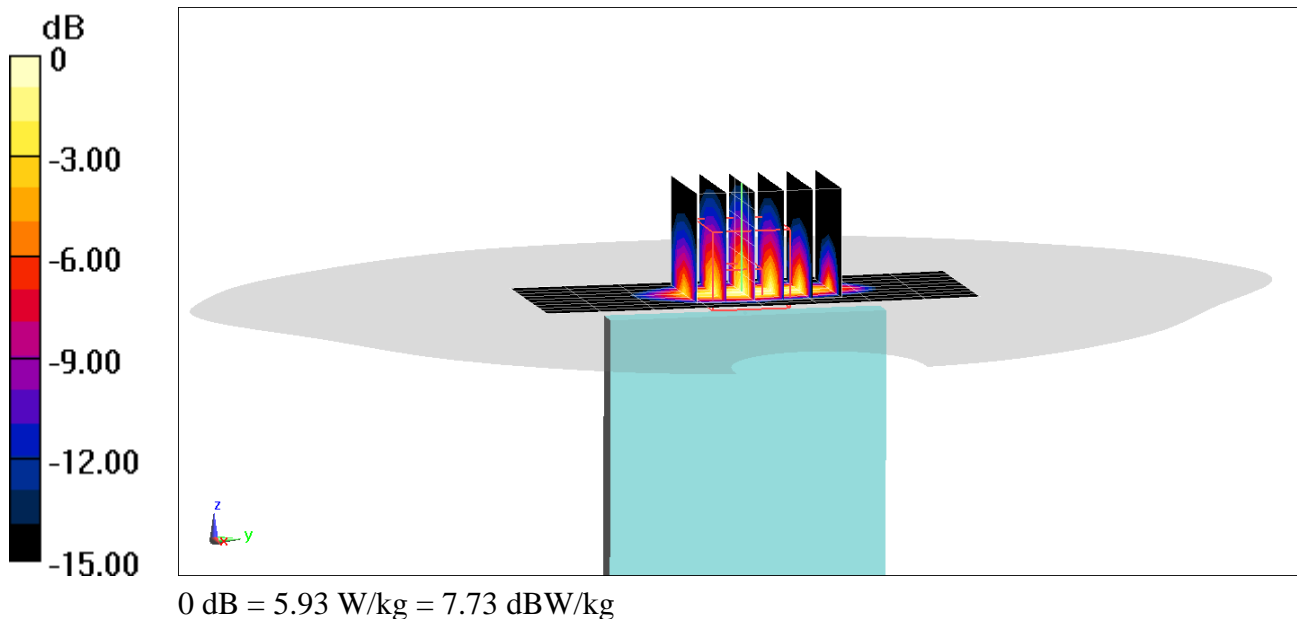
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
 $f = 1752.6$ MHz; $\sigma = 1.497$ S/m; $\epsilon_r = 52.661$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-11-2018; Ambient Temp: 22.0°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3287; ConvF(5.19, 5.19, 5.19); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.89 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 8.54 W/kg
SAR(10 g) = 2.04 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2292

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76

Medium: 1900 Body Medium parameters used:

$f = 1910 \text{ MHz}$; $\sigma = 1.572 \text{ S/m}$; $\epsilon_r = 54.591$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-14-2018; Ambient Temp: 21.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1450; Calibrated: 11/9/2017

Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

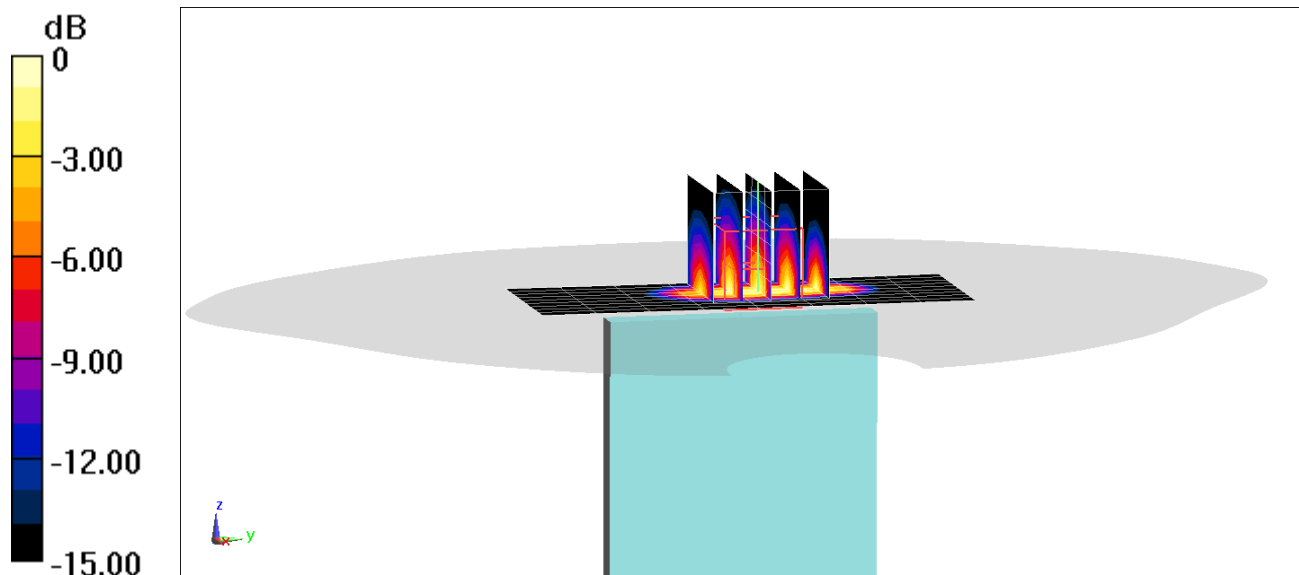
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 52.09 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 7.39 W/kg

SAR(10 g) = 1.6 W/kg



0 dB = 4.75 W/kg = 6.77 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2292

Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1907.6$ MHz; $\sigma = 1.569$ S/m; $\epsilon_r = 54.598$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-14-2018; Ambient Temp: 21.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

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

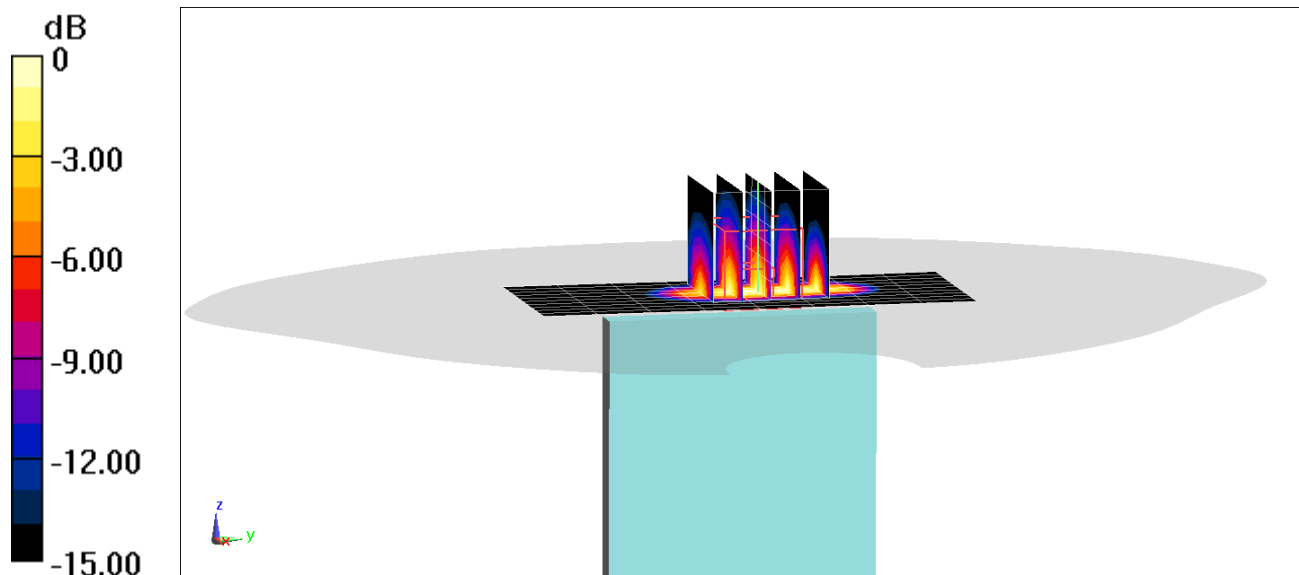
Area Scan (11x9x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 73.38 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 14.4 W/kg

SAR(10 g) = 3.15 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2292

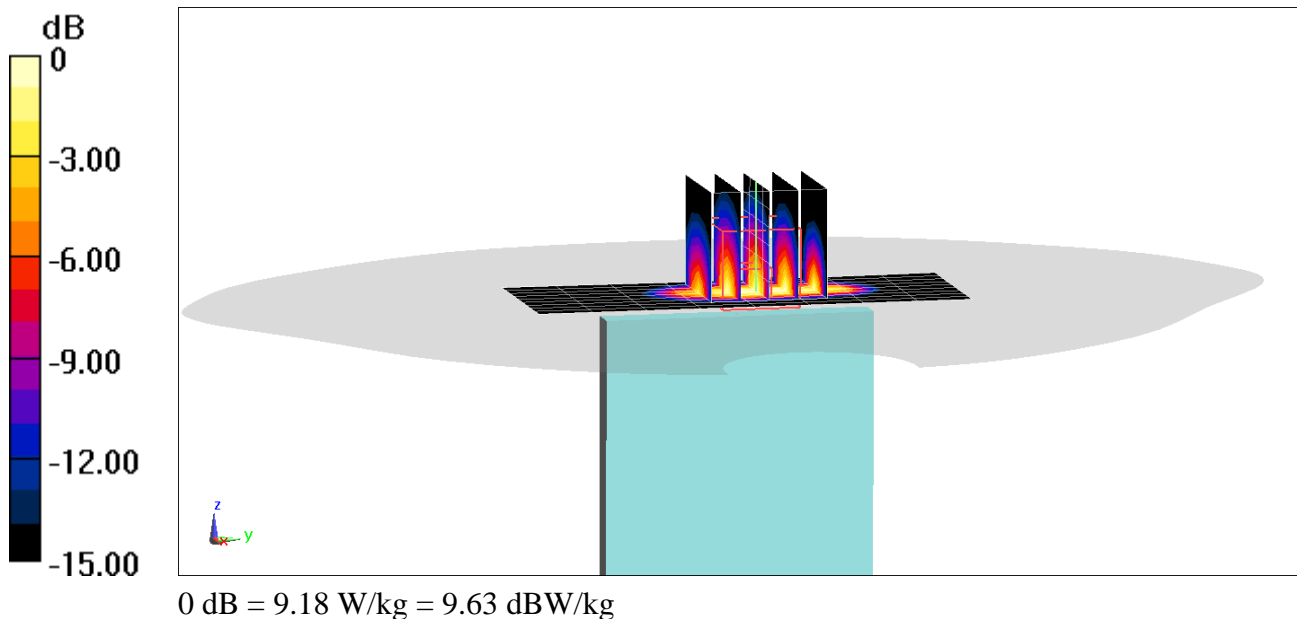
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1908.75$ MHz; $\sigma = 1.593$ S/m; $\epsilon_r = 53.92$; $\rho = 1000$ kg/m³
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-11-2018; Ambient Temp: 22.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017
Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

PCS EVDO Rev. 0, Phablet SAR, Bottom Edge, High.ch

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 71.76 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 13.6 W/kg
SAR(10 g) = 3.02 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2308

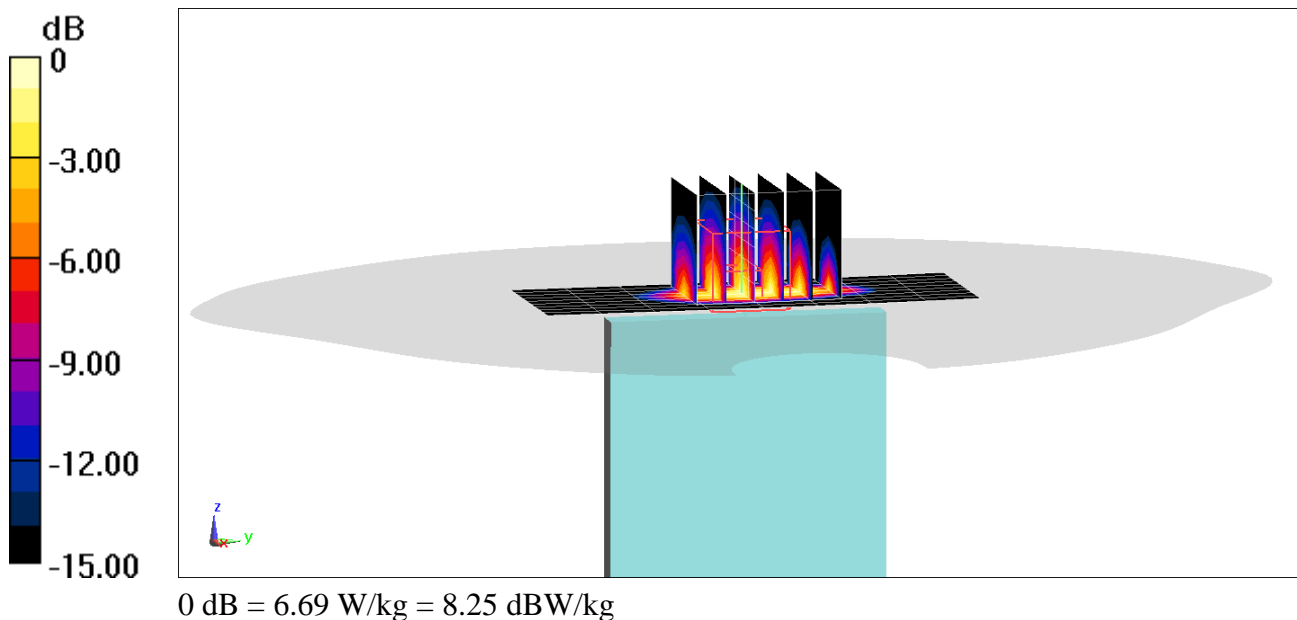
Communication System: UID 0, _LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters (interpolated):
 $f = 1770 \text{ MHz}$; $\sigma = 1.517 \text{ S/m}$; $\epsilon_r = 52.586$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-11-2018; Ambient Temp: 22.0°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3287; ConvF(5.19, 5.19, 5.19); Calibrated: 9/18/2017;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 6/21/2017
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 66 (AWS), Phablet SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

Area Scan (10x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 59.91 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 9.70 W/kg
SAR(10 g) = 2.27 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2308

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1905 \text{ MHz}$; $\sigma = 1.566 \text{ S/m}$; $\epsilon_r = 54.605$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-14-2018; Ambient Temp: 21.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3347; ConvF(4.94, 4.94, 4.94); Calibrated: 3/27/2018;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 11/9/2017

Phantom: Twin-SAM V5.0 Right; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 25 (PCS), Phablet SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

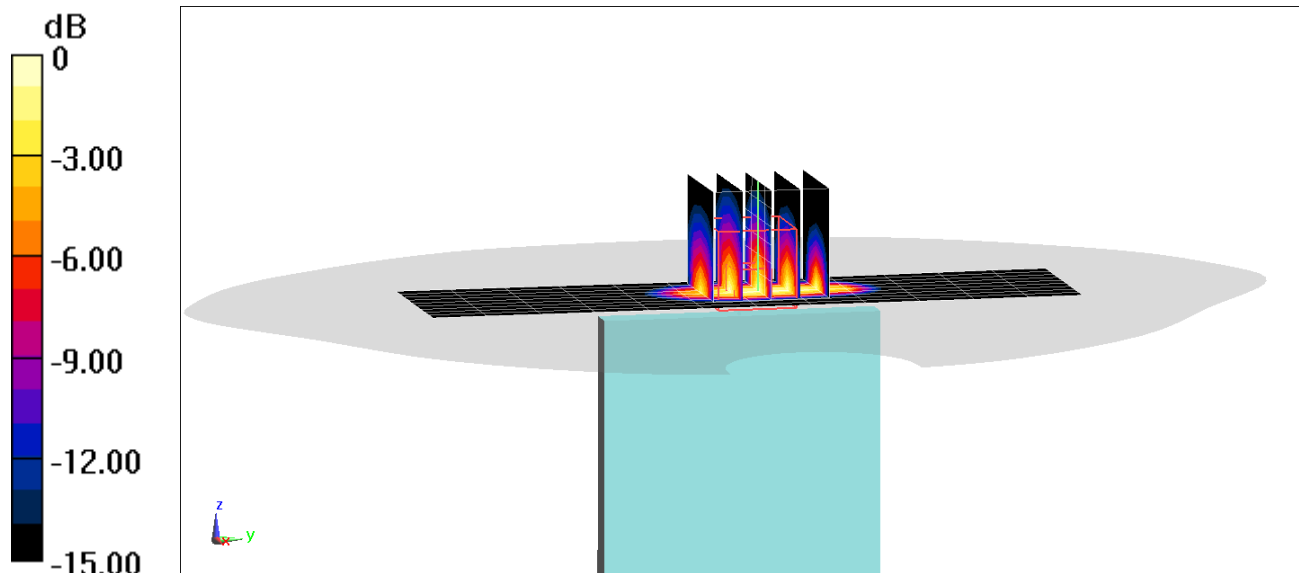
Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 63.98 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 10.8 W/kg

SAR(10 g) = 2.38 W/kg



0 dB = 7.21 W/kg = 8.58 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2284

Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.877 \text{ S/m}$; $\epsilon_r = 51.822$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-22-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 30, Antenna B, Phablet SAR, Bottom Edge, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

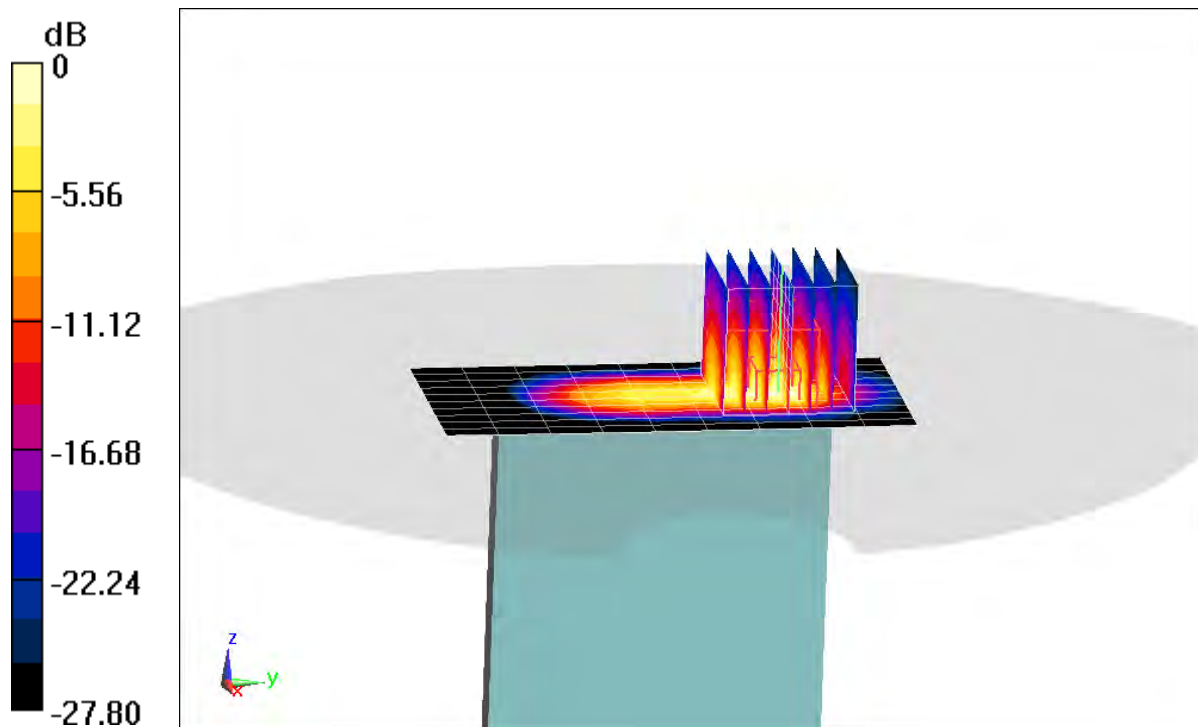
Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 71.74 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 23.7 W/kg

SAR(10 g) = 2.46 W/kg



0 dB = 11.8 W/kg = 10.72 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2284

Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2535 \text{ MHz}$; $\sigma = 2.124 \text{ S/m}$; $\epsilon_r = 50.78$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-15-2018; Ambient Temp: 22.5°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

LTE Band 7, Antenna B, Phablet SAR, Bottom Edge, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

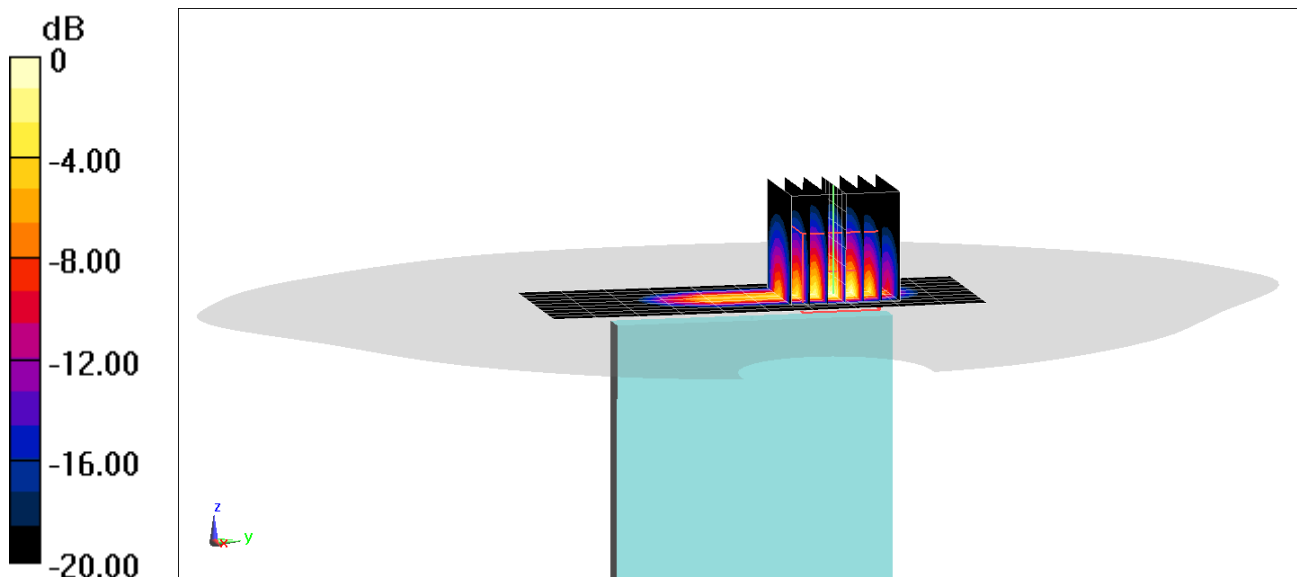
Area Scan (10x11x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 70.03 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 27.5 W/kg

SAR(10 g) = 2.55 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2284

Communication System: UID 0, _LTE Band 41; Frequency: 2549.5 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body Medium parameters used:

$f = 2550 \text{ MHz}$; $\sigma = 2.142 \text{ S/m}$; $\epsilon_r = 50.741$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-15-2018; Ambient Temp: 22.5°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33); Calibrated: 3/13/2018;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1375

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: LTE Band 41 PC3 ULCA, Phablet SAR, Bottom Edge,
PCC: 20 MHz Bandwidth, QPSK, Ch. 40185, 50 RB, 0 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 39987, 50 RB, 50 RB Offset**

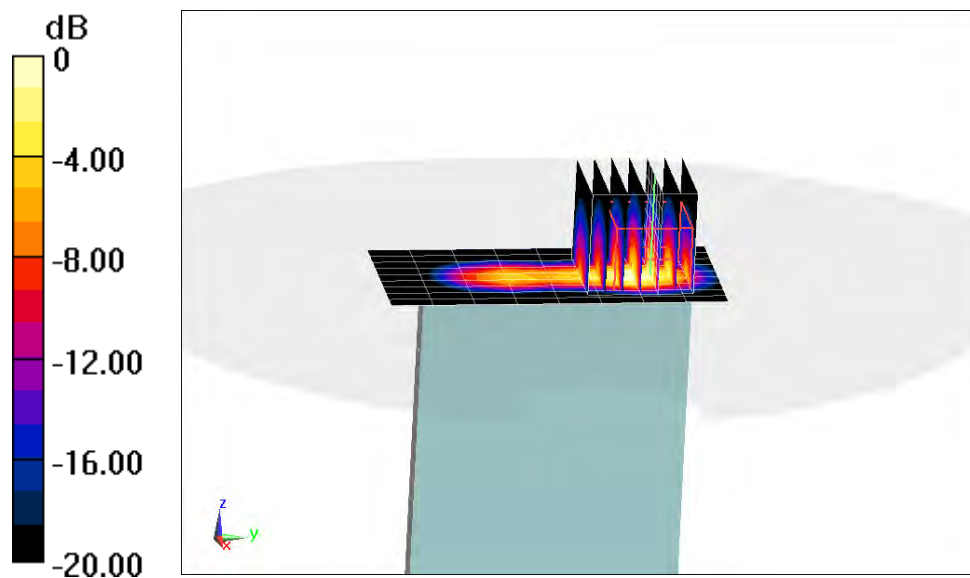
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 68.02 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 33.7 W/kg

SAR(10 g) = 2.46 W/kg



0 dB = 14.0 W/kg = 11.46 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN960U; Type: Portable Handset; Serial: Q2311

Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 5.957 \text{ S/m}$; $\epsilon_r = 47.699$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-07-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7308; ConvF(4.23, 4.23, 4.23); Calibrated: 8/16/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/14/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10;SEMCAD X Version 14.6.10 (7417)

**Mode: IEEE 802.11n, U-NII-2C, MIMO, 20 MHz Bandwidth,
Phablet SAR, Ch 120, 13 Mbps, Back Side**

Area Scan (11x9x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 1.399 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 116 W/kg

SAR(10 g) = 2.23 W/kg

