



SAR EVALUATION REPORT

Applicant Name:

Samsung Electronics Co., Ltd.
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Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:

04/17/17 - 06/19/17

Test Site/Location:

PCTEST Lab, Columbia, MD, USA

Document Serial No.:

1M1704170147-01-R2.A3L

FCC ID:

A3LSMG892A

APPLICANT:

SAMSUNG ELECTRONICS CO., LTD.

DUT Type:

Portable Handset

Application Type:

Certification

FCC Rule Part(s):

CFR §2.1093

Model:

SM-G892A

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)	10 gm Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.15	0.22	0.17	0.87
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.31	0.52	1.03
PCE	UMTS 850	826.40 - 846.60 MHz	0.23	0.34	0.47	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.23	0.59	0.64	2.21
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.22	0.69	0.75	2.44
PCE	LTE Band 12	699.7 - 715.3 MHz	0.16	0.37	0.53	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.25	0.33	0.61	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.23	0.80	1.09	3.09
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.23	0.68	0.90	2.97
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.17	0.50	0.34	1.47
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.12	0.22	0.98	2.00
PCE	LTE Band 38	2572.5 - 2617.5 MHz	< 0.1	0.18	0.74	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.23	0.31	1.30
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.00	0.19	0.49	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.57	< 0.1	N/A	0.68
NII	U-NII-2C	5500 - 5720 MHz	0.57	0.14	N/A	0.91
NII	U-NII-3	5745 - 5825 MHz	0.51	0.37	0.44	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.13	< 0.1	< 0.1	0.28
Simultaneous SAR per KDB 690783 D01v01r03:			1.25	1.32	1.59	3.88

Note: This revised Test Report (S/N: 1M1704170147-01-R2.A3L) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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

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


Randy Ortanez
President



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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 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 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 38	Voice/Data	2572.5 - 2617.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
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 Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)		Burst Average 8-PSK (dBm)	
		1 TX Slot	1 TX Slots	2 TX Slots	1 TX Slots	2 TX Slots
GSM/GPRS/EDGE 850	Maximum	33.5	33.5	31.5	27.5	26.5
	Nominal	33.0	33.0	31.0	27.0	26.0
GSM/GPRS/EDGE 1900	Maximum	30.5	30.5	28.5	26.5	24.5
	Nominal	30.0	30.0	28.0	26.0	24.0

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	25.5	24.0	24.0
	Nominal	25.0	23.5	23.5
UMTS Band 4 (1750 MHz)	Maximum	23.5	22.5	22.5
	Nominal	23.0	22.0	22.0
UMTS Band 2 (1900 MHz)	Maximum	25.0	23.5	23.5
	Nominal	24.5	23.0	23.0

Mode / Band		Modulated Average (dBm)
LTE Band 12	Maximum	25.5
	Nominal	25.0
LTE Band 5 (Cell)	Maximum	25.5
	Nominal	25.0
LTE Band 66 (AWS)	Maximum	25.0
	Nominal	24.5
LTE Band 4 (AWS)	Maximum	25.0
	Nominal	24.5
LTE Band 2 (PCS)	Maximum	25.0
	Nominal	24.5
LTE Band 30	Maximum	25.0
	Nominal	24.5
LTE Band 7	Maximum	23.5
	Nominal	23.0
LTE Band 38	Maximum	23.5
	Nominal	23.0
LTE Band 41	Maximum	23.5
	Nominal	23.0

1.3.2 Reduced PCE Power – Hotspot Mode Activated

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)		Burst Average 8-PSK (dBm)	
		1 TX Slot	1 TX Slots	2 TX Slots	1 TX Slots	2 TX Slots
GSM/GPRS/EDGE 850	Maximum	27.5	27.5	26.5	27.5	26.5
	Nominal	27.0	27.0	26.0	27.0	26.0
GSM/GPRS/EDGE 1900	Maximum	24.5	24.5	23.5	24.5	23.5
	Nominal	24.0	24.0	23.0	24.0	23.0

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Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 4 (1750 MHz)	Maximum	20.0	19.0	19.0
	Nominal	19.5	18.5	18.5
UMTS Band 2 (1900 MHz)	Maximum	20.5	19.5	19.5
	Nominal	20.0	19.0	19.0

Mode / Band		Modulated Average (dBm)	
LTE Band 66 (AWS)	Maximum	21.5	
	Nominal	21.0	
LTE Band 4 (AWS)	Maximum	21.0	
	Nominal	20.5	
LTE Band 2 (PCS)	Maximum	20.5	
	Nominal	20.0	
LTE Band 30	Maximum	21.0	
	Nominal	20.5	
LTE Band 7	Maximum	21.5	
	Nominal	21.0	
LTE Band 41	Maximum	21.5	
	Nominal	21.0	

1.3.3 Reduced PCE 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	1 TX Slots	2 TX Slots
GSM/GPRS/EDGE 850	Maximum	27.5	27.5	26.5	27.5	26.5
	Nominal	27.0	27.0	26.0	27.0	26.0
GSM/GPRS/EDGE 1900	Maximum	24.5	24.5	23.5	24.5	23.5
	Nominal	24.0	24.0	23.0	24.0	23.0

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 4 (1750 MHz)	Maximum	20.5	19.5	19.5
	Nominal	20.0	19.0	19.0
UMTS Band 2 (1900 MHz)	Maximum	21.5	20.0	20.0
	Nominal	21.0	19.5	19.5

Mode / Band		Modulated Average (dBm)	
LTE Band 66 (AWS)	Maximum	21.5	
	Nominal	21.0	
LTE Band 4 (AWS)	Maximum	21.5	
	Nominal	21.0	
LTE Band 2 (PCS)	Maximum	22.0	
	Nominal	21.5	
LTE Band 30	Maximum	21.0	
	Nominal	20.5	
LTE Band 7	Maximum	21.5	
	Nominal	21.0	
LTE Band 41	Maximum	21.5	
	Nominal	21.0	

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1.3.4 Maximum Bluetooth and SISO and MIMO WLAN Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	20.5
	Nominal	20.0
IEEE 802.11g (2.4 GHz)	Maximum	17.5
	Nominal	17.0
IEEE 802.11n (2.4 GHz)	Maximum	17.5
	Nominal	17.0

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	17.5		
	Nominal	17.0		
IEEE 802.11n (5 GHz)	Maximum	17.5	16.5	
	Nominal	17.0	16.0	
IEEE 802.11ac (5 GHz)	Maximum	17.5	16.5	15.5
	Nominal	17.0	16.0	15.0

Mode / Band		Modulated Average (dBm)
Bluetooth (1 Mbps)	Maximum	14.5
	Nominal	14.0
Bluetooth (EDR)	Maximum	7.0
	Nominal	6.5
Bluetooth LE	Maximum	9.5
	Nominal	9.0

Mode / Band		Modulated Average - MIMO (dBm)	
		20 MHz Bandwidth	
		Ch. 1-10	Ch. 11
IEEE 802.11g (2.4 GHz)	Maximum	20.5	17.5
	Nominal	20.0	17.0
IEEE 802.11n (2.4 GHz)	Maximum	20.5	17.5
	Nominal	20.0	17.0

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	20.5		
	Nominal	20.0		
IEEE 802.11n (5 GHz)	Maximum	20.5	19.5	
	Nominal	20.0	19.0	
IEEE 802.11ac (5 GHz)	Maximum	20.5	19.5	18.5
	Nominal	20.0	19.0	18.0

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1.3.5 Reduced SISO and MIMO WLAN Power

Mode / Band		Modulated Average - Single Tx Chain (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	13.5
	Nominal	13.0
IEEE 802.11g (2.4 GHz)	Maximum	13.5
	Nominal	13.0
IEEE 802.11n (2.4 GHz)	Maximum	13.5
	Nominal	13.0

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	15.5		
	Nominal	15.0		
IEEE 802.11n (5 GHz)	Maximum	15.5	15.5	
	Nominal	15.0	15.0	
IEEE 802.11ac (5 GHz)	Maximum	15.5	15.5	15.5
	Nominal	15.0	15.0	15.0

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11g (2.4 GHz)	Maximum	16.5		
	Nominal	16.0		
IEEE 802.11n (2.4 GHz)	Maximum	16.5		
	Nominal	16.0		
IEEE 802.11a (5 GHz)	Maximum	18.5		
	Nominal	18.0		
IEEE 802.11n (5 GHz)	Maximum	18.5	18.5	
	Nominal	18.0	18.0	
IEEE 802.11ac (5 GHz)	Maximum	18.5	18.5	18.5
	Nominal	18.0	18.0	18.0

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1.3.6 Maximum Powers During Conditions with Simultaneous 2.4 GHz 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 Ch. 11: C	2.4 GHz: b,g,n 5 GHz: a,n,ac
	2	-	A	B Ch. 11: C	-	
	2	A	-	B Ch. 11: C	-	
	2	-	A	-	B Ch. 11: C	
	3	A	A	B Ch. 11: C	-	2.4 GHz: b, g, n 5 GHz: n, ac, a (CDD + STBC only)
	3	A	A	-	B Ch. 11: C	
	3	A	-	B Ch. 11: C	B Ch. 11: C	2.4 GHz: n, g (CDD + STBC only) 5 GHz: a, n, ac
	3	-	A	B Ch. 11: C	B Ch. 11: C	
	4	A	A	B Ch. 11: C	B Ch. 11: C	2.4 GHz: n, g (CDD + STBC only) 5 GHz: n, ac, a (CDD + STBC only)

A = 15 dBm

B = 17 dBm

C = 14 dBm

(Upper tolerance: target + 0.5 dB)

1.3.7 Reduced Powers During Conditions with Simultaneous 2.4 GHz 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 = 9.5 dBm

(Upper tolerance: target + 0.5 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
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	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 2 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 7	Yes	Yes	No	Yes	No	Yes
LTE Band 38	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.

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. Possible transmission paths for the DUT are shown in Figure 1-1 and are color-coded to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.



Figure 1-1
Simultaneous Transmission Paths

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.

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Table 1-2
Simultaneous Transmission Scenarios

Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
GSM voice + 2.4 GHz Bluetooth	Yes*	Yes	N/A	Yes	*BT Tethering Applications are considered
GSM voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
GSM voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
GSM voice + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
GSM voice + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
UMTS + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	*BT Tethering Applications are considered
UMTS + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
UMTS + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
UMTS + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
UMTS + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
LTE + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
LTE + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	*BT Tethering Applications are considered
LTE + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
LTE + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
LTE + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
LTE + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
GPRS/EDGE + 2.4 GHz Wi-Fi	N/A	N/A	Yes	Yes	
GPRS/EDGE + 5 GHz Wi-Fi	N/A	N/A	Yes	Yes	
GPRS/EDGE + 2.4 GHz Bluetooth	N/A	N/A	Yes*	Yes	*BT Tethering Applications are considered
GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	
GPRS/EDGE + 5 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	
GPRS/EDGE + 2.4 GHz Wi-Fi + 5 GHz Wi-Fi	N/A	N/A	Yes	Yes	
GPRS/EDGE + 2.4 GHz Wi-Fi MIMO + 5 GHz Wi-Fi MIMO	N/A	N/A	Yes	Yes	

- 2.4 GHz WLAN, 5 GHz WLAN, and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
- All licensed modes share the same antenna path and cannot transmit simultaneously.
- 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.
- 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 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.
- This device supports 2x2 MIMO Tx for WLAN 802.11n/ac. Each WLAN antenna can transmit independently or together when operating with MIMO.
- This device supports Bluetooth tethering for EDR packet only.
- This device supports VOLTE.
- 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.

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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. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-1, U-NII-2A & U-NII-2C WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

(B) Licensed Transmitter(s)

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

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

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

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

This device supports downlink 4x4 MIMO operations for LTE Bands 2, 4, and 66 only. Per FCC 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 both LTE B66 (AWS) and LTE B4 (AWS). Since the supported frequency span for LTE B4 (AWS) falls completely within the supported frequency span for LTE B66 (AWS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE B66 (AWS).

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. Phablet SAR was not evaluated for licensed technologies since wireless router 1g SAR was < 1.2 W/kg for these modes.

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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)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)

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 samples were configured via software for different power levels.

	Head Serial Number	Body-Worn Serial Number	Hotspot Serial Number	Phablet Max Serial Number	Phablet Reduced Serial
GSM/GPRS/EDGE 850	2CC64	2CC64	2CC91	2CC64	2CC91
GSM/GPRS/EDGE 1900	2CC64	2CC64	2A94F	2CC64	2CC91
UMTS 850	2CC64	2CC64	2CC64	-	-
UMTS 1750	2CC64	2CC64	2A94F	2CC64	2CC91
UMTS 1900	2CC64	2CC64	2A94F	2CC64	2CC91
LTE Band 12	2A8FE	2A8FE	2A8FE	-	-
LTE Band 5 (Cell)	2A8FE	2A8FE	2A8FE	-	-
LTE Band 66 (AWS)	2A8C8	2A8C8	2A950	2A8C8	2AA4A
LTE Band 2 (PCS)	2AA6B	2A8C8	2A950	2A8C8	2AA4A
LTE Band 30	2AA6B	2AA6B	2CC93	2AA6B	2CC93
LTE Band 7	2AA6B	2AA6B	2DFB0	2AA6B	2DFB0
LTE Band 38	2AA6B	2AA6B	2AA6B	-	-
LTE Band 41	2AA6B	2AA6B	2CC97	2AA6B	2CC97
2.4 GHz WLAN	2CC5C	2CC5C	2CC5C	-	-
5 GHz WLAN	2CC5C	2CC5C	2CC5C	2CC5C	-
Bluetooth	2CC5C	2CC5C	2CC5C	2CC5C	-

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LTE INFORMATION

LTE Information					
FCC ID	A3LSMG892A				
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 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 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 38 (2572.5 - 2617.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
Channel Bandwidths	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 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 38: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 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)	1733.6 (132208)	N/A	1756.4 (132436)	1779.3 (132665)
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)	N/A	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 38: 5 MHz	2572.5 (37775)		2595 (38000)	2617.5 (38224)	
LTE Band 38: 10 MHz	2575 (37800)		2595 (38000)	2615 (38199)	
LTE Band 38: 15 MHz	2577.5 (37825)		2595 (38000)	2612.5 (38174)	
LTE Band 38: 20 MHz	2580 (37850)		2595 (38000)	2610 (38150)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	Uplink: 5; Downlink: 11/15				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Release 10 Additional Information	This device does not support full CA features on 3GPP Release 13. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 13 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WiFi Offloading, MDH, eMBMS, 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.

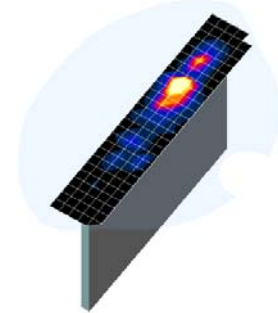


Figure 4-1
Sample SAR Area
Scan

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

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

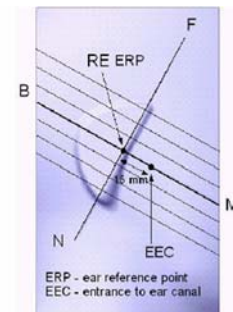


Figure 5-1
Close-Up Side view
of ERP

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

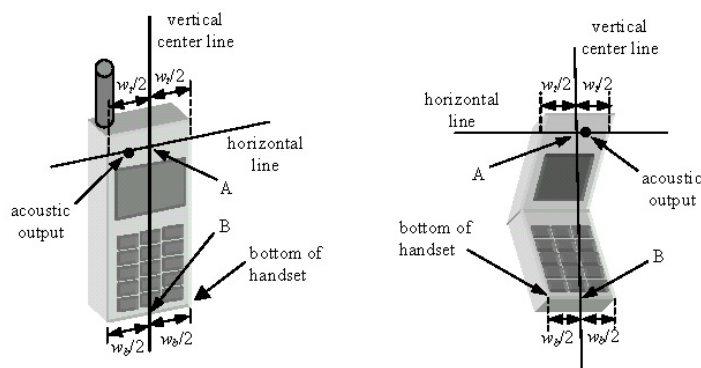


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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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.

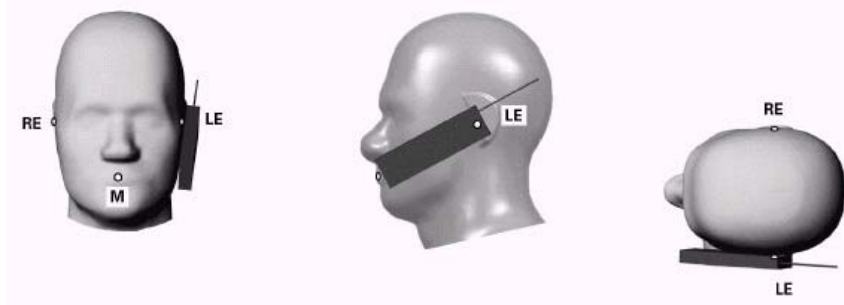


Figure 6-1 Front, Side and Top View of Cheek Position

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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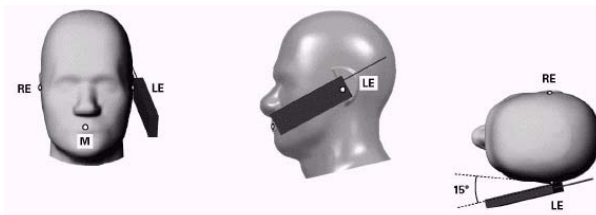


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

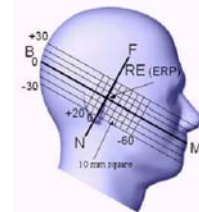


Figure 6-3 Side view w/ relevant markings

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.

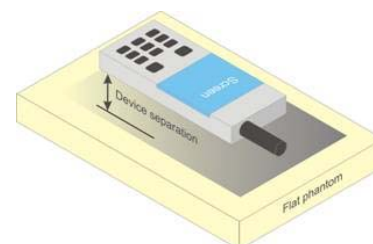


Figure 6-4 Sample Body-Worn Diagram

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 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.

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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 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

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

6.7 Wireless Router Configurations

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

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

6.8 Phablet Configurations

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

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6.9 Additional Test Positions due to Proximity Conditions

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

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

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

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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 UMTS

8.4.1 Output Power Verification

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body SAR Measurements

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

8.4.4 SAR Measurements with Rel 5 HSDPA

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

8.4.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5 SAR Measurement Conditions for LTE

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

8.5.1 Spectrum Plots for RB Configurations

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

8.5.2 MPR

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

8.5.3 A-MPR

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

8.5.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

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- 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 ≤ 0.6 W/kg for LTE Band 41 and ≤ 0.8 W/kg for other LTE bands, 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.

8.5.5 TDD

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

8.5.6 Downlink Only Carrier Aggregation

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

8.6 SAR Testing with 802.11 Transmitters

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

8.6.1 General Device Setup

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

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

8.6.2 U-NII-1 and U-NII-2A

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

8.6.3 U-NII-2C and U-NII-3

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

8.6.4 Initial Test Position Procedure

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

8.6.5 2.4 GHz SAR Test Requirements

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

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

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

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8.6.6 OFDM Transmission Mode and SAR Test Channel Selection

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

8.6.7 Initial Test Configuration Procedure

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

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.6.6). When 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.8 Subsequent Test Configuration Procedures

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

8.6.9 MIMO SAR considerations

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

Table 9-1
Maximum Conducted Powers

Maximum Burst-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	32.38	32.41	30.75	27.14	25.24
	190	32.78	32.53	30.81	27.08	25.08
	251	32.79	32.81	30.78	27.06	25.11
GSM 1900	512	29.47	29.50	27.57	24.54	22.79
	661	29.23	29.43	27.58	24.51	22.76
	810	29.64	29.76	27.81	24.62	22.91
Calculated Maximum Frame-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	23.35	23.38	24.73	18.11	19.22
	190	23.75	23.50	24.79	18.05	19.06
	251	23.76	23.78	24.76	18.03	19.09
GSM 1900	512	20.44	20.47	21.55	15.51	16.77
	661	20.20	20.40	21.56	15.48	16.74
	810	20.61	20.73	21.79	15.59	16.89
GSM 850	Frame	23.97	23.97	24.98	17.97	19.98
GSM 1900	Avg.Targets:	20.97	20.97	21.98	16.97	17.98

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Table 9-2
Reduced Conducted Powers

Maximum Burst-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	26.56	26.55	25.41	26.60	24.53
	190	26.84	26.79	25.83	26.83	24.83
	251	26.76	26.76	25.66	26.77	24.72
GSM 1900	512	23.39	23.61	22.54	23.72	22.61
	661	23.41	23.29	22.30	23.43	22.35
	810	23.44	23.55	22.52	23.64	22.48
Calculated Maximum Frame-Averaged Output Power						
		Voice	GPRS/EDGE Data (GMSK)		EDGE Data (8-PSK)	
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot
GSM 850	128	17.53	17.52	19.39	17.57	18.51
	190	17.81	17.76	19.81	17.80	18.81
	251	17.73	17.73	19.64	17.74	18.70
GSM 1900	512	14.36	14.58	16.52	14.69	16.59
	661	14.38	14.26	16.28	14.40	16.33
	810	14.41	14.52	16.50	14.61	16.46
GSM 850	Frame	17.97	17.97	19.98	17.97	19.98
GSM 1900	Avg.Targets:	14.97	14.97	16.98	14.97	16.98

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.

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

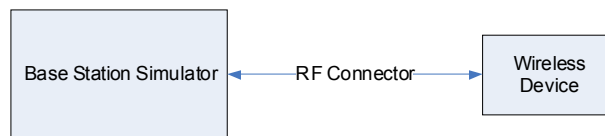


Figure 9-1
Power Measurement Setup

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9.2 UMTS Conducted Powers

Table 9-3
Maximum Conducted Powers

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	24.52	24.56	24.49	22.79	22.51	22.53	23.66	23.56	23.78	-
99		12.2 kbps AMR	24.51	24.53	24.44	22.78	22.50	22.53	23.65	23.54	23.76	-
6	HSDPA	Subtest 1	23.39	23.40	23.36	21.62	21.33	21.35	22.52	22.43	22.63	0
6		Subtest 2	23.40	23.46	23.37	21.63	21.34	21.28	22.55	22.45	22.65	0
6		Subtest 3	22.86	22.94	22.87	21.11	20.80	20.85	22.02	21.93	22.17	0.5
6		Subtest 4	22.85	22.91	22.90	21.10	20.77	20.88	22.05	21.92	22.16	0.5
6	HSUPA	Subtest 1	23.38	23.33	23.36	21.63	21.35	21.36	22.57	22.45	22.63	0
6		Subtest 2	21.36	21.35	21.38	19.67	19.34	19.39	20.55	20.43	20.65	2
6		Subtest 3	22.35	22.34	22.36	20.67	20.33	20.36	21.54	21.46	21.64	1
6		Subtest 4	21.34	21.33	21.35	19.69	19.32	19.37	20.52	20.43	20.65	2
6		Subtest 5	23.35	23.39	23.38	21.60	21.34	21.36	22.55	22.45	22.68	0

Table 9-4
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	19.11	19.16	19.09	19.57	19.67	19.67	-
99		12.2 kbps AMR	19.10	19.15	19.10	19.55	19.64	19.68	-
6	HSDPA	Subtest 1	17.92	17.90	17.87	18.42	18.52	18.54	0
6		Subtest 2	17.91	18.03	17.80	18.44	18.51	18.61	0
6		Subtest 3	17.43	17.56	17.39	17.98	18.07	18.03	0.5
6		Subtest 4	17.35	17.51	17.31	17.95	18.06	18.02	0.5
6	HSUPA	Subtest 1	18.10	17.93	18.07	18.32	18.56	18.50	0
6		Subtest 2	16.00	16.02	16.04	16.30	16.49	16.50	2
6		Subtest 3	16.80	16.95	17.17	17.52	17.46	17.56	1
6		Subtest 4	16.06	15.90	16.03	16.41	16.56	16.35	2
6		Subtest 5	17.99	17.96	18.06	18.51	18.43	18.55	0

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Table 9-5
Reduced Conducted Powers – Grip Sensor 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	19.65	19.57	19.59	20.55	20.56	20.60	-
99		12.2 kbps AMR	19.68	19.59	19.53	20.58	20.57	20.61	-
6	HSDPA	Subtest 1	18.48	18.39	18.42	19.42	19.41	19.48	0
6		Subtest 2	18.47	18.40	18.41	19.46	19.45	19.50	0
6		Subtest 3	17.98	17.92	17.94	18.96	18.95	18.96	0.5
6		Subtest 4	17.99	17.93	17.90	18.91	18.98	19.00	0.5
6	HSUPA	Subtest 1	18.50	18.41	18.42	19.44	19.45	19.52	0
6		Subtest 2	16.56	16.42	16.43	17.45	17.43	17.49	2
6		Subtest 3	17.53	17.40	17.42	18.42	18.45	18.47	1
6		Subtest 4	16.51	16.39	16.43	17.45	17.44	17.50	2
6		Subtest 5	18.54	18.40	18.44	19.46	19.46	19.48	0

This device does not support DC-HSDPA.



Figure 9-2
Power Measurement Setup

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9.3 LTE Conducted Powers

9.3.1 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.58	0	0
	1	25	24.61		0
	1	49	24.19		0
	25	0	23.73	0-1	1
	25	12	23.71		1
	25	25	23.72		1
	50	0	23.67		1
16QAM	1	0	23.74	0-1	1
	1	25	23.83		1
	1	49	23.49		1
	25	0	22.74	0-2	2
	25	12	22.73		2
	25	25	22.82		2
	50	0	22.90		2
64QAM	1	0	22.58	0-2	2
	1	25	22.56		2
	1	49	22.46		2
	25	0	21.57	0-3	3
	25	12	21.51		3
	25	25	21.45		3
	50	0	21.50		3

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

Table 9-7
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	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	24.54	24.45	24.43	0	0
	1	12	24.53	24.37	24.28		0
	1	24	24.45	24.35	24.56		0
	12	0	23.46	23.54	23.32	0-1	1
	12	6	23.47	23.50	23.37		1
	12	13	23.43	23.51	23.42		1
	25	0	23.47	23.53	23.61		1
16QAM	1	0	23.89	23.95	23.81	0-1	1
	1	12	23.84	23.89	23.66		1
	1	24	23.78	23.83	23.92		1
	12	0	22.54	22.61	22.40	0-2	2
	12	6	22.53	22.59	22.44		2
	12	13	22.46	22.54	22.62		2
	25	0	22.44	22.53	22.65		2
64QAM	1	0	22.46	22.43	22.33	0-2	2
	1	12	22.75	22.95	22.80		2
	1	24	22.34	22.40	22.42		2
	12	0	21.70	21.83	21.72	0-3	3
	12	6	21.36	21.47	21.62		3
	12	13	21.32	21.48	21.65		3
	25	0	21.55	21.73	21.87		3

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Table 9-8
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	24.28	24.41	24.12	0	0
	1	7	24.38	24.49	24.58		0
	1	14	24.27	24.36	24.43		0
	8	0	23.29	23.51	23.55	0-1	1
	8	4	23.33	23.55	23.58		1
	8	7	23.34	23.47	23.53		1
	15	0	23.31	23.50	23.59		1
16QAM	1	0	23.57	23.82	23.44	0-1	1
	1	7	23.49	23.90	23.81		1
	1	14	23.34	23.77	23.68		1
	8	0	22.21	22.43	22.55	0-2	2
	8	4	22.22	22.45	22.62		2
	8	7	22.15	22.44	22.59		2
	15	0	22.30	22.50	22.54		2
64QAM	1	0	22.48	22.27	22.31	0-2	2
	1	7	22.56	22.91	22.74		2
	1	14	22.21	22.39	22.50		2
	8	0	21.50	21.81	21.88	0-3	3
	8	4	21.32	21.55	21.80		3
	8	7	21.50	21.41	21.68		3
	15	0	21.42	21.91	21.88		3

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	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	24.24	24.49	24.35	0	0
	1	2	24.28	24.55	24.39		0
	1	5	24.18	24.47	24.38		0
	3	0	24.27	24.42	24.48		0
	3	2	24.33	24.49	24.50		0
	3	3	24.30	24.45	24.47		0
	6	0	23.24	23.42	23.49	0-1	1
16QAM	1	0	23.30	23.36	23.61	0-1	1
	1	2	23.36	23.41	23.65		1
	1	5	23.28	23.34	23.62		1
	3	0	23.46	23.44	23.40		1
	3	2	23.51	23.48	23.51		1
	3	3	23.43	23.43	23.44		1
	6	0	22.25	22.51	22.43	0-2	2
64QAM	1	0	22.30	22.15	22.20	0-2	2
	1	2	22.65	22.76	22.68		2
	1	5	22.02	22.21	22.36		2
	3	0	22.49	22.94	22.80		2
	3	2	22.47	22.59	22.90		2
	3	3	22.64	22.25	22.62		2
	6	0	21.58	21.72	21.88	0-3	3

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9.3.2 LTE Band 5 (Cell)

Table 9-10
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	24.69	0	0
	1	25	24.59		0
	1	49	24.56		0
	25	0	23.66	0-1	1
	25	12	23.60		1
	25	25	23.56		1
16QAM	50	0	23.59	0-1	1
	1	0	23.73		1
	1	25	23.69		1
	1	49	23.57	0-2	1
	25	0	22.66		2
	25	12	22.62		2
64QAM	25	25	22.52	0-2	2
	50	0	22.57		2
	1	0	22.86	0-2	2
	1	25	22.59		2
	1	49	22.58	0-3	2
	25	0	21.68		3
	25	12	21.67		3
	25	25	21.55		3
	50	0	21.60		3

Note: LTE Band 5 (Cell) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-11
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	24.68	24.66	24.70	0	0
	1	12	24.60	24.57	24.60		0
	1	24	24.61	24.51	24.18		0
	12	0	23.63	23.59	23.75	0-1	1
	12	6	23.62	23.56	23.71		1
	12	13	23.53	23.55	23.67		1
	25	0	23.55	23.53	23.67		1
16QAM	1	0	24.00	23.96	24.00	0-1	1
	1	12	23.98	23.91	23.99		1
	1	24	23.93	23.84	23.59		1
	12	0	22.61	22.62	22.75	0-2	2
	12	6	22.64	22.59	22.72		2
	12	13	22.56	22.53	22.66		2
	25	0	22.58	22.58	22.73		2
64QAM	1	0	22.84	22.87	22.74	0-2	2
	1	12	22.69	22.81	22.97		2
	1	24	22.74	22.59	22.68		2
	12	0	21.77	21.86	22.00	0-3	3
	12	6	21.65	21.71	21.55		3
	12	13	21.61	21.72	21.61		3
	25	0	21.74	21.85	21.68		3

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Table 9-12
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	24.55	24.44	24.59	0	0
	1	7	24.61	24.51	24.66		0
	1	14	24.47	24.37	23.97		0
	8	0	23.57	23.50	23.63	0-1	1
	8	4	23.55	23.54	23.66		1
	8	7	23.50	23.46	23.62		1
16QAM	15	0	23.56	23.51	23.63	0-1	1
	1	0	23.68	23.84	23.85		1
	1	7	23.72	23.91	23.87		1
	1	14	23.54	23.78	23.23	0-2	1
	8	0	22.43	22.48	22.69		2
	8	4	22.44	22.44	22.68		2
64QAM	8	7	22.40	22.46	22.66	0-2	2
	15	0	22.52	22.55	22.54		2
	1	0	22.80	22.67	22.81		0-2
	1	7	22.60	22.61	22.70	2	
	1	14	22.90	22.44	22.54	2	
	8	0	21.90	21.95	21.79	0-3	3
8	4	21.47	21.65	21.48	3		
8	7	21.44	21.55	21.25	3		
	15	0	21.55	21.72	21.48		3

Table 9-13
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	24.46	24.54	24.40	0	0
	1	2	24.49	24.58	24.24		0
	1	5	24.42	24.52	23.81		0
	3	0	24.52	24.47	24.44		0
	3	2	24.57	24.49	24.39		0
	3	3	24.51	24.43	24.08		0
	6	0	23.47	23.41	23.48	0-1	1
16QAM	1	0	23.54	23.37	23.65	0-1	1
	1	2	23.60	23.41	23.62		1
	1	5	23.54	23.37	23.23		1
	3	0	23.64	23.43	23.43		1
	3	2	23.67	23.49	23.40		1
	3	3	23.62	23.44	23.17		1
	6	0	22.47	22.54	22.50	0-2	2
64QAM	1	0	22.74	22.69	22.79	0-2	2
	1	2	22.79	22.80	22.76		2
	1	5	22.96	22.42	22.55		2
	3	0	22.82	22.92	22.74		2
	3	2	22.33	22.67	22.64		2
	3	3	22.41	22.68	22.21		2
	6	0	21.60	21.69	21.32	0-3	3

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9.3.3 LTE Band 66 (AWS)

Table 9-14
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	24.01	24.18	24.12	0	0
	1	50	23.77	23.93	23.91		0
	1	99	23.81	23.97	23.94		0
	50	0	22.97	23.07	22.99	0-1	1
	50	25	22.87	22.96	22.92		1
	50	50	22.83	22.97	22.88		1
	100	0	22.89	23.00	22.90		1
16QAM	1	0	23.21	23.22	23.20	0-1	1
	1	50	22.99	23.09	23.06		1
	1	99	22.88	23.03	23.00		1
	50	0	21.96	22.08	22.06	0-2	2
	50	25	21.89	22.02	22.00		2
	50	50	21.81	21.95	21.95		2
	100	0	21.88	22.04	22.03		2
64QAM	1	0	22.18	22.29	22.31	0-2	2
	1	50	22.01	22.08	22.08		2
	1	99	21.96	22.05	22.18		2
	50	0	20.97	21.04	21.10	0-3	3
	50	25	20.88	20.99	21.03		3
	50	50	20.87	21.00	20.96		3
	100	0	20.89	21.02	21.03		3

Table 9-15
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	23.92	23.83	23.86	0	0
	1	36	23.79	23.72	23.76		0
	1	74	23.80	23.67	23.68		0
	36	0	22.97	22.94	22.73	0-1	1
	36	18	22.95	22.91	22.72		1
	36	37	22.91	22.87	22.70		1
	75	0	22.93	22.85	22.74		1
16QAM	1	0	23.04	23.25	22.97	0-1	1
	1	36	22.90	23.10	22.88		1
	1	74	22.94	23.12	22.90		1
	36	0	21.93	22.07	21.84	0-2	2
	36	18	21.92	21.92	21.81		2
	36	37	21.88	21.90	21.82		2
	75	0	22.00	21.88	21.74		2
64QAM	1	0	21.98	22.21	22.08	0-2	2
	1	36	21.82	22.04	21.98		2
	1	74	21.83	22.06	22.02		2
	36	0	21.06	21.00	20.76	0-3	3
	36	18	21.04	20.96	20.77		3
	36	37	21.00	20.94	20.74		3
	75	0	20.98	20.87	20.81		3

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Table 9-16
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	23.91	23.79	23.65	0	0
	1	25	23.83	23.72	23.58		0
	1	49	23.87	23.73	23.60		0
	25	0	23.01	22.89	22.77	0-1	1
	25	12	23.00	22.91	22.79		1
	25	25	22.99	22.88	22.76		1
	50	0	22.97	22.90	22.75		1
16QAM	1	0	23.03	23.22	22.83	0-1	1
	1	25	22.94	23.15	22.81		1
	1	49	22.96	23.14	22.83		1
	25	0	22.04	21.96	21.77	0-2	2
	25	12	22.00	21.94	21.78		2
	25	25	22.01	21.93	21.77		2
	50	0	22.02	21.98	21.81		2
64QAM	1	0	21.95	22.00	21.86	0-2	2
	1	25	21.89	21.91	21.80		2
	1	49	21.92	21.88	21.81		2
	25	0	21.11	20.98	20.86	0-3	3
	25	12	21.12	20.99	20.88		3
	25	25	21.09	20.94	20.85		3
	50	0	21.04	20.97	20.78		3

Table 9-17
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	23.79	23.70	23.70	0	0
	1	12	23.77	23.66	23.68		0
	1	24	23.79	23.69	23.75		0
	12	0	22.95	22.87	22.75	0-1	1
	12	6	22.96	22.85	22.77		1
	12	13	22.92	22.83	22.76		1
	25	0	22.95	22.84	22.73		1
16QAM	1	0	23.29	23.17	23.09	0-1	1
	1	12	23.30	23.18	23.04		1
	1	24	23.27	23.20	23.10		1
	12	0	22.00	21.90	21.78	0-2	2
	12	6	22.03	21.91	21.80		2
	12	13	21.99	21.87	21.75		2
	25	0	21.98	21.88	21.81		2
64QAM	1	0	22.13	22.04	22.05	0-2	2
	1	12	22.08	21.98	21.99		2
	1	24	22.12	22.02	22.03		2
	12	0	20.89	20.78	20.82	0-3	3
	12	6	20.91	20.80	20.84		3
	12	13	20.88	20.77	20.83		3
	25	0	20.95	20.86	20.77		3

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Table 9-18
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	23.84	23.69	23.61	0	0
	1	7	23.96	23.81	23.67		0
	1	14	23.81	23.71	23.57		0
	8	0	22.93	22.83	22.69	0-1	1
	8	4	22.95	22.88	22.70		1
	8	7	22.93	22.85	22.69		1
	15	0	22.92	22.84	22.71		1
16QAM	1	0	22.97	23.09	22.82	0-1	1
	1	7	23.06	23.21	22.92		1
	1	14	22.94	23.08	22.77		1
	8	0	21.84	21.79	21.76	0-2	2
	8	4	21.86	21.77	21.78		2
	8	7	21.80	21.78	21.76		2
	15	0	21.90	21.87	21.68		2
64QAM	1	0	21.83	21.88	21.98	0-2	2
	1	7	21.98	21.99	22.02		2
	1	14	21.86	21.87	21.91		2
	8	0	20.94	20.94	20.78	0-3	3
	8	4	20.99	20.96	20.82		3
	8	7	20.96	20.92	20.77		3
	15	0	21.04	20.88	20.75		3

Table 9-19
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	Low-Mid Channel	Mid-High	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132208 (1733.6 MHz)	132436 (1756.4 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.88	23.80	23.62	23.48	0	0
	1	2	23.94	23.83	23.70	23.59		0
	1	5	23.89	23.77	23.64	23.50		0
	3	0	23.84	23.90	23.70	23.61		0
	3	2	23.87	23.94	23.77	23.68		0
	3	3	23.82	23.90	23.72	23.63		0
	6	0	22.84	22.88	22.71	22.62	0-1	1
16QAM	1	0	22.73	23.03	22.74	22.72	0-1	1
	1	2	22.79	23.08	22.81	22.77		1
	1	5	22.75	23.04	22.75	22.74		1
	3	0	22.85	22.83	22.85	22.59		1
	3	2	22.90	22.90	22.91	22.67		1
	3	3	22.86	22.88	22.82	22.62		1
	6	0	21.93	21.87	21.75	21.60	0-2	2
64QAM	1	0	22.15	22.10	21.72	21.83	0-2	2
	1	2	22.24	22.16	21.77	21.87		2
	1	5	22.11	22.14	21.70	21.88		2
	3	0	22.12	22.04	21.87	21.81		2
	3	2	22.17	22.12	21.92	21.83		2
	3	3	22.10	22.11	21.89	21.80		2
	6	0	20.81	20.99	20.79	20.72	0-3	3

Note: Per FCC KDB Publication 447498 D01v06 Section 4.1g), 4 channels are required for LTE Band 66 with 1.4 MHz Bandwidth.

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Table 9-20
Reduced 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	21.01	21.00	21.10	0	0
	1	50	20.76	20.72	20.87		0
	1	99	20.63	20.60	20.78		0
	50	0	20.98	20.88	21.03	0-1	0
	50	25	20.90	20.81	20.91		0
	50	50	20.80	20.72	20.87		0
	100	0	20.89	20.83	21.02		0
16QAM	1	0	21.15	21.08	21.08	0-1	0
	1	50	20.94	20.74	20.87		0
	1	99	20.82	20.60	20.72		0
	50	0	21.04	20.93	21.02	0-2	0
	50	25	20.90	20.79	20.94		0
	50	50	20.86	20.74	20.86		0
	100	0	20.91	20.81	20.96		0
64QAM	1	0	21.35	21.25	21.37	0-2	0
	1	50	20.99	20.99	21.11		0
	1	99	20.79	20.89	21.04		0
	50	0	21.08	20.95	21.05	0-3	0
	50	25	20.96	20.85	20.98		0
	50	50	20.89	20.76	20.91		0
	100	0	20.95	20.84	20.97		0

Table 9-21
Reduced 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	20.80	20.64	20.64	0	0
	1	36	20.62	20.42	20.41		0
	1	74	20.59	20.38	20.47		0
	36	0	20.77	20.66	20.54	0-1	0
	36	18	20.71	20.62	20.54		0
	36	37	20.61	20.54	20.51		0
	75	0	20.70	20.51	20.49		0
16QAM	1	0	21.00	20.98	20.77	0-1	0
	1	36	20.81	20.70	20.53		0
	1	74	20.80	20.75	20.69		0
	36	0	20.78	20.70	20.54	0-2	0
	36	18	20.70	20.65	20.52		0
	36	37	20.66	20.55	20.51		0
	75	0	20.70	20.69	20.47		0
64QAM	1	0	20.77	20.80	20.75	0-2	0
	1	36	20.76	20.66	20.47		0
	1	74	20.75	20.68	20.51		0
	36	0	20.78	20.64	20.54	0-3	0
	36	18	20.74	20.63	20.53		0
	36	37	20.66	20.56	20.51		0
	75	0	20.72	20.61	20.43		0

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Table 9-22
Reduced 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	20.74	20.63	20.52	0	0
	1	25	20.65	20.47	20.41		0
	1	49	20.59	20.44	20.43		0
	25	0	20.74	20.56	20.49	0-1	0
	25	12	20.72	20.53	20.48		0
	25	25	20.62	20.52	20.47		0
	50	0	20.67	20.52	20.52		0
16QAM	1	0	20.97	20.81	20.78	0-1	0
	1	25	20.86	20.73	20.67		0
	1	49	20.82	20.69	20.71		0
	25	0	20.73	20.58	20.52	0-2	0
	25	12	20.72	20.56	20.50		0
	25	25	20.65	20.52	20.47		0
	50	0	20.68	20.55	20.52		0
64QAM	1	0	20.88	20.73	20.62	0-2	0
	1	25	20.78	20.61	20.55		0
	1	49	20.71	20.60	20.56		0
	25	0	20.77	20.60	20.52	0-3	0
	25	12	20.74	20.58	20.52		0
	25	25	20.67	20.55	20.49		0
	50	0	20.72	20.57	20.50		0

Table 9-23
Reduced 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	20.79	20.55	20.45	0	0
	1	12	20.66	20.51	20.41		0
	1	24	20.64	20.46	20.44		0
	12	0	20.72	20.53	20.49	0-1	0
	12	6	20.74	20.54	20.49		0
	12	13	20.69	20.47	20.45		0
	25	0	20.68	20.51	20.48		0
16QAM	1	0	20.92	20.78	20.71	0-1	0
	1	12	20.89	20.67	20.64		0
	1	24	20.90	20.62	20.67		0
	12	0	20.73	20.57	20.53	0-2	0
	12	6	20.76	20.55	20.53		0
	12	13	20.69	20.54	20.51		0
	25	0	20.71	20.51	20.50		0
64QAM	1	0	20.80	20.67	20.60	0-2	0
	1	12	20.76	20.62	20.59		0
	1	24	20.78	20.58	20.62		0
	12	0	20.75	20.55	20.53	0-3	0
	12	6	20.74	20.56	20.51		0
	12	13	20.71	20.51	20.46		0
	25	0	20.73	20.55	20.51		0

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Table 9-24
Reduced 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	20.70	20.51	20.44	0	0
	1	7	20.83	20.56	20.51		0
	1	14	20.74	20.45	20.39		0
	8	0	20.70	20.49	20.41	0-1	0
	8	4	20.72	20.51	20.45		0
	8	7	20.70	20.45	20.43		0
	15	0	20.69	20.54	20.42		0
16QAM	1	0	20.92	20.81	20.56	0-1	0
	1	7	20.97	20.79	20.72		0
	1	14	20.91	20.64	20.62		0
	8	0	20.78	20.55	20.49	0-2	0
	8	4	20.77	20.56	20.51		0
	8	7	20.76	20.52	20.49		0
	15	0	20.71	20.45	20.41		0
64QAM	1	0	20.81	20.56	20.51	0-2	0
	1	7	20.91	20.63	20.61		0
	1	14	20.76	20.53	20.54		0
	8	0	20.72	20.47	20.46	0-3	0
	8	4	20.75	20.50	20.46		0
	8	7	20.70	20.47	20.44		0
	15	0	20.74	20.48	20.45		0

Table 9-25
Reduced 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	Low-Mid Channel	Mid-High	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132208 (1733.6 MHz)	132436 (1756.4 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	20.66	20.58	20.39	20.41	0	0
	1	2	20.69	20.63	20.46	20.46		0
	1	5	20.62	20.56	20.40	20.42		0
	3	0	20.67	20.56	20.40	20.41		0
	3	2	20.71	20.61	20.45	20.45		0
	3	3	20.66	20.59	20.39	20.41		0
	6	0	20.67	20.65	20.42	20.46	0-1	0
16QAM	1	0	20.87	20.77	20.71	20.66	0-1	0
	1	2	21.02	20.80	20.72	20.69		0
	1	5	20.86	20.76	20.64	20.65		0
	3	0	20.79	20.67	20.51	20.55		0
	3	2	20.83	20.70	20.56	20.58		0
	3	3	20.76	20.71	20.53	20.56		0
	6	0	20.73	20.64	20.52	20.53	0-2	0
64QAM	1	0	20.78	20.69	20.59	20.52	0-2	0
	1	2	20.88	20.75	20.54	20.63		0
	1	5	20.80	20.68	20.55	20.60		0
	3	0	20.79	20.70	20.58	20.56		0
	3	2	20.85	20.73	20.52	20.59		0
	3	3	20.81	20.69	20.53	20.55		0
	6	0	20.70	20.58	20.49	20.45	0-3	0

Note: Per FCC KDB Publication 447498 D01v06 Section 4.1g), 4 channels are required for LTE Band 66 with 1.4 MHz Bandwidth.

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9.3.4 LTE Band 2 (PCS)

Table 9-26
LTE Band 2 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.12	24.19	24.15	0	0
	1	50	23.83	23.93	23.89		0
	1	99	23.83	23.89	23.86		0
	50	0	22.97	23.09	23.08	0-1	1
	50	25	22.85	22.97	22.96		1
	50	50	22.80	22.93	22.92		1
	100	0	22.91	23.00	22.97		1
16QAM	1	0	23.25	23.31	23.29	0-1	1
	1	50	23.02	23.18	23.16		1
	1	99	23.01	23.12	23.13		1
	50	0	22.04	22.10	22.09	0-2	2
	50	25	21.98	22.02	21.99		2
	50	50	21.91	21.98	21.93		2
	100	0	21.99	22.05	22.01		2
64QAM	1	0	22.25	22.23	22.27	0-2	2
	1	50	22.08	22.03	22.01		2
	1	99	21.98	21.99	21.99		2
	50	0	21.07	21.06	21.06	0-3	3
	50	25	21.01	21.01	21.00		3
	50	50	20.94	20.95	20.96		3
	100	0	20.98	20.99	21.00		3

Table 9-27
LTE Band 2 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.82	23.85	23.90	0	0
	1	36	23.66	23.61	23.71		0
	1	74	23.55	23.58	23.69		0
	36	0	22.73	22.69	22.77	0-1	1
	36	18	22.64	22.64	22.78		1
	36	37	22.64	22.60	22.67		1
	75	0	22.71	22.62	22.83		1
16QAM	1	0	23.07	23.15	23.23	0-1	1
	1	36	22.83	23.18	23.00		1
	1	74	22.74	23.15	22.77		1
	36	0	21.65	21.71	21.82	0-2	2
	36	18	21.70	21.65	21.80		2
	36	37	21.67	21.59	21.67		2
	75	0	21.70	21.55	21.73		2
64QAM	1	0	22.17	22.13	22.12	0-2	2
	1	36	21.77	21.79	21.74		2
	1	74	21.76	21.89	21.73		2
	36	0	20.71	20.69	20.84	0-3	3
	36	18	20.76	20.65	20.79		3
	36	37	20.75	20.58	20.70		3
	75	0	20.76	20.67	20.72		3

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Table 9-28
LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.78	23.70	23.71	0	0
	1	25	23.59	23.73	23.56		0
	1	49	23.65	23.56	23.54		0
	25	0	22.74	22.73	22.64	0-1	1
	25	12	22.72	22.66	22.59		1
	25	25	22.66	22.60	22.58		1
	50	0	22.71	22.62	22.61		1
16QAM	1	0	23.15	22.70	22.95	0-1	1
	1	25	22.95	22.90	22.79		1
	1	49	22.99	22.54	22.77		1
	25	0	21.80	21.78	21.64	0-2	2
	25	12	21.76	21.81	21.63		2
	25	25	21.70	21.66	21.56		2
	50	0	21.69	21.72	21.60		2
64QAM	1	0	21.76	21.91	21.78	0-2	2
	1	25	21.59	21.53	21.59		2
	1	49	21.65	21.64	21.58		2
	25	0	20.78	20.73	20.78	0-3	3
	25	12	20.74	20.74	20.74		3
	25	25	20.71	20.61	20.70		3
	50	0	20.72	20.66	20.69		3

Table 9-29
LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.62	23.69	23.85	0	0
	1	12	23.62	23.64	23.84		0
	1	24	23.59	23.68	23.86		0
	12	0	22.62	22.71	22.86	0-1	1
	12	6	22.61	22.70	22.91		1
	12	13	22.60	22.72	22.89		1
	25	0	22.62	22.70	22.87		1
16QAM	1	0	23.35	22.96	22.90	0-1	1
	1	12	23.23	22.91	22.84		1
	1	24	23.19	22.86	22.89		1
	12	0	21.65	21.74	21.94	0-2	2
	12	6	21.69	21.76	21.98		2
	12	13	21.61	21.72	21.94		2
	25	0	21.64	21.70	21.86		2
64QAM	1	0	21.79	21.87	22.00	0-2	2
	1	12	21.72	21.84	22.15		2
	1	24	21.70	21.86	22.00		2
	12	0	20.67	20.74	20.97	0-3	3
	12	6	20.67	20.75	20.99		3
	12	13	20.63	20.71	20.97		3
	25	0	20.66	20.74	20.87		3

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Table 9-30
LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.60	23.69	23.82	0	0
	1	7	23.70	23.77	23.96		0
	1	14	23.53	23.64	23.85		0
	8	0	22.66	22.73	22.94	0-1	1
	8	4	22.70	22.75	22.96		1
	8	7	22.60	22.69	22.98		1
	15	0	22.66	22.71	22.95		1
16QAM	1	0	23.25	23.07	22.87	0-1	1
	1	7	23.34	23.13	22.88		1
	1	14	23.18	23.01	22.66		1
	8	0	21.74	21.91	21.99	0-2	2
	8	4	21.81	21.85	22.00		2
	8	7	21.82	21.84	21.96		2
	15	0	21.67	21.66	21.89		2
64QAM	1	0	21.67	21.86	21.99	0-2	2
	1	7	21.75	21.96	22.09		2
	1	14	21.67	21.82	21.96		2
	8	0	20.70	20.74	21.06	0-3	3
	8	4	20.70	20.77	21.07		3
	8	7	20.69	20.75	21.08		3
	15	0	20.68	20.82	21.02		3

Table 9-31
LTE Band 2 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.77	23.79	23.81	0	0
	1	2	23.86	23.82	23.88		0
	1	5	23.81	23.72	23.78		0
	3	0	23.81	23.81	23.79		0
	3	2	23.86	23.84	23.86		0
	3	3	23.82	23.80	23.79		0
	6	0	22.81	22.84	22.85		0-1
16QAM	1	0	22.80	22.95	23.02	0-1	1
	1	2	22.85	23.02	23.07		1
	1	5	22.80	22.87	23.16		1
	3	0	22.93	22.86	23.03		1
	3	2	22.96	22.91	23.10		1
	3	3	22.93	22.84	23.05		1
	6	0	21.92	21.80	21.83	0-2	2
64QAM	1	0	21.79	21.95	22.01	0-2	2
	1	2	21.86	22.00	22.03		2
	1	5	21.81	21.93	21.97		2
	3	0	21.97	21.85	21.94		2
	3	2	21.99	21.91	22.00		2
	3	3	21.97	21.85	21.96		2
	6	0	20.83	20.85	20.84	0-3	3

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Table 9-32
Reduced LTE Band 2 (PCS) Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.14	20.11	20.33	0	0
	1	50	19.87	19.83	20.09		0
	1	99	19.76	19.79	20.02		0
	50	0	20.09	20.05	20.24	0-1	0
	50	25	19.94	19.94	20.15		0
	50	50	19.88	19.90	20.09		0
	100	0	19.97	19.98	20.19		0
16QAM	1	0	20.42	20.27	20.15	0-1	0
	1	50	20.17	19.98	19.89		0
	1	99	20.05	19.90	19.85		0
	50	0	20.07	20.10	20.21	0-2	0
	50	25	19.99	20.00	20.12		0
	50	50	19.92	19.90	20.08		0
	100	0	20.02	20.01	20.20		0
64QAM	1	0	20.35	20.18	20.36	0-2	0
	1	50	20.08	19.92	20.33		0
	1	99	19.98	19.83	20.24		0
	50	0	20.11	20.13	20.30	0-3	0
	50	25	20.01	20.03	20.23		0
	50	50	19.94	20.02	20.16		0
	100	0	20.01	20.05	20.04		0

Table 9-33
Reduced LTE Band 2 (PCS) Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.77	19.72	20.04	0	0
	1	36	19.62	19.56	19.88		0
	1	74	19.61	19.57	19.85		0
	36	0	19.74	19.65	19.84	0-1	0
	36	18	19.69	19.60	19.83		0
	36	37	19.70	19.53	19.79		0
	75	0	19.68	19.52	19.78		0
16QAM	1	0	19.90	19.98	20.10	0-1	0
	1	36	19.77	19.88	19.93		0
	1	74	19.76	19.96	19.89		0
	36	0	19.75	19.66	19.85	0-2	0
	36	18	19.74	19.68	19.82		0
	36	37	19.70	19.63	19.80		0
	75	0	19.73	19.60	19.82		0
64QAM	1	0	19.76	19.71	20.05	0-2	0
	1	36	19.79	19.60	19.87		0
	1	74	19.85	19.61	19.87		0
	36	0	19.86	19.74	19.88	0-3	0
	36	18	19.79	19.70	19.87		0
	36	37	19.77	19.63	19.80		0
	75	0	19.73	19.65	19.85		0

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Table 9-34
Reduced LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.79	19.64	19.94	0	0
	1	25	19.68	19.51	19.86		0
	1	49	19.67	19.52	19.87		0
	25	0	19.79	19.63	19.99	0-1	0
	25	12	19.77	19.64	20.01		0
	25	25	19.78	19.61	20.00		0
	50	0	19.77	19.63	20.01		0
16QAM	1	0	19.97	19.85	20.08	0-1	0
	1	25	19.91	19.78	19.97		0
	1	49	19.88	19.77	19.98		0
	25	0	19.85	19.73	20.13	0-2	0
	25	12	19.83	19.71	20.09		0
	25	25	19.80	19.70	20.08		0
	50	0	19.80	19.65	20.05		0
64QAM	1	0	19.95	19.95	19.93	0-2	0
	1	25	19.84	19.92	19.83		0
	1	49	19.85	19.89	19.80		0
	25	0	19.88	19.71	20.05	0-3	0
	25	12	19.89	19.70	20.08		0
	25	25	19.87	19.69	20.05		0
	50	0	19.83	19.66	20.04		0

Table 9-35
Reduced LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.85	19.56	19.93	0	0
	1	12	19.76	19.50	19.87		0
	1	24	19.80	19.52	19.86		0
	12	0	19.80	19.63	19.95	0-1	0
	12	6	19.81	19.60	19.96		0
	12	13	19.79	19.55	19.92		0
	25	0	19.75	19.59	19.96		0
16QAM	1	0	19.99	19.75	20.10	0-1	0
	1	12	19.98	19.73	20.05		0
	1	24	19.95	19.74	20.09		0
	12	0	19.85	19.65	19.98	0-2	0
	12	6	19.79	19.66	19.96		0
	12	13	19.80	19.60	19.99		0
	25	0	19.83	19.63	19.97		0
64QAM	1	0	20.00	19.63	19.98	0-2	0
	1	12	19.99	19.58	19.92		0
	1	24	19.97	19.60	19.91		0
	12	0	19.93	19.61	19.96	0-3	0
	12	6	19.92	19.60	19.95		0
	12	13	19.91	19.62	19.94		0
	25	0	19.82	19.65	19.99		0

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Table 9-36
Reduced LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.71	19.60	19.89	0	0
	1	7	19.80	19.61	19.93		0
	1	14	19.68	19.50	19.86		0
	8	0	19.75	19.56	19.92	0-1	0
	8	4	19.79	19.60	19.95		0
	8	7	19.73	19.58	19.94		0
	15	0	19.78	19.57	19.95		0
16QAM	1	0	19.86	19.54	19.99	0-1	0
	1	7	19.96	19.60	20.03		0
	1	14	19.83	19.46	19.94		0
	8	0	19.78	19.72	20.01	0-2	0
	8	4	19.79	19.75	20.01		0
	8	7	19.75	19.71	20.00		0
	15	0	19.80	19.62	19.92		0
64QAM	1	0	19.88	19.81	19.86	0-2	0
	1	7	19.97	19.88	19.93		0
	1	14	19.88	19.80	19.85		0
	8	0	19.73	19.72	19.95	0-3	0
	8	4	19.75	19.77	19.99		0
	8	7	19.73	19.73	19.92		0
	15	0	19.95	19.66	19.99		0

Table 9-37
Reduced LTE Band 2 (PCS) Conducted Powers -1.4 MHz Bandwidth – Hotspot Mode Active

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	19.62	19.46	19.81	0	0
	1	2	19.68	19.51	19.86		0
	1	5	19.60	19.44	19.82		0
	3	0	19.71	19.50	19.83		0
	3	2	19.73	19.56	19.91		0
	3	3	19.66	19.51	19.84		0
	6	0	19.71	19.53	19.85	0-1	0
16QAM	1	0	19.71	19.54	19.93	0-1	0
	1	2	19.75	19.60	19.99		0
	1	5	19.71	19.57	19.93		0
	3	0	19.89	19.68	19.88		0
	3	2	19.88	19.73	19.90		0
	3	3	19.85	19.69	19.84		0
	6	0	19.87	19.71	19.93	0-2	0
64QAM	1	0	19.63	19.69	19.95	0-2	0
	1	2	19.66	19.74	20.00		0
	1	5	19.64	19.70	19.96		0
	3	0	19.71	19.56	19.99		0
	3	2	19.73	19.60	20.01		0
	3	3	19.72	19.55	20.02		0
	6	0	19.78	19.58	20.00	0-3	0

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Table 9-38
Reduced LTE Band 2 (PCS) Conducted Powers - 20 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.58	21.57	21.50	0	0
	1	50	21.31	21.29	21.30		0
	1	99	21.22	21.20	21.21		0
	50	0	21.56	21.46	21.43	0-1	0
	50	25	21.48	21.34	21.34		0
	50	50	21.38	21.29	21.26		0
	100	0	21.46	21.38	21.35		0
16QAM	1	0	21.69	21.53	21.43	0-1	0
	1	50	21.25	21.26	21.24		0
	1	99	21.16	21.20	21.16		0
	50	0	21.53	21.42	21.36	0-2	0
	50	25	21.41	21.35	21.32		0
	50	50	21.35	21.27	21.23		0
	100	0	21.46	21.35	21.30		0
64QAM	1	0	21.11	21.18	20.94	0-2	0.5
	1	50	20.95	20.96	20.84		0.5
	1	99	20.91	20.98	20.74		0.5
	50	0	20.70	20.65	20.48	0-3	0.5
	50	25	20.62	20.60	20.44		0.5
	50	50	20.59	20.53	20.40		0.5
	100	0	20.61	20.53	20.42		0.5

Table 9-39
Reduced LTE Band 2 (PCS) Conducted Powers - 15 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.41	21.42	21.43	0	0
	1	36	21.25	21.34	21.27		0
	1	74	21.29	21.27	21.30		0
	36	0	21.48	21.32	21.34	0-1	0
	36	18	21.29	21.31	21.32		0
	36	37	21.27	21.31	21.31		0
	75	0	21.26	21.35	21.33		0
16QAM	1	0	21.55	21.67	21.60	0-1	0
	1	36	21.39	21.64	21.50		0
	1	74	21.41	21.65	21.45		0
	36	0	21.35	21.33	21.42	0-2	0
	36	18	21.32	21.26	21.41		0
	36	37	21.29	21.28	21.38		0
	75	0	21.20	21.25	21.29		0
64QAM	1	0	20.78	20.56	20.81	0-2	0.5
	1	36	20.63	20.57	20.73		0.5
	1	74	20.61	20.55	20.76		0.5
	36	0	20.30	20.45	20.39	0-3	0.5
	36	18	20.27	20.41	20.33		0.5
	36	37	20.25	20.43	20.32		0.5
	75	0	20.22	20.35	20.28		0.5

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Table 9-40
Reduced LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.49	21.43	21.52	0	0
	1	25	21.36	21.39	21.38		0
	1	49	21.41	21.35	21.43		0
	25	0	21.28	21.47	21.38	0-1	0
	25	12	21.30	21.44	21.39		0
	25	25	21.29	21.42	21.36		0
	50	0	21.39	21.43	21.38		0
16QAM	1	0	21.66	21.60	21.67	0-1	0
	1	25	21.59	21.59	21.63		0
	1	49	21.65	21.57	21.62		0
	25	0	21.26	21.32	21.40	0-2	0
	25	12	21.24	21.28	21.37		0
	25	25	21.24	21.26	21.37		0
	50	0	21.29	21.27	21.39		0
64QAM	1	0	20.30	20.62	20.39	0-2	0.5
	1	25	20.21	20.55	20.36		0.5
	1	49	20.22	20.56	20.37		0.5
	25	0	20.27	20.38	20.37	0-3	0.5
	25	12	20.22	20.37	20.38		0.5
	25	25	20.20	20.40	20.34		0.5
	50	0	20.24	20.41	20.33		0.5

Table 9-41
Reduced LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.31	21.32	21.34	0	0
	1	12	21.28	21.26	21.27		0
	1	24	21.33	21.30	21.31		0
	12	0	21.46	21.43	21.45	0-1	0
	12	6	21.36	21.44	21.46		0
	12	13	21.37	21.45	21.43		0
	25	0	21.40	21.44	21.45		0
16QAM	1	0	21.65	21.68	21.59	0-1	0
	1	12	21.54	21.59	21.63		0
	1	24	21.59	21.62	21.62		0
	12	0	21.40	21.49	21.50	0-2	0
	12	6	21.41	21.48	21.52		0
	12	13	21.35	21.47	21.45		0
	25	0	21.32	21.42	21.41		0
64QAM	1	0	20.65	20.85	20.88	0-2	0.5
	1	12	20.61	20.74	20.74		0.5
	1	24	20.62	20.82	20.78		0.5
	12	0	20.35	20.43	20.44	0-3	0.5
	12	6	20.41	20.46	20.47		0.5
	12	13	20.40	20.45	20.42		0.5
	25	0	20.70	20.38	20.37		0.5

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Table 9-42
Reduced LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.43	21.46	21.46	0	0
	1	7	21.47	21.50	21.53		0
	1	14	21.40	21.40	21.33		0
	8	0	21.30	21.43	21.40	0-1	0
	8	4	21.33	21.42	21.42		0
	8	7	21.30	21.40	21.44		0
	15	0	21.43	21.41	21.51		0
16QAM	1	0	21.54	21.58	21.68	0-1	0
	1	7	21.60	21.63	21.65		0
	1	14	21.61	21.64	21.36		0
	8	0	21.30	21.40	21.28	0-2	0
	8	4	21.29	21.42	21.32		0
	8	7	21.28	21.39	21.33		0
	15	0	21.27	21.62	21.36		0
64QAM	1	0	20.45	20.64	20.95	0-2	0.5
	1	7	20.51	20.68	20.94		0.5
	1	14	20.42	20.60	20.85		0.5
	8	0	20.35	20.41	20.46	0-3	0.5
	8	4	20.32	20.40	20.43		0.5
	8	7	20.40	20.38	20.42		0.5
	15	0	20.41	20.35	20.40		0.5

Table 9-43
Reduced LTE Band 2 (PCS) Conducted Powers -1.4 MHz Bandwidth – Grip Sensor Active

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.40	21.33	21.45	0	0
	1	2	21.42	21.40	21.53		0
	1	5	21.29	21.31	21.46		0
	3	0	21.26	21.25	21.45		0
	3	2	21.30	21.28	21.35		0
	3	3	21.24	21.21	21.39		0
	6	0	21.23	21.39	21.40	0-1	0
16QAM	1	0	21.14	21.49	21.60	0-1	0
	1	2	21.15	21.58	21.63		0
	1	5	21.13	21.50	21.56		0
	3	0	21.20	21.38	21.46		0
	3	2	21.23	21.37	21.47		0
	3	3	21.20	21.39	21.44		0
	6	0	21.21	21.33	21.16	0-2	0
64QAM	1	0	20.36	20.60	20.33	0-2	0.5
	1	2	20.42	20.63	20.41		0.5
	1	5	20.40	20.58	20.39		0.5
	3	0	20.38	20.65	20.35		0.5
	3	2	20.43	20.66	20.40		0.5
	3	3	20.37	20.60	20.39		0.5
	6	0	20.34	20.40	20.31	0-3	0.5

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9.3.5 LTE Band 30

Table 9-44
LTE Band 30 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	24.32	0	0
	1	25	24.30		0
	1	49	24.23		0
	25	0	23.41	0-1	1
	25	12	23.37		1
	25	25	23.34		1
16QAM	50	0	23.34	0-1	1
	1	0	23.50		1
	1	25	23.46		1
	1	49	23.44	0-2	1
	25	0	22.39		2
	25	12	22.38		2
64QAM	25	25	22.34	0-2	2
	50	0	22.36		2
	1	0	22.45	0-2	2
	1	25	22.42		2
	1	49	22.38		2
	25	0	21.40	0-3	3
	25	12	21.40		3
	25	25	21.36		3
	50	0	21.38		3

Table 9-45
LTE Band 30 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	24.31	0	0
	1	12	24.33		0
	1	24	24.25		0
	12	0	23.35	0-1	1
	12	6	23.31		1
	12	13	23.24		1
16QAM	25	0	23.24	0-1	1
	1	0	23.43		1
	1	12	23.50		1
	1	24	23.50	0-2	1
	12	0	22.32		2
	12	6	22.37		2
64QAM	12	13	22.32	0-2	2
	25	0	22.28		2
	1	0	22.50	0-2	2
	1	12	22.33		2
	1	24	22.32		2
	12	0	21.39	0-3	3
	12	6	21.50		3
	12	13	21.45		3
	25	0	21.38		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 9-46
Reduced LTE Band 30 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	20.88	0	0
	1	25	20.75		0
	1	49	20.80		0
	25	0	20.80	0-1	0
	25	12	20.79		0
	25	25	20.76		0
	50	0	20.79		0
16QAM	1	0	20.99	0-1	0
	1	25	21.00		0
	1	49	20.99		0
	25	0	20.92	0-2	0
	25	12	20.96		0
	25	25	20.90		0
	50	0	20.89		0
64QAM	1	0	19.86	0-2	0.5
	1	25	19.78		0.5
	1	49	19.90		0.5
	25	0	19.95	0-3	0.5
	25	12	19.94		0.5
	25	25	19.89		0.5
	50	0	19.92		0.5

Table 9-47
Reduced LTE Band 30 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	20.74	0	0
	1	12	20.68		0
	1	24	20.71		0
	12	0	20.74	0-1	0
	12	6	20.76		0
	12	13	20.71		0
	25	0	20.72		0
16QAM	1	0	21.00	0-1	0
	1	12	20.98		0
	1	24	20.95		0
	12	0	20.83	0-2	0
	12	6	20.84		0
	12	13	20.81		0
	25	0	20.77		0
64QAM	1	0	20.12	0-2	0.5
	1	12	20.00		0.5
	1	24	20.10		0.5
	12	0	19.85	0-3	0.5
	12	6	19.85		0.5
	12	13	19.86		0.5
	25	0	19.76		0.5

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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9.3.1

LTE Band 7

Table 9-48
LTE Band 7 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	23.19	23.00	23.01	0	0
	1	50	23.11	22.94	22.92		0
	1	99	23.08	22.98	22.92		0
	50	0	22.00	22.04	22.00	0-1	1
	50	25	22.00	21.98	21.98		1
	50	50	21.94	21.99	21.98		1
16QAM	100	0	21.97	22.03	21.99	0-1	1
	1	0	22.26	22.19	22.30		1
	1	50	22.18	22.11	21.77		1
	1	99	22.32	22.15	21.75	0-2	1
	50	0	21.14	21.01	21.01		2
	50	25	21.10	20.99	21.02		2
64QAM	50	50	21.06	20.98	20.96	0-2	2
	100	0	21.13	21.01	20.94		2
	1	0	21.39	21.25	21.30		0-2
	1	50	21.23	21.27	21.30	2	
	1	99	21.37	21.12	20.63	2	
	64QAM	50	0	20.29	20.31	20.21	0-3
50		25	20.28	20.22	20.12	3	
50		50	20.27	20.24	20.08	3	
100		0	20.15	20.27	20.16		3

Table 9-49
LTE Band 7 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	23.16	23.27	23.19	0	0
	1	36	23.15	23.25	23.03		0
	1	74	23.06	23.18	23.05		0
	36	0	22.15	22.25	22.19	0-1	1
	36	18	22.15	22.19	22.17		1
	36	37	22.10	22.16	22.06		1
	75	0	22.16	22.20	22.05		1
16QAM	1	0	22.50	22.44	22.27	0-1	1
	1	36	22.19	22.50	22.26		1
	1	74	22.50	22.45	22.39		1
	36	0	21.10	21.21	21.20	0-2	2
	36	18	21.19	21.24	21.23		2
	36	37	21.23	21.25	21.15		2
	75	0	21.21	21.24	21.07		2
64QAM	1	0	21.36	21.42	21.44	0-2	2
	1	36	21.15	21.35	21.27		2
	1	74	21.37	21.21	21.12		2
	36	0	20.36	20.26	20.19	0-3	3
	36	18	20.23	20.22	20.18		3
	36	37	20.18	20.19	20.11		3
	75	0	20.21	20.20	20.13		3

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Table 9-50
LTE Band 7 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	23.22	23.17	23.21	0	0
	1	25	23.29	23.26	23.11		0
	1	49	23.21	23.06	23.05		0
	25	0	22.28	22.15	22.17	0-1	1
	25	12	22.21	22.21	22.12		1
	25	25	22.20	22.13	22.06		1
	50	0	22.26	22.17	22.10		1
16QAM	1	0	22.50	22.45	22.15	0-1	1
	1	25	22.04	22.50	22.01		1
	1	49	22.23	22.36	22.45		1
	25	0	21.22	21.16	21.08	0-2	2
	25	12	21.29	21.26	21.18		2
	25	25	21.23	21.11	21.05		2
	50	0	21.27	21.10	21.11		2
64QAM	1	0	21.13	21.50	21.27	0-2	2
	1	25	21.01	21.19	21.24		2
	1	49	21.17	21.07	21.26		2
	25	0	20.31	20.24	20.18	0-3	3
	25	12	20.28	20.24	20.15		3
	25	25	20.26	20.18	20.09		3
	50	0	20.30	20.22	20.13		3

Table 9-51
LTE Band 7 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	23.21	23.14	23.14	0	0
	1	12	23.09	23.13	23.16		0
	1	24	23.07	23.10	23.08		0
	12	0	22.23	22.19	22.14	0-1	1
	12	6	22.24	22.19	22.15		1
	12	13	22.28	22.12	22.05		1
	25	0	22.24	22.15	22.08		1
16QAM	1	0	22.41	22.37	22.25	0-1	1
	1	12	22.41	22.36	22.25		1
	1	24	22.28	22.40	22.26		1
	12	0	21.31	21.22	21.17	0-2	2
	12	6	21.28	21.23	21.14		2
	12	13	21.25	21.22	21.12		2
	25	0	21.22	21.23	21.10		2
64QAM	1	0	21.31	21.24	21.22	0-2	2
	1	12	21.35	21.28	21.22		2
	1	24	21.25	21.25	21.16		2
	12	0	20.28	20.21	20.15	0-3	3
	12	6	20.27	20.20	20.17		3
	12	13	20.22	20.21	20.06		3
	25	0	20.20	20.18	20.15		3

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Table 9-52
Reduced LTE Band 7 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	20.83	21.12	20.63	0	0
	1	50	20.60	20.87	20.44		0
	1	99	20.56	20.93	20.45		0
	50	0	20.77	21.10	20.58	0-1	0
	50	25	20.72	21.05	20.56		0
	50	50	20.65	21.03	20.50		0
	100	0	20.73	21.04	20.55		0
16QAM	1	0	21.00	21.26	20.75	0-1	0
	1	50	20.85	21.18	20.56		0
	1	99	20.79	21.14	20.63		0
	50	0	20.75	21.01	20.55	0-2	0
	50	25	20.69	21.04	20.48		0
	50	50	20.61	21.00	20.47		0
	100	0	20.71	21.02	20.48		0
64QAM	1	0	19.94	20.20	19.67	0-2	1
	1	50	19.76	20.02	19.57		1
	1	99	19.74	20.05	19.52		1
	50	0	19.74	20.04	19.56	0-3	1
	50	25	19.70	20.03	19.53		1
	50	50	19.69	20.01	19.48		1
	100	0	19.70	19.99	19.53		1

Table 9-53
Reduced LTE Band 7 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	21.06	21.37	20.67	0	0
	1	36	21.01	21.30	20.62		0
	1	74	21.01	21.31	20.65		0
	36	0	21.08	21.39	20.67	0-1	0
	36	18	21.12	21.43	20.69		0
	36	37	21.06	21.40	20.68		0
	75	0	21.12	21.35	20.66		0
16QAM	1	0	21.44	21.22	20.97	0-1	0
	1	36	21.37	21.10	20.95		0
	1	74	21.39	21.12	20.86		0
	36	0	21.24	21.32	20.71	0-2	0
	36	18	21.28	21.31	20.72		0
	36	37	21.22	21.32	20.69		0
	75	0	21.08	21.33	20.71		0
64QAM	1	0	20.28	20.31	19.75	0-2	1
	1	36	20.19	20.30	19.77		1
	1	74	20.21	20.50	19.83		1
	36	0	20.07	20.35	19.69	0-3	1
	36	18	20.09	20.35	19.71		1
	36	37	20.06	20.32	19.68		1
	75	0	20.07	20.36	19.70		1

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Table 9-54
Reduced LTE Band 7 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	20.90	21.28	20.49	0	0
	1	25	20.89	21.26	20.51		0
	1	49	20.86	21.25	20.49		0
	25	0	20.94	21.33	20.53	0-1	0
	25	12	20.95	21.33	20.55		0
	25	25	20.91	21.32	20.50		0
	50	0	20.95	21.31	20.52		0
16QAM	1	0	21.15	21.46	20.81	0-1	0
	1	25	20.90	21.47	20.81		0
	1	49	20.85	21.48	20.83		0
	25	0	20.90	21.28	20.55	0-2	0
	25	12	20.97	21.30	20.56		0
	25	25	20.92	21.26	20.52		0
	50	0	20.93	21.28	20.53		0
64QAM	1	0	20.08	20.24	19.57	0-2	1
	1	25	20.09	20.23	19.59		1
	1	49	20.07	20.44	19.61		1
	25	0	19.94	20.31	19.52	0-3	1
	25	12	19.96	20.31	19.54		1
	25	25	19.91	20.28	19.52		1
	50	0	19.96	20.30	19.56		1

Table 9-55
Reduced LTE Band 7 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	20.90	21.18	20.44	0	0
	1	12	20.92	21.23	20.48		0
	1	24	20.92	21.22	20.47		0
	12	0	20.95	21.33	20.53	0-1	0
	12	6	20.94	21.37	20.55		0
	12	13	20.93	21.34	20.54		0
	25	0	20.94	21.33	20.53		0
16QAM	1	0	21.10	21.33	20.88	0-1	0
	1	12	21.14	21.35	21.17		0
	1	24	21.12	21.31	21.15		0
	12	0	20.98	21.31	20.60	0-2	0
	12	6	21.04	21.30	20.60		0
	12	13	20.94	21.28	20.60		0
	25	0	20.96	21.29	20.58		0
64QAM	1	0	20.04	20.30	19.71	0-2	1
	1	12	20.07	20.32	19.74		1
	1	24	20.03	20.32	19.71		1
	12	0	20.03	20.29	19.56	0-3	1
	12	6	20.00	20.31	19.57		1
	12	13	19.93	20.28	19.55		1
	25	0	19.96	20.25	19.55		1

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LTE Band 38

Table 9-56
LTE Band 38 Conducted Powers - 20 MHz Bandwidth

LTE Band 38 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			38000 (2595.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	22.98	0	0
	1	50	22.76		0
	1	99	22.72		0
	50	0	21.90	0-1	1
	50	25	21.84		1
	50	50	21.76		1
	100	0	21.85		1
16QAM	1	0	22.07	0-1	1
	1	50	21.85		1
	1	99	21.83		1
	50	0	20.98	0-2	2
	50	25	20.86		2
	50	50	20.82		2
	100	0	20.93		2
64QAM	1	0	20.96	0-2	2
	1	50	20.67		2
	1	99	20.56		2
	50	0	19.95	0-3	3
	50	25	19.77		3
	50	50	19.71		3
	100	0	19.79		3

Note: LTE Band 38 at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-57
LTE Band 38 Conducted Powers - 15 MHz Bandwidth

LTE Band 38 15 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			37825 (2577.5 MHz)	38000 (2595.0 MHz)	38174 (2612.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.76	22.91	22.85	0	0
	1	36	22.65	22.77	22.67		0
	1	74	22.59	22.71	22.63		0
	36	0	21.73	21.88	21.77	0-1	1
	36	18	21.69	21.85	21.74		1
	36	37	21.66	21.78	21.73		1
	75	0	21.65	21.84	21.76		1
16QAM	1	0	21.89	22.05	21.92	0-1	1
	1	36	21.71	21.86	21.79		1
	1	74	21.66	21.83	21.75		1
	36	0	20.78	20.89	20.85	0-2	2
	36	18	20.74	20.90	20.83		2
	36	37	20.69	20.79	20.72		2
	75	0	20.68	20.88	20.75		2
64QAM	1	0	20.63	20.78	20.71	0-2	2
	1	36	20.46	20.62	20.55		2
	1	74	20.41	20.55	20.47		2
	36	0	19.74	19.87	19.79	0-3	3
	36	18	19.71	19.88	19.77		3
	36	37	19.65	19.76	19.70		3
	75	0	19.69	19.86	19.80		3

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Table 9-58
LTE Band 38 Conducted Powers - 10 MHz Bandwidth

LTE Band 38 10 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			37800 (2575.0 MHz)	38000 (2595.0 MHz)	38199 (2615.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.94	22.82	22.80	0	0
	1	25	22.81	22.77	22.71		0
	1	49	22.75	22.70	22.67		0
	25	0	21.87	21.86	21.76	0-1	1
	25	12	21.85	21.87	21.74		1
	25	25	21.80	21.77	21.69		1
	50	0	21.82	21.82	21.75		1
16QAM	1	0	22.13	21.96	21.85	0-1	1
	1	25	22.09	21.86	21.78		1
	1	49	22.06	21.82	21.76		1
	25	0	20.88	20.80	20.71	0-2	2
	25	12	20.79	20.82	20.73		2
	25	25	20.74	20.73	20.66		2
	50	0	20.86	20.87	20.80		2
64QAM	1	0	20.98	20.68	20.96	0-2	2
	1	25	20.91	20.60	20.88		2
	1	49	20.83	20.51	20.80		2
	25	0	19.85	19.81	19.81	0-3	3
	25	12	19.82	19.81	19.78		3
	25	25	19.77	19.77	19.72		3
	50	0	19.82	19.83	19.77		3

Table 9-59
LTE Band 38 Conducted Powers - 5 MHz Bandwidth

LTE Band 38 5 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			37775 (2572.5 MHz)	38000 (2595.0 MHz)	38224 (2617.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.78	22.85	22.73	0	0
	1	12	22.79	22.75	22.74		0
	1	24	22.80	22.72	22.66		0
	12	0	21.82	21.83	21.77	0-1	1
	12	6	21.81	21.83	21.81		1
	12	13	21.78	21.79	21.73		1
	25	0	21.79	21.80	21.74		1
16QAM	1	0	22.14	22.22	22.08	0-1	1
	1	12	22.10	22.11	22.04		1
	1	24	22.09	22.13	22.06		1
	12	0	20.90	20.96	20.90	0-2	2
	12	6	20.90	20.97	20.86		2
	12	13	20.83	20.92	20.82		2
	25	0	20.75	20.81	20.70		2
64QAM	1	0	20.93	20.94	20.89	0-2	2
	1	12	20.86	20.91	20.78		2
	1	24	20.89	20.93	20.79		2
	12	0	19.87	19.88	19.81	0-3	3
	12	6	19.87	19.88	19.80		3
	12	13	19.83	19.84	19.71		3
	25	0	19.76	19.83	19.72		3

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9.3.2 LTE Band 41

Table 9-60
LTE Band 41 Power Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHzBandwidth									
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	23.20	23.10	23.06	23.00	23.05	0	0
	1	50	22.99	22.94	22.82	22.78	22.86		0
	1	99	23.00	22.90	22.71	22.72	22.75		0
	50	0	22.14	22.04	21.93	21.95	21.98	0-1	1
	50	25	22.09	22.01	21.85	21.88	21.93		1
	50	50	22.07	21.95	21.77	21.80	21.86		1
	100	0	22.13	22.02	21.86	21.88	21.93		1
16QAM	1	0	22.31	22.22	22.12	22.13	22.15	0-1	1
	1	50	22.10	22.04	21.84	21.90	21.96		1
	1	99	22.12	22.05	21.77	21.86	21.88		1
	50	0	21.18	21.06	20.98	20.96	20.99	0-2	2
	50	25	21.14	21.03	20.89	20.92	20.97		2
	50	50	21.07	21.00	20.79	20.85	20.90		2
	100	0	21.15	21.08	20.91	20.89	20.99		2
64QAM	1	0	21.16	21.09	20.99	20.98	21.03	0-2	2
	1	50	20.99	20.98	20.80	20.70	20.88		2
	1	99	20.95	20.87	20.63	20.70	20.73		2
	50	0	20.23	20.08	19.97	19.97	20.03	0-3	3
	50	25	20.16	20.05	19.90	19.90	19.96		3
	50	50	20.10	20.00	19.81	19.82	19.87		3
	100	0	20.10	20.01	19.89	19.86	19.96		3

Table 9-61
LTE Band 41 Power Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.95	23.13	23.17	22.88	22.47	0	0
	1	36	22.92	23.03	23.05	22.76	22.40		0
	1	74	22.84	23.00	23.01	22.70	22.35		0
	36	0	22.04	22.08	22.14	21.81	21.60	0-1	1
	36	18	22.05	22.10	22.13	21.82	21.54		1
	36	37	22.02	22.03	22.11	21.76	21.44		1
16QAM	75	0	22.00	22.04	22.06	21.75	21.47	0-1	1
	1	0	22.07	21.73	22.26	21.98	21.60		1
	1	36	21.95	21.63	22.17	21.86	21.46		1
	1	74	21.91	21.64	22.12	21.81	21.40	0-2	1
	36	0	21.00	21.14	21.19	20.88	20.52		2
	36	18	20.98	21.16	21.16	20.84	20.46		2
64QAM	36	37	20.94	21.11	21.10	20.79	20.37	0-2	2
	75	0	21.02	21.05	21.07	20.73	20.47		2
	1	0	21.36	21.27	21.06	20.77	20.81		0-2
	1	36	21.23	21.19	21.01	20.68	20.71	2	
	1	74	21.24	21.14	20.98	20.61	20.63	2	
	64QAM	36	0	20.16	20.09	20.17	19.88	19.78	0-3
36		18	20.12	20.08	20.19	19.84	19.58	3	
36		37	20.07	20.01	20.12	19.77	19.51	3	
75		0	20.04	20.06	20.08	19.76	19.49	3	

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Table 9-62
LTE Band 41 Power Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHzBandwidth									
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	22.94	23.03	23.13	22.86	22.56	0	0
	1	25	22.91	23.02	23.07	22.87	22.52		0
	1	49	22.84	22.97	23.03	22.77	22.44		0
	25	0	22.02	22.05	22.17	21.82	21.53	0-1	1
	25	12	22.03	22.08	22.13	21.79	21.50		1
	25	25	21.98	22.05	22.07	21.77	21.49		1
	50	0	22.01	22.04	22.10	21.82	21.50		1
16QAM	1	0	22.03	21.94	22.21	21.76	21.47	0-1	1
	1	25	21.94	21.91	22.22	21.70	21.37		1
	1	49	21.92	21.87	22.16	21.63	21.32		1
	25	0	21.06	21.08	21.15	20.88	20.60	0-2	2
	25	12	21.02	21.09	21.12	20.85	20.54		2
	25	25	21.00	21.07	21.11	20.82	20.52		2
	50	0	21.02	21.05	21.09	20.83	20.49		2
64QAM	1	0	21.23	21.18	20.77	20.99	20.72	0-2	2
	1	25	21.18	21.14	20.74	20.92	20.63		2
	1	49	21.20	21.11	20.69	20.88	20.56		2
	25	0	19.92	20.01	20.20	19.78	19.42	0-3	3
	25	12	19.96	20.04	20.18	19.74	19.46		3
	25	25	19.92	19.92	20.16	19.70	19.39		3
	50	0	20.01	20.06	20.12	19.84	19.49		3

Table 9-63
LTE Band 41 Power Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHzBandwidth									
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	22.92	22.88	23.15	22.69	22.34	0	0
	1	12	22.94	22.90	23.13	22.73	22.33		0
	1	24	22.89	22.87	23.08	22.68	22.34		0
	12	0	21.99	22.03	22.11	21.80	21.49	0-1	1
	12	6	22.02	22.05	22.12	21.77	21.47		1
	12	13	22.00	22.04	22.09	21.76	21.44		1
	25	0	21.97	22.02	22.11	21.73	21.47		1
16QAM	1	0	22.12	22.00	21.97	21.90	21.48	0-1	1
	1	12	22.14	21.97	21.91	21.93	21.41		1
	1	24	22.00	21.96	21.90	21.88	21.43		1
	12	0	20.95	21.00	21.15	20.73	20.45	0-2	2
	12	6	20.96	21.04	21.16	20.71	20.47		2
	12	13	20.93	21.00	21.14	20.67	20.45		2
	25	0	20.95	21.09	21.06	20.66	20.53		2
64QAM	1	0	20.66	21.17	21.07	20.47	20.65	0-2	2
	1	12	20.64	21.15	21.05	20.44	20.62		2
	1	24	20.65	21.16	21.01	20.43	20.61		2
	12	0	20.03	19.88	20.07	19.77	19.37	0-3	3
	12	6	20.04	19.92	20.08	19.79	19.34		3
	12	13	19.99	19.89	20.06	19.76	19.31		3
	25	0	20.03	19.99	20.05	19.78	19.44		3

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Table 9-64
Reduced LTE Band 41 Power Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHzBandwidth									
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	21.35	21.07	20.93	21.14	21.45	0	0
	1	50	21.03	20.88	20.69	20.95	21.18		0
	1	99	21.07	20.91	20.67	20.86	21.19		0
	50	0	21.20	21.06	20.91	21.13	21.40	0-1	0
	50	25	21.19	21.02	20.77	21.12	21.32		0
	50	50	21.10	20.94	20.75	21.08	21.23		0
16QAM	100	0	21.17	20.95	20.86	21.05	21.27	0-1	0
	1	0	21.28	21.02	20.60	21.32	21.38		0
	1	50	21.03	21.00	20.38	21.03	21.20		0
	1	99	21.02	21.01	20.33	21.05	21.17	0-2	0
	50	0	21.21	21.02	20.82	21.16	21.36		0
	50	25	21.20	21.01	20.84	21.15	21.31		0
64QAM	50	50	21.12	20.97	20.75	21.08	21.24	0-2	0
	100	0	21.21	21.02	20.78	21.07	21.29		0
	1	0	20.34	20.14	19.89	20.11	20.32		0-2
	1	50	20.23	20.04	19.70	19.94	20.13	1	
	1	99	20.24	20.05	19.73	19.93	20.10	1	
	64QAM	50	0	20.43	20.17	19.72	20.18	20.35	0-3
50		25	20.44	20.19	19.71	20.17	20.33	1	
50		50	20.40	20.16	19.66	20.11	20.32	1	
100		0	20.49	20.15	19.68	20.09	20.33	1	

Table 9-65
Reduced LTE Band 41 Power Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHzBandwidth									
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	21.28	21.02	20.75	21.06	21.39	0	0
	1	36	21.16	20.95	20.63	20.98	21.28		0
	1	74	21.19	20.94	20.66	20.99	21.24		0
	36	0	21.35	21.07	20.72	21.18	21.36	0-1	0
	36	18	21.32	21.06	20.73	21.12	21.34		0
	36	37	21.31	21.05	20.69	21.08	21.32		0
16QAM	75	0	21.28	20.99	20.70	21.10	21.31	0	
	1	0	21.20	21.03	20.81	21.09	21.31	0-1	0
	1	36	21.15	20.95	20.73	20.93	21.21		0
	1	74	21.17	20.94	20.72	20.97	21.19		0
	36	0	21.41	21.06	20.73	21.24	21.48	0-2	0
	36	18	21.42	21.05	20.74	21.22	21.47		0
36	37	21.36	21.06	20.70	21.18	21.40	0		
64QAM	75	0	21.26	21.03	20.71	21.12	21.32	0	
	1	0	20.31	20.18	19.54	20.32	20.49	0-2	1
	1	36	20.21	20.16	19.45	20.17	20.37		1
	1	74	20.20	20.11	19.43	20.16	20.36		1
	36	0	20.36	20.10	19.72	20.21	20.45	0-3	1
	36	18	20.35	20.09	19.75	20.20	20.44		1
36	37	20.34	20.07	19.71	20.16	20.36	1		
	75	0	20.32	20.04	19.70	20.13	20.34		1

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Table 9-66
Reduced LTE Band 41 Power Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHzBandwidth									
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	21.36	20.96	20.80	21.17	21.41	0	0
	1	25	21.32	20.94	20.74	21.12	21.34		0
	1	49	21.28	20.93	20.75	21.08	21.35		0
	25	0	21.35	21.01	20.73	21.16	21.34	0-1	0
	25	12	21.37	21.08	20.72	21.12	21.36		0
	25	25	21.29	21.00	20.75	21.08	21.31		0
	50	0	21.35	21.01	20.70	21.13	21.36		0
16QAM	1	0	21.47	21.33	20.56	20.96	21.30	0-1	0
	1	25	21.43	21.28	20.49	20.91	21.19		0
	1	49	21.44	21.29	20.53	20.88	21.20		0
	25	0	21.34	20.99	20.75	21.18	21.38	0-2	0
	25	12	21.27	21.04	20.73	21.15	21.34		0
	25	25	21.26	21.03	20.71	21.11	21.35		0
	50	0	21.31	20.96	20.77	21.18	21.36		0
64QAM	1	0	20.15	20.24	19.27	19.64	19.91	0-2	1
	1	25	20.09	20.20	19.20	19.61	19.84		1
	1	49	20.10	20.22	19.15	19.56	19.77		1
	25	0	20.35	20.02	19.73	20.11	20.33	0-3	1
	25	12	20.32	19.97	19.78	20.17	20.39		1
	25	25	20.28	20.02	19.70	20.09	20.33		1
	50	0	20.32	20.01	19.73	20.12	20.32		1

Table 9-67
Reduced LTE Band 41 Power Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHzBandwidth									
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	21.30	20.98	20.70	21.13	21.30	0	0
	1	12	21.29	20.95	20.68	21.11	21.29		0
	1	24	21.27	20.96	20.67	21.10	21.26		0
	12	0	21.30	21.03	20.70	21.14	21.29	0-1	0
	12	6	21.35	21.05	20.71	21.12	21.33		0
	12	13	21.32	21.01	20.69	21.12	21.31		0
	25	0	21.34	21.04	20.76	21.14	21.28		0
16QAM	1	0	20.86	20.63	20.36	21.20	21.46	0-1	0
	1	12	20.85	20.58	20.30	21.20	21.43		0
	1	24	20.85	20.56	20.28	21.21	21.42		0
	12	0	21.25	21.02	20.67	21.12	21.30	0-2	0
	12	6	21.24	20.96	20.66	21.13	21.29		0
	12	13	21.22	20.98	20.67	21.09	21.29		0
	25	0	21.35	21.10	20.70	21.07	21.31		0
64QAM	1	0	20.50	20.25	19.47	19.86	20.12	0-2	1
	1	12	20.48	20.29	19.42	19.87	20.11		1
	1	24	20.46	20.26	19.40	19.88	20.08		1
	12	0	20.28	19.95	19.75	20.14	20.39	0-3	1
	12	6	20.27	19.95	19.75	20.21	20.37		1
	12	13	20.28	19.96	19.72	20.16	20.36		1
	25	0	20.27	19.99	19.66	20.13	20.32		1

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9.3.3 LTE Carrier Aggregation Conducted Powers

Table 9-68
LTE Band 12 Two Component Carrier Maximum Conducted Powers

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-12A (1)	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	24.80	24.61
CA_12A-30A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B30	10	9820	2355	24.30	24.61

Table 9-69
LTE Band 12 Three Component Carrier Maximum Conducted Powers

	PCC									SCC 1				SCC 2				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-12A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	5	900	1960	LTE B2	5	625	1932.5	24.77	24.61
CA_2A-12A-30A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.67	24.61

Table 9-70
LTE Band 12 Four Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dbm)
CA_2A-2A-12A-30A	LTE B12	10	23095	707.5	QPSK	1	25	5095	737.5	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	24.67	24.61

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Table 9-71
LTE Band 5 Two Component Carrier Maximum Conducted Powers

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-5A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	20	900	1960	24.53	24.70
CA_4A-5A (1)	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B4	20	2175	2132.5	24.67	24.70
CA_5B	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B5	10	2553	884.3	24.74	24.70
CA_5A-30A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B30	10	9820	2355	24.63	24.70
CA_5A-66A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B66	20	66786	2145	24.64	24.70

Table 9-72
LTE Band 5 Three Component Carrier Maximum Conducted Powers

Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC					SCC 1				SCC 2				Power		
				PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	5	900	1960	LTE B2	5	625	1932.5	24.68	24.70
CA_2A-4A-5A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.67	24.70
CA_2A-5A-30A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.75	24.70
CA_2A-5A-66A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.69	24.70
CA_4A-4A-5A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B4	5	2175	2132.5	LTE B4	5	1975	2112.5	24.69	24.70
CA_4A-5A-30A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	24.74	24.70
CA_5A-30A-66A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.72	24.70
CA_5A-66A-66A	LTE B5	5	20625	846.5	QPSK	0	0	2625	891.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	24.67	24.70

Table 9-73
LTE Band 5 Four Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A-30A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	24.47	24.70
CA_2A-5A-30A-66A	LTE B5	5	20625	846.5	QPSK	1	0	2625	891.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.51	24.70

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Table 9-74
LTE Band 66 Two Component Carrier Maximum Conducted Powers

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	24.02	24.18
CA_5A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B5	10	2525	881.5	24.07	24.18
CA_12A-66A (2)	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B12	10	5095	737.5	24.33	24.18
CA_29A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B29	10	9715	722.5	24.15	24.18
CA_30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B30	10	9820	2355	24.08	24.18
CA_66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	67311	2197.5	24.02	24.18

Table 9-75
LTE Band 66 Three Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-5A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.06	24.18
CA_2A-12A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.12	24.18
CA_2A-30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	23.82	24.18
CA_2A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B66	5	67311	2197.5	24.01	24.18
CA_5A-30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	23.81	24.18
CA_5A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B5	10	2525	881.5	LTE B66	5	67311	2197.5	24.11	24.18
CA_12A-30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	23.88	24.18
CA_30A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B30	10	5230	2355	LTE B66	5	67311	2197.5	23.92	24.18
CA_12A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B12	10	5095	737.5	LTE B66	5	67311	2197.5	24.09	24.18

Table 9-76
LTE Band 66 Four Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1			SCC 2			SCC 3				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-5A-30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.04	24.18
CA_2A-12A-30A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.03	24.18
CA_2A-12A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	67311	2197.5	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.05	24.18
CA_12A-30A-66A-66A	LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	67311	2197.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.02	24.18

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Table 9-77

LTE Band 66 Two Component Carrier Reduced Conducted Powers

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	21.21	21.37
CA 5A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B5	10	2525	881.5	21.28	21.37
CA 12A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B12	10	5095	737.5	21.33	21.37
CA 29A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B29	10	9715	722.5	21.22	21.37
CA 30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B30	10	9820	2355	21.18	21.37
CA 66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B66	5	66461	2112.5	21.20	21.37

Table 9-78

LTE Band 66 Three Component Carrier Reduced Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-5A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B5	10	2525	881.5	21.33	21.37
CA 2A-12A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B12	10	5095	737.5	21.35	21.37
CA 2A-30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B30	10	9820	2355	21.36	21.37
CA 2A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B66	5	66461	2112.5	21.35	21.37
CA 5A-30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	21.34	21.37
CA 5A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B5	10	2525	881.5	LTE B66	5	66461	2112.5	21.35	21.37
CA 12A-30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.36	21.37
CA 30A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B30	10	5230	2355	LTE B66	5	66461	2112.5	21.32	21.37
CA 12A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B12	10	5095	737.5	LTE B66	5	66461	2112.5	21.35	21.37

Table 9-79

LTE Band 66 Four Component Carrier Reduced Conducted Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-5A-30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	21.33	21.37
CA 2A-5A-30A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.29	21.37
CA 2A-12A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B66	5	66461	2112.5	LTE B2	20	900	1960	LTE B12	10	5095	737.5	21.22	21.37
CA 12A-30A-66A-66A	LTE B66	20	132572	1770	64QAM	1	0	67036	2170	LTE B66	5	66461	2112.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.18	21.37

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Table 9-80
LTE Band 4 Two Component Carrier Maximum Conducted Powers

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-4A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	24.10	24.18
CA_4A-4A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	23.38	24.18
CA_4A-5A (1)	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B5	10	2525	881.5	24.13	24.18
CA_4A-12A (2)	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B12	10	5095	737.5	24.21	24.18
CA_4A-29A (2)	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B29	10	9715	722.5	24.25	24.18
CA_4A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B30	10	9820	2355	24.27	24.18

Table 9-81
LTE Band 4 Three Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-4A-5A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.39	24.18
CA_2A-4A-12A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.26	24.18
CA_2A-4A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.37	24.18
CA_4A-4A-5A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B5	10	2525	881.5	24.36	24.18
CA_4A-4A-12A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B12	10	5095	737.5	24.20	24.18
CA_4A-4A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B30	10	9820	2355	24.09	24.18
CA_4A-5A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.31	24.18
CA_4A-12A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.27	24.18
CA_4A-29A-30A	LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.35	24.18

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Table 9-82

LTE Band 4 Two Component Carrier Reduced Conducted Powers – Hotspot Mode Active

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B2	20	900	1960	20.95	21.00
CA 4A-4A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B4	5	1975	2112.5	20.71	21.00
CA 4A-5A (1)	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B5	10	2525	881.5	20.68	21.00
CA 4A-12A (2)	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B12	10	5095	737.5	20.69	21.00
CA 4A-29A (2)	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B29	10	9715	722.5	20.94	21.00
CA 4A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B30	10	9820	2355	20.48	21.00

Table 9-83

LTE Band 4 Three Component Carrier Reduced Conducted Powers – Hotspot Mode Active

Combination	PCC										SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 2A-4A-5A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B2	20	900	1960	LTE B5	10	2525	881.5	20.66	21.00	
CA 2A-4A-12A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B2	20	900	1960	LTE B12	10	5095	737.5	20.70	21.00	
CA 2A-4A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	20.72	21.00	
CA 4A-4A-5A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B4	5	1975	2112.5	LTE B5	10	2525	881.5	20.64	21.00	
CA 4A-4A-12A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B4	5	1975	2112.5	LTE B12	10	5095	737.5	20.67	21.00	
CA 4A-4A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B4	5	1975	2112.5	LTE B30	10	9820	2355	20.65	21.00	
CA 4A-5A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.61	21.00	
CA 4A-12A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.84	21.00	
CA 4A-29A-30A	LTE B4	5	20175	1732.5	16QAM	1	0	2175	2132.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.37	21.00	

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Table 9-84

LTE Band 4 Two Component Carrier Reduced Conducted Powers – Grip Sensor Active

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	21.20	21.37
CA 4A-4A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	21.31	21.37
CA 4A-5A (1)	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B5	10	2525	881.5	21.26	21.37
CA 4A-12A (2)	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B12	10	5095	737.5	21.27	21.37
CA 4A-29A (2)	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B29	10	9715	722.5	21.23	21.37
CA 4A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B30	10	9820	2355	21.24	21.37

Table 9-85

LTE Band 4 Three Component Carrier Reduced Conducted Powers – Grip Sensor Active

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A-5A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	21.20	21.37
CA 2A-4A-12A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	21.18	21.37
CA 2A-4A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	21.20	21.37
CA 4A-4A-5A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B5	10	2525	881.5	21.19	21.37
CA 4A-4A-12A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B12	10	5095	737.5	21.26	21.37
CA 4A-4A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B30	10	9820	2355	21.27	21.37
CA 4A-5A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	21.19	21.37
CA 4A-12A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.16	21.37
CA 4A-29A-30A	LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	21.17	21.37

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Table 9-86
LTE Band 2 Two Component Carrier Maximum Conducted Powers

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	23.98	24.19
CA_2A-4A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B4	20	2175	2132.5	23.91	24.19
CA_2A-5A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B5	10	2525	881.5	23.97	24.19
CA_2A-12A (1)	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B12	10	5095	737.5	23.92	24.19
CA_2A-29A (2)	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B29	10	9715	722.5	23.98	24.19
CA_2A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B30	10	9820	2355	24.07	24.19
CA_2A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B66	20	66786	2145	24.03	24.19

Table 9-87
LTE Band 2 Three Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	24.15	24.19
CA_2A-2A-12A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	24.08	24.19
CA_2A-2A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	24.27	24.19
CA_2A-4A-5A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	24.05	24.19
CA_2A-4A-12A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	24.06	24.19
CA_2A-4A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	24.27	24.19
CA_2A-5A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.27	24.19
CA_2A-5A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.08	24.19
CA_2A-12A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.32	24.19
CA_2A-12A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	24.24	24.19
CA_2A-29A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.14	24.19
CA_2A-30A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.18	24.19
CA_2A-66A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	24.04	24.19

Table 9-88
LTE Band 2 Four Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.31	24.19
CA_2A-2A-12A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.29	24.19
CA_2A-2A-29A-30A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.28	24.19
CA_2A-5A-30A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.16	24.19
CA_2A-12A-30A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.18	24.19
CA_2A-12A-66A-66A	LTE B2	20	18900	1880	QPSK	1	0	900	1960	LTE B12	10	5095	737.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	24.13	24.19

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Table 9-89

LTE Band 2 Two Component Carrier Reduced Conducted Powers – Hotspot Mode Active

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	20.44	20.42
CA_2A-4A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	20.36	20.42
CA_2A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	20.20	20.42
CA_2A-12A (1)	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	20.27	20.42
CA_2A-29A (2)	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B29	10	9715	722.5	20.35	20.42
CA_2A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B30	10	9820	2355	20.43	20.42
CA_2A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B66	20	66786	2145	20.32	20.42

Table 9-90

LTE Band 2 Three Component Carrier Reduced Conducted Powers – Hotspot Mode Active

	PCC									SCC 1				SCC 2				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	20.34	20.42
CA_2A-2A-12A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	20.26	20.42
CA_2A-2A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B30	10	9820	2355	20.24	20.42
CA_2A-4A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	20.29	20.42
CA_2A-4A-12A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	20.13	20.42
CA_2A-4A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	20.33	20.42
CA_2A-5A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.25	20.42
CA_2A-5A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	20.32	20.42
CA_2A-12A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.23	20.42
CA_2A-12A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	20.25	20.42
CA_2A-29A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.24	20.42
CA_2A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B30	10	9820	2355	LTE B66	20	66786	2145	20.34	20.42
CA_2A-66A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	20.35	20.42

Table 9-91

LTE Band 2 Four Component Carrier Reduced Conducted Powers – Hotspot Mode Active

Combination	PCC										SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Channel	PCC [UL] Freq. [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC [UL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA_2A-2A-5A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.20	20.42	
CA_2A-2A-12A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.22	20.42	
CA_2A-2A-29A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.21	20.42	
CA_2A-5A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	20.18	20.42	
CA_2A-12A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	20.15	20.42	
CA_2A-12A-66A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	20.25	20.42	

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Table 9-92

LTE Band 2 Two Component Carrier Reduced Conducted Powers – Grip Sensor Active

	PCC									SCC				Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	21.77	21.69
CA_2A-4A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	21.79	21.69
CA_2A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	21.72	21.69
CA_2A-12A (1)	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	21.80	21.69
CA_2A-29A (2)	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B29	10	9715	722.5	21.76	21.69
CA_2A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B30	10	9820	2355	21.64	21.69
CA_2A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B66	20	66786	2145	21.62	21.69

Table 9-93

LTE Band 2 Three Component Carrier Reduced Conducted Powers – Grip Sensor Active

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	21.68	21.69
CA_2A-2A-12A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	21.69	21.69
CA_2A-2A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B30	10	9820	2355	21.66	21.69
CA_2A-4A-5A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	21.69	21.69
CA_2A-4A-12A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	21.67	21.69
CA_2A-4A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	21.68	21.69
CA_2A-5A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	21.71	21.69
CA_2A-5A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	21.56	21.69
CA_2A-12A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.68	21.69
CA_2A-12A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	21.55	21.69
CA_2A-29A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	21.70	21.69
CA_2A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B30	10	9820	2355	LTE B66	20	66786	2145	21.58	21.69
CA_2A-66A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	21.64	21.69

Table 9-94

LTE Band 2 Four Component Carrier Reduced Conducted Powers – Grip Sensor Active

Combination	PCC Band	PCC								SCC 1			SCC 2			SCC 3			Power				
		PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_2A-2A-5A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	21.49	21.69
CA_2A-2A-12A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	21.60	21.69
CA_2A-2A-29A-30A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	21.58	21.69
CA_2A-5A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	21.47	21.69
CA_2A-12A-30A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	21.45	21.69
CA_2A-12A-66A-66A	LTE B2	20	18700	1860	16QAM	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	21.41	21.69

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Table 9-95
LTE Band 30 Two Component Carrier Maximum Conducted Powers

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	24.09	24.33
CA 4A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B4	20	2175	2132.5	24.11	24.33
CA 5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B5	10	2525	881.5	24.15	24.33
CA 12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B12	10	5095	737.5	24.17	24.33
CA 29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B29	10	9715	722.5	24.14	24.33
CA 30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B66	20	66786	2145	23.33	24.33

Table 9-96
LTE Band 30 Three Component Carrier Maximum Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	24.08	24.33
CA 2A-4A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.13	24.33
CA 2A-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.30	24.33
CA 2A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.29	24.33
CA 2A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	24.21	24.33
CA 2A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.29	24.33
CA 4A-4A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B4	5	2175	2132.5	LTE B4	5	2375	2152.5	24.39	24.33
CA 4A-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	24.31	24.33
CA 4A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	24.35	24.33
CA 4A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	24.33	24.33
CA 5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.36	24.33
CA 12A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	24.39	24.33
CA 30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	24.28	24.33

Table 9-97
LTE Band 30 Four Component Carrier Maximum Conducted Powers

Combination	PCC Band	PCC								SCC 1				SCC 2				SCC 3				Power	
		PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-5A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	24.31	24.33
CA 2A-2A-12A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	24.28	24.33
CA 2A-2A-29A-30A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	24.33	24.33
CA 2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.29	24.33
CA 2A-5A-30A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	24.30	24.33
CA 12A-30A-66A-66A	LTE B30	5	27710	2310	QPSK	1	12	9820	2355	LTE B12	10	5095	737.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	24.29	24.33

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LTE Band 30 Two Component Carrier Reduced Conducted Powers

Combination	PCC									SCC				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	20.99	21.00
CA 4A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B4	20	2175	2132.5	20.95	21.00
CA 5A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B5	10	2525	881.5	20.81	21.00
CA 12A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B12	10	5095	737.5	20.79	21.00
CA 29A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B29	10	9715	722.5	20.70	21.00
CA 30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B66	20	66786	2145	20.78	21.00

Table 9-99
LTE Band 30 Three Component Carrier Reduced Conducted Powers

Combination	PCC									SCC 1				SCC 2				Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	20.99	21.00
CA 2A-4A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	21.00	21.00
CA 2A-5A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	20.99	21.00
CA 2A-12A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	20.97	21.00
CA 2A-29A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	21.00	21.00
CA 2A-30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	20	900	1960	LTE B66	20	66786	2145	20.98	21.00
CA 4A-4A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B4	20	2175	2132.5	LTE B4	5	2375	2152.5	20.99	21.00
CA 4A-5A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	21.00	21.00
CA 4A-12A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	20.99	21.00
CA 4A-29A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	21.00	21.00
CA 5A-30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	20.97	21.00
CA 12A-30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	20.99	21.00
CA 30A-66A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	20.98	21.00

Table 9-100
LTE Band 30 Four Component Carrier Reduced Conducted Powers

Combination	PCC									SCC 1				SCC 2				SCC 3				Power	
	PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx.Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-2A-5A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	20.92	21.00
CA 2A-2A-12A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	20.93	21.00
CA 2A-2A-29A-30A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	20.94	21.00
CA 2A-5A-30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	20.88	21.00
CA 2A-5A-30A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B2	5	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	20.86	21.00
CA 12A-30A-66A-66A	LTE B30	10	27710	2310	16QAM	1	25	9820	2355	LTE B12	10	5095	737.5	LTE B66	5	66786	2145	LTE B66	5	67311	2197.5	20.82	21.00

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Notes:

1. For every supported combination of downlink carrier aggregation, power measurements were performed 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.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
3. Per FCC guidance, LTE Band 66 standalone powers were used to select measurement configurations for LTE Band 4.
4. For downlink carrier aggregation combinations, PCC uplink channel was selected based on section C)3)b)ii) of KBD 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.

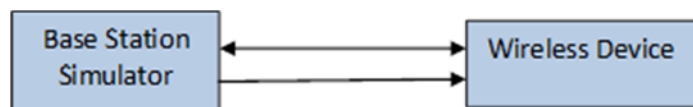


Figure 9-3
Power Measurement Setup

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9.4 WLAN Conducted Powers

Table 9-101
2.4 GHz WLAN Maximum Average RF Power – Antenna 1

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	20.24	16.55	16.66
2437	6	20.49	17.07	16.94
2462	11	19.41	16.35	16.11

Table 9-102
2.4 GHz WLAN Maximum Average RF Power – Antenna 2

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	20.49	17.10	17.07
2437	6	20.48	17.49	17.31
2462	11	19.97	16.77	16.79

Table 9-103
2.4 GHz WLAN Reduced Average RF Power – Antenna 1 (Held-to-ear)

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	13.34	12.63	12.53
2437	6	13.35	12.68	12.87
2462	11	12.90	12.49	13.00

Table 9-104
2.4 GHz WLAN Reduced Average RF Power – Antenna 2 (Held-to-ear)

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	12.76	13.06	13.04
2437	6	13.48	12.94	12.96
2462	11	12.60	13.18	13.20

Table 9-105
2.4 GHz WLAN Reduced Average RF Power – MIMO

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	802.11n		
		ANT1	ANT2	MIMO
2412	1	12.53	13.04	15.80
2437	6	12.87	12.96	15.93
2462	11	13.00	13.20	16.11

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Table 9-106
5 GHz WLAN Maximum Average RF Power – Antenna 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	16.79	16.30	16.21
5200	40	16.19	16.34	16.33
5220	44	16.31	16.27	16.28
5240	48	16.05	16.18	16.37
5260	52	16.67	16.80	16.88
5280	56	16.83	16.71	16.83
5300	60	16.76	16.73	16.78
5320	64	16.79	16.79	16.82
5500	100	17.16	17.01	16.90
5600	120	16.89	16.91	16.81
5620	124	16.78	16.73	16.86
5720	144	16.79	16.90	16.81
5745	149	17.18	16.71	16.64
5785	157	17.05	16.48	16.70
5825	165	16.58	16.63	16.71

Table 9-107
5 GHz WLAN Maximum Average RF Power – Antenna 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	16.83	16.69	17.12
5200	40	16.79	16.67	17.15
5220	44	16.79	16.61	17.24
5240	48	16.81	16.73	17.23
5260	52	16.86	16.79	17.21
5280	56	16.70	16.78	17.25
5300	60	16.61	16.71	17.18
5320	64	16.73	16.73	17.22
5500	100	16.57	16.55	17.01
5600	120	16.69	16.65	17.28
5620	124	16.61	16.64	17.31
5720	144	16.81	16.85	17.19
5745	149	17.38	17.24	17.24
5785	157	17.19	17.29	17.28
5825	165	17.49	17.48	17.46

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Table 9-108
5 GHz WLAN Reduced Average RF Power – Antenna 1 (Held-to-ear)

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
5210	42	15.20
5290	58	14.97
5530	106	14.41
5610	122	14.71
5690	138	14.53
5775	155	14.52

Table 9-109
5 GHz WLAN Reduced Average RF Power – Antenna 2 (Held-to-ear)

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
5210	42	14.65
5290	58	14.77
5530	106	14.53
5610	122	14.81
5690	138	15.01
5775	155	15.43

Table 9-110
5 GHz WLAN Reduced Average RF Power – MIMO

5GHz (80MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	802.11ac		
		ANT1	ANT2	MIMO
5210	42	15.20	14.65	17.94
5290	58	14.97	14.77	17.88
5530	106	14.41	14.53	17.48
5610	122	14.71	14.81	17.77
5690	138	14.53	15.01	17.79
5775	155	14.52	15.43	18.01

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Table 9-111
Maximum Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	802.11n	
		ANT1	ANT2
2412	1	16.66	17.07
2437	6	16.94	17.31
2457	10	17.44	17.35
2462	11	14.34	14.50
5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	802.11ac	
		ANT1	ANT2
5210	42	15.20	14.65
5290	58	14.97	14.77
5530	106	14.41	14.53
5610	122	14.71	14.81
5690	138	14.53	15.01
5775	155	14.52	15.43

Table 9-112
Reduced Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz Conducted Power [dBm]			
Freq [MHz]	Channel	802.11n	
		ANT1	ANT2
2412	1	8.44	8.72
2437	6	9.89	9.88
2462	11	8.22	8.62
5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	802.11ac	
		ANT1	ANT2
5210	42	12.66	13.08
5290	58	13.49	13.20
5530	106	12.86	12.99
5610	122	13.07	13.22
5690	138	13.25	13.48
5775	155	13.37	12.98

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.

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

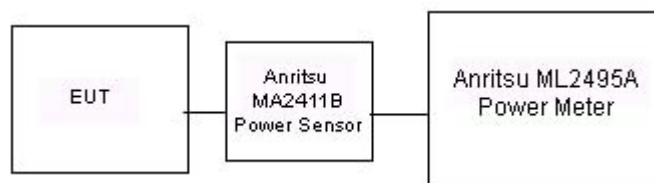


Figure 9-4
Power Measurement Setup for Bandwidths < 50 MHz

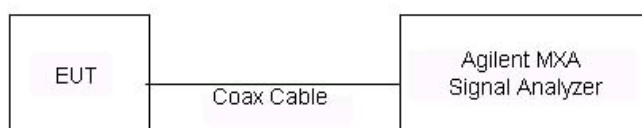


Figure 9-5
Power Measurement Setup for Bandwidths > 50 MHz

9.1 Bluetooth Conducted Powers

Table 9-113
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	13.67	23.254
2441	1.0	39	14.30	26.928
2480	1.0	78	12.12	16.308
2402	2.0	0	4.21	2.638
2441	2.0	39	5.71	3.725
2480	2.0	78	6.61	4.582
2402	3.0	0	4.39	2.746
2441	3.0	39	5.52	3.564
2480	3.0	78	6.66	4.638

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

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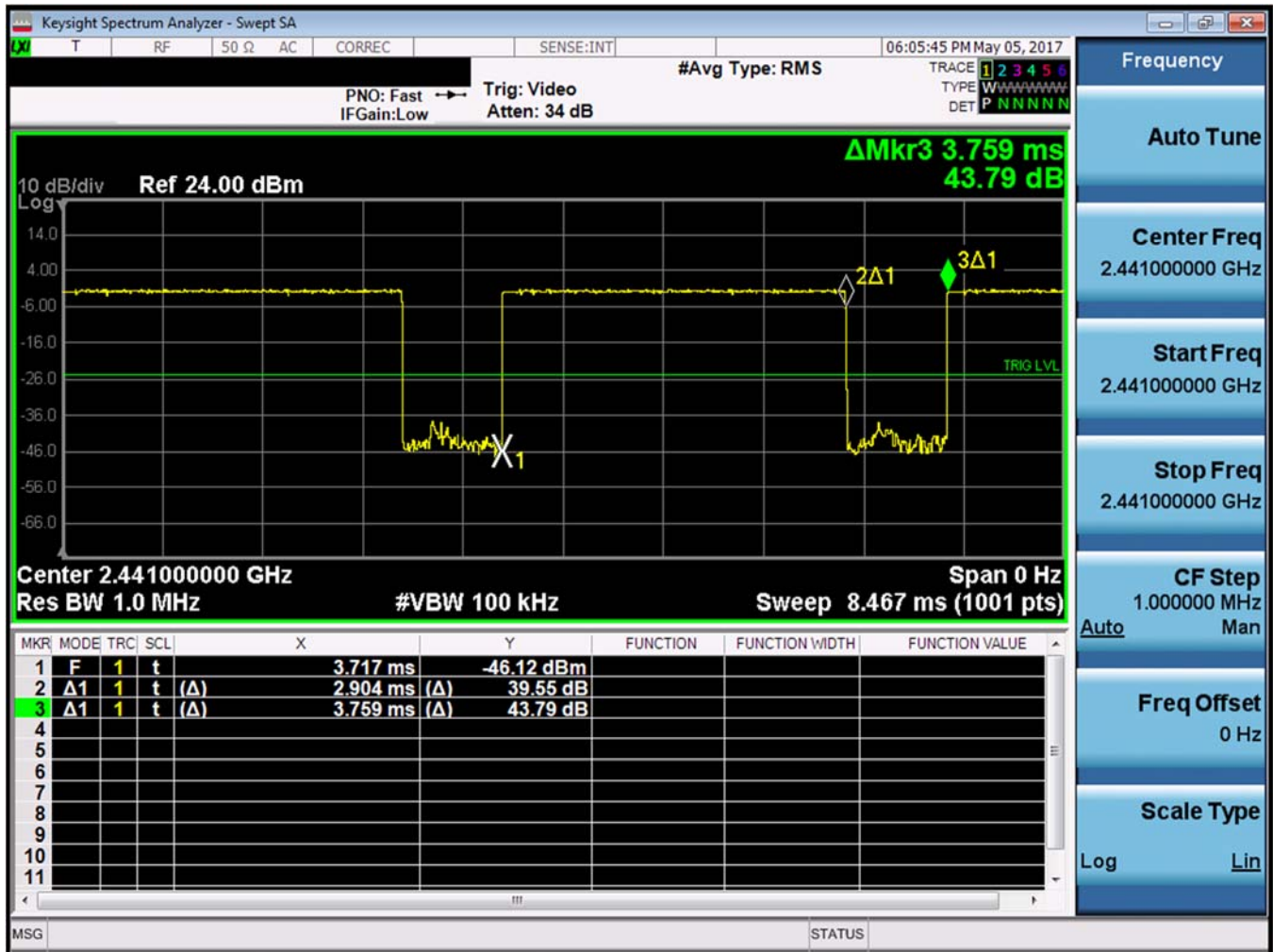


Figure 9-6
Bluetooth Transmission Plot

Equation 2
Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \text{Pulse} \frac{\text{Width}}{\text{Period}} * 100\% = \frac{2.904\text{ms}}{3.759\text{ms}} * 100\% = 77.3\%$$

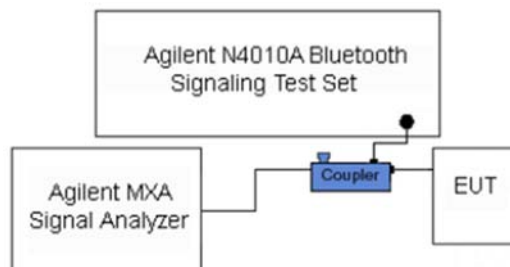


Figure 9-7
Power Measurement Setup

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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
04/17/2017	750H	19.6	700	0.859	43.456	0.889	42.201	-3.37%	2.97%
			710	0.868	43.336	0.890	42.149	-2.47%	2.82%
			740	0.893	42.939	0.893	41.994	0.00%	2.25%
			755	0.906	42.702	0.894	41.916	1.34%	1.88%
04/18/2017	835H	20.3	820	0.896	42.202	0.899	41.578	-0.33%	1.50%
			835	0.908	41.988	0.900	41.500	0.89%	1.18%
			850	0.925	41.789	0.916	41.500	0.98%	0.70%
04/21/2017	835H	20.5	820	0.878	40.539	0.899	41.578	-2.34%	-2.50%
			835	0.892	40.328	0.900	41.500	-0.89%	-2.82%
			850	0.906	40.169	0.916	41.500	-1.09%	-3.21%
04/18/2017	1750H	20.5	1710	1.336	39.579	1.348	40.142	-0.89%	-1.40%
			1750	1.373	39.389	1.371	40.079	0.15%	-1.72%
			1790	1.416	39.219	1.394	40.016	1.58%	-1.99%
04/26/2017	1750H	21.2	1710	1.342	40.155	1.348	40.142	-0.45%	0.03%
			1750	1.384	39.929	1.371	40.079	0.95%	-0.37%
			1790	1.435	39.771	1.394	40.016	2.94%	-0.61%
04/19/2017	1900H	21.5	1850	1.403	38.480	1.400	40.000	0.21%	-3.80%
			1880	1.436	38.348	1.400	40.000	2.57%	-4.13%
			1910	1.467	38.217	1.400	40.000	4.79%	-4.46%
05/12/2017	2300H	22.5	2300	1.686	39.280	1.670	39.500	0.96%	-0.56%
			2310	1.697	39.249	1.679	39.480	1.07%	-0.59%
			2320	1.708	39.213	1.687	39.460	1.24%	-0.63%
04/27/2017	2450H	21.5	2450	1.882	38.945	1.800	39.200	4.56%	-0.65%
			2500	1.940	38.722	1.855	39.136	4.58%	-1.06%
			2550	1.997	38.574	1.909	39.073	4.61%	-1.28%
04/30/2017	2450H	21.6	2400	1.783	38.278	1.756	39.289	1.54%	-2.57%
			2450	1.839	38.139	1.800	39.200	2.17%	-2.71%
			2500	1.893	37.993	1.855	39.136	2.05%	-2.92%
06/14/2017	2450H-2600H	22.0	2450	1.866	38.628	1.800	39.200	3.67%	-1.46%
			2500	1.924	38.436	1.855	39.136	3.72%	-1.79%
			2550	1.983	38.263	1.909	39.073	3.88%	-2.07%
			2600	2.042	38.047	1.964	39.009	3.97%	-2.47%
06/19/2017	2450H	24.0	2400	1.750	38.524	1.756	39.289	-0.34%	-1.95%
			2450	1.803	38.360	1.800	39.200	0.17%	-2.14%
			2500	1.858	38.152	1.855	39.136	0.16%	-2.51%
04/24/2017	5200H-5800H	19.5	5240	4.734	34.850	4.696	35.940	0.81%	-3.03%
			5260	4.762	34.835	4.717	35.917	0.95%	-3.01%
			5280	4.779	34.832	4.737	35.894	0.89%	-2.96%
			5300	4.785	34.763	4.758	35.871	0.57%	-3.09%
			5600	5.099	34.278	5.065	35.529	0.67%	-3.52%
			5620	5.134	34.225	5.086	35.506	0.94%	-3.61%
			5680	5.199	34.211	5.147	35.437	1.01%	-3.46%
			5700	5.232	34.136	5.168	35.414	1.24%	-3.61%
			5745	5.272	34.053	5.214	35.363	1.11%	-3.70%
			5765	5.292	34.033	5.234	35.340	1.11%	-3.70%
			5785	5.318	34.032	5.255	35.317	1.20%	-3.64%

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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
04/20/2017	750B	22.3	700	0.914	54.929	0.959	55.726	-4.69%	-1.43%
			710	0.923	54.809	0.960	55.687	-3.85%	-1.58%
			740	0.949	54.463	0.963	55.570	-1.45%	-1.99%
			755	0.963	54.295	0.964	55.512	-0.10%	-2.19%
04/17/2017	835B	20.1	820	0.967	54.920	0.969	55.258	-0.21%	-0.61%
			835	0.982	54.813	0.970	55.200	1.24%	-0.70%
			850	0.997	54.651	0.988	55.154	0.91%	-0.91%
04/20/2017	835B	20.7	820	0.982	54.830	0.969	55.258	1.34%	-0.77%
			835	0.996	54.678	0.970	55.200	2.68%	-0.95%
			850	1.011	54.521	0.988	55.154	2.33%	-1.15%
05/01/2017	835B	20.5	820	0.974	54.465	0.969	55.258	0.52%	-1.44%
			835	0.989	54.311	0.970	55.200	1.96%	-1.61%
			850	1.001	54.188	0.988	55.154	1.32%	-1.75%
05/12/2017	835B	21.6	820	0.976	53.205	0.969	55.258	0.72%	-3.72%
			835	0.992	53.066	0.970	55.200	2.27%	-3.87%
			850	1.008	52.924	0.988	55.154	2.02%	-4.04%
04/24/2017	1750B	20.9	1710	1.458	51.490	1.463	53.537	-0.34%	-3.82%
			1750	1.501	51.353	1.488	53.432	0.87%	-3.89%
			1790	1.545	51.199	1.514	53.326	2.05%	-3.99%
05/06/2017	1750B	20.5	1710	1.485	51.612	1.463	53.537	1.50%	-3.60%
			1750	1.530	51.452	1.488	53.432	2.82%	-3.71%
			1790	1.574	51.267	1.514	53.326	3.96%	-3.86%
04/19/2017	1900B	22.5	1850	1.514	51.887	1.520	53.300	-0.39%	-2.65%
			1880	1.548	51.830	1.520	53.300	1.84%	-2.76%
			1910	1.580	51.754	1.520	53.300	3.95%	-2.90%
04/26/2017	1900B	22.6	1850	1.517	52.172	1.520	53.300	-0.20%	-1.22%
			1880	1.549	52.076	1.520	53.300	1.91%	-2.30%
			1910	1.583	51.999	1.520	53.300	4.14%	-2.44%
05/01/2017	1900B	22.3	1850	1.518	52.803	1.520	53.300	-0.13%	-0.93%
			1880	1.556	52.722	1.520	53.300	2.37%	-1.08%
			1910	1.592	52.632	1.520	53.300	4.74%	-1.25%
04/27/2017	2300B	22.2	2300	1.806	53.207	1.809	52.900	-0.17%	0.58%
			2310	1.817	53.163	1.816	52.887	0.06%	0.52%
			2320	1.828	53.111	1.826	52.873	0.11%	0.45%
05/10/2017	2300B	21.8	2300	1.844	52.400	1.809	52.900	1.93%	-0.95%
			2310	1.860	52.378	1.816	52.887	2.42%	-0.96%
			2320	1.873	52.352	1.826	52.873	2.57%	-0.99%
04/24/2017	2450B-2600B	23.3	2450	2.005	51.035	1.950	52.700	2.82%	-3.16%
			2500	2.076	50.872	2.021	52.636	2.72%	-3.35%
			2550	2.141	50.681	2.092	52.573	2.34%	-3.60%
			2600	2.216	50.482	2.163	52.509	2.45%	-3.86%
			2650	2.284	50.279	2.234	52.445	2.24%	-4.13%
05/01/2017	2450B	21.4	2700	2.353	50.109	2.305	52.382	2.08%	-4.34%
			2400	1.884	51.297	1.902	52.767	-0.95%	-2.79%
			2450	1.936	51.053	1.950	52.700	-0.72%	-3.13%
06/14/2017	2600B	22.4	2500	2.011	50.871	2.021	52.636	-0.49%	-3.35%
			2550	2.081	51.845	2.021	52.636	2.97%	-1.50%
			2600	2.150	51.722	2.092	52.573	2.77%	-1.62%
06/16/2017	2450B-2600B	23.4	2600	2.223	51.519	2.163	52.509	2.77%	-1.89%
			2450	1.942	51.582	1.950	52.700	-0.41%	-2.12%
			2500	2.012	51.368	2.021	52.636	-0.45%	-2.41%
			2550	2.079	51.190	2.092	52.573	-0.62%	-2.63%
06/19/2017	2450B-2600B	23.0	2600	2.147	50.983	2.163	52.509	-0.74%	-2.91%
			2450	1.972	52.059	1.950	52.700	1.13%	-1.22%
			2500	2.044	51.834	2.021	52.636	1.14%	-1.52%
			2550	2.114	51.657	2.092	52.573	1.05%	-1.74%
			2600	2.183	51.421	2.163	52.509	0.92%	-2.07%

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

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	%dev σ	%dev ϵ
04/20/2017	5200B-5800B	22.0	5240	5.483	48.190	5.346	48.960	2.56%	-1.57%
			5260	5.523	48.173	5.369	48.933	2.87%	-1.55%
			5280	5.538	48.143	5.393	48.906	2.69%	-1.56%
			5300	5.552	48.087	5.416	48.879	2.51%	-1.62%
			5500	5.811	47.752	5.650	48.607	2.85%	-1.76%
			5600	5.943	47.563	5.766	48.471	3.07%	-1.87%
			5680	6.055	47.483	5.860	48.363	3.33%	-1.82%
			5700	6.075	47.429	5.883	48.336	3.26%	-1.88%
			5745	6.138	47.352	5.936	48.275	3.40%	-1.91%
			5765	6.180	47.326	5.959	48.248	3.71%	-1.91%
			5785	6.217	47.304	5.982	48.220	3.93%	-1.90%
			5825	6.269	47.238	6.029	48.166	3.98%	-1.93%

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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10.2 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)	Dipole 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	04/17/2017	22.9	20.0	0.200	1161	3319	1.540	8.170	7.700	-5.75%
J	835	HEAD	04/18/2017	20.5	20.3	0.200	4d133	3334	2.000	9.320	10.000	7.30%
H	835	HEAD	04/21/2017	21.7	20.5	0.200	4d133	3318	1.840	9.320	9.200	-1.29%
E	1750	HEAD	04/18/2017	23.4	21.0	0.100	1008	3319	3.760	36.700	37.600	2.45%
I	1750	HEAD	04/26/2017	22.7	21.2	0.100	1008	3213	3.530	36.700	35.300	-3.81%
E	1900	HEAD	04/19/2017	23.0	21.5	0.100	5d149	3319	4.180	40.100	41.800	4.24%
E	2300	HEAD	05/12/2017	23.5	22.5	0.100	1038	3319	4.470	47.500	44.700	-5.89%
H	2450	HEAD	04/27/2017	21.1	21.0	0.100	981	3318	5.280	52.800	52.800	0.00%
H	2450	HEAD	04/30/2017	21.3	21.6	0.100	797	3318	5.240	52.100	52.400	0.58%
I	2450	HEAD	06/14/2017	23.0	21.2	0.100	797	3213	5.610	52.100	56.100	7.68%
I	2450	HEAD	06/19/2017	23.0	23.0	0.100	797	3213	5.330	52.100	53.300	2.30%
I	2600	HEAD	06/14/2017	23.0	21.2	0.100	1126	3213	6.040	56.300	60.400	7.28%
K	5250	HEAD	04/24/2017	20.5	20.0	0.050	1120	7308	4.140	83.200	82.800	-0.48%
K	5600	HEAD	04/24/2017	20.5	20.0	0.050	1120	7308	4.060	85.800	81.200	-5.36%
K	5750	HEAD	04/24/2017	20.5	20.0	0.050	1120	7308	3.870	81.800	77.400	-5.38%
J	750	BODY	04/20/2017	19.9	22.3	0.200	1054	3334	1.830	8.610	9.150	6.27%
H	835	BODY	04/17/2017	20.0	20.1	0.200	4d133	3318	1.960	9.500	9.800	3.16%
H	835	BODY	04/20/2017	22.1	20.7	0.200	4d133	3318	1.980	9.500	9.900	4.21%
I	835	BODY	05/12/2017	21.0	21.6	0.200	4d133	3213	2.000	9.500	10.000	5.26%
E	1750	BODY	04/24/2017	21.7	20.9	0.100	1148	3319	3.460	37.100	34.600	-6.74%
G	1750	BODY	05/06/2017	21.1	20.5	0.100	1051	3287	3.840	37.100	38.400	3.50%
K	1900	BODY	04/19/2017	22.5	20.7	0.100	5d149	7409	4.120	39.900	41.200	3.26%
G	2300	BODY	04/27/2017	20.0	21.2	0.100	1064	3287	4.800	47.000	48.000	2.13%
H	2300	BODY	05/10/2017	20.3	21.8	0.100	1038	3318	4.720	47.500	47.200	-0.63%
G	2450	BODY	04/24/2017	21.7	21.5	0.100	797	3287	5.230	50.700	52.300	3.16%
G	2450	BODY	05/01/2017	20.4	21.4	0.100	797	3287	5.310	50.700	53.100	4.73%
G	2450	BODY	06/16/2017	22.5	23.4	0.100	797	3287	5.440	50.700	54.400	7.30%
G	2600	BODY	04/24/2017	21.7	21.5	0.100	1126	3287	5.820	54.500	58.200	6.79%
G	2600	BODY	06/14/2017	22.5	22.4	0.100	1071	3287	5.820	54.200	58.200	7.38%
G	2600	BODY	06/16/2017	22.5	23.4	0.100	1126	3287	5.760	54.500	57.600	5.69%
D	5250	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	3.560	74.800	71.200	-4.81%
D	5600	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	3.820	77.000	76.400	-0.78%
D	5750	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	3.420	75.400	68.400	-9.28%

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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)	Dipole SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
E	835	BODY	05/01/2017	21.2	20.5	0.200	4d047	3319	1.350	6.240	6.750	8.17%
E	1750	BODY	04/24/2017	21.7	20.9	0.100	1148	3319	1.870	19.700	18.700	-5.08%
G	1750	BODY	05/06/2017	21.1	20.5	0.100	1051	3287	2.030	19.900	20.300	2.01%
K	1900	BODY	04/19/2017	22.5	20.7	0.100	5d149	7409	2.100	21.100	21.000	-0.47%
H	1900	BODY	04/26/2017	22.1	21.8	0.100	5d149	3318	2.180	21.100	21.800	3.32%
D	1900	BODY	05/01/2017	21.7	21.6	0.100	5d149	3288	2.180	21.100	21.800	3.32%
H	2300	BODY	05/10/2017	20.3	21.8	0.100	1038	3318	2.250	23.000	22.500	-2.17%
G	2450	BODY	04/24/2017	21.7	21.5	0.100	797	3287	2.360	24.200	23.600	-2.48%
G	2450	BODY	05/01/2017	20.4	21.4	0.100	797	3287	2.390	24.200	23.900	-1.24%
G	2450	BODY	06/19/2017	21.5	23.0	0.100	797	3287	2.510	24.200	25.100	3.72%
G	2600	BODY	04/24/2017	21.7	21.5	0.100	1126	3287	2.480	24.300	24.800	2.06%
G	2600	BODY	06/19/2017	21.5	23.0	0.100	1126	3287	2.600	24.300	26.000	7.00%
D	5250	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	0.995	21.000	19.900	-5.24%
D	5600	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	1.060	21.500	21.200	-1.40%
D	5750	BODY	04/20/2017	21.6	21.3	0.050	1237	3589	0.957	20.900	19.140	-8.42%

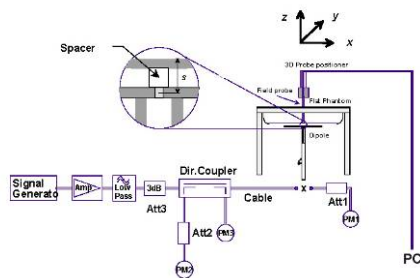


Figure 10-1
System Verification Setup Diagram



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	32.78	0.05	Right	Cheek	2CC64	1:8.3	0.126	1.180	0.149	A1
836.60	190	GSM 850	GSM	33.5	32.78	0.03	Right	Tilt	2CC64	1:8.3	0.056	1.180	0.066	
836.60	190	GSM 850	GSM	33.5	32.78	-0.03	Left	Cheek	2CC64	1:8.3	0.113	1.180	0.133	
836.60	190	GSM 850	GSM	33.5	32.78	-0.04	Left	Tilt	2CC64	1:8.3	0.069	1.180	0.081	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

**Table 11-2
GSM 1900 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maxim um 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	30.5	29.23	0.13	Right	Cheek	2CC64	1:8.3	0.063	1.340	0.084	
1880.00	661	GSM 1900	GSM	30.5	29.23	-0.05	Right	Tilt	2CC64	1:8.3	0.043	1.340	0.058	
1880.00	661	GSM 1900	GSM	30.5	29.23	0.19	Left	Cheek	2CC64	1:8.3	0.064	1.340	0.086	A2
1880.00	661	GSM 1900	GSM	30.5	29.23	0.12	Left	Tilt	2CC64	1:8.3	0.037	1.340	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

**Table 11-3
UMTS 850 Head SAR**

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	24.56	-0.01	Right	Cheek	0	2CC64	1:1	0.183	1.242	0.227	A3
836.60	4183	UMTS 850	RMC	25.5	24.56	0.06	Right	Tilt	0	2CC64	1:1	0.079	1.242	0.098	
836.60	4183	UMTS 850	RMC	25.5	24.56	0.08	Left	Cheek	0	2CC64	1:1	0.155	1.242	0.193	
836.60	4183	UMTS 850	RMC	25.5	24.56	0.01	Left	Tilt	0	2CC64	1:1	0.098	1.242	0.122	
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 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	23.5	22.51	0.12	Right	Cheek	31	2CC64	1:1	0.123	1.256	0.154	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	-0.02	Right	Tilt	31	2CC64	1:1	0.101	1.256	0.127	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	-0.02	Left	Cheek	31	2CC64	1:1	0.180	1.256	0.226	A4
1732.40	1412	UMTS 1750	RMC	23.5	22.51	0.03	Left	Tilt	31	2CC64	1:1	0.092	1.256	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 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	25.0	23.56	0.02	Right	Cheek	16	2CC64	1:1	0.155	1.393	0.216	A5
1880.00	9400	UMTS 1900	RMC	25.0	23.56	0.00	Right	Tilt	16	2CC64	1:1	0.109	1.393	0.152	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	0.01	Left	Cheek	16	2CC64	1:1	0.154	1.393	0.215	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	0.07	Left	Tilt	16	2CC64	1:1	0.086	1.393	0.120	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	-0.01	0	Right	Cheek	QPSK	1	25	68	2ABFE	1:1	0.130	1.227	0.160	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	-0.10	1	Right	Cheek	QPSK	25	0	68	2ABFE	1:1	0.108	1.194	0.129	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	0.00	0	Right	Tilt	QPSK	1	25	68	2ABFE	1:1	0.110	1.227	0.135	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	0.03	1	Right	Tilt	QPSK	25	0	68	2ABFE	1:1	0.089	1.194	0.106	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	0.00	0	Left	Cheek	QPSK	1	25	68	2ABFE	1:1	0.118	1.227	0.145	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	0.04	1	Left	Cheek	QPSK	25	0	68	2ABFE	1:1	0.096	1.194	0.115	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	0.03	0	Left	Tilt	QPSK	1	25	68	2ABFE	1:1	0.134	1.227	0.164	A6
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	0.01	1	Left	Tilt	QPSK	25	0	68	2ABFE	1:1	0.103	1.194	0.123	
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 11-7
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.05	0	Right	Cheek	QPSK	1	0	15	2A8FE	1:1	0.205	1.205	0.247	A7
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	0.04	1	Right	Cheek	QPSK	25	0	15	2A8FE	1:1	0.158	1.213	0.192	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.06	0	Right	Tilt	QPSK	1	0	15	2A8FE	1:1	0.123	1.205	0.148	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	0.01	1	Right	Tilt	QPSK	25	0	15	2A8FE	1:1	0.098	1.213	0.119	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.14	0	Left	Cheek	QPSK	1	0	15	2A8FE	1:1	0.115	1.205	0.139	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	0.09	1	Left	Cheek	QPSK	25	0	15	2A8FE	1:1	0.089	1.213	0.108	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.01	0	Left	Tilt	QPSK	1	0	15	2A8FE	1:1	0.135	1.205	0.163	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	0.02	1	Left	Tilt	QPSK	25	0	15	2A8FE	1:1	0.103	1.213	0.125	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-8
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	0.03	0	Right	Cheek	QPSK	1	0	31	2A8C8	1:1	1.208	0.179	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	0.09	1	Right	Cheek	QPSK	50	0	31	2A8C8	1:1	1.239	0.141	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	0.10	0	Right	Tilt	QPSK	1	0	31	2A8C8	1:1	1.208	0.109	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	0.01	1	Right	Tilt	QPSK	50	0	31	2A8C8	1:1	1.239	0.085	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.03	0	Left	Cheek	QPSK	1	0	31	2A8C8	1:1	1.208	0.225	A8
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	0.07	1	Left	Cheek	QPSK	50	0	31	2A8C8	1:1	1.239	0.206	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	0.06	0	Left	Tilt	QPSK	1	0	31	2A8C8	1:1	1.208	0.108	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	0.00	1	Left	Tilt	QPSK	50	0	31	2A8C8	1:1	1.239	0.093	
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 2 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.04	0	Right	Cheek	QPSK	1	0	30	2A6B	1:1	1.173	1.205	0.208	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	0.06	1	Right	Cheek	QPSK	50	0	30	2A6B	1:1	1.153	1.233	0.189	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.05	0	Right	Tilt	QPSK	1	0	30	2A6B	1:1	1.106	1.205	0.128	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.15	1	Right	Tilt	QPSK	50	0	30	2A6B	1:1	1.092	1.233	0.113	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.16	0	Left	Cheek	QPSK	1	0	30	2A6B	1:1	1.193	1.205	0.233	A9
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	0.05	1	Left	Cheek	QPSK	50	0	30	2A6B	1:1	1.148	1.233	0.182	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.02	0	Left	Tilt	QPSK	1	0	30	2A6B	1:1	1.072	1.205	0.087	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.05	1	Left	Tilt	QPSK	50	0	30	2A6B	1:1	1.051	1.233	0.063	
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 30 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.13	0	Right	Cheek	QPSK	1	0	2AA6B	1:1	0.116	1.169	0.136	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.09	1	Right	Cheek	QPSK	25	0	2AA6B	1:1	0.093	1.146	0.107	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.12	0	Right	Tilt	QPSK	1	0	2AA6B	1:1	0.094	1.169	0.110	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.17	1	Right	Tilt	QPSK	25	0	2AA6B	1:1	0.072	1.146	0.083	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.08	0	Left	Cheek	QPSK	1	0	2AA6B	1:1	0.145	1.169	0.170	A10
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.07	1	Left	Cheek	QPSK	25	0	2AA6B	1:1	0.116	1.146	0.133	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	-0.15	0	Left	Tilt	QPSK	1	0	2AA6B	1:1	0.055	1.169	0.064	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.04	1	Left	Tilt	QPSK	25	0	2AA6B	1:1	0.048	1.146	0.055	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-11
LTE Band 7 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	0.19	0	Right	Cheek	QPSK	1	0	2AA6B	1:1	0.103	1.074	0.111	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.15	1	Right	Cheek	QPSK	50	0	2AA6B	1:1	0.069	1.112	0.077	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	0.17	0	Right	Tilt	QPSK	1	0	2AA6B	1:1	0.088	1.074	0.095	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.15	1	Right	Tilt	QPSK	50	0	2AA6B	1:1	0.050	1.112	0.056	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	0.08	0	Left	Cheek	QPSK	1	0	2AA6B	1:1	0.113	1.074	0.121	A11
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.16	1	Left	Cheek	QPSK	50	0	2AA6B	1:1	0.067	1.112	0.075	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	0.05	0	Left	Tilt	QPSK	1	0	2AA6B	1:1	0.054	1.074	0.058	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.12	1	Left	Tilt	QPSK	50	0	2AA6B	1:1	0.029	1.112	0.032	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-12
LTE Band 38 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	0.06	0	Right	Cheek	QPSK	1	0	2AA6B	1:1.58	0.044	1.127	0.050	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	0.05	1	Right	Cheek	QPSK	50	0	2AA6B	1:1.58	0.032	1.148	0.037	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	-0.05	0	Right	Tilt	QPSK	1	0	2AA6B	1:1.58	0.039	1.127	0.044	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	-0.06	1	Right	Tilt	QPSK	50	0	2AA6B	1:1.58	0.030	1.148	0.034	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	0.18	0	Left	Cheek	QPSK	1	0	2AA6B	1:1.58	0.049	1.127	0.055	A12
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	0.03	1	Left	Cheek	QPSK	50	0	2AA6B	1:1.58	0.038	1.148	0.044	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	0.20	0	Left	Tilt	QPSK	1	0	2AA6B	1:1.58	0.048	1.127	0.054	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	0.18	1	Left	Tilt	QPSK	50	0	2AA6B	1:1.58	0.038	1.148	0.044	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-13
LTE Band 41 Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)		(W/kg)	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	0.01	0	Right	Cheek	QPSK	1	0	2AA6B	1:1.58	1.072	0.054	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.18	1	Right	Cheek	QPSK	50	0	2AA6B	1:1.58	1.086	0.042	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	0.20	0	Right	Tilt	QPSK	1	0	2AA6B	1:1.58	1.072	0.056	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.16	1	Right	Tilt	QPSK	50	0	2AA6B	1:1.58	1.086	0.041	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	0.10	0	Left	Cheek	QPSK	1	0	2AA6B	1:1.58	1.072	0.079	A13
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.11	1	Left	Cheek	QPSK	50	0	2AA6B	1:1.58	1.086	0.061	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	0.07	0	Left	Tilt	QPSK	1	0	2AA6B	1:1.58	1.072	0.030	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.16	1	Left	Tilt	QPSK	50	0	2AA6B	1:1.58	1.086	0.025	
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
DTS Head SISO SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	13.5	13.35	0.08	Right	Cheek	1	2CC5C	1	99.5	0.313	0.234	1.035	1.005	0.243	
2437	6	802.11b	DSSS	22	13.5	13.35	0.06	Right	Tilt	1	2CC5C	1	99.5	0.239	-	1.035	1.005	-	
2437	6	802.11b	DSSS	22	13.5	13.35	0.17	Left	Cheek	1	2CC5C	1	99.5	0.116	-	1.035	1.005	-	
2437	6	802.11b	DSSS	22	13.5	13.35	0.19	Left	Tilt	1	2CC5C	1	99.5	0.135	-	1.035	1.005	-	
2412	1	802.11b	DSSS	22	13.5	12.76	0.13	Right	Cheek	2	2CC5C	1	99.5	1.156	0.837	1.186	1.005	0.998	
2437	6	802.11b	DSSS	22	13.5	13.48	0.11	Right	Cheek	2	2CC5C	1	99.5	1.155	0.834	1.005	1.005	0.842	
2437	6	802.11b	DSSS	22	13.5	13.48	0.17	Right	Tilt	2	2CC5C	1	99.5	0.641	0.465	1.005	1.005	0.470	
2437	6	802.11b	DSSS	22	13.5	13.48	0.18	Left	Cheek	2	2CC5C	1	99.5	0.400	-	1.005	1.005	-	
2437	6	802.11b	DSSS	22	13.5	13.48	-0.01	Left	Tilt	2	2CC5C	1	99.5	0.238	-	1.005	1.005	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-15
DTS Head MIMO SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	13.5	12.87	12.96	0.10	Right	Cheek	MIMO	2CC5C	13	99.4	0.833	0.822	1.156	1.006	0.956	
2462	11	802.11n	OFDM	20	13.5	13.00	13.20	0.10	Right	Cheek	MIMO	2CC5C	13	99.4	0.879	0.887	1.122	1.006	1.001	A14
2462	11	802.11n	OFDM	20	13.5	13.00	13.20	0.04	Right	Tilt	MIMO	2CC5C	13	99.4	0.625	0.592	1.122	1.006	0.668	
2462	11	802.11n	OFDM	20	13.5	13.00	13.20	0.12	Left	Cheek	MIMO	2CC5C	13	99.4	0.335	-	1.122	1.006	-	
2462	11	802.11n	OFDM	20	13.5	13.00	13.20	0.21	Left	Tilt	MIMO	2CC5C	13	99.4	0.259	-	1.122	1.006	-	
2462	11	802.11n	OFDM	20	13.5	13.00	13.20	0.12	Right	Cheek	MIMO	2CC5C	13	99.4	0.878	0.880	1.122	1.006	0.993	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram									

- To achieve the 16.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 13.0 dBm.
- Blue entry represents variability data.

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Table 11-16
DTS Head SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Contacted Power [dBm]	Ant 2 Contacted 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)				
2437	6	802.11n	OFDM	20	10.0	9.89	9.88	-0.21	Right	Cheek	MIMO	2CC5C	13	99.4	0.406	0.375	1.028	1.006	0.388	
2437	6	802.11n	OFDM	20	10.0	9.89	9.88	0.20	Right	Tilt	MIMO	2CC5C	13	99.4	0.270	-	1.028	1.006	-	
2437	6	802.11n	OFDM	20	10.0	9.89	9.88	0.09	Left	Cheek	MIMO	2CC5C	13	99.4	0.136	-	1.028	1.006	-	
2437	6	802.11n	OFDM	20	10.0	9.89	9.88	0.13	Left	Tilt	MIMO	2CC5C	13	99.4	0.089	-	1.028	1.006	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head										
Spatial Peak										1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 1 gram										

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

Table 11-17
NII Head SISO 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	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)	(Power)	(Duty Cycle)	(W/kg)	
5290	58	802.11ac	OFDM	80	15.5	14.97	0.19	Right	Cheek	1	2CC5C	29.3	95.8	0.728	0.417	1.130	1.044	0.492	
5290	58	802.11ac	OFDM	80	15.5	14.97	0.18	Right	Tilt	1	2CC5C	29.3	95.8	0.508	0.262	1.130	1.044	0.309	
5290	58	802.11ac	OFDM	80	15.5	14.97	0.12	Left	Cheek	1	2CC5C	29.3	95.8	0.336	-	1.130	1.044	-	
5290	58	802.11ac	OFDM	80	15.5	14.97	0.00	Left	Tilt	1	2CC5C	29.3	95.8	0.297	-	1.130	1.044	-	
5290	58	802.11ac	OFDM	80	15.5	14.77	0.18	Right	Cheek	2	2CC5C	29.3	95.8	1.106	0.458	1.183	1.044	0.566	
5290	58	802.11ac	OFDM	80	15.5	14.77	0.14	Right	Tilt	2	2CC5C	29.3	95.8	0.767	0.333	1.183	1.044	0.411	
5290	58	802.11ac	OFDM	80	15.5	14.77	-0.15	Left	Cheek	2	2CC5C	29.3	95.8	0.428	-	1.183	1.044	-	
5290	58	802.11ac	OFDM	80	15.5	14.77	-0.11	Left	Tilt	2	2CC5C	29.3	95.8	0.379	-	1.183	1.044	-	
5610	122	802.11ac	OFDM	80	15.5	14.71	0.13	Right	Cheek	1	2CC5C	29.3	95.8	0.912	0.455	1.199	1.044	0.570	
5610	122	802.11ac	OFDM	80	15.5	14.71	0.15	Right	Tilt	1	2CC5C	29.3	95.8	0.609	0.295	1.199	1.044	0.369	
5610	122	802.11ac	OFDM	80	15.5	14.71	0.12	Left	Cheek	1	2CC5C	29.3	95.8	0.450	-	1.199	1.044	-	
5610	122	802.11ac	OFDM	80	15.5	14.71	0.10	Left	Tilt	1	2CC5C	29.3	95.8	0.477	-	1.199	1.044	-	
5690	138	802.11ac	OFDM	80	15.5	15.01	0.15	Right	Cheek	2	2CC5C	29.3	95.8	0.954	0.379	1.119	1.044	0.443	
5690	138	802.11ac	OFDM	80	15.5	15.01	0.12	Right	Tilt	2	2CC5C	29.3	95.8	0.692	0.281	1.119	1.044	0.328	
5690	138	802.11ac	OFDM	80	15.5	15.01	0.13	Left	Cheek	2	2CC5C	29.3	95.8	0.526	-	1.119	1.044	-	
5690	138	802.11ac	OFDM	80	15.5	15.01	0.04	Left	Tilt	2	2CC5C	29.3	95.8	0.441	-	1.119	1.044	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	0.16	Right	Cheek	1	2CC5C	29.3	95.8	0.599	-	1.253	1.044	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	0.14	Right	Tilt	1	2CC5C	29.3	95.8	0.615	-	1.253	1.044	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	-0.11	Left	Cheek	1	2CC5C	29.3	95.8	0.480	-	1.253	1.044	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	0.11	Left	Tilt	1	2CC5C	29.3	95.8	0.627	0.280	1.253	1.044	0.366	
5775	155	802.11ac	OFDM	80	15.5	15.43	0.11	Right	Cheek	2	2CC5C	29.3	95.8	1.420	0.479	1.016	1.044	0.508	
5775	155	802.11ac	OFDM	80	15.5	15.43	0.17	Right	Tilt	2	2CC5C	29.3	95.8	1.099	0.419	1.016	1.044	0.444	
5775	155	802.11ac	OFDM	80	15.5	15.43	0.19	Left	Cheek	2	2CC5C	29.3	95.8	0.710	-	1.016	1.044	-	
5775	155	802.11ac	OFDM	80	15.5	15.43	0.13	Left	Tilt	2	2CC5C	29.3	95.8	0.656	-	1.016	1.044	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head									
Spatial Peak										1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population										averaged over 1 gram									

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Table 11-18
NII Head MIMO SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Contacted Power [dBm]	Ant 2 Contacted 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)				
5290	58	802.11ac	OFDM	80	15.5	14.97	14.77	0.10	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.422	0.737	1.183	1.075	0.937	
5290	58	802.11ac	OFDM	80	15.5	14.97	14.77	0.11	Right	Tilt	MIMO	2CC5C	58.5	93.0	1.048	0.459	1.183	1.075	0.584	
5290	58	802.11ac	OFDM	80	15.5	14.97	14.77	0.12	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.826	-	1.183	1.075	-	
5290	58	802.11ac	OFDM	80	15.5	14.97	14.77	-0.10	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.493	-	1.183	1.075	-	
5610	122	802.11ac	OFDM	80	15.5	14.71	14.81	-0.18	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.396	0.712	1.199	1.075	0.918	
5690	138	802.11ac	OFDM	80	15.5	14.53	15.01	0.11	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.331	0.741	1.250	1.075	0.996	A15
5690	138	802.11ac	OFDM	80	15.5	14.53	15.01	0.16	Right	Tilt	MIMO	2CC5C	58.5	93.0	1.055	0.476	1.250	1.075	0.640	
5690	138	802.11ac	OFDM	80	15.5	14.53	15.01	0.19	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.819	-	1.250	1.075	-	
5690	138	802.11ac	OFDM	80	15.5	14.53	15.01	-0.13	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.830	-	1.250	1.075	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.15	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.536	0.701	1.253	1.075	0.944	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.05	Right	Tilt	MIMO	2CC5C	58.5	93.0	1.121	0.505	1.253	1.075	0.680	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.16	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.841	-	1.253	1.075	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	-0.13	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.801	-	1.253	1.075	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: To achieve the 18.0 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.0 dBm.

Table 11-19
NII Head SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Contacted Power [dBm]	Ant 2 Contacted 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)	(Power)	(Duty Cycle)	(W/kg)	
5290	58	802.11ac	OFDM	80	13.5	13.49	13.20	0.10	Right	Cheek	MIMO	2CC5C	58.5	93.0	0.925	0.476	1.072	1.075	0.549	
5290	58	802.11ac	OFDM	80	13.5	13.49	13.20	0.18	Right	Tilt	MIMO	2CC5C	58.5	93.0	0.688	0.332	1.072	1.075	0.383	
5290	58	802.11ac	OFDM	80	13.5	13.49	13.20	-0.01	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.538	-	1.072	1.075	-	
5290	58	802.11ac	OFDM	80	13.5	13.49	13.20	0.18	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.433	-	1.072	1.075	-	
5690	138	802.11ac	OFDM	80	13.5	13.25	13.48	0.12	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.038	0.532	1.059	1.075	0.806	
5690	138	802.11ac	OFDM	80	13.5	13.25	13.48	0.17	Right	Tilt	MIMO	2CC5C	58.5	93.0	0.675	0.393	1.059	1.075	0.447	
5690	138	802.11ac	OFDM	80	13.5	13.25	13.48	0.14	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.502	-	1.059	1.075	-	
5690	138	802.11ac	OFDM	80	13.5	13.25	13.48	-0.13	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.401	-	1.059	1.075	-	
5775	155	802.11ac	OFDM	80	13.5	13.37	12.98	0.18	Right	Cheek	MIMO	2CC5C	58.5	93.0	1.051	0.508	1.127	1.075	0.615	
5775	155	802.11ac	OFDM	80	13.5	13.37	12.98	0.14	Right	Tilt	MIMO	2CC5C	58.5	93.0	0.895	0.380	1.127	1.075	0.460	
5775	155	802.11ac	OFDM	80	13.5	13.37	12.98	-0.04	Left	Cheek	MIMO	2CC5C	58.5	93.0	0.591	-	1.127	1.075	-	
5775	155	802.11ac	OFDM	80	13.5	13.37	12.98	0.18	Left	Tilt	MIMO	2CC5C	58.5	93.0	0.544	-	1.127	1.075	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

Table 11-20
Bluetooth Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	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 (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480.00	78	Bluetooth	FHSS	7.0	6.61	0.18	Right	Cheek	2CC5C	2	77.3	0.091	1.094	1.294	0.129	A16
2480.00	78	Bluetooth	FHSS	7.0	6.61	0.17	Right	Tilt	2CC5C	2	77.3	0.049	1.094	1.294	0.069	
2480.00	78	Bluetooth	FHSS	7.0	6.61	0.18	Left	Cheek	2CC5C	2	77.3	0.031	1.094	1.294	0.044	
2480.00	78	Bluetooth	FHSS	7.0	6.61	0.17	Left	Tilt	2CC5C	2	77.3	0.019	1.094	1.294	0.027	
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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11.2 Standalone Body-Worn SAR Data

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

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	32.78	0.00	15 mm	N/A	2CC64	1	1:8.3	back	0.190	1.180	0.224	A17
1880.00	661	GSM 1900	GSM	30.5	29.23	0.01	15 mm	N/A	2CC64	1	1:8.3	back	0.231	1.340	0.310	A19
836.60	4183	UMTS 850	RMC	25.5	24.56	0.01	15 mm	0	2CC64	N/A	1:1	back	0.270	1.242	0.335	A21
1732.40	1412	UMTS 1750	RMC	23.5	22.51	-0.01	15 mm	31	2CC64	N/A	1:1	back	0.467	1.256	0.587	A23
1880.00	9400	UMTS 1900	RMC	25.0	23.56	0.01	15 mm	31	2CC64	N/A	1:1	back	0.492	1.393	0.685	A25
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-22
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	-0.01	0	68	2A8FE	QPSK	1	25	15 mm	back	1:1	0.303	1.227	0.372	A27
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	-0.01	1	68	2A8FE	QPSK	25	0	15 mm	back	1:1	0.246	1.194	0.294	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	-0.03	0	15	2A8FE	QPSK	1	0	15 mm	back	1:1	0.271	1.205	0.327	A29
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	-0.03	1	15	2A8FE	QPSK	25	0	15 mm	back	1:1	0.218	1.213	0.264	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	0.01	0	31	2A8C8	QPSK	1	0	15 mm	back	1:1	0.660	1.208	0.797	A31
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.06	1	31	2A8C8	QPSK	50	0	15 mm	back	1:1	0.526	1.239	0.652	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	-0.03	0	31	2A8C8	QPSK	1	0	15 mm	back	1:1	0.561	1.205	0.676	A33
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	0.00	1	31	2A8C8	QPSK	50	0	15 mm	back	1:1	0.448	1.233	0.552	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.05	0	N/A	2A86B	QPSK	1	0	15 mm	back	1:1	0.430	1.169	0.503	A35
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.01	1	N/A	2A86B	QPSK	25	0	15 mm	back	1:1	0.345	1.146	0.395	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	-0.06	0	N/A	2A86B	QPSK	1	0	15 mm	back	1:1	0.202	1.074	0.217	A37
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	-0.01	1	N/A	2A86B	QPSK	50	0	15 mm	back	1:1	0.185	1.112	0.206	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	-0.03	0	N/A	2A86B	QPSK	1	0	15 mm	back	1:1.58	0.157	1.127	0.177	A39
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	0.01	1	N/A	2A86B	QPSK	50	0	15 mm	back	1:1.58	0.123	1.148	0.141	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	-0.02	0	N/A	2A86B	QPSK	1	0	15 mm	back	1:1.58	0.210	1.072	0.225	A41
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	-0.01	1	N/A	2A86B	QPSK	50	0	15 mm	back	1:1.58	0.164	1.086	0.178	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-23
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)	(Power)	(Duty Cycle)	(W/kg)	
2437	6	802.11b	DSSS	22	20.5	20.49	0.14	15 mm	1	2CC5C	1	back	99.5	0.178	0.148	1.002	1.005	0.149	
2412	1	802.11b	DSSS	22	20.5	20.49	-0.04	15 mm	2	2CC5C	1	back	99.5	0.229	0.192	1.002	1.005	0.193	A43
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 11-24
DTS Body-Worn SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Conducted Power [dBm]	Ant 2 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)	
2457	10	802.11n	OFDM	20	17.5	17.44	17.35	0.02	15 mm	MIMO	2CC5C	13	back	99.4	0.169	0.151	1.035	1.006	0.157	
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: DTS MIMO was additionally evaluated at the maximum allowed output power for operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WLAN was not transmitting during the above evaluations

Table 11-25
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)	
5280	56	802.11a	OFDM	20	17.5	16.83	0.10	15 mm	1	2CC5C	6	back	98.9	0.101	0.034	1.167	1.011	0.040	
5280	52	802.11a	OFDM	20	17.5	16.86	0.12	15 mm	2	2CC5C	6	back	98.9	0.135	0.057	1.159	1.011	0.067	
5500	100	802.11a	OFDM	20	17.5	17.16	-0.09	15 mm	1	2CC5C	6	back	98.9	0.369	0.127	1.081	1.011	0.139	
5720	144	802.11a	OFDM	20	17.5	16.81	0.14	15 mm	2	2CC5C	6	back	98.9	0.263	0.091	1.172	1.011	0.108	
5745	149	802.11a	OFDM	20	17.5	17.18	0.08	15 mm	1	2CC5C	6	back	98.9	0.766	0.338	1.076	1.011	0.368	A45
5825	165	802.11a	OFDM	20	17.5	17.49	0.18	15 mm	2	2CC5C	6	back	98.9	0.377	0.150	1.002	1.011	0.152	
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 11-26
NII Body-Worn SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Conducted Power [dBm]	Ant 2 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)	
5290	58	802.11ac	OFDM	80	15.5	14.97	14.77	-0.19	15 mm	MIMO	2CC5C	58.5	back	93.0	0.111	0.035	1.183	1.075	0.045	
5690	138	802.11ac	OFDM	80	15.5	14.53	15.01	0.12	15 mm	MIMO	2CC5C	58.5	back	93.0	0.479	0.209	1.250	1.075	0.281	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.21	15 mm	MIMO	2CC5C	58.5	back	93.0	0.579	0.243	1.253	1.075	0.327	
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: NII MIMO was additionally evaluated at the maximum allowed output power for operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WLAN was not transmitting during the above evaluations.

Table 11-27
Bluetooth 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 (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	14.5	14.30	0.11	15 mm	2CC5C	1	back	77.3	0.016	1.047	1.294	0.022	A47
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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11.3 Standalone Hotspot SAR Data

Table 11-28
GPRS/UMTS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	26.5	25.83	0.10	10 mm	N/A	2CC91	2	1:4.15	back	0.143	1.167	0.167	A18
836.60	190	GSM 850	GPRS	26.5	25.83	0.00	10 mm	N/A	2CC91	2	1:4.15	front	0.129	1.167	0.151	
836.60	190	GSM 850	GPRS	26.5	25.83	-0.14	10 mm	N/A	2CC91	2	1:4.15	bottom	0.074	1.167	0.086	
836.60	190	GSM 850	GPRS	26.5	25.83	-0.01	10 mm	N/A	2CC91	2	1:4.15	right	0.103	1.167	0.120	
836.60	190	GSM 850	GPRS	26.5	25.83	-0.04	10 mm	N/A	2CC91	2	1:4.15	left	0.044	1.167	0.051	
1880.00	661	GSM 1900	GPRS	23.5	22.30	-0.01	10 mm	N/A	2A94F	2	1:4.15	back	0.219	1.318	0.289	
1880.00	661	GSM 1900	GPRS	23.5	22.30	0.01	10 mm	N/A	2A94F	2	1:4.15	front	0.225	1.318	0.297	
1880.00	661	GSM 1900	GPRS	23.5	22.30	0.00	10 mm	N/A	2A94F	2	1:4.15	bottom	0.396	1.318	0.522	A20
1880.00	661	GSM 1900	GPRS	23.5	22.30	-0.07	10 mm	N/A	2A94F	2	1:4.15	right	0.048	1.318	0.063	
1880.00	661	GSM 1900	GPRS	23.5	22.30	0.14	10 mm	N/A	2A94F	2	1:4.15	left	0.056	1.318	0.074	
836.60	4183	UMTS 850	RMC	25.5	24.56	0.02	10 mm	0	2CC64	N/A	1:1	back	0.367	1.242	0.456	
836.60	4183	UMTS 850	RMC	25.5	24.56	-0.02	10 mm	0	2CC64	N/A	1:1	front	0.376	1.242	0.467	A22
836.60	4183	UMTS 850	RMC	25.5	24.56	-0.02	10 mm	0	2CC64	N/A	1:1	bottom	0.236	1.242	0.293	
836.60	4183	UMTS 850	RMC	25.5	24.56	-0.01	10 mm	0	2CC64	N/A	1:1	right	0.298	1.242	0.370	
836.60	4183	UMTS 850	RMC	25.5	24.56	-0.05	10 mm	0	2CC64	N/A	1:1	left	0.178	1.242	0.221	
1732.40	1412	UMTS 1750	RMC	20.0	19.16	-0.02	10 mm	31	2A94F	N/A	1:1	back	0.401	1.213	0.486	
1732.40	1412	UMTS 1750	RMC	20.0	19.16	0.00	10 mm	31	2A94F	N/A	1:1	front	0.412	1.213	0.500	
1732.40	1412	UMTS 1750	RMC	20.0	19.16	-0.04	10 mm	31	2A94F	N/A	1:1	bottom	0.527	1.213	0.639	A24
1732.40	1412	UMTS 1750	RMC	20.0	19.16	-0.01	10 mm	31	2A94F	N/A	1:1	right	0.054	1.213	0.066	
1732.40	1412	UMTS 1750	RMC	20.0	19.16	-0.01	10 mm	31	2A94F	N/A	1:1	left	0.110	1.213	0.133	
1880.00	9400	UMTS 1900	RMC	20.5	19.67	-0.12	10 mm	31	2A94F	N/A	1:1	back	0.369	1.211	0.447	
1880.00	9400	UMTS 1900	RMC	20.5	19.67	-0.01	10 mm	31	2A94F	N/A	1:1	front	0.376	1.211	0.455	
1880.00	9400	UMTS 1900	RMC	20.5	19.67	-0.03	10 mm	31	2A94F	N/A	1:1	bottom	0.616	1.211	0.746	A26
1880.00	9400	UMTS 1900	RMC	20.5	19.67	-0.05	10 mm	31	2A94F	N/A	1:1	right	0.080	1.211	0.097	
1880.00	9400	UMTS 1900	RMC	20.5	19.67	0.06	10 mm	31	2A94F	N/A	1:1	left	0.089	1.211	0.108	
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 11-29
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	-0.02	0	68	2ABFE	QPSK	1	25	10 mm	back	1:1	0.435	1.227	0.534	A28
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	-0.01	1	68	2ABFE	QPSK	25	0	10 mm	back	1:1	0.350	1.194	0.418	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	-0.01	0	68	2ABFE	QPSK	1	25	10 mm	front	1:1	0.362	1.227	0.444	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	-0.06	1	68	2ABFE	QPSK	25	0	10 mm	front	1:1	0.290	1.194	0.346	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	0.12	0	68	2ABFE	QPSK	1	25	10 mm	bottom	1:1	0.208	1.227	0.255	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	-0.10	1	68	2ABFE	QPSK	25	0	10 mm	bottom	1:1	0.169	1.194	0.202	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	-0.02	0	68	2ABFE	QPSK	1	25	10 mm	right	1:1	0.289	1.227	0.355	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	0.05	1	68	2ABFE	QPSK	25	0	10 mm	right	1:1	0.236	1.194	0.282	
707.50	23095	Mid	LTE Band 12	10	25.5	24.61	0.09	0	68	2ABFE	QPSK	1	25	10 mm	left	1:1	0.166	1.227	0.204	
707.50	23095	Mid	LTE Band 12	10	24.5	23.73	0.02	1	68	2ABFE	QPSK	25	0	10 mm	left	1:1	0.131	1.194	0.156	
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 11-30
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	-0.01	0	15	2ABFE	QPSK	1	0	10 mm	back	1:1	0.502	1.205	0.605	A30
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	0.00	1	15	2ABFE	QPSK	25	0	10 mm	back	1:1	0.412	1.213	0.500	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.02	0	15	2ABFE	QPSK	1	0	10 mm	front	1:1	0.468	1.205	0.564	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	-0.03	1	15	2ABFE	QPSK	25	0	10 mm	front	1:1	0.384	1.213	0.466	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.17	0	15	2ABFE	QPSK	1	0	10 mm	bottom	1:1	0.263	1.205	0.317	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	-0.02	1	15	2ABFE	QPSK	25	0	10 mm	bottom	1:1	0.205	1.213	0.249	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.03	0	15	2ABFE	QPSK	1	0	10 mm	right	1:1	0.369	1.205	0.445	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	-0.02	1	15	2ABFE	QPSK	25	0	10 mm	right	1:1	0.291	1.213	0.353	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.5	24.69	0.03	0	15	2ABFE	QPSK	1	0	10 mm	left	1:1	0.136	1.205	0.164	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.5	23.66	-0.01	1	15	2ABFE	QPSK	25	0	10 mm	left	1:1	0.108	1.213	0.131	
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 11-31
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	0.02	0	31	2A950	QPSK	1	0	10 mm	back	1:1	0.651	1.096	0.713	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	0.00	0	31	2A950	QPSK	50	0	10 mm	back	1:1	0.653	1.114	0.727	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	0.00	0	31	2A950	QPSK	1	0	10 mm	front	1:1	0.696	1.096	0.763	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	0.02	0	31	2A950	QPSK	50	0	10 mm	front	1:1	0.694	1.114	0.773	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	21.01	-0.05	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.825	1.119	0.923	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	21.00	-0.03	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.862	1.122	0.967	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	-0.05	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.967	1.096	1.060	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	20.98	-0.04	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.822	1.127	0.926	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	20.88	-0.04	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.860	1.153	0.992	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.05	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.976	1.114	1.087	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.02	-0.02	0	31	2A950	QPSK	100	0	10 mm	bottom	1:1	0.973	1.117	1.087	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	-0.04	0	31	2A950	QPSK	1	0	10 mm	right	1:1	0.097	1.096	0.106	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.02	0	31	2A950	QPSK	50	0	10 mm	right	1:1	0.096	1.114	0.107	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	-0.02	0	31	2A950	QPSK	1	0	10 mm	left	1:1	0.176	1.096	0.193	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.02	0	31	2A950	QPSK	50	0	10 mm	left	1:1	0.169	1.114	0.188	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.02	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.977	1.114	1.088	A32
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 data

Table 11-32
LTE Band 2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	0.00	0	31	2A950	QPSK	1	0	10 mm	back	1:1	0.426	1.040	0.443	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.24	0.05	0	31	2A950	QPSK	50	0	10 mm	back	1:1	0.425	1.062	0.451	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	0.03	0	31	2A950	QPSK	1	0	10 mm	front	1:1	0.451	1.040	0.469	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.24	0.04	0	31	2A950	QPSK	50	0	10 mm	front	1:1	0.459	1.062	0.487	
1860.00	18700	Low	LTE Band 2 (PCS)	20	20.5	20.14	-0.06	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.825	1.086	0.896	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	20.5	20.11	-0.02	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.767	1.094	0.839	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	-0.02	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.852	1.040	0.886	A34
1860.00	18700	Low	LTE Band 2 (PCS)	20	20.5	20.09	-0.02	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.739	1.099	0.812	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	20.5	20.05	0.02	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.665	1.109	0.737	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.24	-0.02	0	31	2A950	QPSK	50	0	10 mm	bottom	1:1	0.829	1.062	0.880	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.19	0.05	0	31	2A950	QPSK	100	0	10 mm	bottom	1:1	0.688	1.074	0.739	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	0.11	0	31	2A950	QPSK	1	0	10 mm	right	1:1	0.079	1.040	0.082	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.24	-0.13	0	31	2A950	QPSK	50	0	10 mm	right	1:1	0.102	1.062	0.108	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	0.03	0	31	2A950	QPSK	1	0	10 mm	left	1:1	0.126	1.040	0.131	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.24	0.03	0	31	2A950	QPSK	50	0	10 mm	left	1:1	0.123	1.062	0.131	
1900.00	19100	High	LTE Band 2 (PCS)	20	20.5	20.33	-0.14	0	31	2A950	QPSK	1	0	10 mm	bottom	1:1	0.783	1.040	0.814	
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 data

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Table 11-33
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	-0.01	0	2CC93	QPSK	1	0	10 mm	back	1:1	0.226	1.028	0.232	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	0.04	0	2CC93	QPSK	25	0	10 mm	back	1:1	0.226	1.047	0.237	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	0.00	0	2CC93	QPSK	1	0	10 mm	front	1:1	0.261	1.028	0.268	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	-0.01	0	2CC93	QPSK	25	0	10 mm	front	1:1	0.259	1.047	0.271	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	-0.04	0	2CC93	QPSK	1	0	10 mm	bottom	1:1	0.329	1.028	0.338	A36
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	-0.06	0	2CC93	QPSK	25	0	10 mm	bottom	1:1	0.328	1.047	0.343	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	0.09	0	2CC93	QPSK	1	0	10 mm	left	1:1	0.126	1.028	0.130	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	-0.01	0	2CC93	QPSK	25	0	10 mm	left	1:1	0.126	1.047	0.132	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-34
LTE Band 7 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	0.03	0	2DFB0	QPSK	1	0	10 mm	back	1:1	0.348	1.091	0.380	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	-0.02	0	2DFB0	QPSK	50	0	10 mm	back	1:1	0.324	1.096	0.355	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	-0.05	0	2DFB0	QPSK	1	0	10 mm	front	1:1	0.420	1.091	0.458	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	-0.03	0	2DFB0	QPSK	50	0	10 mm	front	1:1	0.384	1.096	0.421	
2510.00	20850	Low	LTE Band 7	20	21.5	20.83	-0.02	0	2DFB0	QPSK	1	0	10 mm	bottom	1:1	0.839	1.167	0.979	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	-0.03	0	2DFB0	QPSK	1	0	10 mm	bottom	1:1	0.853	1.091	0.931	A38
2560.00	21350	High	LTE Band 7	20	21.5	20.63	-0.04	0	2DFB0	QPSK	1	0	10 mm	bottom	1:1	0.712	1.222	0.870	
2510.00	20850	Low	LTE Band 7	20	21.5	20.77	-0.05	0	2DFB0	QPSK	50	0	10 mm	bottom	1:1	0.829	1.183	0.981	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	-0.04	0	2DFB0	QPSK	50	0	10 mm	bottom	1:1	0.826	1.096	0.905	
2560.00	21350	High	LTE Band 7	20	21.5	20.58	-0.05	0	2DFB0	QPSK	50	0	10 mm	bottom	1:1	0.702	1.236	0.868	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.04	-0.10	0	2DFB0	QPSK	100	0	10 mm	bottom	1:1	0.793	1.112	0.882	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	0.06	0	2DFB0	QPSK	1	0	10 mm	left	1:1	0.208	1.091	0.227	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	-0.02	0	2DFB0	QPSK	50	0	10 mm	left	1:1	0.211	1.096	0.231	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	-0.13	0	2DFB0	QPSK	1	0	10 mm	bottom	1:1	0.835	1.091	0.911	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Blue entries represent variability data

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Table 11-35
LTE Band 38 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	-0.05	0	2A46B	QPSK	1	0	10 mm	back	1:1.58	0.289	1.127	0.326	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	0.01	1	2A46B	QPSK	50	0	10 mm	back	1:1.58	0.226	1.148	0.259	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	0.01	0	2A46B	QPSK	1	0	10 mm	front	1:1.58	0.345	1.127	0.389	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	-0.04	1	2A46B	QPSK	50	0	10 mm	front	1:1.58	0.270	1.148	0.310	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	-0.06	0	2A46B	QPSK	1	0	10 mm	bottom	1:1.58	0.659	1.127	0.743	A40
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	-0.01	1	2A46B	QPSK	50	0	10 mm	bottom	1:1.58	0.508	1.148	0.583	
2595.00	38000	Mid	LTE Band 38	20	23.5	22.98	-0.09	0	2A46B	QPSK	1	0	10 mm	left	1:1.58	0.172	1.127	0.194	
2595.00	38000	Mid	LTE Band 38	20	22.5	21.90	-0.09	1	2A46B	QPSK	50	0	10 mm	left	1:1.58	0.130	1.148	0.149	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-36
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)		(W/kg)	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	-0.07	0	2CC97	QPSK	1	0	10 mm	back	1:1.58	1.012	0.137	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	0.00	0	2CC97	QPSK	50	0	10 mm	back	1:1.58	1.023	0.136	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	0.03	0	2CC97	QPSK	1	0	10 mm	front	1:1.58	1.012	0.147	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	0.01	0	2CC97	QPSK	50	0	10 mm	front	1:1.58	1.023	0.143	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	-0.01	0	2CC97	QPSK	1	0	10 mm	bottom	1:1.58	1.012	0.307	A42
2680.00	41490	High	LTE Band 41	20	21.5	21.40	-0.05	0	2CC97	QPSK	50	0	10 mm	bottom	1:1.58	1.023	0.295	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	0.02	0	2CC97	QPSK	1	0	10 mm	left	1:1.58	1.012	0.074	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	0.10	0	2CC97	QPSK	50	0	10 mm	left	1:1.58	1.023	0.070	
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 11-37
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	20.5	20.49	0.10	10 mm	1	2CC5C	1	back	99.5	0.407	0.330	1.002	1.005	0.332	
2437	6	802.11b	DSSS	22	20.5	20.49	0.12	10 mm	1	2CC5C	1	front	99.5	0.207	-	1.002	1.005	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.11	10 mm	1	2CC5C	1	top	99.5	0.345	-	1.002	1.005	-	
2437	6	802.11b	DSSS	22	20.5	20.49	0.06	10 mm	1	2CC5C	1	left	99.5	0.106	-	1.002	1.005	-	
2412	1	802.11b	DSSS	22	20.5	20.49	-0.08	10 mm	2	2CC5C	1	back	99.5	0.461	0.412	1.002	1.005	0.415	
2412	1	802.11b	DSSS	22	20.5	20.49	-0.02	10 mm	2	2CC5C	1	front	99.5	0.538	0.483	1.002	1.005	0.486	A44
2412	1	802.11b	DSSS	22	20.5	20.49	-0.13	10 mm	2	2CC5C	1	top	99.5	0.328	-	1.002	1.005	-	
2412	1	802.11b	DSSS	22	20.5	20.49	0.06	10 mm	2	2CC5C	1	left	99.5	0.213	-	1.002	1.005	-	
5745	149	802.11a	OFDM	20	17.5	17.18	0.13	10 mm	1	2CC5C	6	back	98.9	0.858	0.404	1.076	1.011	0.439	A46
5745	149	802.11a	OFDM	20	17.5	17.18	-0.15	10 mm	1	2CC5C	6	front	98.9	0.167	-	1.076	1.011	-	
5745	149	802.11a	OFDM	20	17.5	17.18	0.08	10 mm	1	2CC5C	6	top	98.9	0.468	0.195	1.076	1.011	0.212	
5745	149	802.11a	OFDM	20	17.5	17.18	0.10	10 mm	1	2CC5C	6	left	98.9	0.061	-	1.076	1.011	-	
5825	165	802.11a	OFDM	20	17.5	17.49	0.14	10 mm	2	2CC5C	6	back	98.9	0.417	0.166	1.002	1.011	0.168	
5825	165	802.11a	OFDM	20	17.5	17.49	0.19	10 mm	2	2CC5C	6	front	98.9	0.194	-	1.002	1.011	-	
5825	165	802.11a	OFDM	20	17.5	17.49	-0.10	10 mm	2	2CC5C	6	top	98.9	0.213	-	1.002	1.011	-	
5825	165	802.11a	OFDM	20	17.5	17.49	0.19	10 mm	2	2CC5C	6	left	98.9	0.052	-	1.002	1.011	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-38
WLAN Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm] (per Antenna)	Ant 1 Conducted Power [dBm]	Ant 2 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)	
2457	10	802.11n	OFDM	20	17.5	17.44	17.35	0.18	10 mm	MIMO	2CC5C	13	back	99.4	0.302	-	1.035	1.006	-	
2457	10	802.11n	OFDM	20	17.5	17.44	17.35	0.12	10 mm	MIMO	2CC5C	13	front	99.4	0.229	-	1.035	1.006	-	
2457	10	802.11n	OFDM	20	17.5	17.44	17.35	0.00	10 mm	MIMO	2CC5C	13	top	99.4	0.355	0.290	1.035	1.006	0.302	
2457	10	802.11n	OFDM	20	17.5	17.44	17.35	0.15	10 mm	MIMO	2CC5C	13	left	99.4	0.129	-	1.035	1.006	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.16	10 mm	MIMO	2CC5C	58.5	back	93.0	0.647	0.280	1.253	1.075	0.377	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.19	10 mm	MIMO	2CC5C	58.5	front	93.0	0.138	-	1.253	1.075	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.10	10 mm	MIMO	2CC5C	58.5	top	93.0	0.325	-	1.253	1.075	-	
5775	155	802.11ac	OFDM	80	15.5	14.52	15.43	0.19	10 mm	MIMO	2CC5C	58.5	left	93.0	0.045	-	1.253	1.075	-	
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: DTS MIMO and NII MIMO were additionally evaluated at the maximum allowed output power or operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WLAN was not transmitting during 2.4 GHz WLAN evaluations, and 2.4 GHz WLAN was not transmitting during 5 GHz WLAN evaluations.

Table 11-39
Bluetooth 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 (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	7.0	6.61	0.17	10 mm	2CC5C	2	back	77.3	0.013	1.094	1.294	0.018	A48
2480	78	Bluetooth	FHSS	7.0	6.61	0.14	10 mm	2CC5C	2	front	77.3	0.013	1.094	1.294	0.018	
2480	78	Bluetooth	FHSS	7.0	6.61	0.14	10 mm	2CC5C	2	top	77.3	0.007	1.094	1.294	0.010	
2480	78	Bluetooth	FHSS	7.0	6.61	-0.04	10 mm	2CC5C	2	left	77.3	0.004	1.094	1.294	0.006	
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 11-40
GPRS/UMTS Phablet SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	31.5	30.81	0.10	4 mm	N/A	2CC64	2	1:4.15	back	0.667	1.172	0.782	A49
836.60	190	GSM 850	GPRS	31.5	30.81	-0.03	4 mm	N/A	2CC64	2	1:4.15	front	0.739	1.172	0.866	
836.60	190	GSM 850	GPRS	31.5	30.81	-0.10	7 mm	N/A	2CC64	2	1:4.15	bottom	0.185	1.172	0.217	
836.60	190	GSM 850	GPRS	31.5	30.81	-0.13	0 mm	N/A	2CC64	2	1:4.15	right	0.218	1.172	0.255	
836.60	190	GSM 850	GPRS	31.5	30.81	-0.10	0 mm	N/A	2CC64	2	1:4.15	left	0.174	1.172	0.204	
836.60	190	GSM 850	GPRS	26.5	25.83	-0.10	0 mm	N/A	2CC91	2	1:4.15	back	0.427	1.167	0.498	A50
836.60	190	GSM 850	GPRS	26.5	25.83	0.08	0 mm	N/A	2CC91	2	1:4.15	front	0.453	1.167	0.529	
836.60	190	GSM 850	GPRS	26.5	25.83	-0.10	0 mm	N/A	2CC91	2	1:4.15	bottom	0.176	1.167	0.205	
1880.00	661	GSM 1900	GPRS	28.5	27.58	-0.08	4 mm	N/A	2CC64	2	1:4.15	back	0.637	1.236	0.787	
1880.00	661	GSM 1900	GPRS	28.5	27.58	-0.18	4 mm	N/A	2CC64	2	1:4.15	front	0.836	1.236	1.033	
1880.00	661	GSM 1900	GPRS	28.5	27.58	-0.07	7 mm	N/A	2CC64	2	1:4.15	bottom	0.792	1.236	0.979	A51
1880.00	661	GSM 1900	GPRS	28.5	27.58	0.14	0 mm	N/A	2CC64	2	1:4.15	right	0.208	1.236	0.257	
1880.00	661	GSM 1900	GPRS	28.5	27.58	-0.07	0 mm	N/A	2CC64	2	1:4.15	left	0.270	1.236	0.334	
1880.00	661	GSM 1900	GPRS	23.5	22.30	-0.13	0 mm	N/A	2CC91	2	1:4.15	back	0.461	1.318	0.608	
1880.00	661	GSM 1900	GPRS	23.5	22.30	0.06	0 mm	N/A	2CC91	2	1:4.15	front	0.508	1.318	0.670	
1880.00	661	GSM 1900	GPRS	23.5	22.30	-0.08	0 mm	N/A	2CC91	2	1:4.15	bottom	0.683	1.318	0.900	A52
1732.40	1412	UMTS 1750	RMC	23.5	22.51	0.02	4 mm	31	2CC64	N/A	1:1	back	1.050	1.256	1.319	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	0.07	4 mm	31	2CC64	N/A	1:1	front	1.090	1.256	1.369	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	0.00	7 mm	31	2CC64	N/A	1:1	bottom	0.941	1.256	1.182	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	-0.08	0 mm	31	2CC64	N/A	1:1	right	0.276	1.256	0.347	
1732.40	1412	UMTS 1750	RMC	23.5	22.51	-0.10	0 mm	31	2CC64	N/A	1:1	left	0.376	1.256	0.472	
1732.40	1412	UMTS 1750	RMC	20.5	19.57	-0.07	0 mm	31	2CC91	N/A	1:1	back	1.170	1.239	1.450	A51
1732.40	1412	UMTS 1750	RMC	20.5	19.57	0.01	0 mm	31	2CC91	N/A	1:1	front	1.310	1.239	1.623	
1712.40	1312	UMTS 1750	RMC	20.5	19.65	-0.03	0 mm	31	2CC91	N/A	1:1	bottom	1.720	1.216	2.092	
1732.40	1412	UMTS 1750	RMC	20.5	19.57	0.00	0 mm	31	2CC91	N/A	1:1	bottom	1.720	1.239	2.131	
1752.60	1513	UMTS 1750	RMC	20.5	19.59	-0.02	0 mm	31	2CC91	N/A	1:1	bottom	1.790	1.233	2.207	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	-0.04	4 mm	31	2CC64	N/A	1:1	back	1.030	1.393	1.435	A52
1880.00	9400	UMTS 1900	RMC	25.0	23.56	-0.01	4 mm	31	2CC64	N/A	1:1	front	1.190	1.393	1.658	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	-0.04	7 mm	31	2CC64	N/A	1:1	bottom	1.290	1.393	1.797	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	-0.05	0 mm	31	2CC64	N/A	1:1	right	0.422	1.393	0.588	
1880.00	9400	UMTS 1900	RMC	25.0	23.56	-0.03	0 mm	31	2CC64	N/A	1:1	left	0.488	1.393	0.680	
1880.00	9400	UMTS 1900	RMC	21.5	20.56	0.02	0 mm	31	2CC91	N/A	1:1	back	1.320	1.242	1.639	A52
1880.00	9400	UMTS 1900	RMC	21.5	20.56	0.06	0 mm	31	2CC91	N/A	1:1	front	1.450	1.242	1.801	
1852.40	9262	UMTS 1900	RMC	21.5	20.55	0.00	0 mm	31	2CC91	N/A	1:1	bottom	1.960	1.245	2.440	
1880.00	9400	UMTS 1900	RMC	21.5	20.56	0.00	0 mm	31	2CC91	N/A	1:1	bottom	1.850	1.242	2.298	
1907.60	9538	UMTS 1900	RMC	21.5	20.60	-0.02	0 mm	31	2CC91	N/A	1:1	bottom	1.980	1.230	2.435	
ANSI / IEEE C95.1 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 11-41
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.05	0	31	2A8C8	QPSK	1	0	4 mm	back	1:1	1.630	1.208	1.969	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.03	1	31	2A8C8	QPSK	50	0	4 mm	back	1:1	1.300	1.239	1.611	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.04	0	31	2A8C8	QPSK	1	0	4 mm	front	1:1	1.630	1.208	1.969	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.05	1	31	2A8C8	QPSK	50	0	4 mm	front	1:1	1.310	1.239	1.623	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.03	0	31	2A8C8	QPSK	1	0	7 mm	bottom	1:1	1.320	1.208	1.595	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.02	1	31	2A8C8	QPSK	50	0	7 mm	bottom	1:1	1.070	1.239	1.326	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.08	0	31	2A8C8	QPSK	1	0	0 mm	right	1:1	0.288	1.208	0.348	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.09	1	31	2A8C8	QPSK	50	0	0 mm	right	1:1	0.226	1.239	0.280	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.18	-0.06	0	31	2A8C8	QPSK	1	0	0 mm	left	1:1	0.488	1.208	0.590	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.0	23.07	-0.04	1	31	2A8C8	QPSK	50	0	0 mm	left	1:1	0.389	1.239	0.482	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	-0.06	0	31	2A4A4	QPSK	1	0	0 mm	back	1:1	1.790	1.096	1.962	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.04	0	31	2A4A4	QPSK	50	0	0 mm	back	1:1	1.770	1.114	1.972	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	21.01	0.03	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	2.130	1.119	2.383	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	21.00	-0.09	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	2.150	1.122	2.412	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	0.02	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	2.110	1.096	2.313	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	20.98	0.02	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	2.160	1.127	2.434	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	20.88	0.02	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	2.170	1.153	2.502	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	0.01	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	2.230	1.114	2.484	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.02	0.02	0	31	2A4A4	QPSK	100	0	0 mm	front	1:1	2.080	1.117	2.323	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	21.01	-0.03	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.340	1.119	2.618	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	21.00	-0.06	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.500	1.122	2.805	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.10	-0.04	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.750	1.096	3.014	
1720.00	132072	Low	LTE Band 66 (AWS)	20	21.5	20.98	-0.04	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.400	1.127	2.705	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	21.5	20.88	-0.04	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.570	1.153	2.963	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.09	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.760	1.114	3.075	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.02	0.02	0	31	2A4A4	QPSK	100	0	0 mm	bottom	1:1	2.760	1.117	3.083	
1770.00	132572	High	LTE Band 66 (AWS)	20	21.5	21.03	-0.01	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.770	1.114	3.086	A53
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 data

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Table 11-42
LTE Band 2 (PCS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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)		
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.01	0	31	2A8C8	QPSK	1	0	4 mm	back	1:1	1.390	1.205	1.675	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.03	1	31	2A8C8	QPSK	50	0	4 mm	back	1:1	1.090	1.233	1.344	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	0.02	0	31	2A8C8	QPSK	1	0	4 mm	front	1:1	1.370	1.205	1.651	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	0.02	1	31	2A8C8	QPSK	50	0	4 mm	front	1:1	1.090	1.233	1.344	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	-0.02	0	31	2A8C8	QPSK	1	0	7 mm	bottom	1:1	1.520	1.205	1.832	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.03	1	31	2A8C8	QPSK	50	0	7 mm	bottom	1:1	1.210	1.233	1.492	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	-0.04	0	31	2A8C8	QPSK	1	0	0 mm	right	1:1	0.478	1.205	0.576	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.10	1	31	2A8C8	QPSK	50	0	0 mm	right	1:1	0.379	1.233	0.467	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	25.0	24.19	-0.04	0	31	2A8C8	QPSK	1	0	0 mm	left	1:1	0.659	1.205	0.794	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.09	-0.07	1	31	2A8C8	QPSK	50	0	0 mm	left	1:1	0.539	1.233	0.665	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.58	0.01	0	31	2A4A4	QPSK	1	0	0 mm	back	1:1	1.750	1.102	1.929	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.56	0.00	0	31	2A4A4	QPSK	50	0	0 mm	back	1:1	1.750	1.107	1.937	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.58	0.07	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	2.080	1.102	2.292	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	21.57	0.10	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	2.000	1.104	2.208	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	21.50	0.11	0	31	2A4A4	QPSK	1	0	0 mm	front	1:1	1.950	1.122	2.188	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.56	0.07	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	2.080	1.107	2.303	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	21.46	0.14	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	2.020	1.132	2.287	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	21.43	0.11	0	31	2A4A4	QPSK	50	0	0 mm	front	1:1	1.940	1.140	2.212	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.46	0.08	0	31	2A4A4	QPSK	100	0	0 mm	front	1:1	2.030	1.132	2.298	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.58	-0.05	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.670	1.102	2.942	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	21.57	-0.03	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.530	1.104	2.793	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	21.50	-0.04	0	31	2A4A4	QPSK	1	0	0 mm	bottom	1:1	2.470	1.122	2.771	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.56	-0.06	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.680	1.107	2.967	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	21.46	-0.09	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.540	1.132	2.875	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	21.43	-0.05	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.450	1.140	2.793	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.46	-0.04	0	31	2A4A4	QPSK	100	0	0 mm	bottom	1:1	2.620	1.132	2.966	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	21.56	-0.12	0	31	2A4A4	QPSK	50	0	0 mm	bottom	1:1	2.680	1.107	2.967	A54
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 data

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Table 11-43
LTE Band 30 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	-0.04	0	2A6B	QPSK	1	0	4 mm	back	1:1	1.180	1.169	1.379	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.02	1	2A6B	QPSK	25	0	4 mm	back	1:1	0.946	1.146	1.084	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.06	0	2A6B	QPSK	1	0	4 mm	front	1:1	1.260	1.169	1.473	A55
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	-0.09	1	2A6B	QPSK	25	0	4 mm	front	1:1	1.000	1.146	1.146	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	0.01	0	2A6B	QPSK	1	0	7 mm	bottom	1:1	0.718	1.169	0.839	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	0.00	1	2A6B	QPSK	25	0	7 mm	bottom	1:1	0.577	1.146	0.661	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.32	-0.08	0	2A6B	QPSK	1	0	0 mm	left	1:1	0.775	1.169	0.906	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.41	-0.06	1	2A6B	QPSK	25	0	0 mm	left	1:1	0.634	1.146	0.727	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	-0.05	0	2CC93	QPSK	1	0	0 mm	back	1:1	0.911	1.028	0.937	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	-0.06	0	2CC93	QPSK	25	0	0 mm	back	1:1	0.899	1.047	0.941	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	0.04	0	2CC93	QPSK	1	0	0 mm	front	1:1	1.160	1.028	1.192	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	0.06	0	2CC93	QPSK	25	0	0 mm	front	1:1	1.170	1.047	1.225	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.88	-0.09	0	2CC93	QPSK	1	0	0 mm	bottom	1:1	1.000	1.028	1.028	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.80	-0.10	0	2CC93	QPSK	25	0	0 mm	bottom	1:1	0.994	1.047	1.041	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Phablet 4.0 W/kg (mW/g) averaged over 10 grams										

Table 11-44
LTE Band 7 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	0.00	0	2AA6B	QPSK	1	0	4 mm	back	1:1	0.415	1.074	0.446	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.05	1	2AA6B	QPSK	50	0	4 mm	back	1:1	0.395	1.112	0.439	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	-0.03	0	2AA6B	QPSK	1	0	4 mm	front	1:1	0.537	1.074	0.577	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	0.00	1	2AA6B	QPSK	50	0	4 mm	front	1:1	0.510	1.112	0.567	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	-0.05	0	2AA6B	QPSK	1	0	7 mm	bottom	1:1	0.756	1.074	0.812	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	-0.05	1	2AA6B	QPSK	50	0	7 mm	bottom	1:1	0.727	1.112	0.808	
2510.00	20850	Low	LTE Band 7	20	23.5	23.19	-0.07	0	2AA6B	QPSK	1	0	0 mm	left	1:1	0.504	1.074	0.541	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.04	-0.08	1	2AA6B	QPSK	50	0	0 mm	left	1:1	0.517	1.112	0.575	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	0.00	0	2DFB0	QPSK	1	0	0 mm	back	1:1	1.120	1.091	1.222	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	-0.02	0	2DFB0	QPSK	50	0	0 mm	back	1:1	1.110	1.096	1.217	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	0.17	0	2DFB0	QPSK	1	0	0 mm	front	1:1	1.830	1.091	1.997	A56
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	0.04	0	2DFB0	QPSK	50	0	0 mm	front	1:1	1.820	1.096	1.995	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.12	-0.03	0	2DFB0	QPSK	1	0	0 mm	bottom	1:1	1.430	1.091	1.560	
2535.00	21100	Mid	LTE Band 7	20	21.5	21.10	0.01	0	2DFB0	QPSK	50	0	0 mm	bottom	1:1	1.410	1.096	1.545	
ANSI / IEEE C95.1 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 11-45
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maxim um 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)			
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	-0.02	0	2A46B	QPSK	1	0	4 mm	back	1:1.58	1.210	1.072	1.297	A57
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.05	1	2A46B	QPSK	50	0	4 mm	back	1:1.58	0.958	1.086	1.040	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	0.21	0	2A46B	QPSK	1	0	4 mm	front	1:1.58	0.547	1.072	0.586	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	0.20	1	2A46B	QPSK	50	0	4 mm	front	1:1.58	0.426	1.086	0.463	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	-0.03	0	2A46B	QPSK	1	0	7 mm	bottom	1:1.58	0.655	1.072	0.702	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	-0.03	1	2A46B	QPSK	50	0	7 mm	bottom	1:1.58	0.509	1.086	0.553	
2506.00	39750	Low	LTE Band 41	20	23.5	23.20	-0.13	0	2A46B	QPSK	1	0	0 mm	left	1:1.58	0.426	1.072	0.457	
2506.00	39750	Low	LTE Band 41	20	22.5	22.14	-0.07	1	2A46B	QPSK	50	0	0 mm	left	1:1.58	0.340	1.086	0.369	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	-0.01	0	2CC97	QPSK	1	0	0 mm	back	1:1.58	0.633	1.012	0.641	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	0.01	0	2CC97	QPSK	50	0	0 mm	back	1:1.58	0.616	1.023	0.630	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	-0.02	0	2CC97	QPSK	1	0	0 mm	front	1:1.58	0.797	1.012	0.807	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	-0.04	0	2CC97	QPSK	50	0	0 mm	front	1:1.58	0.784	1.023	0.802	
2680.00	41490	High	LTE Band 41	20	21.5	21.45	-0.10	0	2CC97	QPSK	1	0	0 mm	bottom	1:1.58	0.221	1.012	0.224	
2680.00	41490	High	LTE Band 41	20	21.5	21.40	-0.12	0	2CC97	QPSK	50	0	0 mm	bottom	1:1.58	0.209	1.023	0.214	
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 11-46
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)	
5280	56	802.11a	OFDM	20	17.5	16.83	0.12	0 mm	1	2CC5C	6	back	98.9	4.043	0.367	1.167	1.011	0.433	
5280	56	802.11a	OFDM	20	17.5	16.83	-0.12	0 mm	1	2CC5C	6	front	98.9	3.543	0.315	1.167	1.011	0.372	
5280	56	802.11a	OFDM	20	17.5	16.83	0.11	0 mm	1	2CC5C	6	top	98.9	3.496	-	1.167	1.011	-	
5280	56	802.11a	OFDM	20	17.5	16.83	0.19	0 mm	1	2CC5C	6	left	98.9	0.190	-	1.167	1.011	-	
5260	52	802.11a	OFDM	20	17.5	16.86	0.12	0 mm	2	2CC5C	6	back	98.9	3.922	0.580	1.159	1.011	0.680	
5260	52	802.11a	OFDM	20	17.5	16.86	0.10	0 mm	2	2CC5C	6	front	98.9	3.014	0.335	1.159	1.011	0.393	
5260	52	802.11a	OFDM	20	17.5	16.86	-0.14	0 mm	2	2CC5C	6	top	98.9	0.766	-	1.159	1.011	-	
5260	52	802.11a	OFDM	20	17.5	16.86	0.00	0 mm	2	2CC5C	6	left	98.9	0.600	-	1.159	1.011	-	
5500	100	802.11a	OFDM	20	17.5	17.16	-0.20	0 mm	1	2CC5C	6	back	98.9	6.265	-	1.081	1.011	-	
5500	100	802.11a	OFDM	20	17.5	17.16	-0.11	0 mm	1	2CC5C	6	front	98.9	5.457	0.506	1.081	1.011	0.553	
5500	100	802.11a	OFDM	20	17.5	17.16	-0.01	0 mm	1	2CC5C	6	top	98.9	8.872	0.834	1.081	1.011	0.911	A58
5500	100	802.11a	OFDM	20	17.5	17.16	0.17	0 mm	1	2CC5C	6	left	98.9	0.146	-	1.081	1.011	-	
5720	144	802.11a	OFDM	20	17.5	16.81	0.04	0 mm	2	2CC5C	6	back	98.9	5.638	0.491	1.172	1.011	0.582	
5720	144	802.11a	OFDM	20	17.5	16.81	0.17	0 mm	2	2CC5C	6	front	98.9	2.438	0.276	1.172	1.011	0.327	
5720	144	802.11a	OFDM	20	17.5	16.81	0.16	0 mm	2	2CC5C	6	top	98.9	1.404	-	1.172	1.011	-	
5720	144	802.11a	OFDM	20	17.5	16.81	0.00	0 mm	2	2CC5C	6	left	98.9	0.451	-	1.172	1.011	-	
ANSI / IEEE C95.1 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 11-47
Bluetooth Phablet 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 (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	14.5	14.30	0.15	0 mm	2CC5C	1	back	77.3	0.138	1.047	1.294	0.187	
2441	39	Bluetooth	FHSS	14.5	14.30	-0.14	0 mm	2CC5C	1	front	77.3	0.206	1.047	1.294	0.279	A59
2441	39	Bluetooth	FHSS	14.5	14.30	-0.16	0 mm	2CC5C	1	top	77.3	0.031	1.047	1.294	0.042	
2441	39	Bluetooth	FHSS	14.5	14.30	-0.09	0 mm	2CC5C	1	left	77.3	0.097	1.047	1.294	0.131	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet								
Spatial Peak								4.0 W/kg (mW/g)								
Uncontrolled Exposure/General Population								averaged over 10 grams								

11.5 SAR Test Notes

General Notes:

- 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.
- Batteries are fully charged at the beginning of the SAR measurements.
- Liquid tissue depth was at least 15.0 cm for all frequencies.
- 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.
- SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
- 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.
- 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.
- 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.
- 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).
- 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.
- 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.
- 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.
- Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

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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 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.

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 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 8.5.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported (scaled) for LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg, 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 LTE CA operations was not needed since the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, 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

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was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.6.5 for more information.

3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg. See Section 8.6.6 for more information.
4. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06. 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 or all test channels were measured.
6. When 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.
7. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.

Bluetooth Notes:

1. Body-worn and Phablet 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 was evaluated for BT EDR tethering applications.
3. Head and Hotspot Bluetooth SAR were measured with the device connected to a call box with hopping disabled with 2DH5 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.

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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 1-g SAR for all the simultaneous transmitting antennas in a specific 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 1-g or 10-g SAR.

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

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

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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	0.149	0.243	0.998	0.392	1.147
	GSM 1900	0.086	0.243	0.998	0.329	1.084
	UMTS 850	0.227	0.243	0.998	0.470	1.225
	UMTS 1750	0.226	0.243	0.998	0.469	1.224
	UMTS 1900	0.216	0.243	0.998	0.459	1.214
	LTE Band 12	0.164	0.243	0.998	0.407	1.162
	LTE Band 5 (Cell)	0.247	0.243	0.998	0.490	1.245
	LTE Band 66 (AWS)	0.225	0.243	0.998	0.468	1.223
	LTE Band 2 (PCS)	0.233	0.243	0.998	0.476	1.231
	LTE Band 30	0.170	0.243	0.998	0.413	1.168
	LTE Band 7	0.121	0.243	0.998	0.364	1.119
	LTE Band 38	0.055	0.243	0.998	0.298	1.053
	LTE Band 41	0.079	0.243	0.998	0.322	1.077

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
Head SAR	GSM 850	0.149	0.570	0.566	0.719	0.715
	GSM 1900	0.086	0.570	0.566	0.656	0.652
	UMTS 850	0.227	0.570	0.566	0.797	0.793
	UMTS 1750	0.226	0.570	0.566	0.796	0.792
	UMTS 1900	0.216	0.570	0.566	0.786	0.782
	LTE Band 12	0.164	0.570	0.566	0.734	0.730
	LTE Band 5 (Cell)	0.247	0.570	0.566	0.817	0.813
	LTE Band 66 (AWS)	0.225	0.570	0.566	0.795	0.791
	LTE Band 2 (PCS)	0.233	0.570	0.566	0.803	0.799
	LTE Band 30	0.170	0.570	0.566	0.740	0.736
	LTE Band 7	0.121	0.570	0.566	0.691	0.687
	LTE Band 38	0.055	0.570	0.566	0.625	0.621
	LTE Band 41	0.079	0.570	0.566	0.649	0.645

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Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz MIMO (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 13.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.149	1.001	1.150
	GSM 1900	0.086	1.001	1.087
	UMTS 850	0.227	1.001	1.228
	UMTS 1750	0.226	1.001	1.227
	UMTS 1900	0.216	1.001	1.217
	LTE Band 12	0.164	1.001	1.165
	LTE Band 5 (Cell)	0.247	1.001	1.248
	LTE Band 66 (AWS)	0.225	1.001	1.226
	LTE Band 2 (PCS)	0.233	1.001	1.234
	LTE Band 30	0.170	1.001	1.171
	LTE Band 7	0.121	1.001	1.122
	LTE Band 38	0.055	1.001	1.056
	LTE Band 41	0.079	1.001	1.080

Each antenna in the above 2.4 GHz MIMO condition was transmitting with a maximum allowed output power of 13.0 dBm to achieve the summed 16.0 dBm target shown in the documentation.

Table 12-4
Simultaneous Transmission Scenario with 5 GHz MIMO (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.149	0.996	1.145
	GSM 1900	0.086	0.996	1.082
	UMTS 850	0.227	0.996	1.223
	UMTS 1750	0.226	0.996	1.222
	UMTS 1900	0.216	0.996	1.212
	LTE Band 12	0.164	0.996	1.160
	LTE Band 5 (Cell)	0.247	0.996	1.243
	LTE Band 66 (AWS)	0.225	0.996	1.221
	LTE Band 2 (PCS)	0.233	0.996	1.229
	LTE Band 30	0.170	0.996	1.166
	LTE Band 7	0.121	0.996	1.117
	LTE Band 38	0.055	0.996	1.051
	LTE Band 41	0.079	0.996	1.075

Each antenna in the above 5 GHz MIMO condition was transmitting with a maximum allowed output power of 15.0 dBm to achieve the summed 18.0 dBm target shown in the documentation.

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Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz and 5 GHz WLAN 4 Tx (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 9.5 dBm SAR (W/kg)	5 GHz WLAN MIMO at 13.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.149	0.388	0.615	1.152
	GSM 1900	0.086	0.388	0.615	1.089
	UMTS 850	0.227	0.388	0.615	1.230
	UMTS 1750	0.226	0.388	0.615	1.229
	UMTS 1900	0.216	0.388	0.615	1.219
	LTE Band 12	0.164	0.388	0.615	1.167
	LTE Band 5 (Cell)	0.247	0.388	0.615	1.250
	LTE Band 66 (AWS)	0.225	0.388	0.615	1.228
	LTE Band 2 (PCS)	0.233	0.388	0.615	1.236
	LTE Band 30	0.170	0.388	0.615	1.173
	LTE Band 7	0.121	0.388	0.615	1.124
	LTE Band 38	0.055	0.388	0.615	1.058
	LTE Band 41	0.079	0.388	0.615	1.082

Table 12-6
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	0.149	0.129	0.278
	GSM 1900	0.086	0.129	0.215
	UMTS 850	0.227	0.129	0.356
	UMTS 1750	0.226	0.129	0.355
	UMTS 1900	0.216	0.129	0.345
	LTE Band 12	0.164	0.129	0.293
	LTE Band 5 (Cell)	0.247	0.129	0.376
	LTE Band 66 (AWS)	0.225	0.129	0.354
	LTE Band 2 (PCS)	0.233	0.129	0.362
	LTE Band 30	0.170	0.129	0.299
	LTE Band 7	0.121	0.129	0.250
	LTE Band 38	0.055	0.129	0.184
	LTE Band 41	0.079	0.129	0.208

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12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-7
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	0.224	0.149	0.193	0.373	0.417	0.566
	GSM 1900	0.310	0.149	0.193	0.459	0.503	0.652
	UMTS 850	0.335	0.149	0.193	0.484	0.528	0.677
	UMTS 1750	0.587	0.149	0.193	0.736	0.780	0.929
	UMTS 1900	0.685	0.149	0.193	0.834	0.878	1.027
	LTE Band 12	0.372	0.149	0.193	0.521	0.565	0.714
	LTE Band 5 (Cell)	0.327	0.149	0.193	0.476	0.520	0.669
	LTE Band 66 (AWS)	0.797	0.149	0.193	0.946	0.990	1.139
	LTE Band 2 (PCS)	0.676	0.149	0.193	0.825	0.869	1.018
	LTE Band 30	0.503	0.149	0.193	0.652	0.696	0.845
	LTE Band 7	0.217	0.149	0.193	0.366	0.410	0.559
	LTE Band 38	0.177	0.149	0.193	0.326	0.370	0.519
	LTE Band 41	0.225	0.149	0.193	0.374	0.418	0.567

Table 12-8
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	0.224	0.368	0.152	0.592	0.376	0.744
	GSM 1900	0.310	0.368	0.152	0.678	0.462	0.830
	UMTS 850	0.335	0.368	0.152	0.703	0.487	0.855
	UMTS 1750	0.587	0.368	0.152	0.955	0.739	1.107
	UMTS 1900	0.685	0.368	0.152	1.053	0.837	1.205
	LTE Band 12	0.372	0.368	0.152	0.740	0.524	0.892
	LTE Band 5 (Cell)	0.327	0.368	0.152	0.695	0.479	0.847
	LTE Band 66 (AWS)	0.797	0.368	0.152	1.165	0.949	1.317
	LTE Band 2 (PCS)	0.676	0.368	0.152	1.044	0.828	1.196
	LTE Band 30	0.503	0.368	0.152	0.871	0.655	1.023
	LTE Band 7	0.217	0.368	0.152	0.585	0.369	0.737
	LTE Band 38	0.177	0.368	0.152	0.545	0.329	0.697
	LTE Band 41	0.225	0.368	0.152	0.593	0.377	0.745

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Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz and 5 GHz 4 Tx (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.0 dBm SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	GSM 850	0.224	0.157	0.327	0.708
	GSM 1900	0.310	0.157	0.327	0.794
	UMTS 850	0.335	0.157	0.327	0.819
	UMTS 1750	0.587	0.157	0.327	1.071
	UMTS 1900	0.685	0.157	0.327	1.169
	LTE Band 12	0.372	0.157	0.327	0.856
	LTE Band 5 (Cell)	0.327	0.157	0.327	0.811
	LTE Band 66 (AWS)	0.797	0.157	0.327	1.281
	LTE Band 2 (PCS)	0.676	0.157	0.327	1.160
	LTE Band 30	0.503	0.157	0.327	0.987
	LTE Band 7	0.217	0.157	0.327	0.701
	LTE Band 38	0.177	0.157	0.327	0.661
	LTE Band 41	0.225	0.157	0.327	0.709

Table 12-10
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	0.224	0.022	0.246
	GSM 1900	0.310	0.022	0.332
	UMTS 850	0.335	0.022	0.357
	UMTS 1750	0.587	0.022	0.609
	UMTS 1900	0.685	0.022	0.707
	LTE Band 12	0.372	0.022	0.394
	LTE Band 5 (Cell)	0.327	0.022	0.349
	LTE Band 66 (AWS)	0.797	0.022	0.819
	LTE Band 2 (PCS)	0.676	0.022	0.698
	LTE Band 30	0.503	0.022	0.525
	LTE Band 7	0.217	0.022	0.239
	LTE Band 38	0.177	0.022	0.199
	LTE Band 41	0.225	0.022	0.247

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12.5 Hotspot SAR Simultaneous Transmission Analysis

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

Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.167	0.332	0.486	0.499	0.653	0.985
	GPRS 1900	0.522	0.332	0.486	0.854	1.008	1.340
	UMTS 850	0.467	0.332	0.486	0.799	0.953	1.285
	UMTS 1750	0.639	0.332	0.486	0.971	1.125	1.457
	UMTS 1900	0.746	0.332	0.486	1.078	1.232	1.564
	LTE Band 12	0.534	0.332	0.486	0.866	1.020	1.352
	LTE Band 5 (Cell)	0.605	0.332	0.486	0.937	1.091	1.423
	LTE Band 66 (AWS)	1.088	0.332	0.486	1.420	1.574	See Below Table
	LTE Band 2 (PCS)	0.896	0.332	0.486	1.228	1.382	See Below Table
	LTE Band 30	0.343	0.332	0.486	0.675	0.829	1.161
	LTE Band 7	0.981	0.332	0.486	1.313	1.467	See Below Table
	LTE Band 38	0.743	0.332	0.486	1.075	1.229	1.561
	LTE Band 41	0.307	0.332	0.486	0.639	0.793	1.125

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.727	0.332	0.415	1.474
	Front	0.773	0.332*	0.486	1.591
	Top	-	0.332*	0.486*	0.818
	Bottom	1.088	-	-	1.088
	Right	0.107	-	-	0.107
	Left	0.193	0.332*	0.486*	1.011

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.451	0.332	0.415	1.198
	Front	0.487	0.332*	0.486	1.305
	Top	-	0.332*	0.486*	0.818
	Bottom	0.896	-	-	0.896
	Right	0.108	-	-	0.108
	Left	0.131	0.332*	0.486*	0.949

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Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.380	0.332	0.415	1.127
	Front	0.458	0.332*	0.486	1.276
	Top	-	0.332*	0.486*	0.818
	Bottom	0.981	-	-	0.981
	Right	-	-	-	0.000
	Left	0.231	0.332*	0.486*	1.049

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.167	0.439	0.168	0.606	0.335	0.774
	GPRS 1900	0.522	0.439	0.168	0.961	0.690	1.129
	UMTS 850	0.467	0.439	0.168	0.906	0.635	1.074
	UMTS 1750	0.639	0.439	0.168	1.078	0.807	1.246
	UMTS 1900	0.746	0.439	0.168	1.185	0.914	1.353
	LTE Band 12	0.534	0.439	0.168	0.973	0.702	1.141
	LTE Band 5 (Cell)	0.605	0.439	0.168	1.044	0.773	1.212
	LTE Band 66 (AWS)	1.088	0.439	0.168	1.527	1.256	See Below Table
	LTE Band 2 (PCS)	0.896	0.439	0.168	1.335	1.064	1.503
	LTE Band 30	0.343	0.439	0.168	0.782	0.511	0.950
	LTE Band 7	0.981	0.439	0.168	1.420	1.149	1.588
	LTE Band 38	0.743	0.439	0.168	1.182	0.911	1.350
	LTE Band 41	0.307	0.439	0.168	0.746	0.475	0.914

Simult Tx	Configuration	LTE Band 66 (AWS) 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+3
Hotspot SAR	Back	0.727	0.439	0.168	1.334
	Front	0.773	0.439*	0.168*	1.380
	Top	-	0.212	0.168*	0.380
	Bottom	1.088	-	-	1.088
	Right	0.107	-	-	0.107
	Left	0.193	0.439*	0.168*	0.800

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Table 12-13
Simultaneous Transmission Scenario 2.4 GHz and 5 GHz 4 Tx (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 17.0 dBm SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.167	0.302	0.377	0.469	0.544	0.846
	GPRS 1900	0.522	0.302	0.377	0.824	0.899	1.201
	UMTS 850	0.467	0.302	0.377	0.769	0.844	1.146
	UMTS 1750	0.639	0.302	0.377	0.941	1.016	1.318
	UMTS 1900	0.746	0.302	0.377	1.048	1.123	1.425
	LTE Band 12	0.534	0.302	0.377	0.836	0.911	1.213
	LTE Band 5 (Cell)	0.605	0.302	0.377	0.907	0.982	1.284
	LTE Band 66 (AWS)	1.088	0.302	0.377	1.390	1.465	See Below Table
	LTE Band 2 (PCS)	0.896	0.302	0.377	1.198	1.273	See Below Table
	LTE Band 30	0.343	0.302	0.377	0.645	0.720	1.022
	LTE Band 7	0.981	0.302	0.377	1.283	1.358	See Below Table
	LTE Band 38	0.743	0.302	0.377	1.045	1.120	1.422
	LTE Band 41	0.307	0.302	0.377	0.609	0.684	0.986

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17.0 dBm SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.727	0.302*	0.377	1.406
	Front	0.773	0.302*	0.377*	1.452
	Top	-	0.302	0.377*	0.679
	Bottom	1.088	-	-	1.088
	Right	0.107	-	-	0.107
	Left	0.193	0.302*	0.377*	0.872

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO at 17.0 dBm SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.451	0.302*	0.377	1.130
	Front	0.487	0.302*	0.377*	1.166
	Top	-	0.302	0.377*	0.679
	Bottom	0.896	-	-	0.896
	Right	0.108	-	-	0.108
	Left	0.131	0.302*	0.377*	0.810

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Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN MIMO at 17.0 dBm SAR (W/kg)	5 GHz WLAN MIMO at 15.0 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.380	0.302*	0.377	1.059
	Front	0.458	0.302*	0.377*	1.137
	Top	-	0.302	0.377*	0.679
	Bottom	0.981	-	-	0.981
	Right	-	-	-	0.000
	Left	0.231	0.302*	0.377*	0.910

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	0.167	0.018	0.185
	GPRS 1900	0.522	0.018	0.540
	UMTS 850	0.467	0.018	0.485
	UMTS 1750	0.639	0.018	0.657
	UMTS 1900	0.746	0.018	0.764
	LTE Band 12	0.534	0.018	0.552
	LTE Band 5 (Cell)	0.605	0.018	0.623
	LTE Band 66 (AWS)	1.088	0.018	1.106
	LTE Band 2 (PCS)	0.896	0.018	0.914
	LTE Band 30	0.343	0.018	0.361
	LTE Band 7	0.981	0.018	0.999
	LTE Band 38	0.743	0.018	0.761
	LTE Band 41	0.307	0.018	0.325

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12.1 Phablet SAR 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.

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	GSM 850	0.866	0.911	0.680	1.777	1.546	2.457
	GSM 1900	1.033	0.911	0.680	1.944	1.713	2.624
	UMTS 1750	2.207	0.911	0.680	3.118	2.887	3.798
	UMTS 1900	2.440	0.911	0.680	3.351	3.120	See Below Table
	LTE Band 66 (AWS)	3.086	0.911	0.680	See Below Table	3.766	See Below Table
	LTE Band 2 (PCS)	2.967	0.911	0.680	3.878	3.647	See Below Table
	LTE Band 30	1.473	0.911	0.680	2.384	2.153	3.064
	LTE Band 7	1.997	0.911	0.680	2.908	2.677	3.588
	LTE Band 41	1.297	0.911	0.680	2.208	1.977	2.888

Simult Tx	Configuration	UMTS 1900 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+3
Phablet SAR	Back	1.639	0.433	0.680	2.752
	Front	1.801	0.553	0.393	2.747
	Top	-	0.911	0.680*	1.591
	Bottom	2.440	-	-	2.440
	Right	0.588	-	-	0.588
	Left	0.680	0.911*	0.680*	2.271

Simult Tx	Configuration	LTE Band 66 (AWS) 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+2+3
Phablet SAR	Back	1.972	0.433	0.680	2.405	3.085
	Front	2.502	0.553	0.393	3.055	3.448
	Top	-	0.911	0.680*	0.911	1.591
	Bottom	3.086	-	-	3.086	3.086
	Right	0.348	-	-	0.348	0.348
	Left	0.590	0.911*	0.680*	1.501	2.181

Simult Tx	Configuration	LTE Band 2 (PCS) 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+3
Phablet SAR	Back	1.937	0.433	0.680	3.050
	Front	2.303	0.553	0.393	3.249
	Top	-	0.911	0.680*	1.591
	Bottom	2.967	-	-	2.967
	Right	0.576	-	-	0.576
	Left	0.794	0.911*	0.680*	2.385

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Table 12-16
Simultaneous Transmission Scenario – Bluetooth (Phablet)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	GSM 850	0.866	0.279	1.145
	GSM 1900	1.033	0.279	1.312
	UMTS 1750	2.207	0.279	2.486
	UMTS 1900	2.440	0.279	2.719
	LTE Band 66 (AWS)	3.086	0.279	3.365
	LTE Band 2 (PCS)	2.967	0.279	3.246
	LTE Band 30	1.473	0.279	1.752
	LTE Band 7	1.997	0.279	2.276
	LTE Band 41	1.297	0.279	1.576

12.2 Simultaneous Transmission Conclusion

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

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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 ($\sim 10\%$ from the 1-g 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 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode/Band	Service	Side	Test Position	Data Rate (Mbps)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2462.00	11	802.11n, 20 MHz Bandwidth	OFDM , MIMO	Right	Cheek	13	0.887	0.880	1.01	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT						Head								
Spatial Peak						1.6 W/kg (mW/g)								
Uncontrolled Exposure/General Population						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)	
1750	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	10 mm	0.976	0.977	1.00	N/A	N/A	N/A	N/A
1900	1900.00	19100	LTE Band 2 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	0.852	0.783	1.09	N/A	N/A	N/A	N/A
2600	2535.00	21100	LTE Band 7, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	0.853	0.835	1.02	N/A	N/A	N/A	N/A
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 13-3
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS												
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)
	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	bottom	0 mm	2.760	2.770	1.00	N/A	N/A	N/A
1900	1860.00	18700	LTE Band 2 (PCS), 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	0 mm	2.680	2.680	1.00	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 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.

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

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Table 14-1
UMTS Supplemental Head SAR Data

Supplemental Head SAR Data					
UMTS 850		UMTS 1750		UMTS 1900	
RMC		RMC		RMC	
Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Right Cheek
Frequency (MHz)	836.6	Frequency (MHz)	1732.4	Frequency (MHz)	1880.0
Channel	4183	Channel	1412	Channel	9400
Measured 1g SAR (W/kg)	0.183	Measured 1g SAR (W/kg)	0.18	Measured 1g SAR (W/kg)	0.155
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)	0.206	Auto-tune (State 31)	0.216	Auto-tune (State 16)	0.164
Default (State 15)	0.211	Default (State 15)	0.211	Default (State 15)	0.166
State 0	0.215	State 4	0.079	State 4	0.102
State 1	0.036	State 7	0.140	State 6	0.135
State 5	0.126	State 10	0.165	State 9	0.151
State 11	0.210	State 13	0.183	State 14	0.163
State 12	0.211	State 15	0.211	State 15	0.166
State 15	0.211	State 18	0.053	State 16	0.165
State 18	0.041	State 24	0.179	State 24	0.165
State 25	0.200	State 27	0.195	State 26	0.165
State 31	0.147	State 30	0.214	State 29	0.169
State 32	0.202	State 31	0.213	State 33	0.030
State 36	0.080	State 36	0.044	State 42	0.115
State 43	0.193	State 42	0.110	State 44	0.121
State 49	0.020	State 45	0.125	State 47	0.131
State 50	0.035	State 48	0.146	State 52	0.075
State 53	0.099	State 52	0.051	State 54	0.107
State 59	0.198	State 55	0.105	State 57	0.123
State 60	0.199	State 58	0.127	State 61	0.133
State 64	0.208	State 64	0.161	State 66	0.093
State 71	0.178	State 70	0.143	State 70	0.129
State 77	0.146	State 73	0.193	State 72	0.147
State 78	0.213	State 76	0.206	State 75	0.134

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Table 14-2
LTE Supplemental Head SAR Data

Supplemental Head SAR Data							
LTE Band 12		LTE Band 5		LTE Band 66		LTE Band 2	
QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset	
Test Position	Left Tilt	Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek
Frequency (MHz)	707.5	Frequency (MHz)	836.5	Frequency (MHz)	1745.0	Frequency (MHz)	1880.0
Channel	23095	Channel	20525	Channel	132322	Channel	18900
Measured 1g SAR (W/kg)	0.134	Measured 1g SAR (W/kg)	0.205	Measured 1g SAR (W/kg)	0.186	Measured 1g SAR (W/kg)	0.193
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 68)	0.182	Auto-tune (State 15)	0.212	Auto-tune (State 31)	0.242	Auto-tune (State 30)	0.248
Default (State 15)	0.178	Default (State 15)	0.207	Default (State 15)	0.215	Default (State 15)	0.247
State 1	0.018	State 2	0.051	State 1	0.033	State 3	0.110
State 2	0.028	State 3	0.067	State 5	0.107	State 8	0.235
State 8	0.113	State 6	0.131	State 11	0.181	State 10	0.237
State 10	0.124	State 9	0.176	State 15	0.215	State 14	0.240
State 14	0.177	State 12	0.193	State 19	0.069	State 15	0.247
State 15	0.178	State 15	0.207	State 20	0.091	State 20	0.144
State 16	0.138	State 17	0.022	State 21	0.123	State 23	0.234
State 22	0.061	State 22	0.133	State 25	0.185	State 28	0.243
State 24	0.099	State 29	0.184	State 26	0.189	State 30	0.243
State 30	0.159	State 32	0.178	State 31	0.224	State 34	0.051
State 32	0.119	State 35	0.053	State 37	0.062	State 38	0.112
State 34	0.018	State 40	0.148	State 39	0.089	State 41	0.132
State 40	0.085	State 47	0.205	State 43	0.118	State 46	0.154
State 48	0.128	State 50	0.029	State 49	0.015	State 51	0.077
State 54	0.044	State 57	0.161	State 53	0.074	State 56	0.153
State 55	0.060	State 60	0.179	State 56	0.125	State 62	0.155
State 62	0.176	State 62	0.170	State 59	0.140	State 64	0.149
State 67	0.174	State 63	0.170	State 65	0.179	State 66	0.113
State 68	0.182	State 68	0.199	State 67	0.108	State 69	0.228
State 70	0.155	State 75	0.173	State 71	0.149	State 74	0.135
State 79	0.176	State 78	0.196	State 77	0.227	State 79	0.158

FCC ID: A3LSMG892A	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Approved by: Quality Manager
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Table 14-3
UMTS Supplemental Body SAR Data

Supplemental Body SAR Data					
UMTS 850		UMTS 1750		UMTS 1900	
RMC		RMC		RMC	
Test Position	Front Side	Test Position	Bottom Edge	Test Position	Bottom Edge
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	836.6	Frequency (MHz)	1732.4	Frequency (MHz)	1880.0
Channel	4183	Channel	1412	Channel	9400
Measured 1g SAR (W/kg)	0.376	Measured 1g SAR (W/kg)	0.527	Measured 1g SAR (W/kg)	0.616
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)	0.556	Auto-tune (State 31)	0.740	Auto-tune (State 31)	0.816
Default (State 15)	0.544	Default (State 15)	0.700	Default (State 15)	0.802
State 0	0.556	State 3	0.234	State 1	0.214
State 3	0.220	State 7	0.470	State 5	0.535
State 12	0.551	State 9	0.523	State 10	0.721
State 15	0.544	State 15	0.700	State 15	0.802
State 17	0.076	State 17	0.136	State 18	0.344
State 20	0.236	State 23	0.523	State 21	0.615
State 23	0.460	State 27	0.643	State 25	0.771
State 27	0.490	State 29	0.660	State 30	0.789
State 32	0.511	State 31	0.738	State 31	0.804
State 35	0.176	State 35	0.113	State 36	0.265
State 38	0.337	State 41	0.311	State 38	0.398
State 41	0.449	State 43	0.357	State 39	0.436
State 50	0.099	State 45	0.371	State 42	0.492
State 51	0.138	State 51	0.128	State 48	0.602
State 53	0.254	State 52	0.163	State 53	0.404
State 60	0.483	State 55	0.322	State 58	0.559
State 63	0.461	State 57	0.367	State 60	0.586
State 66	0.542	State 63	0.478	State 64	0.607
State 69	0.369	State 69	0.731	State 67	0.421
State 72	0.539	State 73	0.696	State 71	0.590
State 78	0.548	State 75	0.474	State 76	0.795

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Table 14-4
LTE Supplemental Body SAR Data

Supplemental Body SAR Data													
LTE Band 12		LTE Band 5		LTE Band 66								LTE Band 2	
QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offset		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 20 MHz Bandwidth, 50 RB, 0 RB Offset								QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset	
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
Frequency (MHz)	707.5	Frequency (MHz)	836.5	Frequency (MHz)				1770.0				Frequency (MHz)	1860.0
Channel	23095	Channel	20525	Channel				132572				Channel	18700
Measured 1g SAR (W/kg)	0.435	Measured 1g SAR (W/kg)	0.502	Measured 1g SAR (W/kg)				0.977				Measured 1g SAR (W/kg)	0.825
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 68)	0.678	Auto-tune (State 15)	0.617	Auto-tune (State 31)				1.321				Auto-tune (State 31)	1.024
Default (State 15)	0.674	Default (State 15)	0.617	Default (State 15)				1.227				Default (State 15)	0.996
State 0	0.580	State 4	0.277	State 0	1.112	State 21	0.759	State 42	0.592	State 63	0.815	State 6	0.715
State 6	0.320	State 8	0.555	State 1	0.253	State 22	0.884	State 43	0.642	State 64	0.969	State 11	0.905
State 7	0.388	State 13	0.612	State 2	0.354	State 23	0.977	State 44	0.651	State 65	1.005	State 13	0.923
State 13	0.564	State 15	0.617	State 3	0.449	State 24	1.089	State 45	0.665	State 66	0.546	State 15	0.996
State 15	0.674	State 16	0.538	State 4	0.537	State 25	1.077	State 46	0.763	State 67	0.561	State 19	0.491
State 19	0.097	State 21	0.352	State 5	0.674	State 26	1.112	State 47	0.776	State 68	1.204	State 26	0.948
State 21	0.193	State 28	0.544	State 6	0.786	State 27	1.176	State 48	0.789	State 69	1.277	State 30	1.000
State 23	0.334	State 33	0.093	State 7	0.871	State 28	1.177	State 49	0.119	State 70	0.742	State 31	1.020
State 26	0.462	State 34	0.136	State 8	0.974	State 29	1.196	State 50	0.181	State 71	0.792	State 33	0.122
State 31	0.574	State 39	0.406	State 9	0.963	State 30	1.293	State 51	0.246	State 72	1.155	State 35	0.234
State 33	0.052	State 45	0.537	State 10	0.994	State 31	1.302	State 52	0.311	State 73	1.198	State 37	0.367
State 39	0.295	State 46	0.603	State 11	1.054	State 32	0.697	State 53	0.421	State 74	0.671	State 44	0.587
State 41	0.376	State 47	0.607	State 12	1.065	State 33	0.109	State 54	0.517	State 75	0.806	State 46	0.646
State 44	0.451	State 56	0.456	State 13	1.082	State 34	0.163	State 55	0.588	State 76	1.223	State 49	0.138
State 47	0.607	State 61	0.521	State 14	1.234	State 35	0.217	State 56	0.678	State 77	1.298	State 54	0.513
State 54	0.189	State 62	0.507	State 15	1.227	State 36	0.271	State 57	0.660	State 78	0.754	State 58	0.623
State 59	0.452	State 67	0.502	State 16	1.215	State 37	0.360	State 58	0.688	State 79	0.805	State 61	0.667
State 61	0.485	State 70	0.602	State 17	0.273	State 38	0.439	State 59	0.737			State 65	0.757
State 66	0.603	State 73	0.453	State 18	0.389	State 39	0.500	State 60	0.742			State 72	0.904
State 68	0.671	State 74	0.599	State 19	0.498	State 40	0.581	State 61	0.756			State 74	0.566
State 72	0.674	State 76	0.616	State 20	0.602	State 41	0.567	State 62	0.786			State 77	1.009

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15 EQUIPMENT LIST

Used 04/17/17 – 05/12/17:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753ES	S-Parameter Network Analyzer	10/26/2016	Annual	10/26/2017	US39170118
Agilent	E4432B	ESG-D Series Signal Generator	3/24/2017	Annual	3/24/2018	US40053896
Agilent	E4438C	ESG Vector Signal Generator	3/24/2017	Biennial	3/24/2019	MY42082385
Agilent	E5515C	Wireless Communications Test Set	6/18/2015	Biennial	6/18/2017	GB41450275
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	10/5/2016	Annual	10/5/2017	GB42230325
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/22/2017	Annual	3/22/2018	MY45470194
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	N5182A	MXG Vector Signal Generator	10/27/2016	Annual	10/27/2017	MY47420603
Agilent	N9020A	MXA Signal Analyzer	10/28/2016	Annual	10/28/2017	US46470561
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433972
Anritsu	MA24106A	USB Power Sensor	6/2/2016	Annual	6/2/2017	1231535
Anritsu	MA24106A	USB Power Sensor	6/2/2016	Annual	6/2/2017	1231538
Anritsu	MA2411B	Pulse Power Sensor	8/18/2016	Annual	8/18/2017	1126066
Anritsu	MA2411B	Pulse Power Sensor	2/10/2017	Annual	2/10/2018	1207364
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	941001
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	1039008
Anritsu	MT8820C	Radio Communication Analyzer	9/15/2016	Annual	9/15/2017	6200901190
Anritsu	MT8820C	Radio Communication Analyzer	11/4/2016	Annual	11/4/2017	6201144418
COMTECH	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M155A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Control Company	4352	Ultra Long Stem Thermometer	3/8/2016	Biennial	3/8/2018	160261694
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mitutoyo	CD-6°CSX	Digital Caliper	3/2/2016	Biennial	3/2/2018	13264162
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	3/8/2017	Annual	3/8/2018	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	12/12/2016	Annual	12/12/2017	833855/0010
Rohde & Schwarz	CMW500	Radio Communication Tester	10/20/2016	Annual	10/20/2017	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	5/4/2017	Annual	5/4/2018	101699
Rohde & Schwarz	CMW500	Radio Communication Tester	10/13/2016	Annual	10/13/2017	102060
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2/10/2017	Annual	2/10/2018	162125
Seekonk	NC-100	Torque Wrench (8" lb)	9/1/2016	Biennial	9/1/2018	21053
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	N/A
SPEAG	D750V3	750 MHz SAR Dipole	3/7/2017	Annual	3/7/2018	1054
SPEAG	D750V3	750 MHz SAR Dipole	7/13/2016	Annual	7/13/2017	1161
SPEAG	D835V2	835 MHz SAR Dipole	7/13/2016	Annual	7/13/2017	4d047
SPEAG	D835V2	835 MHz SAR Dipole	7/14/2016	Annual	7/14/2017	4d133
SPEAG	D1750V2	1750 MHz SAR Dipole	4/12/2017	Annual	4/12/2018	1051
SPEAG	D1750V2	1750 MHz SAR Dipole	5/9/2016	Annual	5/9/2017	1148
SPEAG	D1765V2	1765 MHz SAR Dipole	5/11/2016	Annual	5/11/2017	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	7/15/2016	Annual	7/15/2017	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	3/7/2017	Annual	3/7/2018	1038
SPEAG	D2300V2	2300 MHz SAR Dipole	11/15/2016	Annual	11/15/2017	1064
SPEAG	D2450V2	2450 MHz SAR Dipole	9/13/2016	Annual	9/13/2017	797
SPEAG	D2600V2	2600 MHz SAR Dipole	7/25/2016	Annual	7/25/2017	1126
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/13/2017	Annual	2/13/2018	1120
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/2/2016	Annual	8/2/2017	1237
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2017	Annual	2/9/2018	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/11/2016	Annual	5/11/2017	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2017	Annual	2/9/2018	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/11/2016	Annual	11/11/2017	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/8/2017	Annual	3/8/2018	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/14/2016	Annual	9/14/2017	1408
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/16/2017	Annual	1/16/2018	1466
SPEAG	DAK-12	Dielectric Assessment Kit (10MHz - 36GHz)	3/16/2017	Annual	3/16/2018	1102
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/10/2016	Annual	5/10/2017	1070
SPEAG	ES3DV3	SAR Probe	2/10/2017	Annual	2/10/2018	3213
SPEAG	ES3DV3	SAR Probe	9/19/2016	Annual	9/19/2017	3287
SPEAG	ES3DV3	SAR Probe	1/13/2017	Annual	1/13/2018	3288
SPEAG	ES3DV3	SAR Probe	2/10/2017	Annual	2/10/2018	3318
SPEAG	ES3DV3	SAR Probe	3/14/2017	Annual	3/14/2018	3319
SPEAG	ES3DV3	SAR Probe	11/15/2016	Annual	11/15/2017	3334
SPEAG	EX3DV4	SAR Probe	1/13/2017	Annual	1/13/2018	3589
SPEAG	EX3DV4	SAR Probe	7/21/2016	Annual	7/21/2017	7308
SPEAG	EX3DV4	SAR Probe	5/17/2016	Annual	5/17/2017	7409

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Used 06/14/17 – 06/19/17:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/22/2017	Annual	3/22/2018	MY45470194
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753ES	S-Parameter Network Analyzer	10/26/2016	Annual	10/26/2017	US39170118
Agilent	E4438C	ESG Vector Signal Generator	3/24/2017	Biennial	3/24/2019	MY42082385
Agilent	E4432B	ESG-D Series Signal Generator	3/24/2017	Annual	3/24/2018	US40053896
Agilent	N9020A	MXA Signal Analyzer	10/28/2016	Annual	10/28/2017	US46470561
Agilent	N5182A	MXG Vector Signal Generator	10/27/2016	Annual	10/27/2017	MY47420603
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	941001
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	1039008
Anritsu	MA2411B	Pulse Power Sensor	8/18/2016	Annual	8/18/2017	1126066
Anritsu	MA2411B	Pulse Power Sensor	2/10/2017	Annual	2/10/2018	1207364
Anritsu	MA24106A	USB Power Sensor	6/7/2017	Annual	6/7/2018	1231535
Anritsu	MA24106A	USB Power Sensor	6/7/2017	Annual	6/7/2018	1231538
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M155A00-009
Control Company	4352	Ultra Long Stem Thermometer	3/8/2016	Biennial	3/8/2018	160261694
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	BW-53W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	3/8/2017	Annual	3/8/2018	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	9/16/2016	Annual	9/16/2017	109366
Rohde & Schwarz	CMW500	Radio Communication Tester	8/1/2016	Annual	8/1/2017	116743
SPEAG	D2450V2	2450 MHz SAR Dipole	9/13/2016	Annual	9/13/2017	797
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Annual	9/13/2017	1071
SPEAG	D2600V2	2600 MHz SAR Dipole	7/25/2016	Annual	7/25/2017	1126
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/9/2017	Annual	2/9/2018	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/14/2016	Annual	9/14/2017	1408
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/10/2017	Annual	5/10/2018	1070
SPEAG	DAK-12	Dielectric Assessment Kit (10MHz - 3GHz)	3/16/2017	Annual	3/16/2018	1102
SPEAG	ES3DV3	SAR Probe	2/10/2017	Annual	2/10/2018	3213
SPEAG	ES3DV3	SAR Probe	9/19/2016	Annual	9/19/2017	3287

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. Each equipment was used solely within its respective 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
Expanded Uncertainty (95% CONFIDENCE LEVEL)						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: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 835 Head; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.893 \text{ S/m}$; $\epsilon_r = 40.311$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-21-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3318; ConvF(6.47, 6.47, 6.47); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (8) ; SEMCAD X Version 14.6.10 (7331)

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

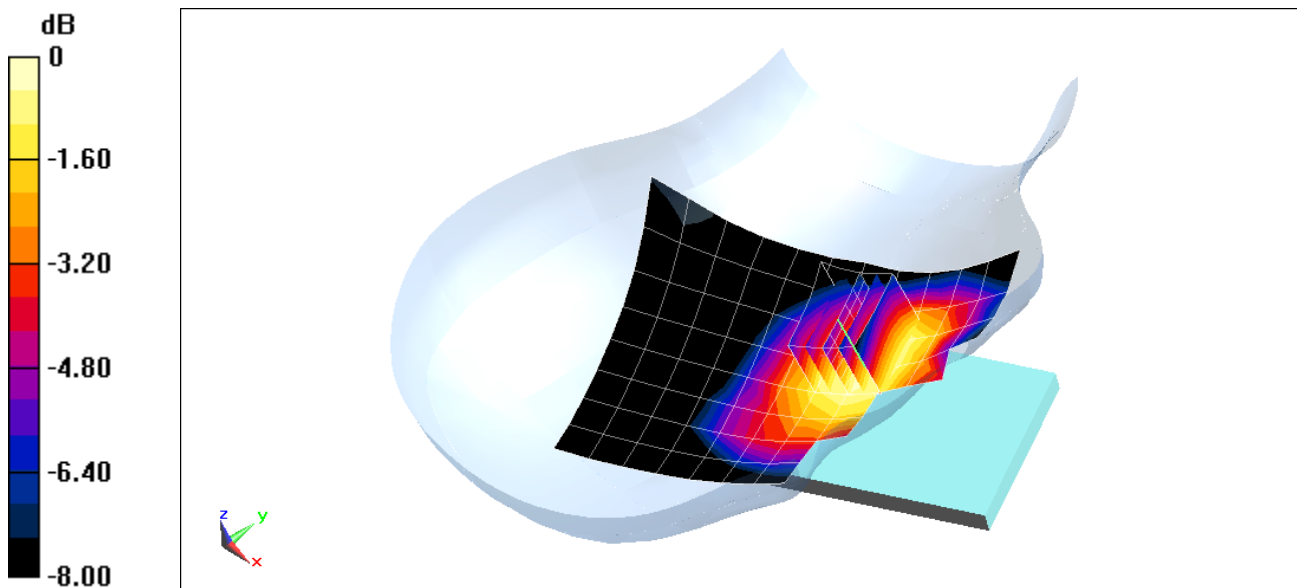
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.31 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.157 W/kg

SAR(1 g) = 0.126 W/kg



0 dB = 0.136 W/kg = -8.66 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 Head; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.436 \text{ S/m}$; $\epsilon_r = 38.348$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-19-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(5.2, 5.2, 5.2); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

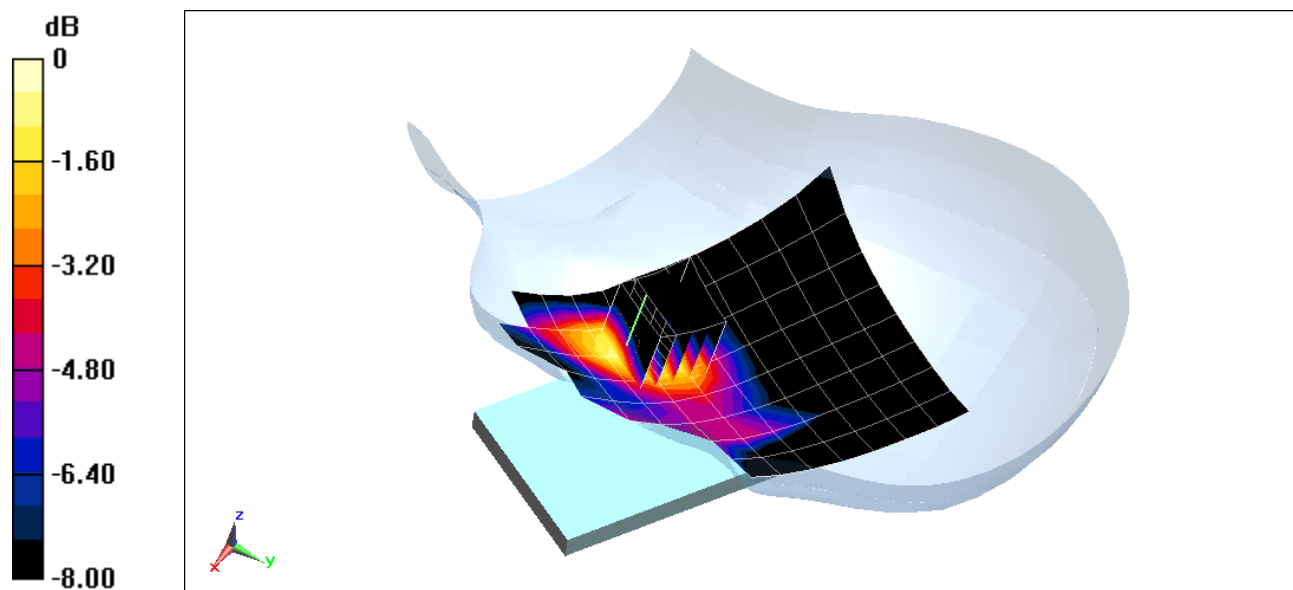
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.825 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.0980 W/kg

SAR(1 g) = 0.064 W/kg



0 dB = 0.0755 W/kg = -11.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

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

Medium: 835 Head; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.893 \text{ S/m}$; $\epsilon_r = 40.311$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-21-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3318; ConvF(6.47, 6.47, 6.47); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

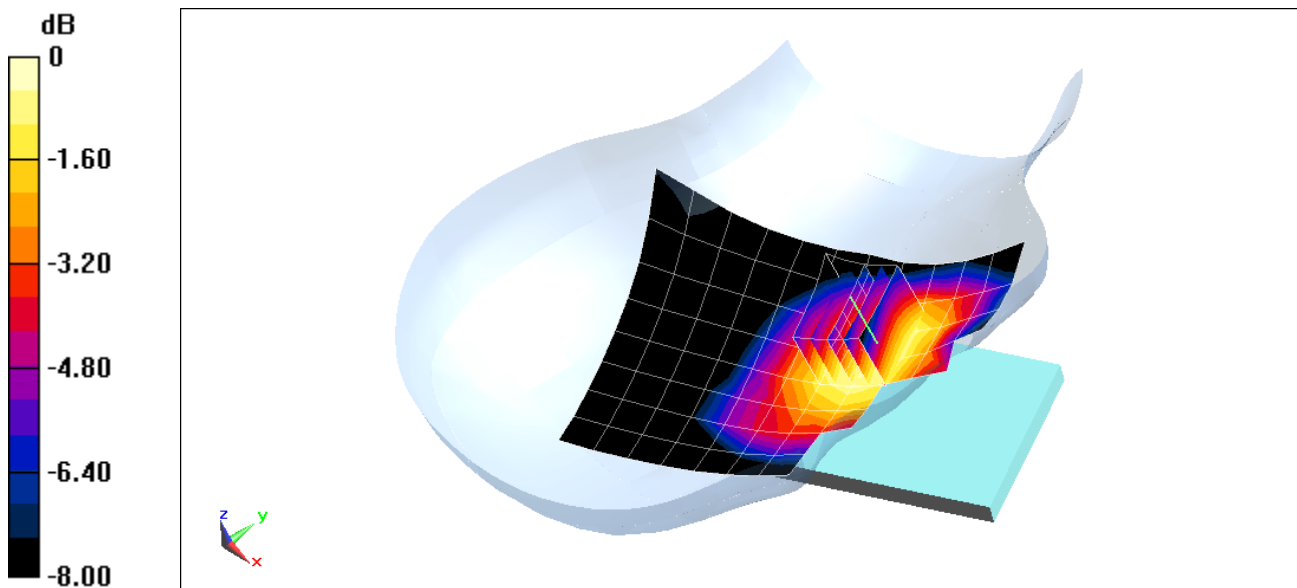
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.74 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.227 W/kg

SAR(1 g) = 0.183 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Head; Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.366 \text{ S/m}$; $\epsilon_r = 40.028$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-26-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(5.49, 5.49, 5.49); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

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

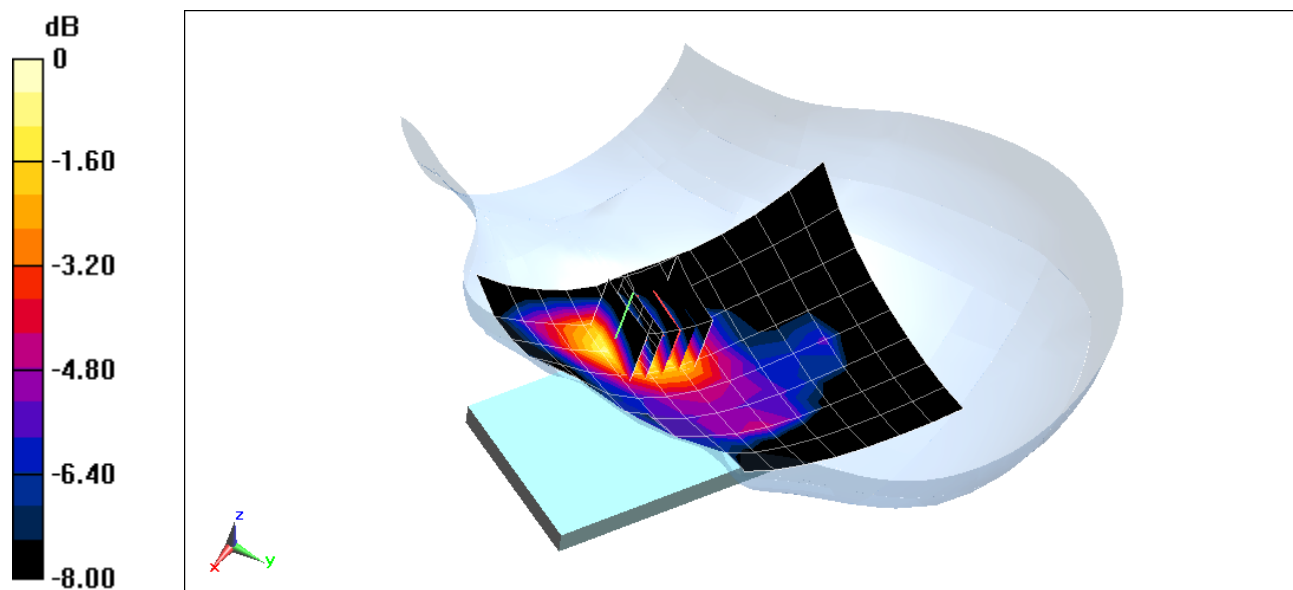
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.90 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.263 W/kg

SAR(1 g) = 0.180 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Head; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.436 \text{ S/m}$; $\epsilon_r = 38.348$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-19-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(5.2, 5.2, 5.2); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

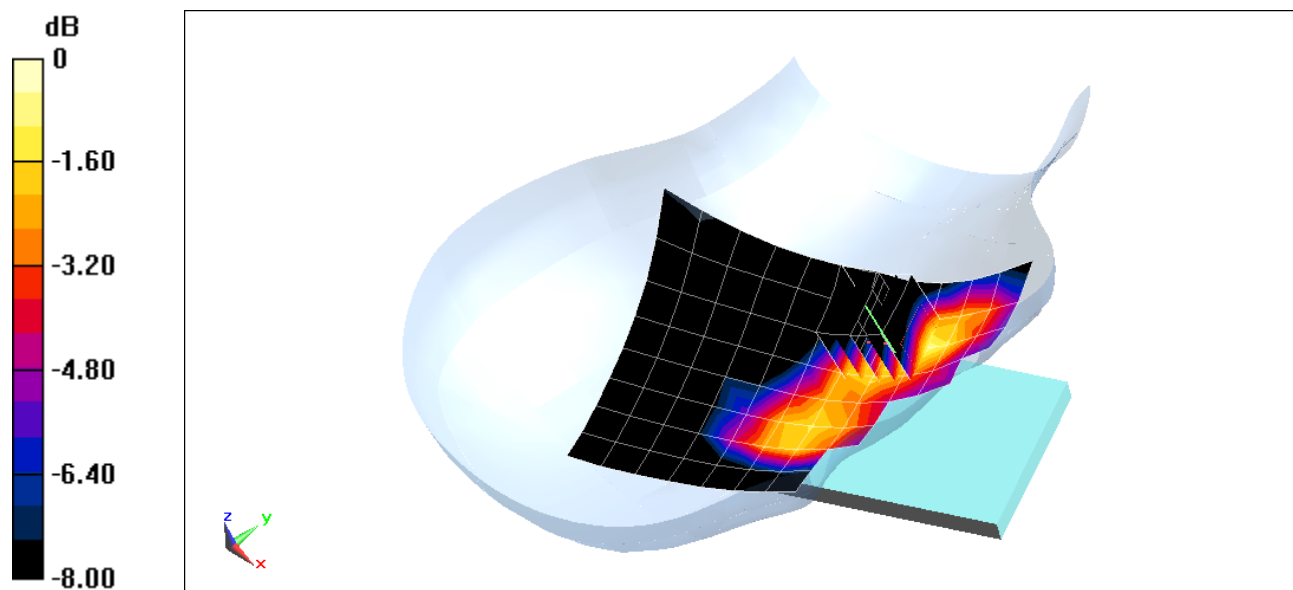
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.95 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.245 W/kg

SAR(1 g) = 0.155 W/kg



0 dB = 0.181 W/kg = -7.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

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

Medium: 750 Head; Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.866 \text{ S/m}$; $\epsilon_r = 43.366$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-17-2017; Ambient Temp: 22.9°C; Tissue Temp: 20.0°C

Probe: ES3DV3 - SN3319; ConvF(6.76, 6.76, 6.76); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

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

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 12, Left Head, Tilt, Mid.ch, QPSK,
10 MHz Bandwidth, 1 RB, 25 RB Offset**

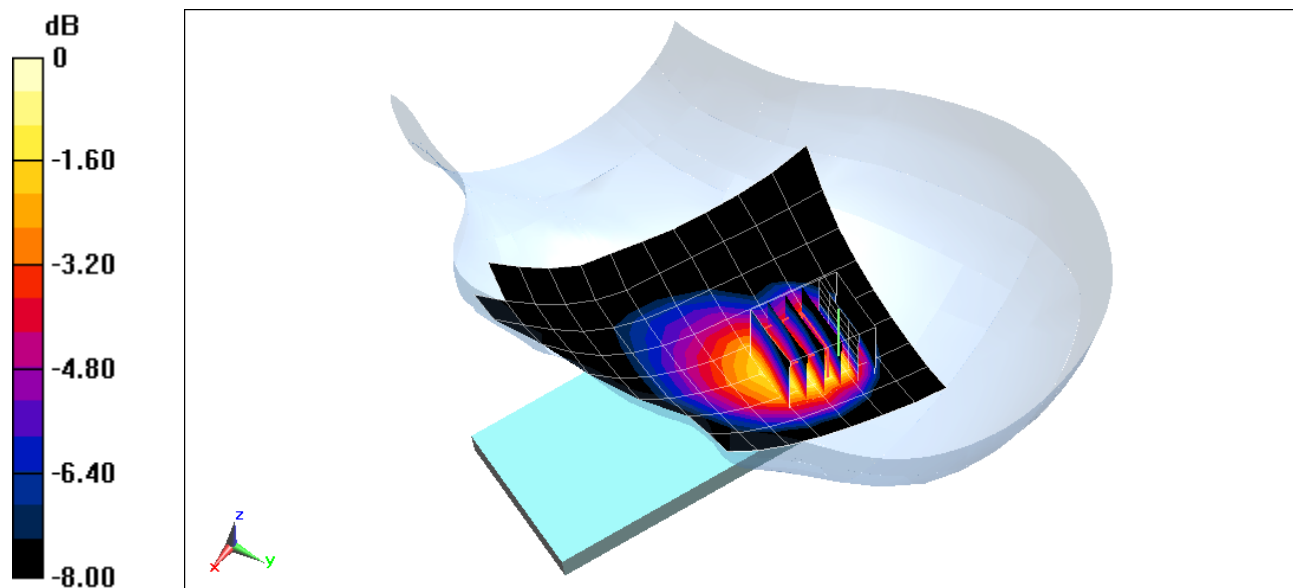
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 13.53 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.244 W/kg

SAR(1 g) = 0.134 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: 835 Head; Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$; $\sigma = 0.91 \text{ S/m}$; $\epsilon_r = 41.968$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-18-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3334; ConvF(6.49, 6.49, 6.49); Calibrated: 11/15/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 11/11/2016

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

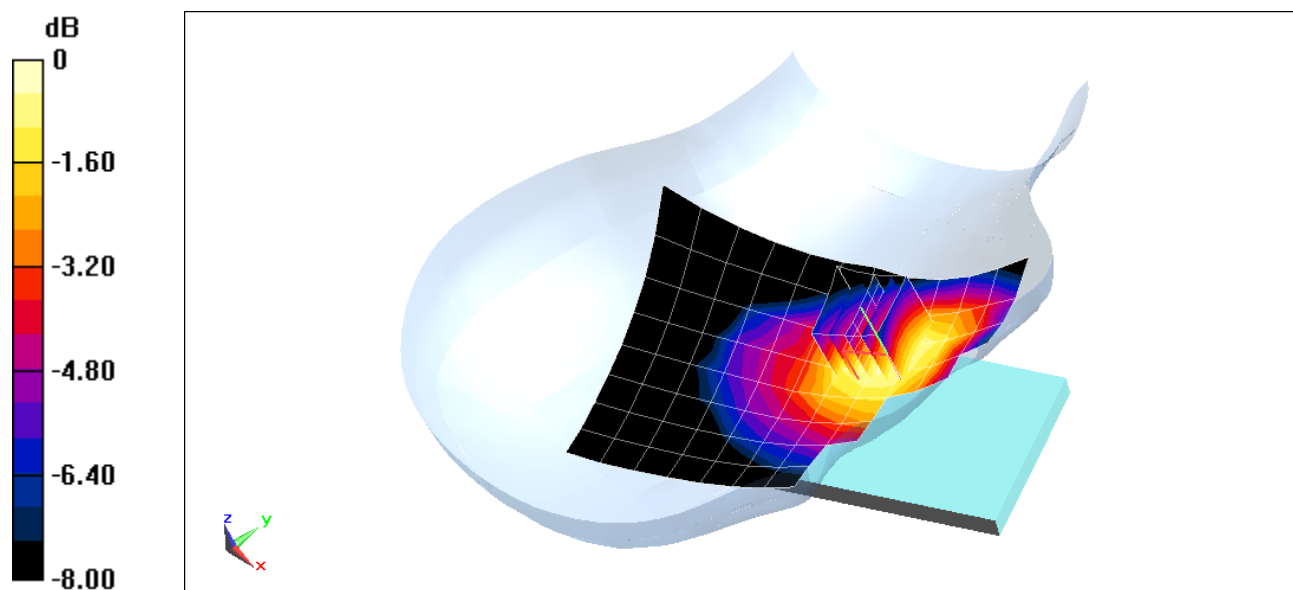
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.24 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.205 W/kg



0 dB = 0.225 W/kg = -6.48 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8C8

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: 1750 Head; Medium parameters used (interpolated):

$f = 1745 \text{ MHz}$; $\sigma = 1.368 \text{ S/m}$; $\epsilon_r = 39.413$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-18-2017; Ambient Temp: 23.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3319; ConvF(5.38, 5.38, 5.38); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

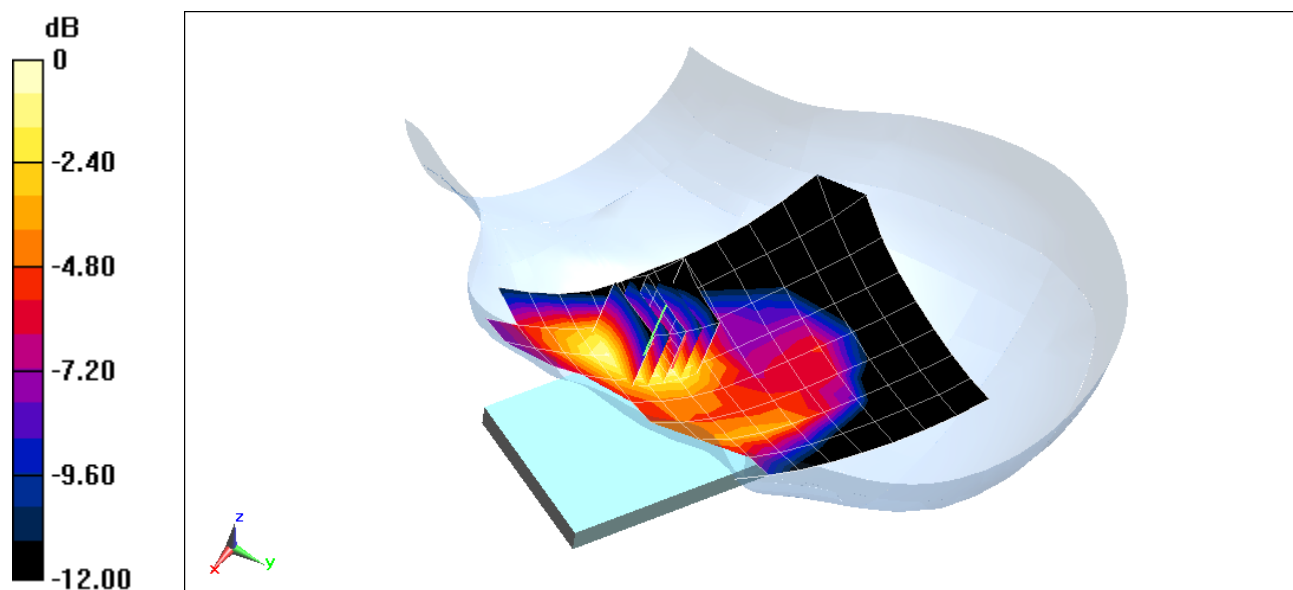
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.94 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.281 W/kg

SAR(1 g) = 0.186 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Head; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.436 \text{ S/m}$; $\epsilon_r = 38.348$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-19-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(5.2, 5.2, 5.2); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 2 (PCS), Left Head, Cheek, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

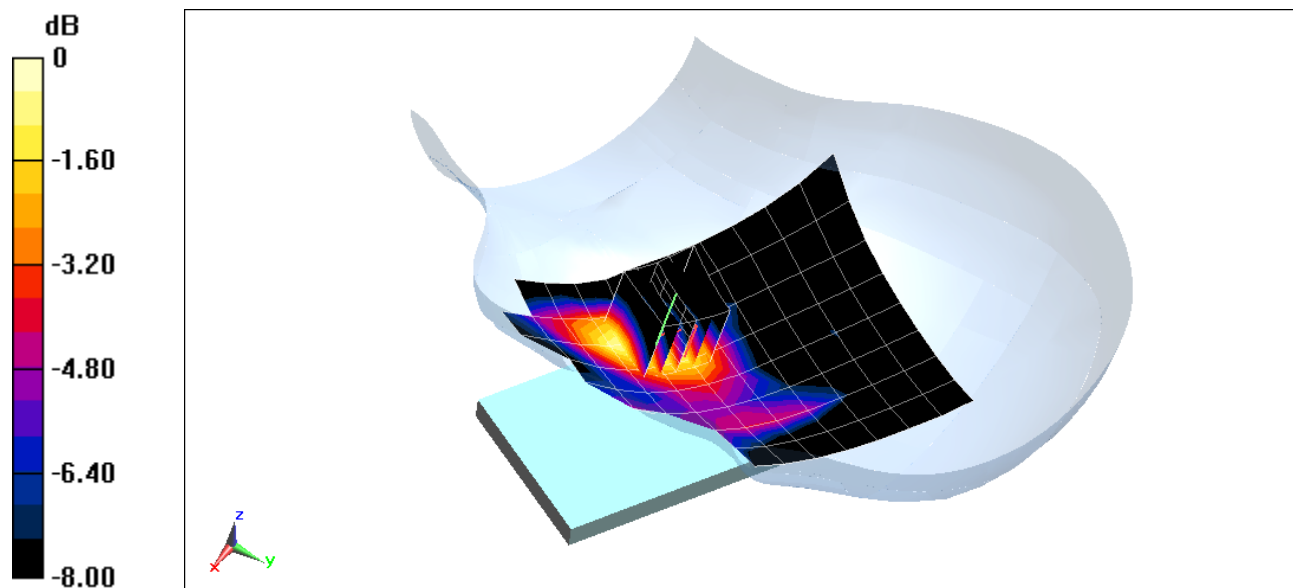
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.56 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.299 W/kg

SAR(1 g) = 0.193 W/kg



0 dB = 0.218 W/kg = -6.62 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

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

Medium: 2300 Head; Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.697 \text{ S/m}$; $\epsilon_r = 39.249$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-12-2017; Ambient Temp: 23.5°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(4.86, 4.86, 4.86); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

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

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

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

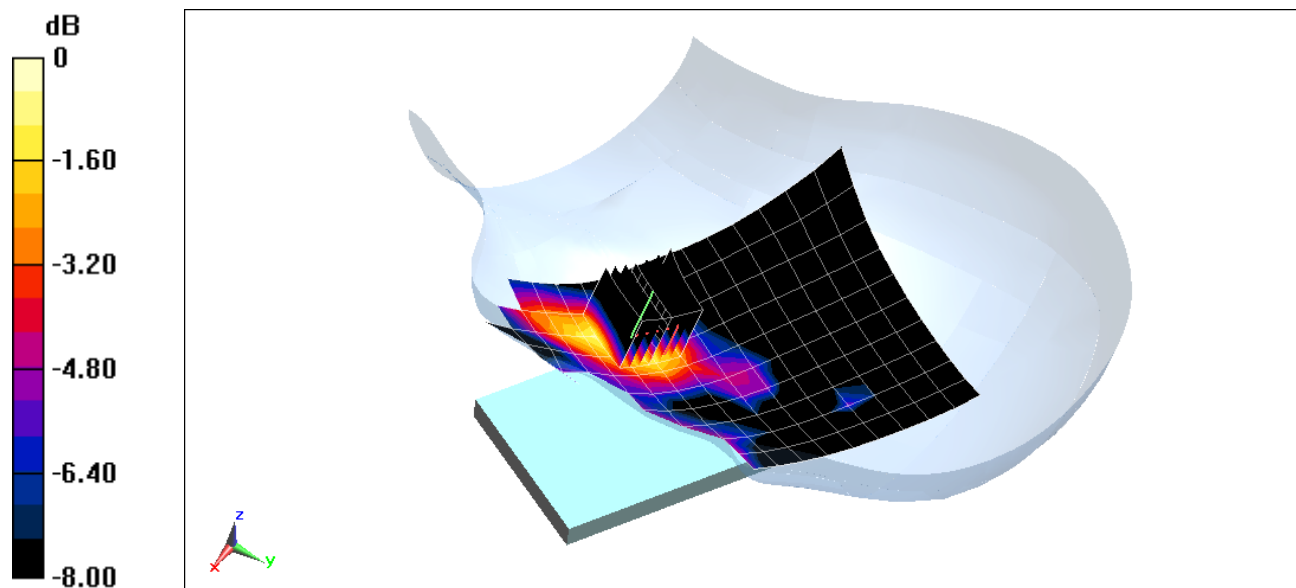
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 10.53 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.245 W/kg

SAR(1 g) = 0.145 W/kg



0 dB = 0.174 W/kg = -7.59 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: 2450 Head; Medium parameters used (interpolated):

$f = 2510 \text{ MHz}$; $\sigma = 1.936 \text{ S/m}$; $\epsilon_r = 38.401$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(4.7, 4.7, 4.7); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

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

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

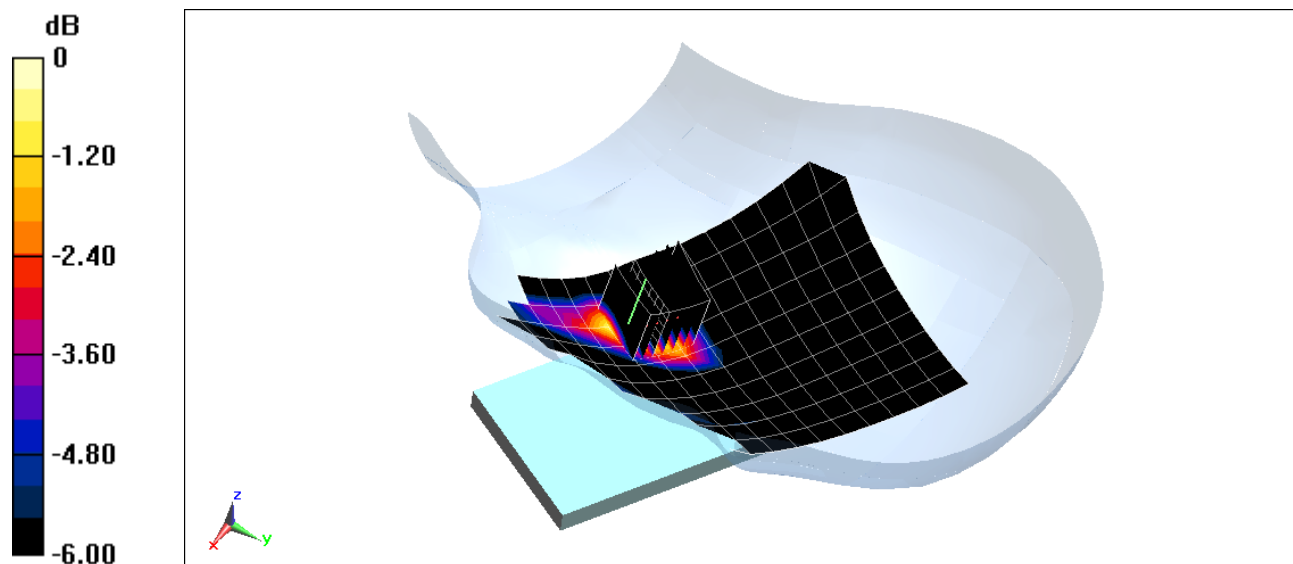
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 8.737 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.212 W/kg

SAR(1 g) = 0.113 W/kg



0 dB = 0.140 W/kg = -8.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, _LTE Band 38; Frequency: 2595 MHz; Duty Cycle: 1:1.58

Medium: 2600 Head; Medium parameters used (interpolated):

$f = 2595 \text{ MHz}$; $\sigma = 2.036 \text{ S/m}$; $\epsilon_r = 38.069$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(4.52, 4.52, 4.52); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

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

**Mode: LTE Band 38, Left Head, Cheek, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

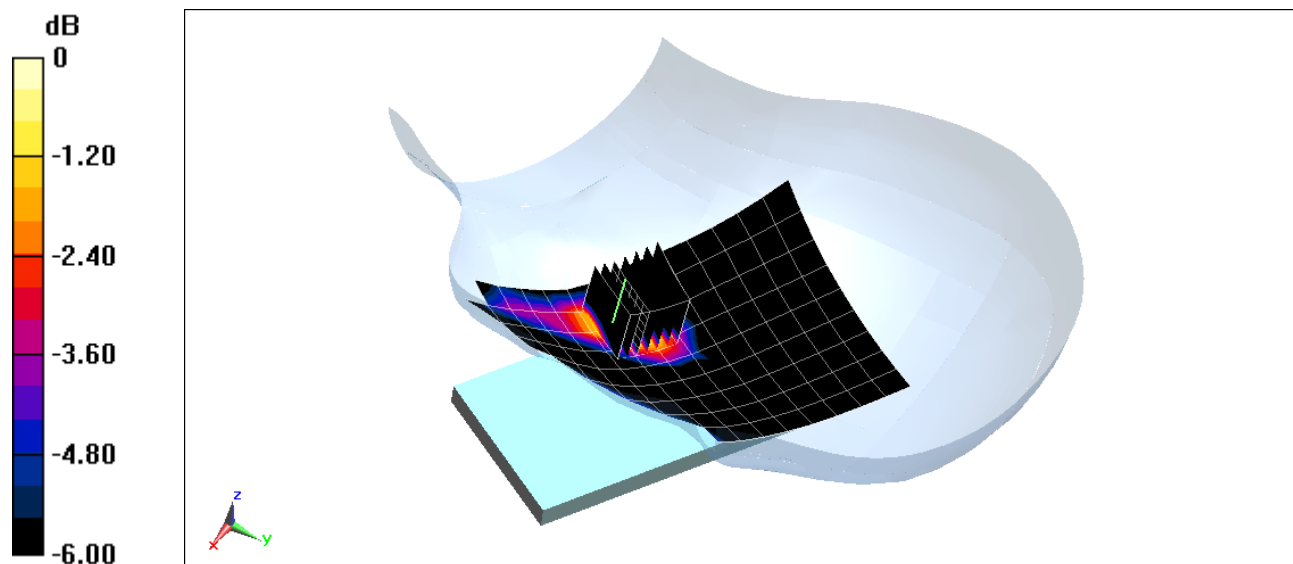
Area Scan (10x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 5.651 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.0980 W/kg

SAR(1 g) = 0.049 W/kg



0 dB = 0.0617 W/kg = -12.10 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.58

Medium: 2450 Head; Medium parameters used (interpolated):

$f = 2506 \text{ MHz}$; $\sigma = 1.947 \text{ S/m}$; $\epsilon_r = 38.704$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-27-2017; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3318; ConvF(4.74, 4.74, 4.74); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 41, Left Head, Cheek, Low.ch, QPSK,
20 MHz Bandwidth, 1 RB, 0 RB Offset**

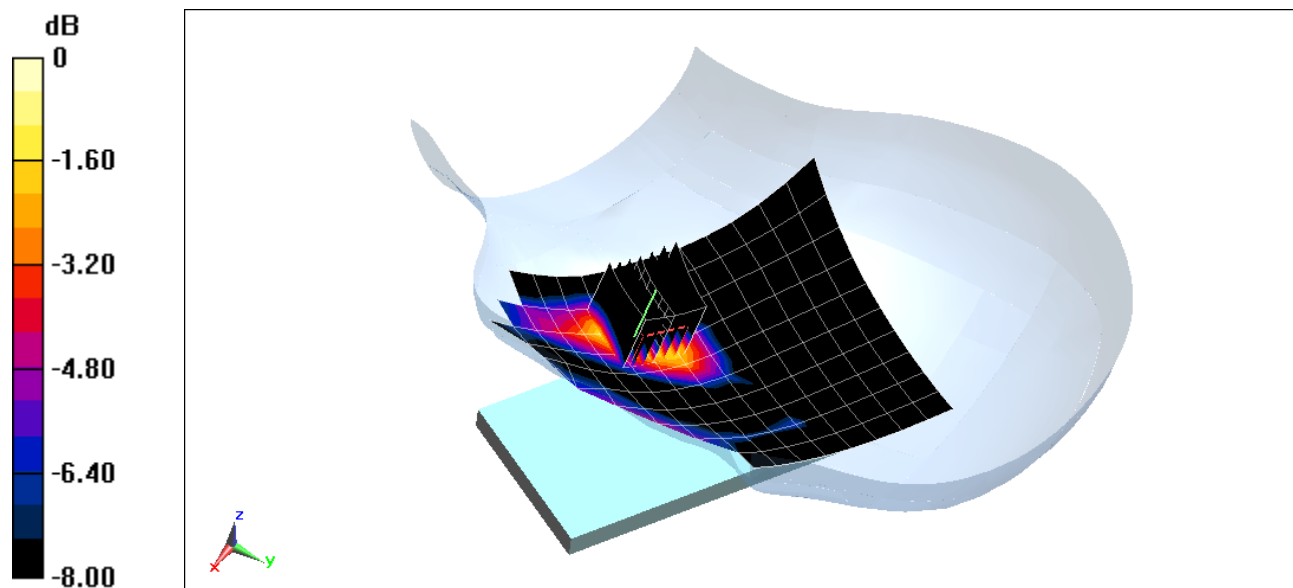
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 7.160 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR(1 g) = 0.074 W/kg



0 dB = 0.0926 W/kg = -10.33 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, IEEE 802.11n; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Head; Medium parameters used (interpolated):

$f = 2462 \text{ MHz}$; $\sigma = 1.852 \text{ S/m}$; $\epsilon_r = 38.104$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-30-2017; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3318; ConvF(4.74, 4.74, 4.74); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: IEEE 802.11n, 20 MHz Bandwidth, MIMO, Right Head, Cheek,
Ch 11, 13 Mbps**

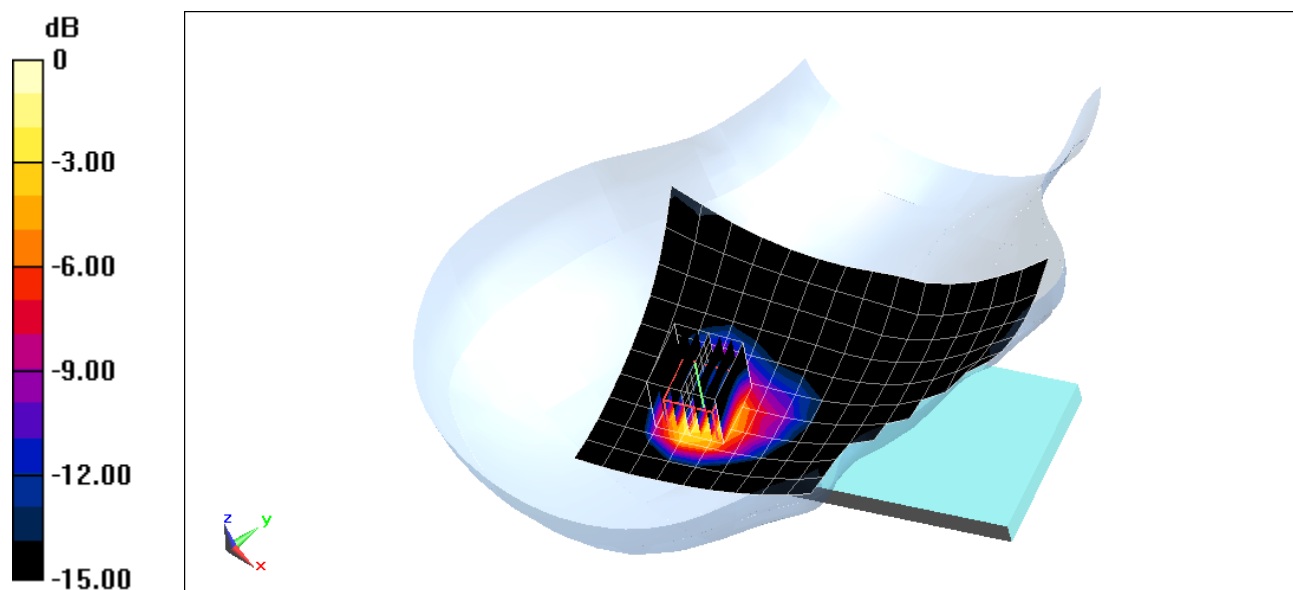
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 9.848 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.98 W/kg

SAR(1 g) = 0.887 W/kg



0 dB = 1.22 W/kg = 0.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5690 MHz; Duty Cycle: 1:1

Medium: 5GHz Head; Medium parameters used (interpolated):

$f = 5690 \text{ MHz}$; $\sigma = 5.215 \text{ S/m}$; $\epsilon_r = 34.174$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-24-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7308; ConvF(4.86, 4.86, 4.86); Calibrated: 7/21/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: IEEE 802.11ac, U-NII-2C, 80 MHz Bandwidth, MIMO, Right Head, Cheek,
Ch 138, 58.5 Mbps**

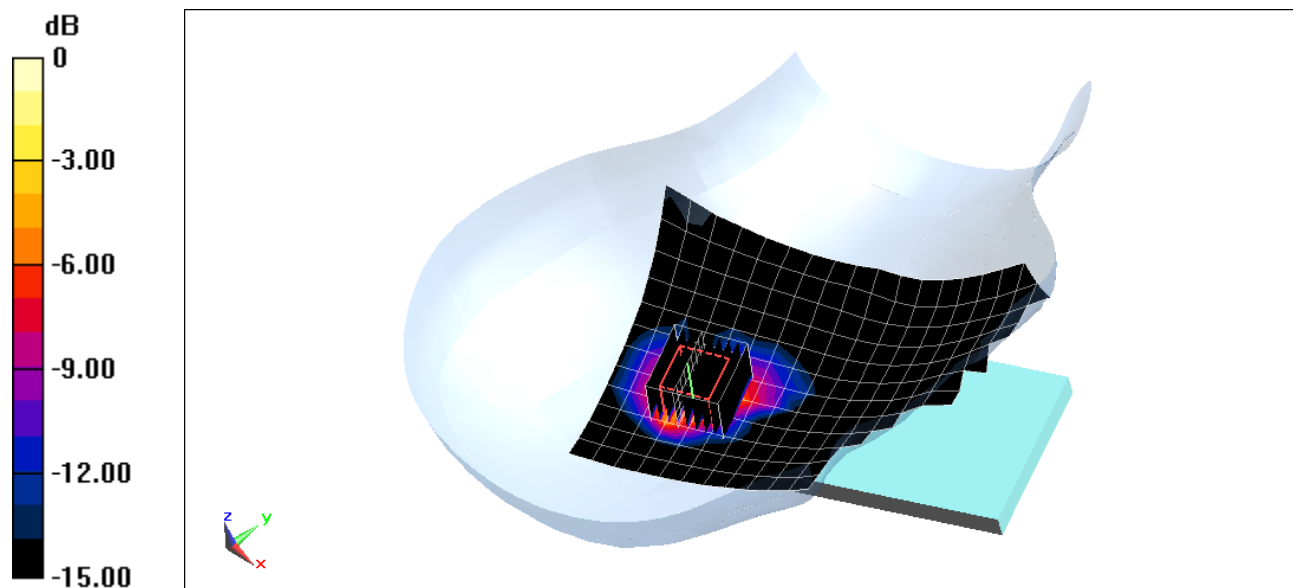
Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm

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

Reference Value = 3.628 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 3.45 W/kg

SAR(1 g) = 0.741 W/kg



0 dB = 1.99 W/kg = 2.99 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.294

Medium: 2450 Head; Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$; $\sigma = 1.871 \text{ S/m}$; $\epsilon_r = 38.051$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 04-30-2017; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3318; ConvF(4.74, 4.74, 4.74); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

Mode: Bluetooth, Right Head, Cheek, Ch 78, 2 Mbps

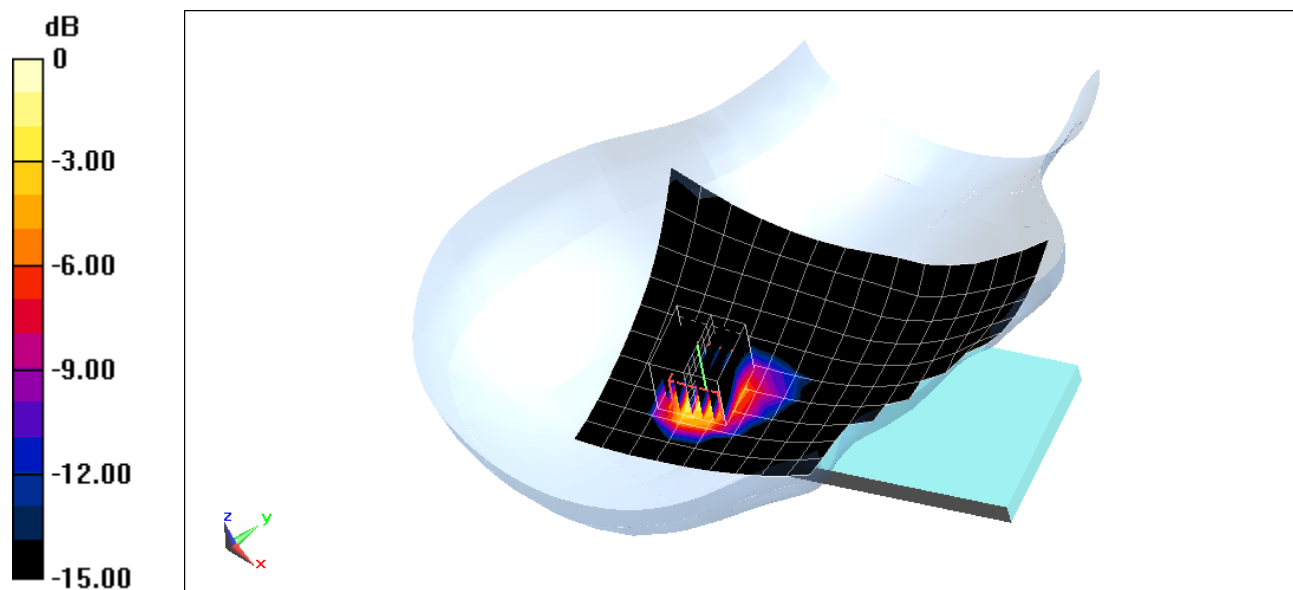
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 1.541 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.091 W/kg



0 dB = 0.125 W/kg = -9.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.998 \text{ S/m}$; $\epsilon_r = 54.661$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 22.1°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

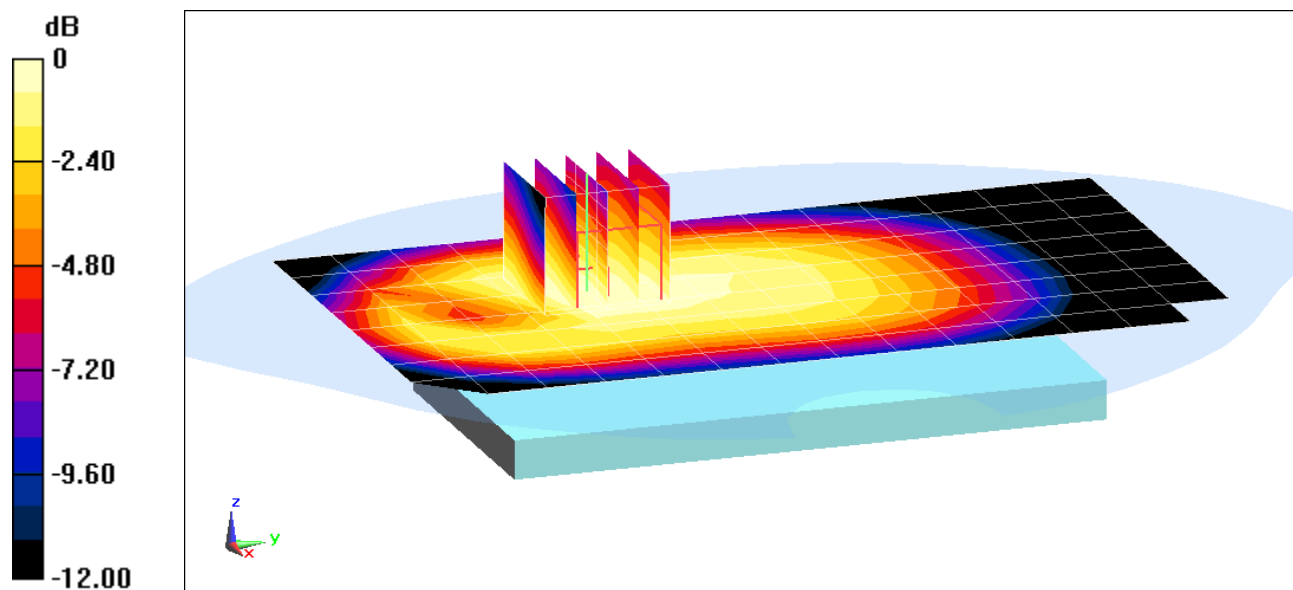
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.37 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.247 W/kg

SAR(1 g) = 0.190 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC91

Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.051$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-12-2017; Ambient Temp: 21.0°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3213; ConvF(6.28, 6.28, 6.28); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

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

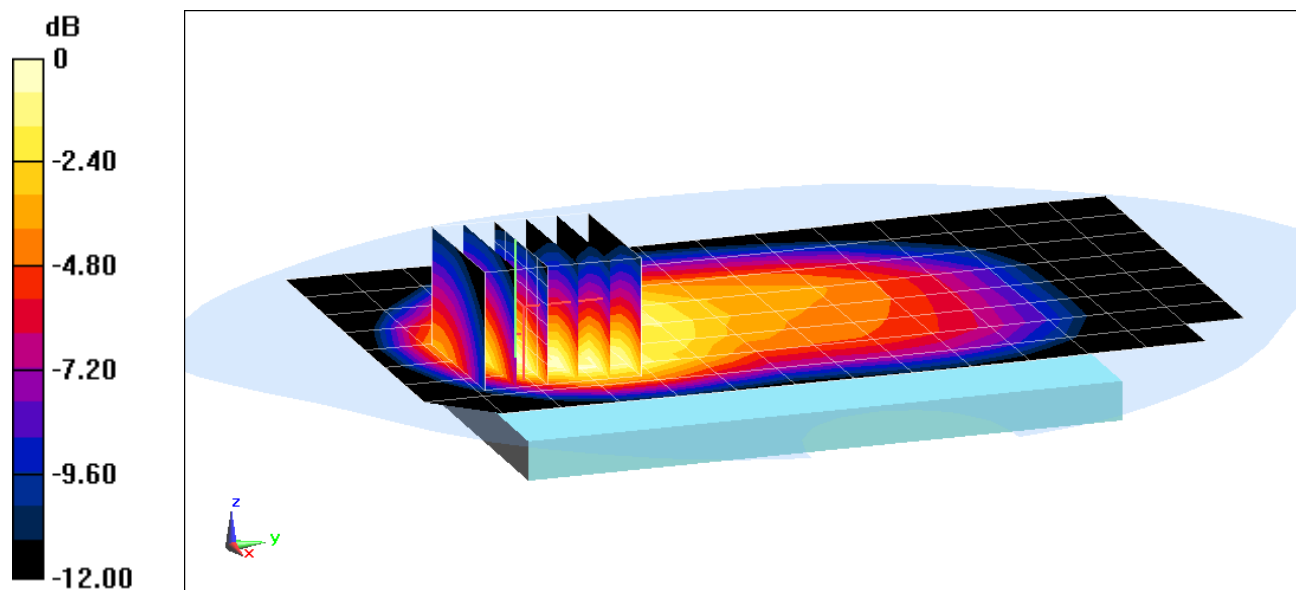
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.58 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.235 W/kg

SAR(1 g) = 0.143 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.548 \text{ S/m}$; $\epsilon_r = 51.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 1900, Body SAR, Back Side, Mid.ch

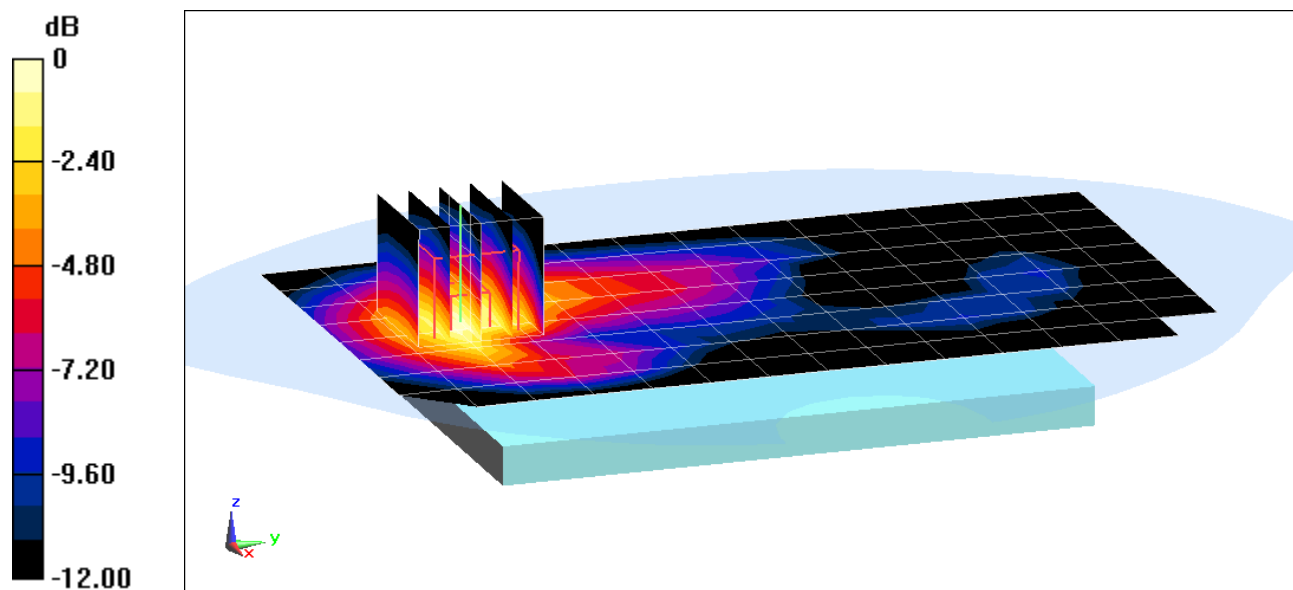
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.77 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.231 W/kg



0 dB = 0.329 W/kg = -4.83 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A94F

Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.548 \text{ S/m}$; $\epsilon_r = 51.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

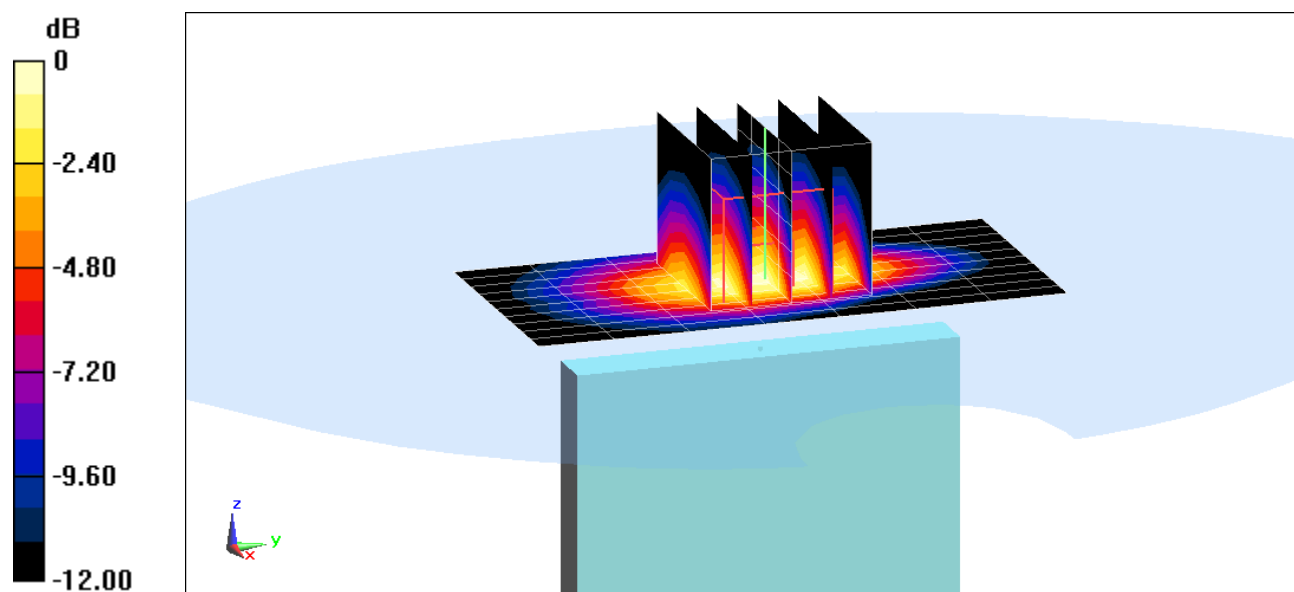
Area Scan (11x8x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.88 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.699 W/kg

SAR(1 g) = 0.396 W/kg



0 dB = 0.591 W/kg = -2.28 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

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

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.998 \text{ S/m}$; $\epsilon_r = 54.661$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 22.1°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

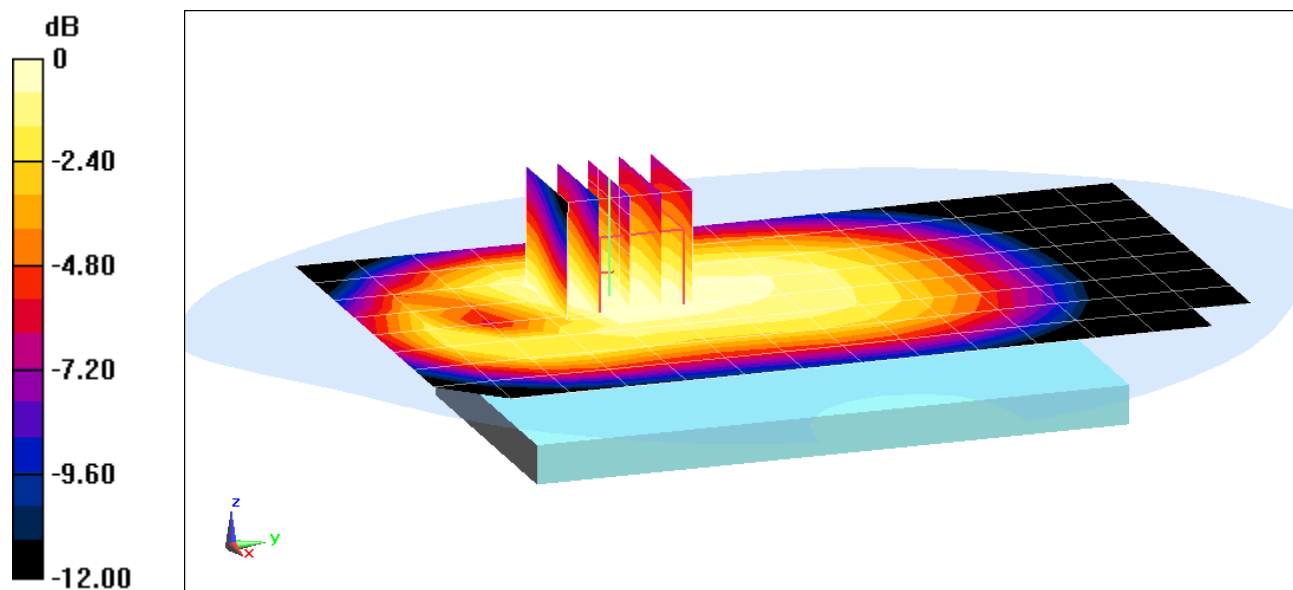
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 17.06 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.270 W/kg



0 dB = 0.298 W/kg = -5.26 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

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

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.998 \text{ S/m}$; $\epsilon_r = 54.661$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 22.1°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

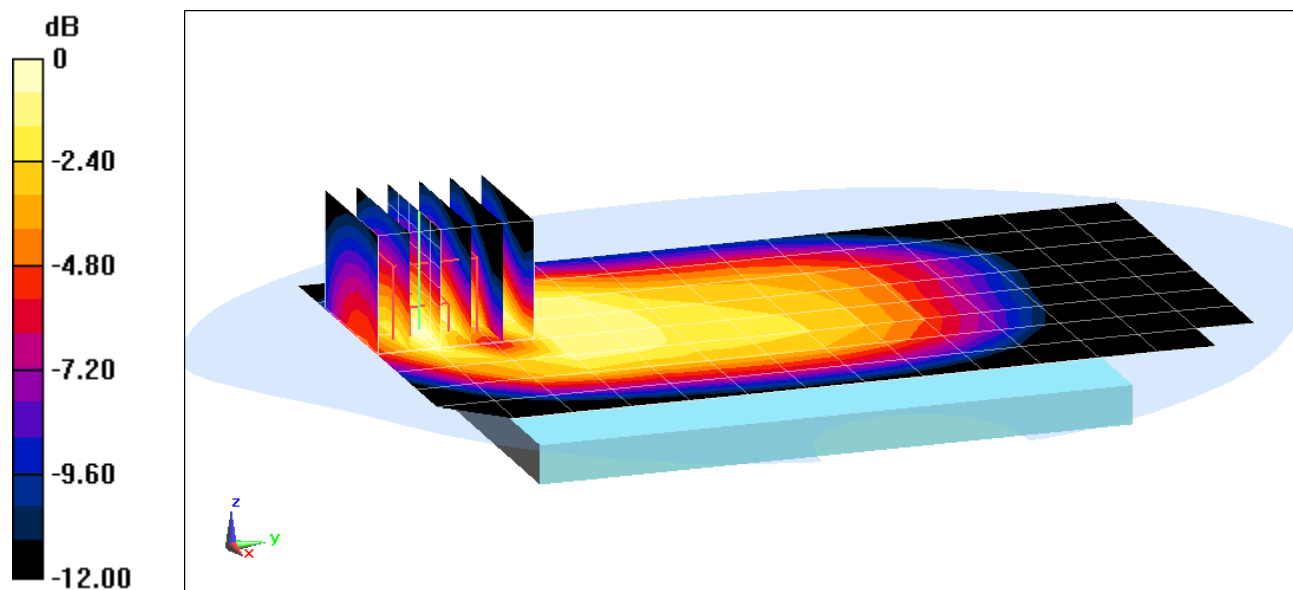
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 20.63 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.614 W/kg

SAR(1 g) = 0.376 W/kg



0 dB = 0.449 W/kg = -3.48 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.482 \text{ S/m}$; $\epsilon_r = 51.413$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3319; ConvF(5.07, 5.07, 5.07); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

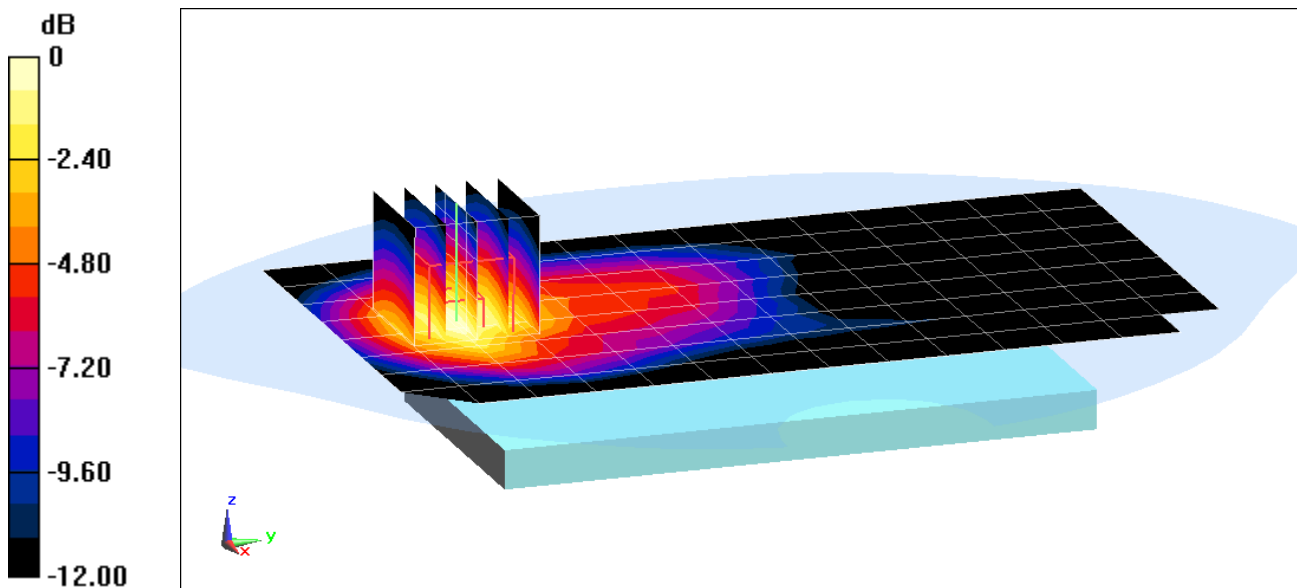
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.98 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.698 W/kg

SAR(1 g) = 0.467 W/kg



0 dB = 0.550 W/kg = -2.60 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A94F

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.482 \text{ S/m}$; $\epsilon_r = 51.413$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3319; ConvF(5.07, 5.07, 5.07); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

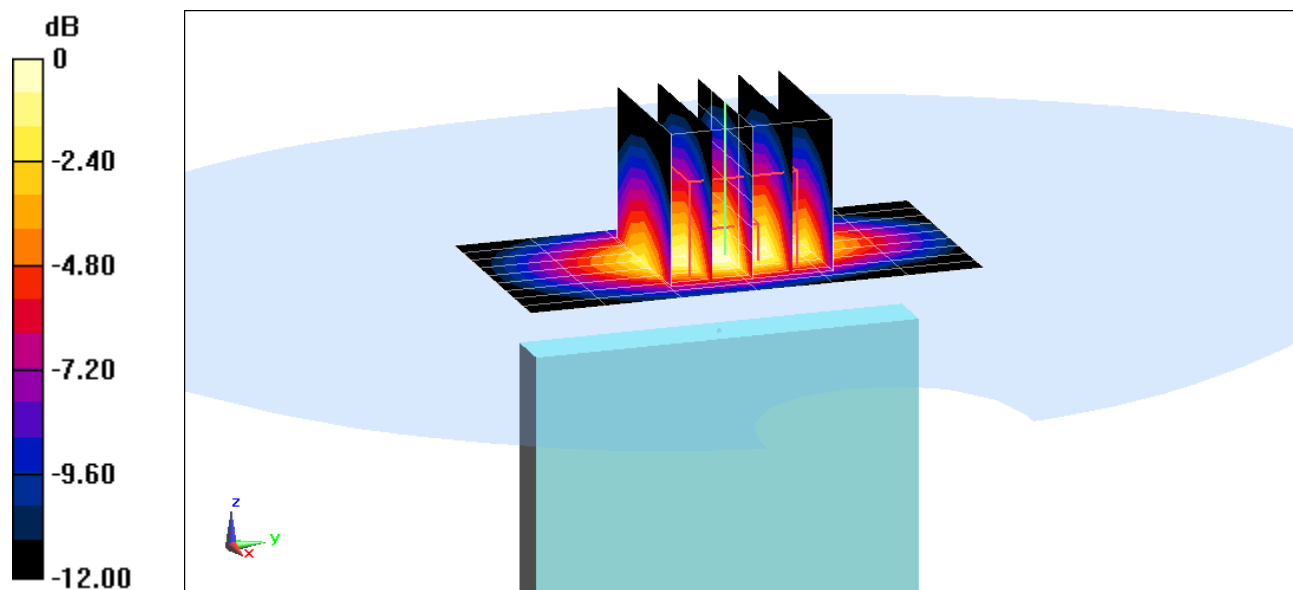
Area Scan (10x7x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.43 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.845 W/kg

SAR(1 g) = 0.527 W/kg



0 dB = 0.645 W/kg = -1.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.548 \text{ S/m}$; $\epsilon_r = 51.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

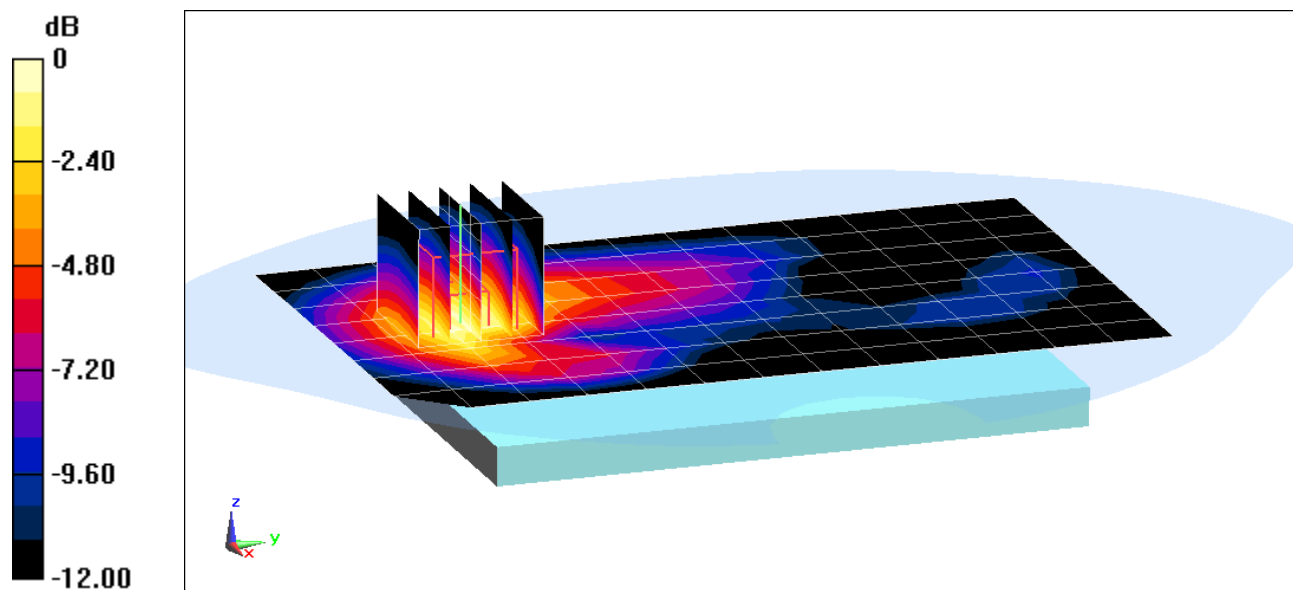
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.56 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.811 W/kg

SAR(1 g) = 0.492 W/kg



0 dB = 0.697 W/kg = -1.57 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A94F

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.548 \text{ S/m}$; $\epsilon_r = 51.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

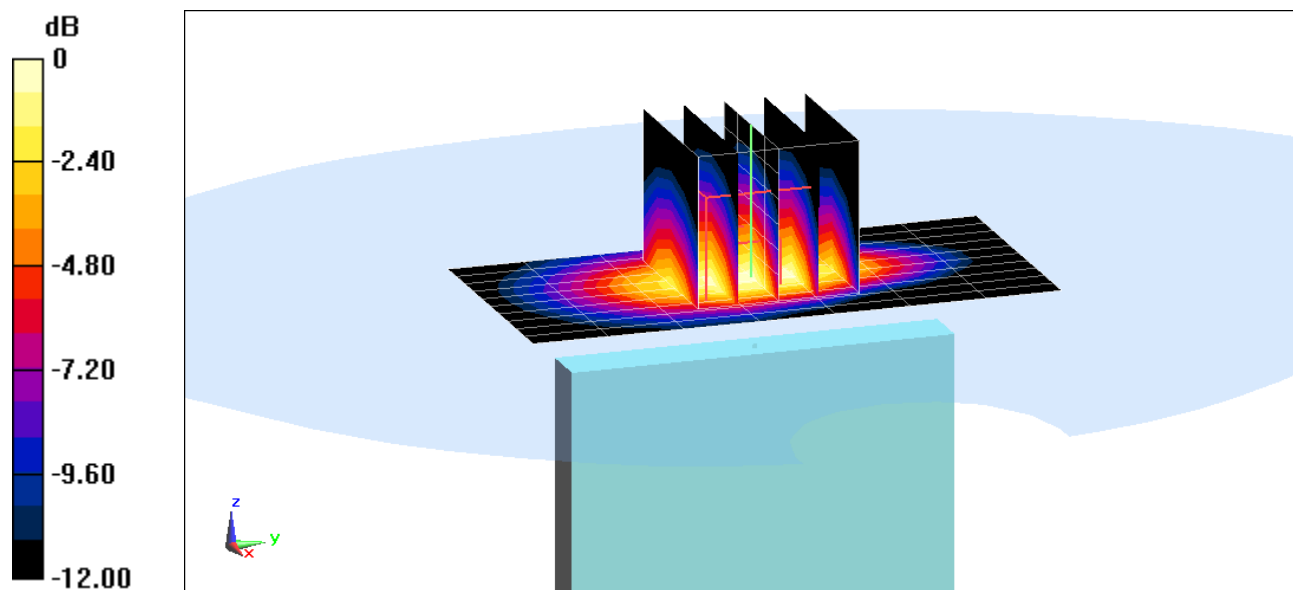
Area Scan (11x8x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.94 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.616 W/kg



0 dB = 0.920 W/kg = -0.36 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

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

Medium: 750 Body; Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.921 \text{ S/m}$; $\epsilon_r = 54.839$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 19.9°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3334; ConvF(6.33, 6.33, 6.33); Calibrated: 11/15/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 11/11/2016

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 12, Body SAR, Back Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset**

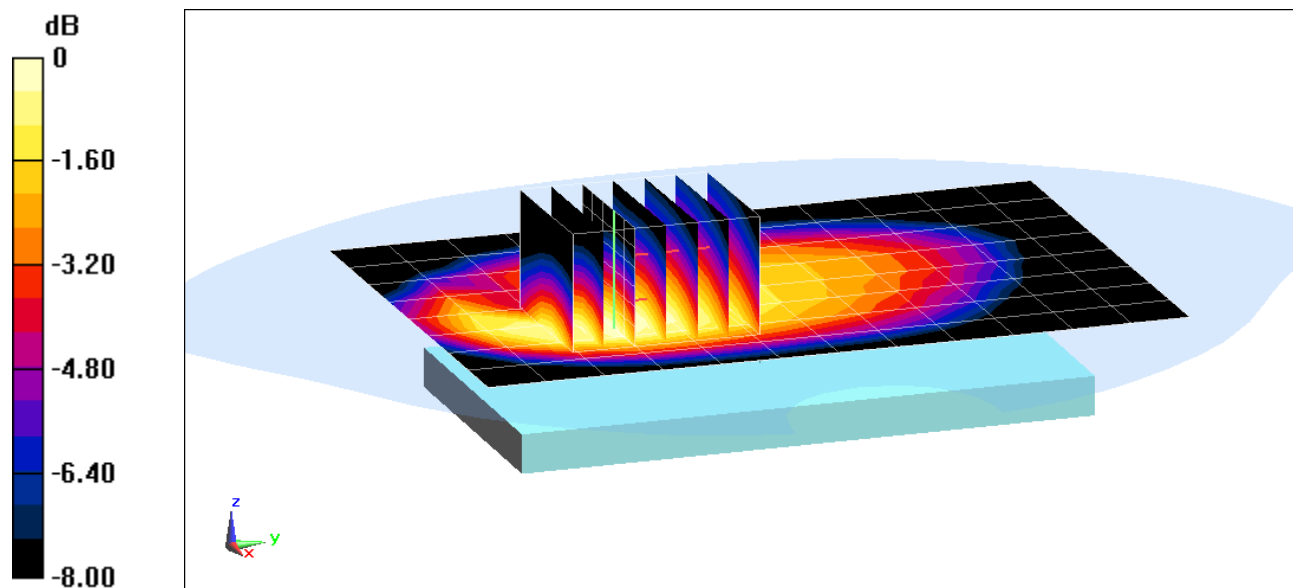
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.73 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.430 W/kg

SAR(1 g) = 0.303 W/kg



0 dB = 0.342 W/kg = -4.66 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

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

Medium: 750 Body; Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.921 \text{ S/m}$; $\epsilon_r = 54.839$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 19.9°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3334; ConvF(6.33, 6.33, 6.33); Calibrated: 11/15/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 11/11/2016

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 12, Body SAR, Back Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset**

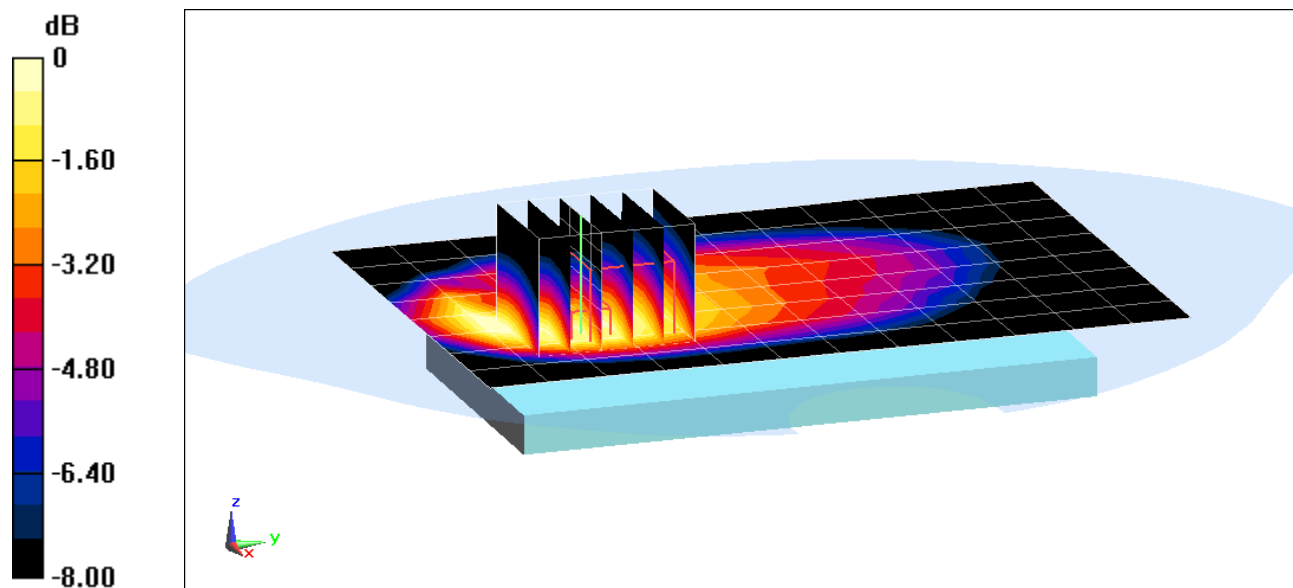
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 22.83 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.435 W/kg



0 dB = 0.509 W/kg = -2.93 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$; $\sigma = 0.983 \text{ S/m}$; $\epsilon_r = 54.797$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-17-2017; Ambient Temp: 20.0°C; Tissue Temp: 20.1°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 5 (Cell.), Body SAR, Back Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

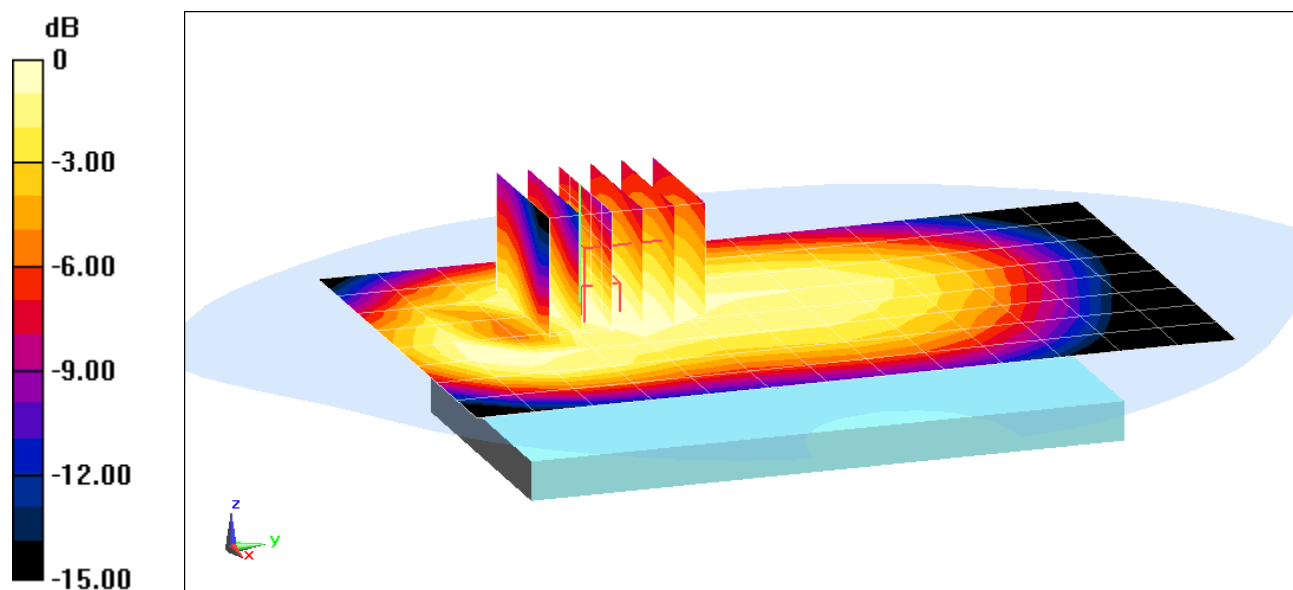
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 17.22 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.361 W/kg

SAR(1 g) = 0.271 W/kg



0 dB = 0.300 W/kg = -5.23 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8FE

Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$; $\sigma = 0.983 \text{ S/m}$; $\epsilon_r = 54.797$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-17-2017; Ambient Temp: 20.0°C; Tissue Temp: 20.1°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 5 (Cell.), Body SAR, Back Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

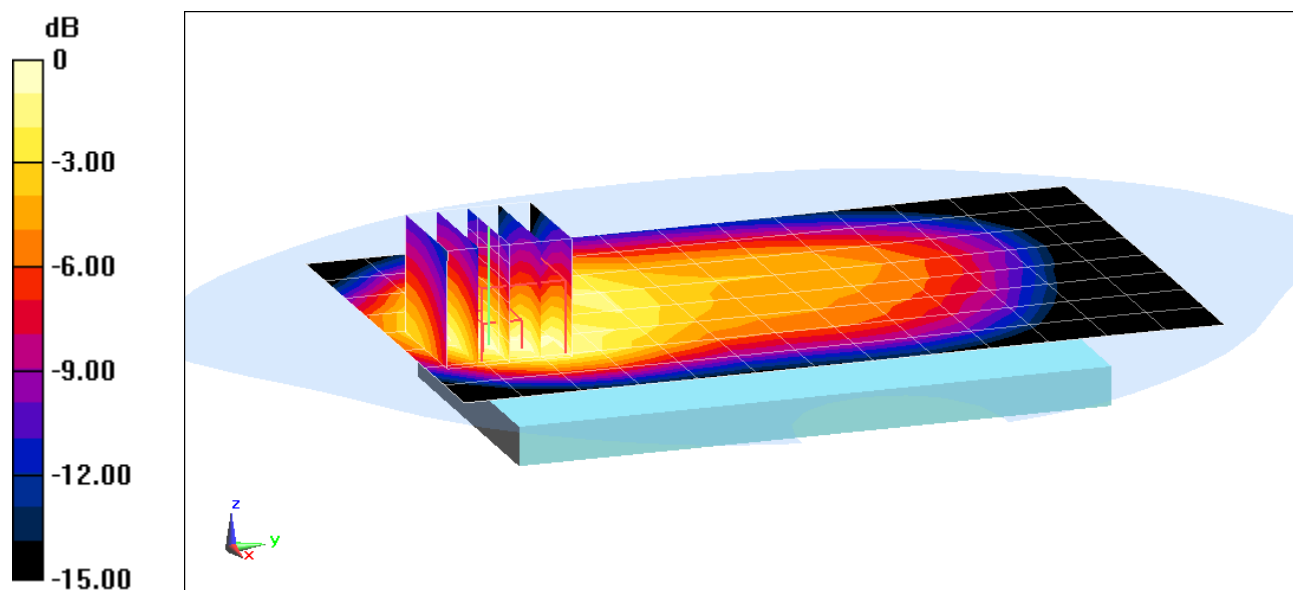
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 23.92 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.797 W/kg

SAR(1 g) = 0.502 W/kg



0 dB = 0.599 W/kg = -2.23 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8C8

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1745 \text{ MHz}$; $\sigma = 1.496 \text{ S/m}$; $\epsilon_r = 51.37$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3319; ConvF(5.07, 5.07, 5.07); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

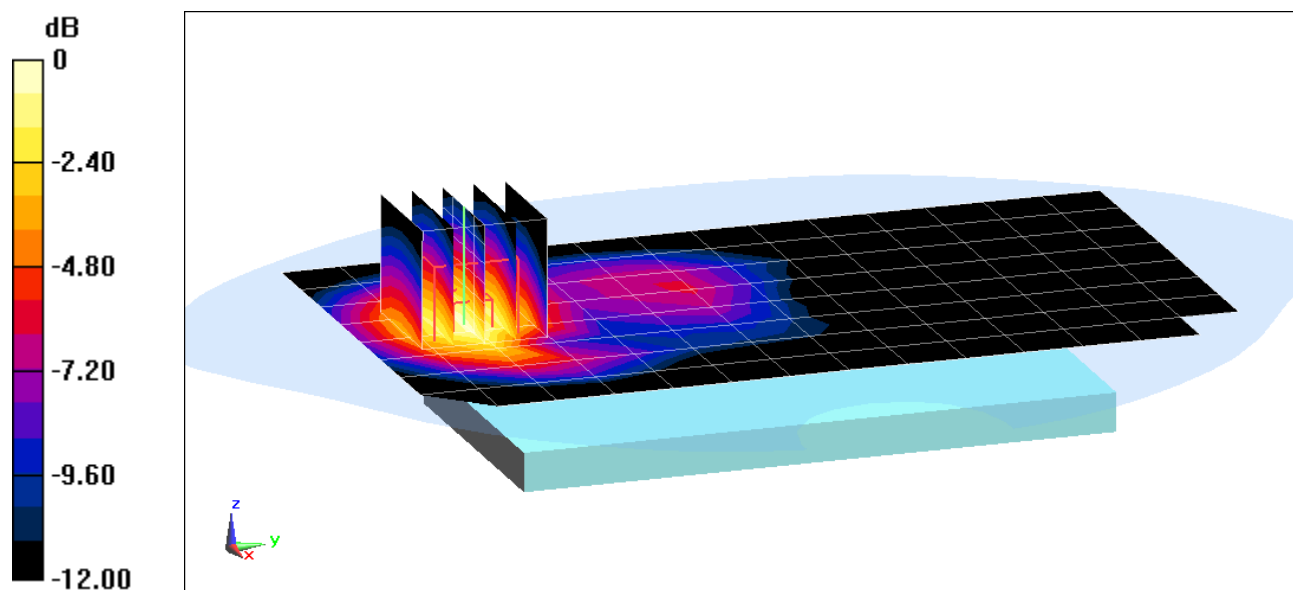
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 22.48 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.660 W/kg



0 dB = 0.787 W/kg = -1.04 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A950

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1770 \text{ MHz}$; $\sigma = 1.552 \text{ S/m}$; $\epsilon_r = 51.36$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2017; Ambient Temp: 21.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3287; ConvF(5.11, 5.11, 5.11); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 66 (AWS), Body SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

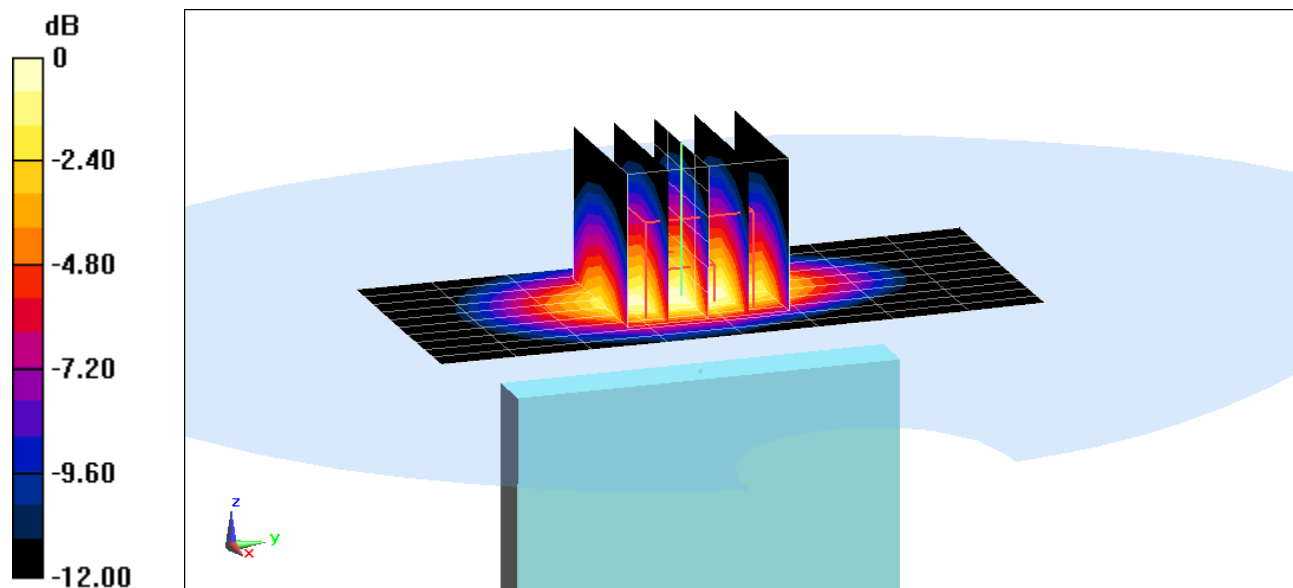
Area Scan (11x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.03 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.977 W/kg



0 dB = 1.20 W/kg = 0.79 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A8C8

Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.548 \text{ S/m}$; $\epsilon_r = 51.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 2 (PCS), Body SAR, Back Side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

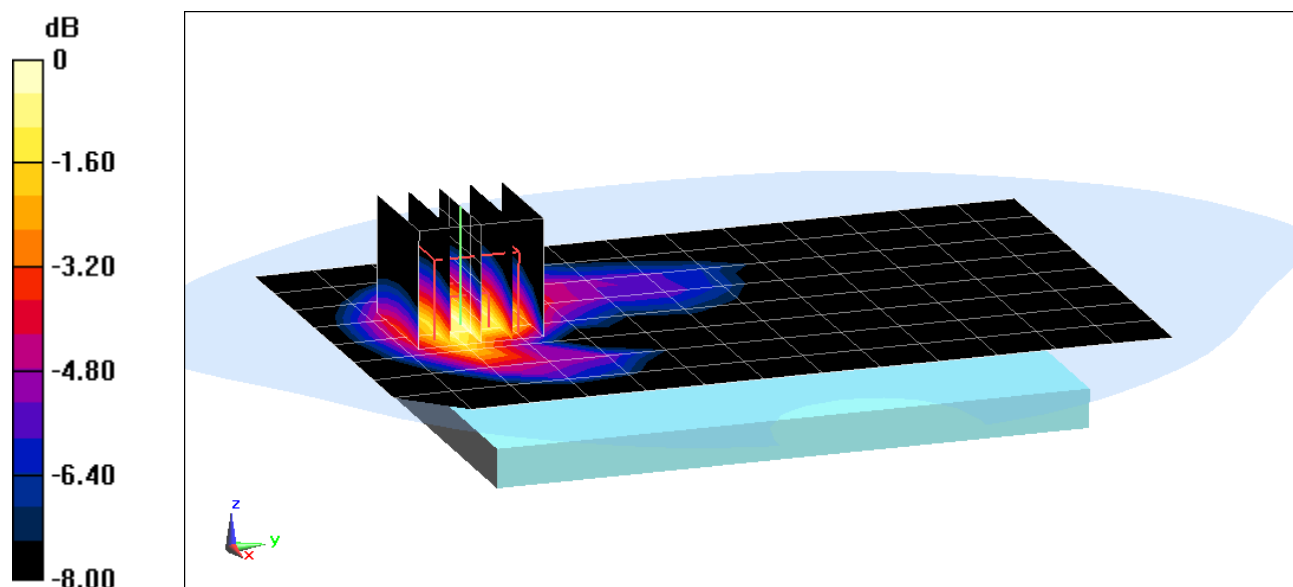
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 19.86 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.561 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2A950

Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.569 \text{ S/m}$; $\epsilon_r = 51.779$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 2 (PCS), Body SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

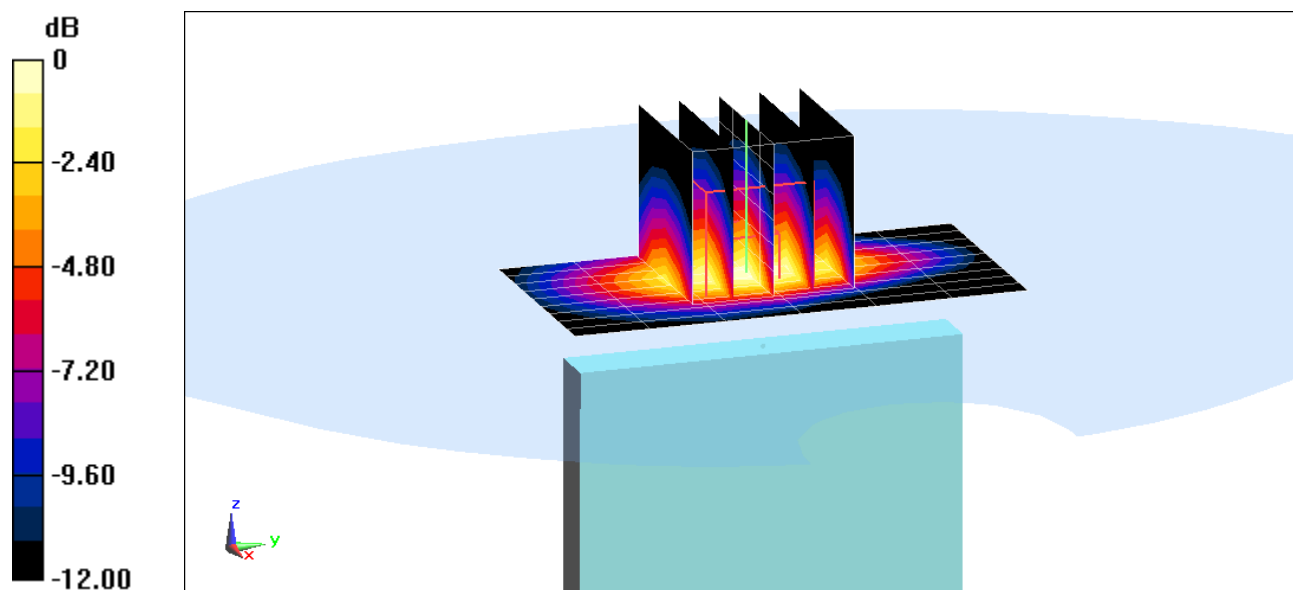
Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 24.47 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 0.852 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

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

Medium: 2300 Body; Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.86 \text{ S/m}$; $\epsilon_r = 52.378$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-10-2017; Ambient Temp: 20.3°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3318; ConvF(4.7, 4.7, 4.7); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

**Mode: LTE Band 30, Body SAR, Back Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

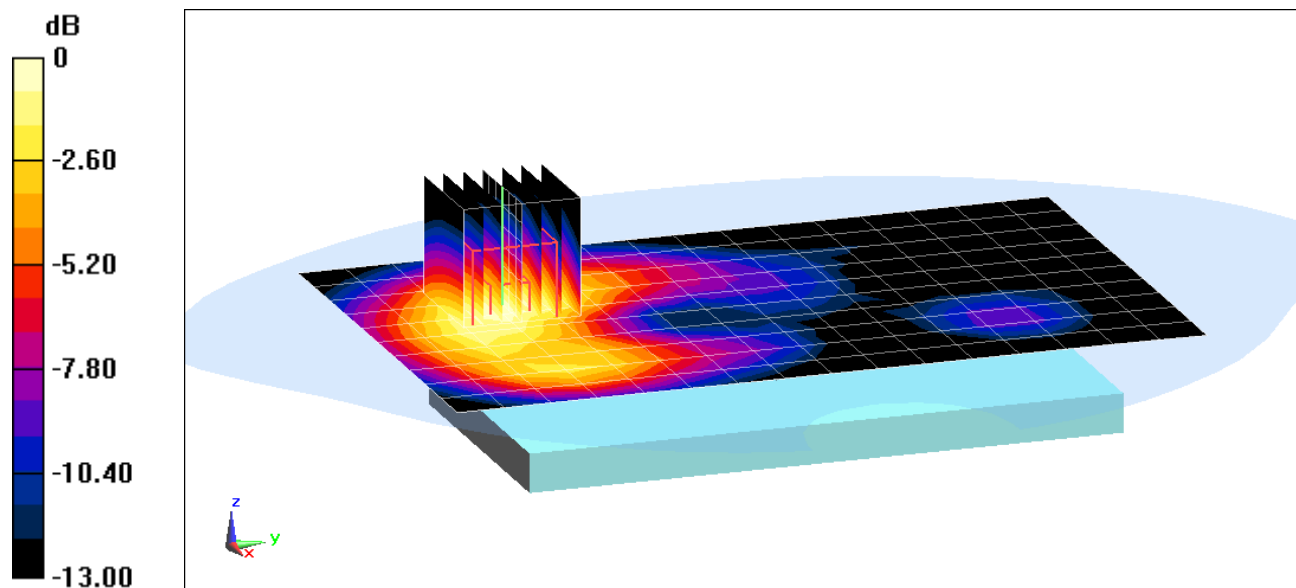
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 16.09 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.747 W/kg

SAR(1 g) = 0.430 W/kg



0 dB = 0.521 W/kg = -2.83 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC93

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

Medium: 2300 Body; Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.817 \text{ S/m}$; $\epsilon_r = 53.163$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-27-2017; Ambient Temp: 20.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3287; ConvF(4.55, 4.55, 4.55); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 30, Body SAR, Bottom Edge, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

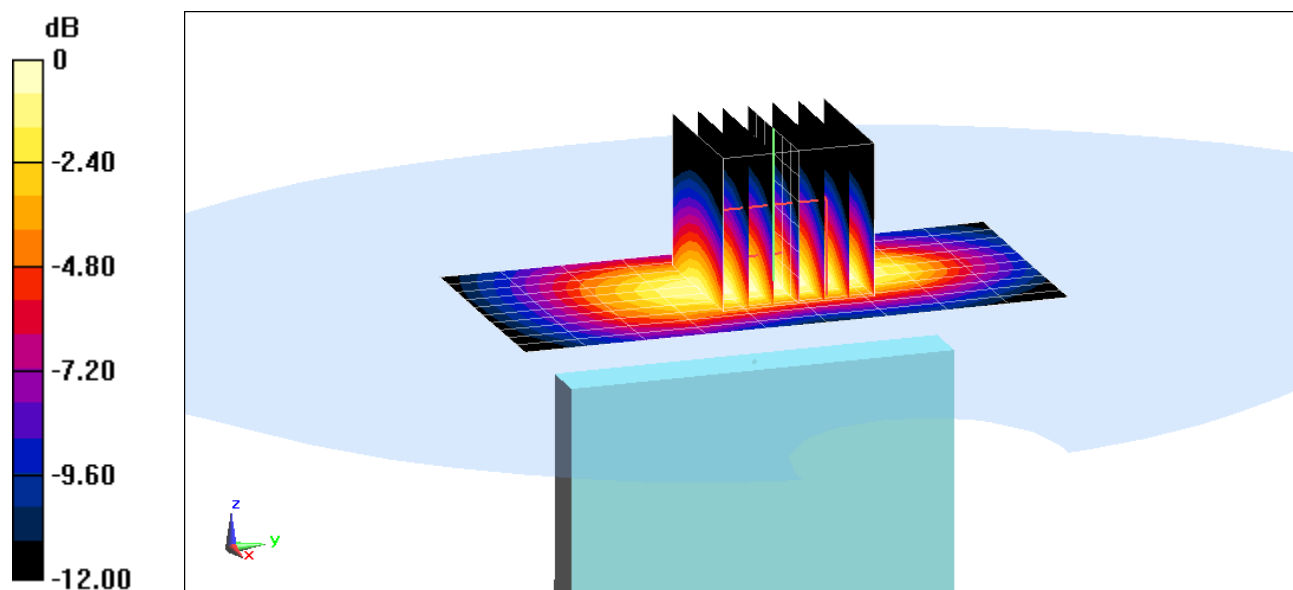
Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 14.47 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.586 W/kg

SAR(1 g) = 0.329 W/kg



0 dB = 0.411 W/kg = -3.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2510 \text{ MHz}$; $\sigma = 2.025 \text{ S/m}$; $\epsilon_r = 51.332$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-16-2017; Ambient Temp: 22.5°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 7, Body SAR, Back Side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

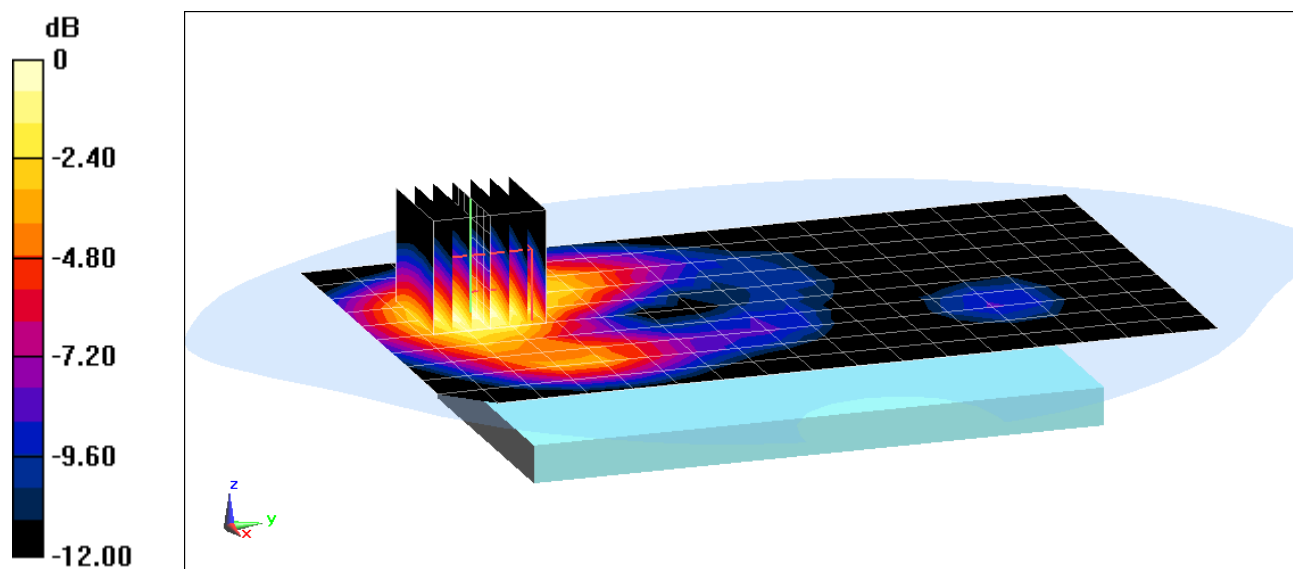
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 10.64 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.367 W/kg

SAR(1 g) = 0.202 W/kg



0 dB = 0.248 W/kg = -6.06 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2DFB0

Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: 2600 Body; Medium parameters used (interpolated):

$f = 2535 \text{ MHz}$; $\sigma = 2.059 \text{ S/m}$; $\epsilon_r = 51.243$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-16-2017; Ambient Temp: 22.5°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 7, Body SAR, Bottom Edge, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

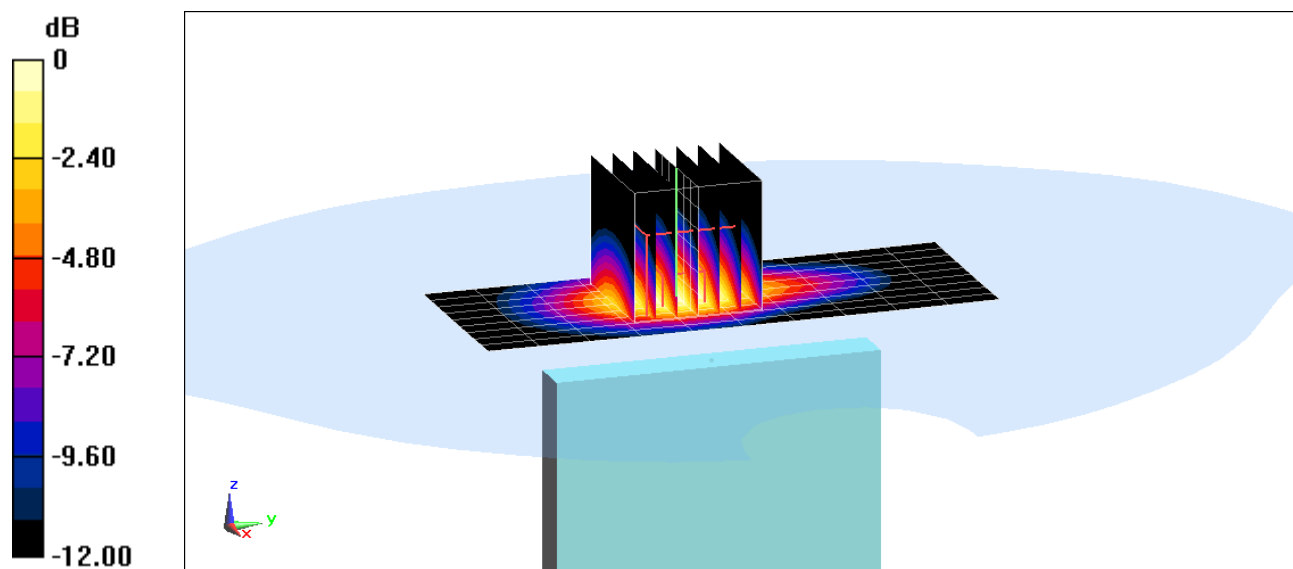
Area Scan (10x11x1): Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 21.98 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.853 W/kg



0 dB = 1.09 W/kg = 0.37 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, _LTE Band 38; Frequency: 2595 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2595 \text{ MHz}$; $\sigma = 2.216 \text{ S/m}$; $\epsilon_r = 51.539$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-14-2017; Ambient Temp: 22.5°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 38, Body SAR, Back Side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

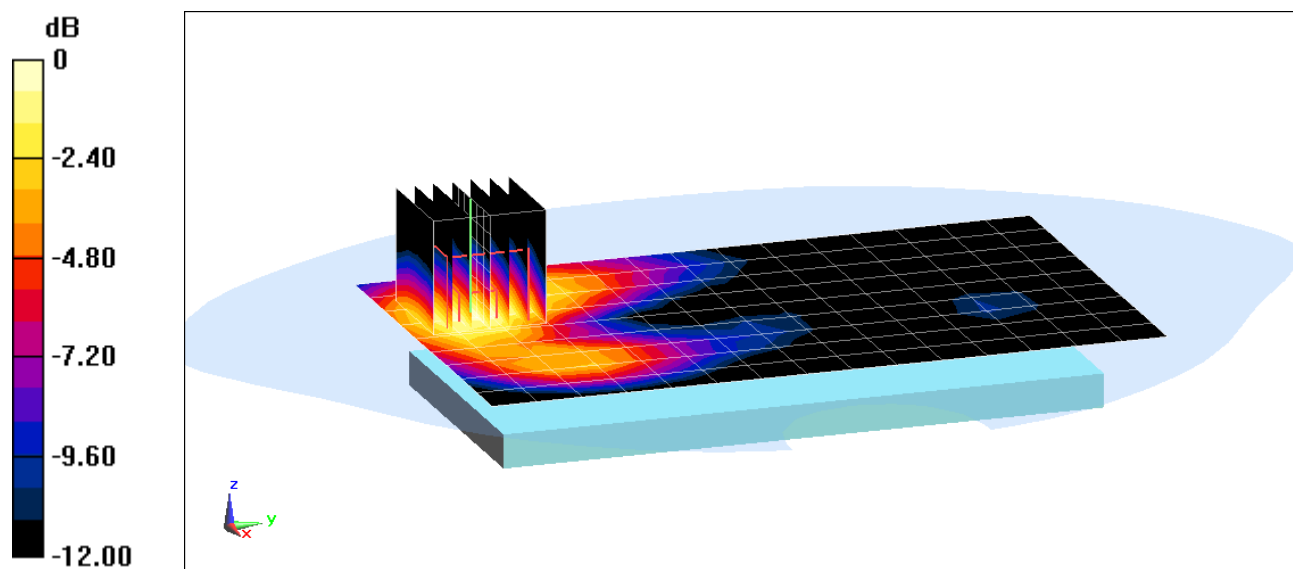
Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 8.861 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.299 W/kg

SAR(1 g) = 0.157 W/kg



0 dB = 0.194 W/kg = -7.12 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, _LTE Band 38; Frequency: 2595 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2595 \text{ MHz}$; $\sigma = 2.216 \text{ S/m}$; $\epsilon_r = 51.539$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2017; Ambient Temp: 22.5°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 38, Body SAR, Bottom Edge, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

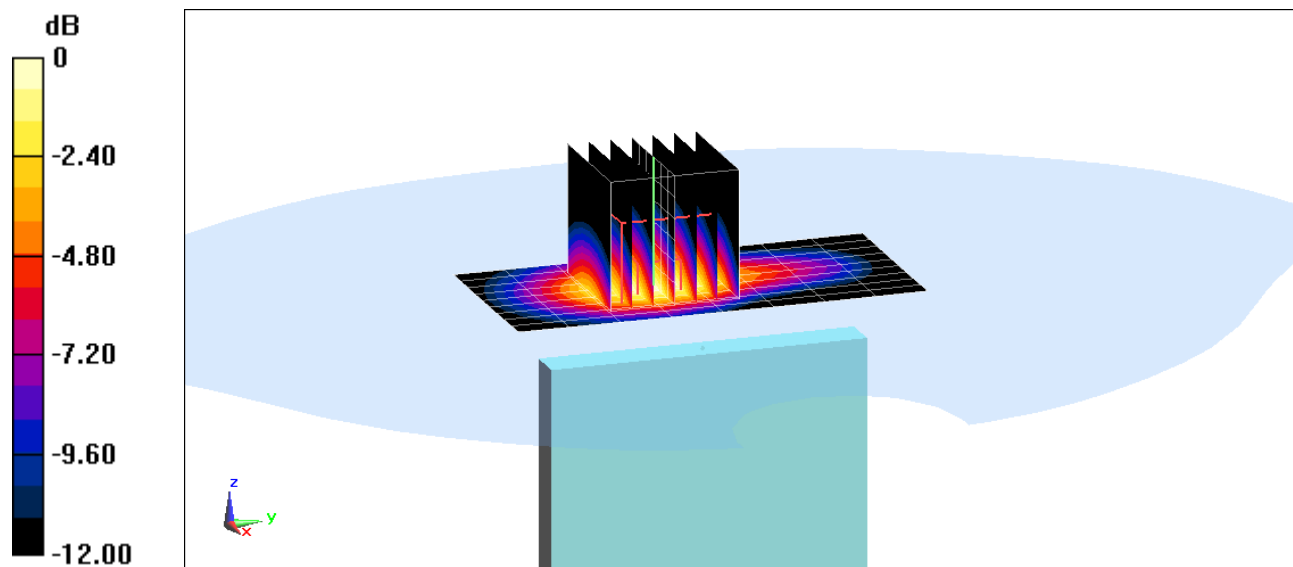
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 18.59 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.659 W/kg



0 dB = 0.849 W/kg = -0.71 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2506 \text{ MHz}$; $\sigma = 2.084 \text{ S/m}$; $\epsilon_r = 50.849$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 41, Body SAR, Back Side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

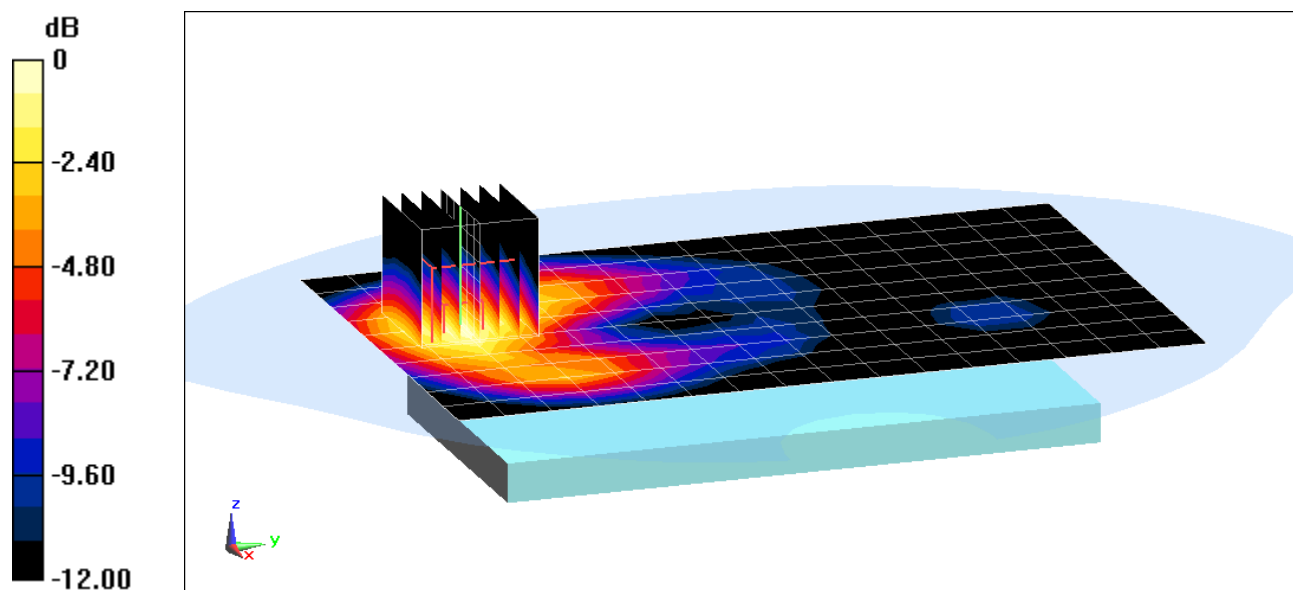
Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 10.59 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.404 W/kg

SAR(1 g) = 0.210 W/kg



0 dB = 0.260 W/kg = -5.85 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC97

Communication System: UID 0, LTE Band 41; Frequency: 2680 MHz; Duty Cycle: 1:1.58

Medium: 2600 Body; Medium parameters used (interpolated):

$f = 2680 \text{ MHz}$; $\sigma = 2.325 \text{ S/m}$; $\epsilon_r = 50.177$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 41, Body SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

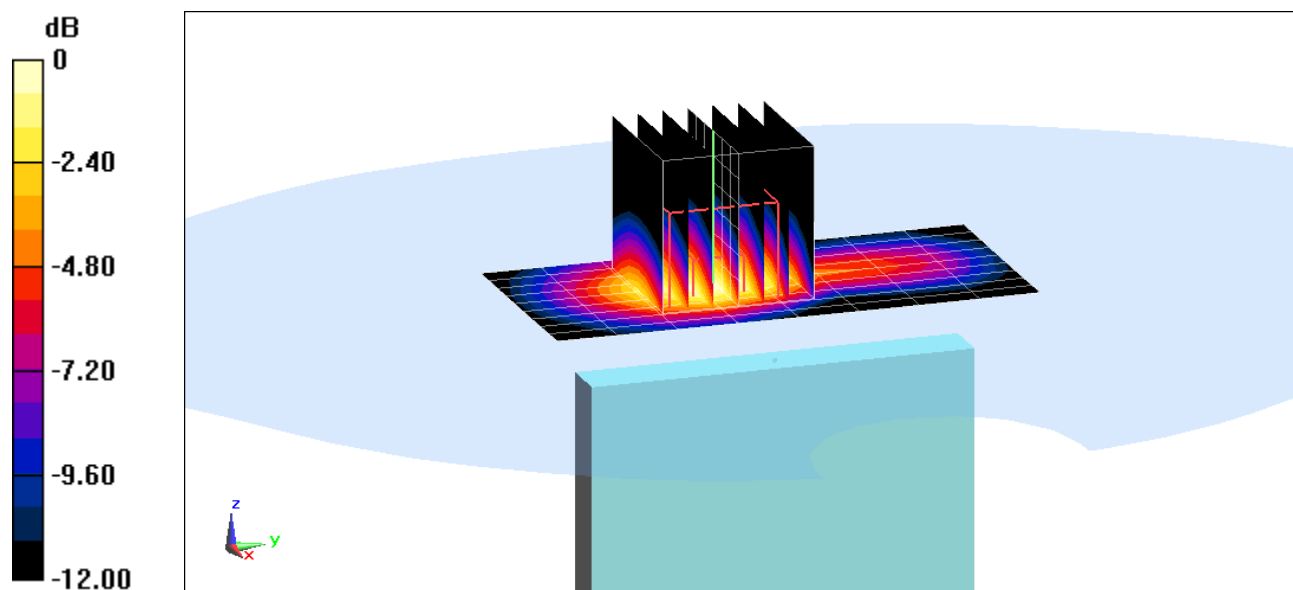
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 12.24 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.643 W/kg

SAR(1 g) = 0.303 W/kg



0 dB = 0.393 W/kg = -4.06 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.896 \text{ S/m}$; $\epsilon_r = 51.238$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-01-2017; Ambient Temp: 20.4°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: IEEE 802.11b, 22 MHz Bandwidth, Antenna 2, Body SAR,
Back Side, Ch 1, 1 Mbps**

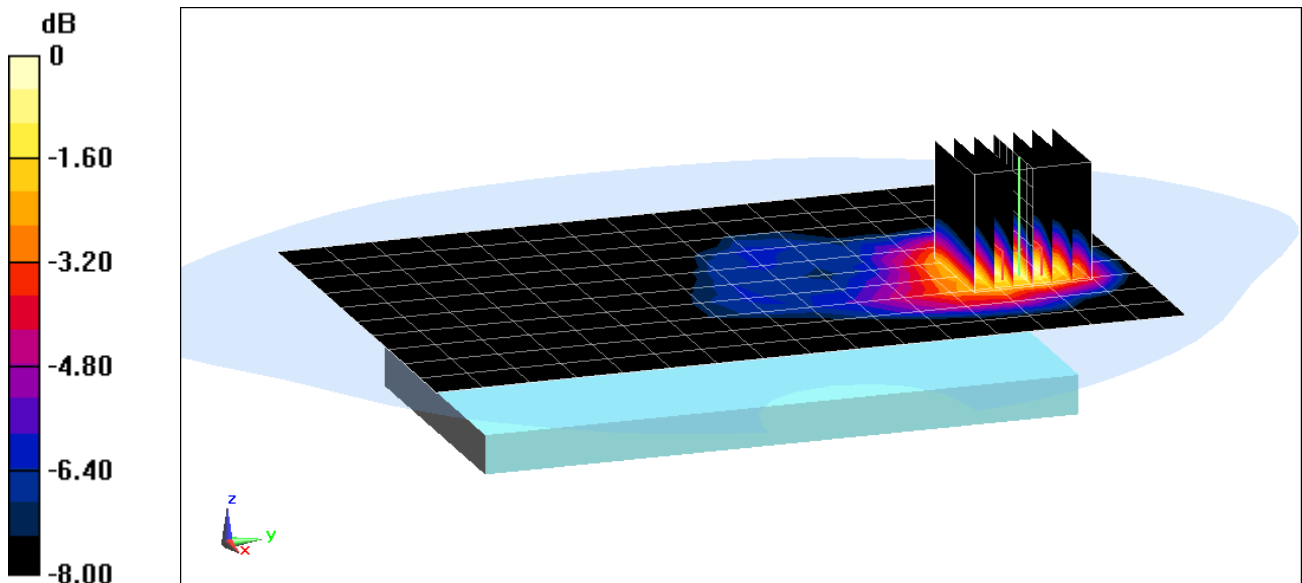
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 10.65 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.363 W/kg

SAR(1 g) = 0.192 W/kg



0 dB = 0.237 W/kg = -6.25 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.896 \text{ S/m}$; $\epsilon_r = 51.238$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-01-2017; Ambient Temp: 20.4°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: IEEE 802.11b, 22 MHz Bandwidth, Antenna 2, Body SAR,
Front Side, Ch 1, 1 Mbps**

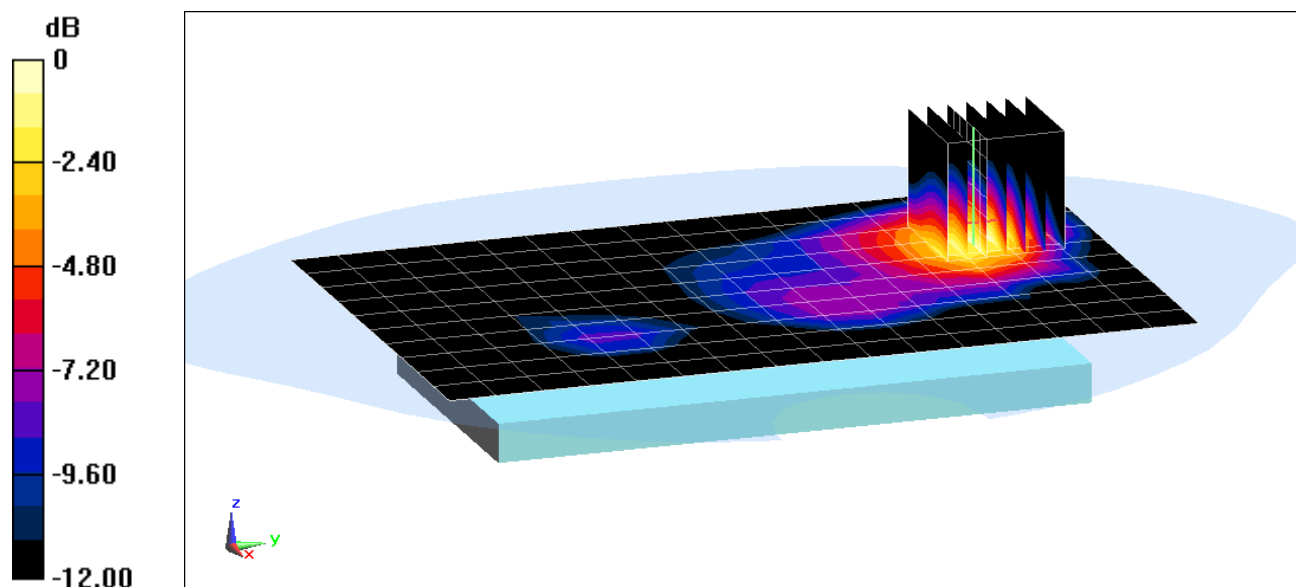
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 6.247 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.939 W/kg

SAR(1 g) = 0.483 W/kg



0 dB = 0.611 W/kg = -2.14 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 6.138 \text{ S/m}$; $\epsilon_r = 47.352$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.83, 3.83, 3.83); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Antenna 1, Body SAR,
Back Side, Ch 149, 6 Mbps**

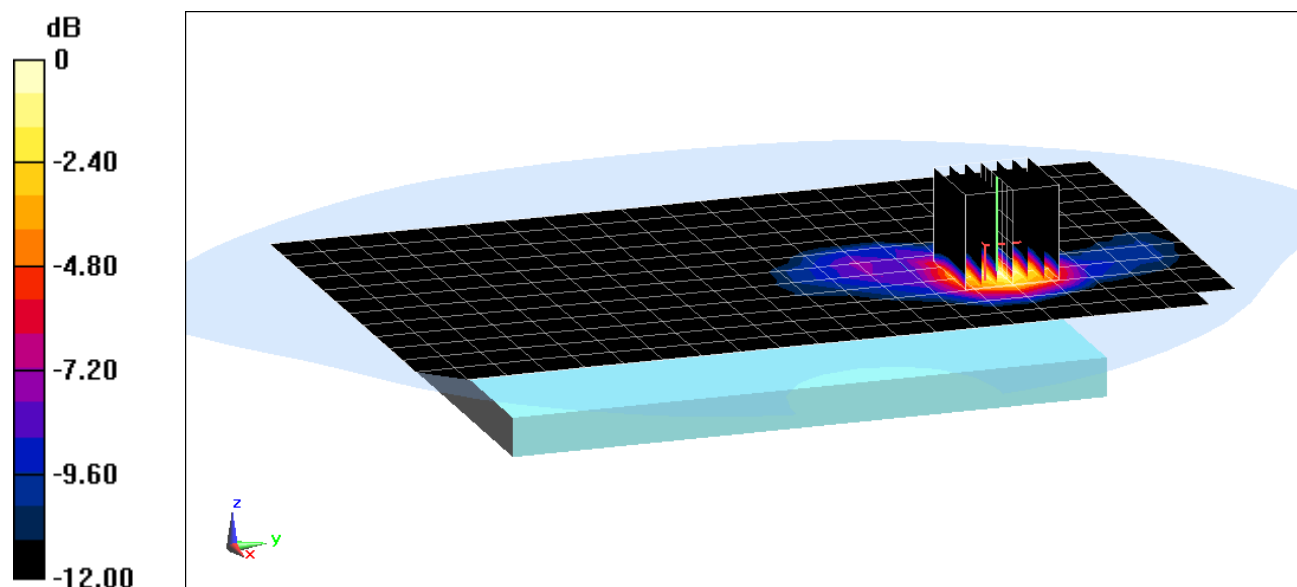
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 7.462 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.338 W/kg



0 dB = 0.841 W/kg = -0.75 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 6.138 \text{ S/m}$; $\epsilon_r = 47.352$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.83, 3.83, 3.83); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Antenna 1, Body SAR,
Back Side, Ch 149, 6 Mbps**

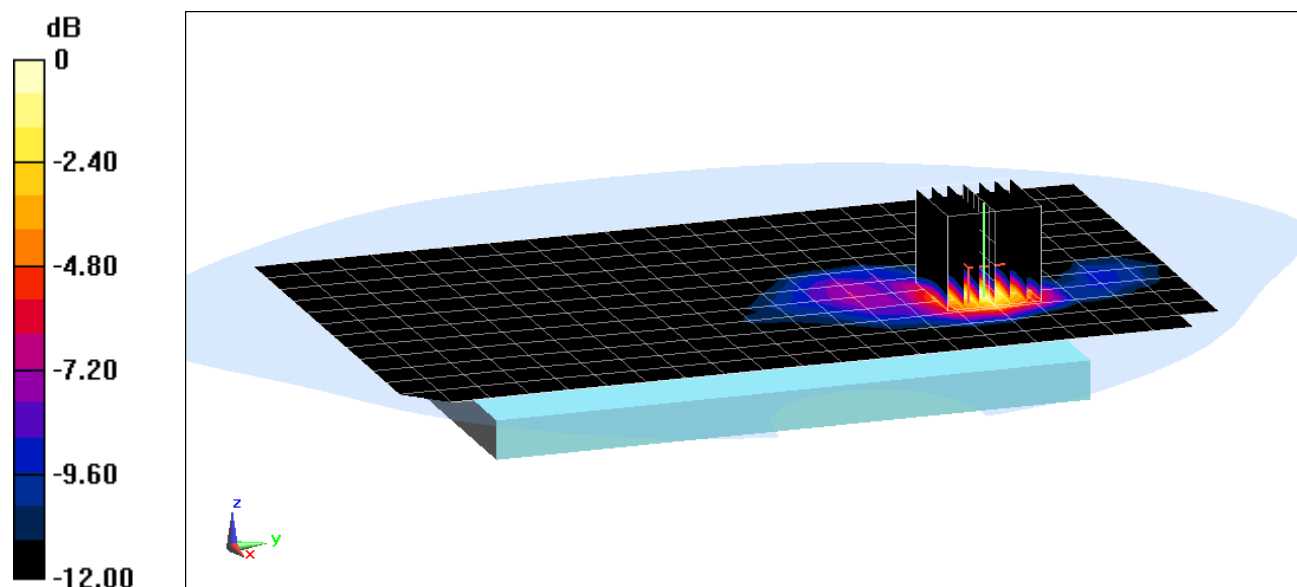
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 7.963 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 0.404 W/kg



0 dB = 0.992 W/kg = -0.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

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

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$; $\sigma = 1.927 \text{ S/m}$; $\epsilon_r = 51.097$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-01-2017; Ambient Temp: 20.4°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

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

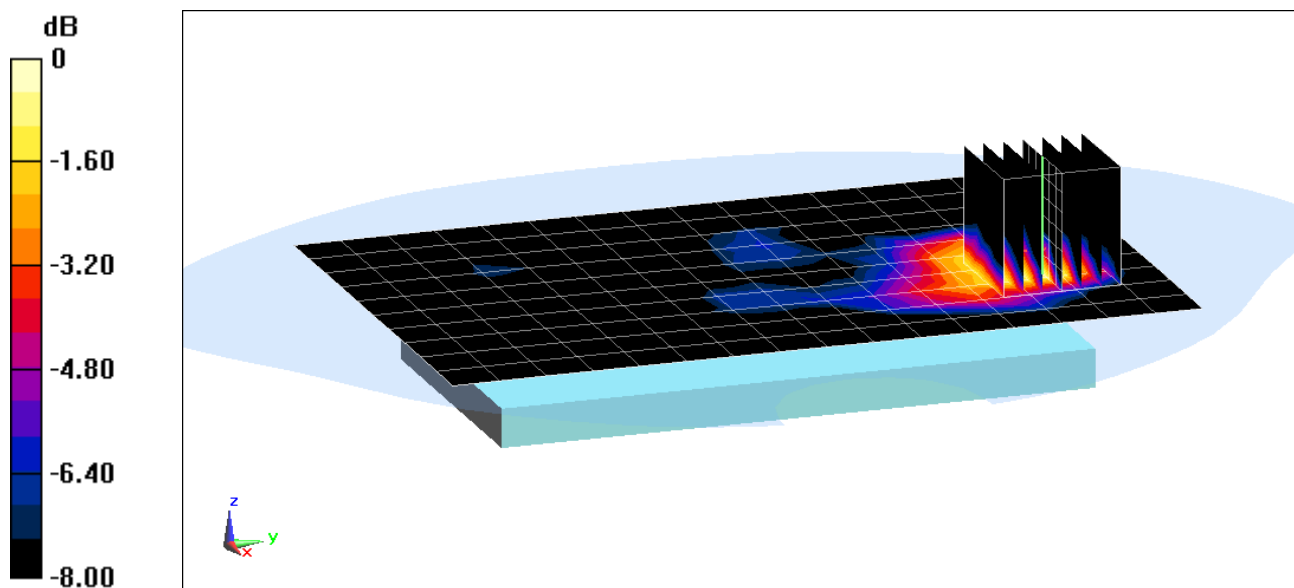
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 3.028 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.0540 W/kg

SAR(1 g) = 0.016 W/kg



0 dB = 0.0197 W/kg = -17.06 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.294

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$; $\sigma = 1.981 \text{ S/m}$; $\epsilon_r = 50.944$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-01-2017; Ambient Temp: 20.4°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

Mode: Bluetooth, Body SAR, Back Side, Ch 78, 2 Mbps

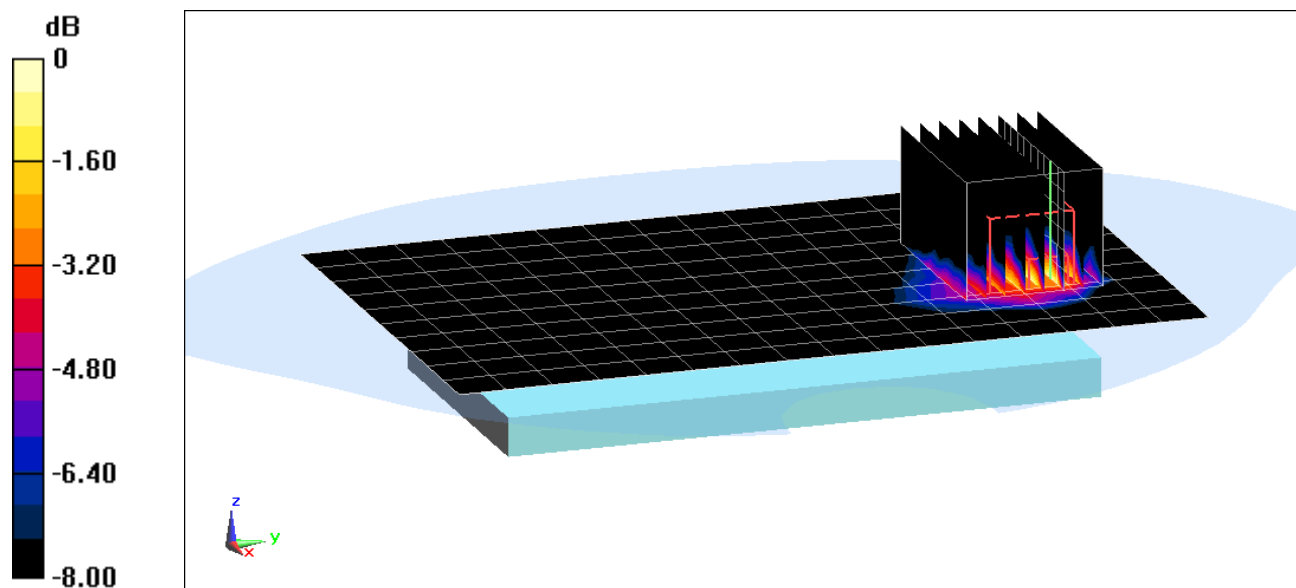
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Zoom Scan (11x8x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.015 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.0270 W/kg

SAR(1 g) = 0.013 W/kg



0 dB = 0.0183 W/kg = -17.38 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15

Medium: 835 Body; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.99 \text{ S/m}$; $\epsilon_r = 54.298$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.4 cm

Test Date: 05-01-2017; Ambient Temp: 21.2°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3319; ConvF(6.29, 6.29, 6.29); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

Mode: GPRS 850, Phablet SAR, Front Side, Mid.ch, 2 Tx Slots

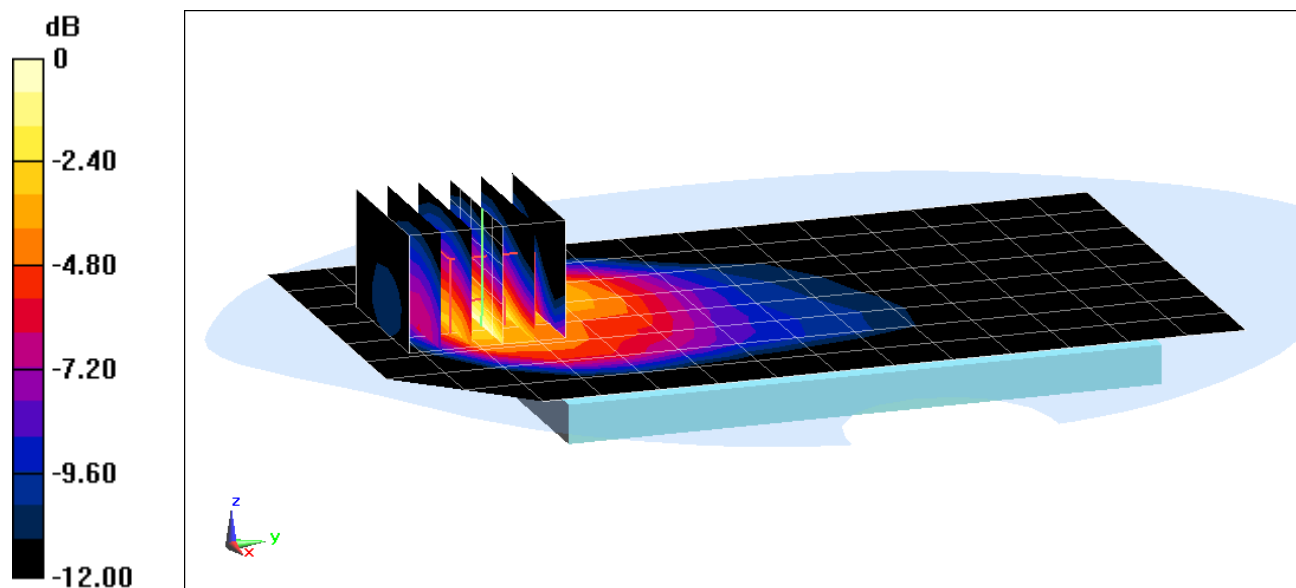
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 39.08 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.55 W/kg

SAR(10 g) = 0.739 W/kg



0 dB = 1.71 W/kg = 2.33 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC64

Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium: 1900 Body; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.549 \text{ S/m}$; $\epsilon_r = 52.076$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.4 cm

Test Date: 04-26-2017; Ambient Temp: 22.1°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3318; ConvF(4.96, 4.96, 4.96); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

Mode: GPRS 1900, Phablet SAR, Front Side, Mid.ch, 2 Tx Slots

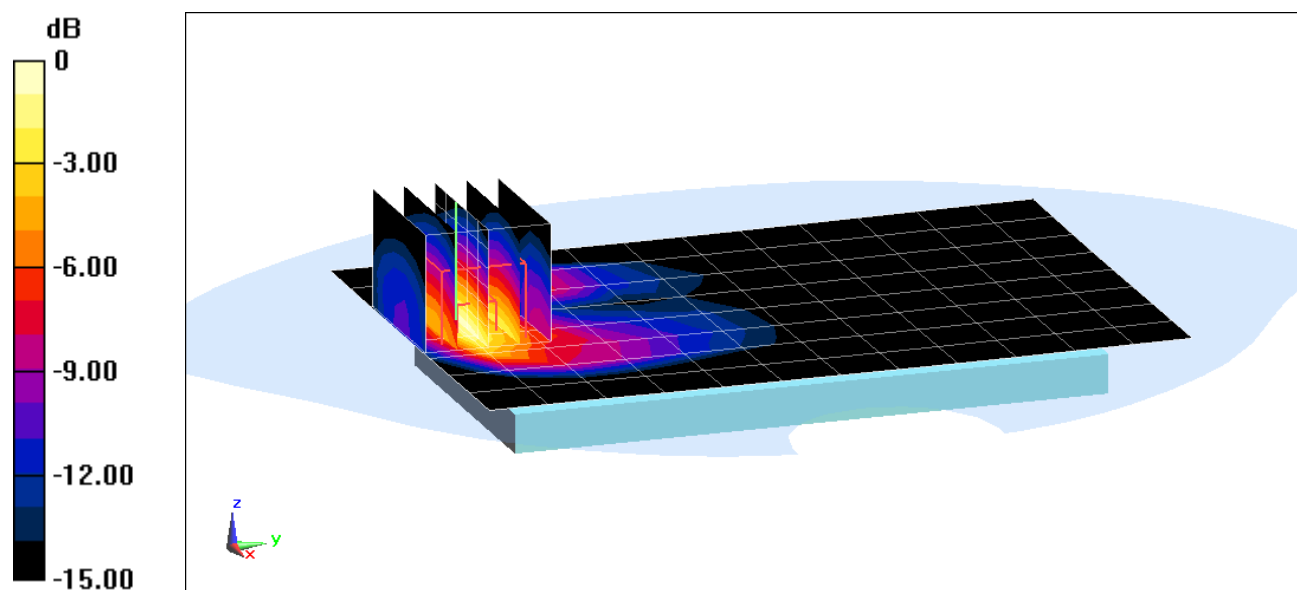
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 34.76 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 5.86 W/kg

SAR(10 g) = 0.836 W/kg



0 dB = 2.14 W/kg = 3.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC91

Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1752.6 \text{ MHz}$; $\sigma = 1.504 \text{ S/m}$; $\epsilon_r = 51.343$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3319; ConvF(5.07, 5.07, 5.07); Calibrated: 3/14/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/8/2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

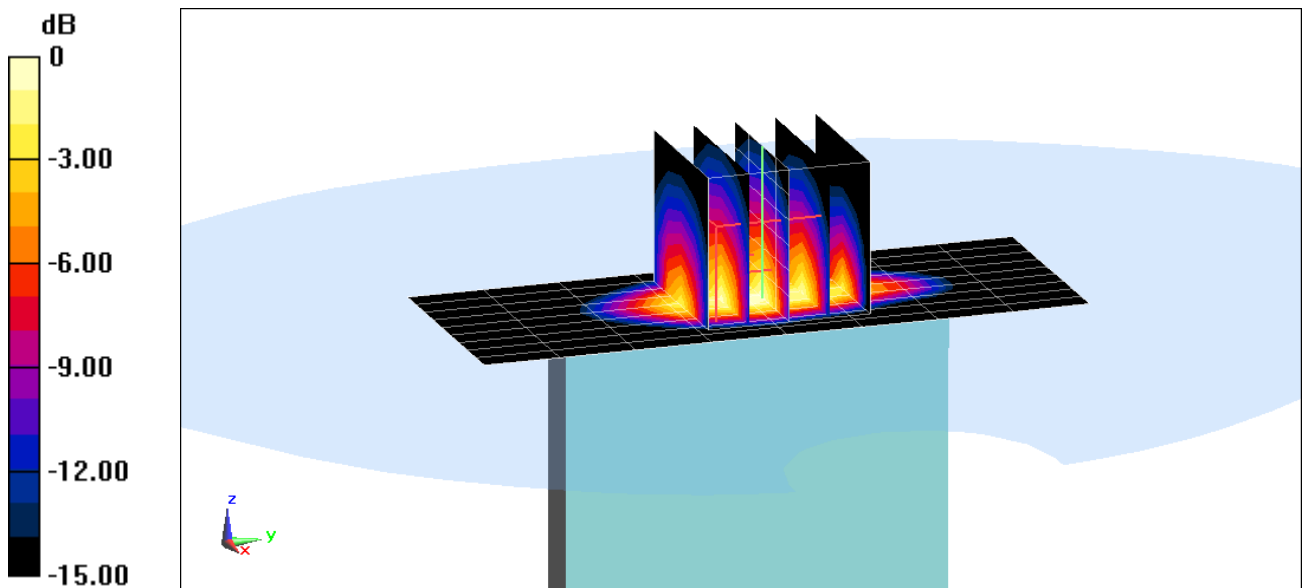
Area Scan (10x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.44 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 7.05 W/kg

SAR(10 g) = 1.79 W/kg



0 dB = 5.02 W/kg = 7.01 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC91

Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1907.6 \text{ MHz}$; $\sigma = 1.577 \text{ S/m}$; $\epsilon_r = 51.76$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

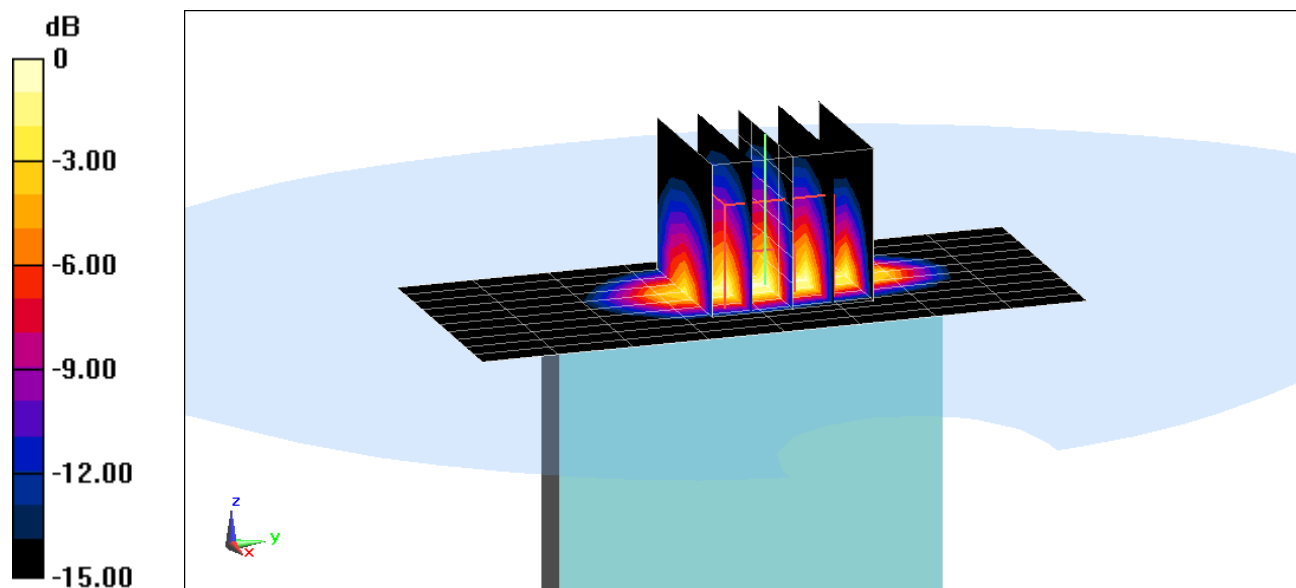
Area Scan (11x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.07 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 8.84 W/kg

SAR(10 g) = 1.98 W/kg



0 dB = 7.41 W/kg = 8.70 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA4A

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used (interpolated):

$f = 1770 \text{ MHz}$; $\sigma = 1.552 \text{ S/m}$; $\epsilon_r = 51.36$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-06-2017; Ambient Temp: 21.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3287; ConvF(5.11, 5.11, 5.11); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 66 (AWS), Phablet SAR, Bottom Edge, High.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

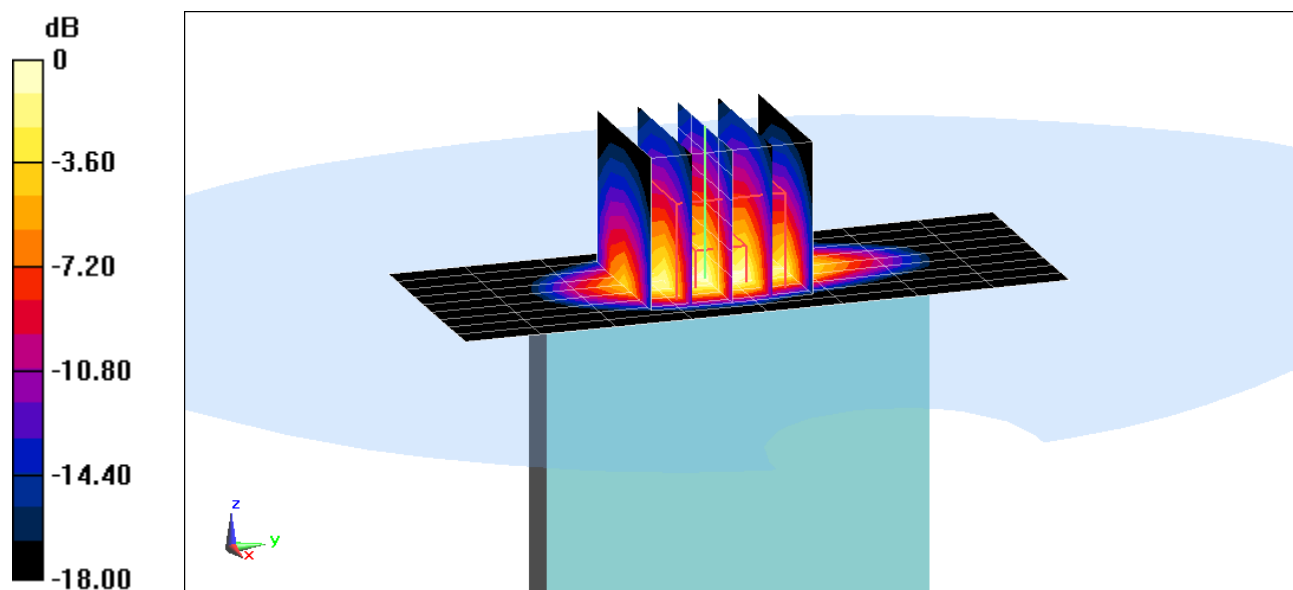
Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 68.41 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 11.4 W/kg

SAR(10 g) = 2.77 W/kg



0 dB = 7.96 W/kg = 9.01 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA4A

Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.531 \text{ S/m}$; $\epsilon_r = 52.776$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-01-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3288; ConvF(4.89, 4.89, 4.89); Calibrated: 1/13/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 2 (PCS), Phablet SAR, Bottom Edge, Low.ch,
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

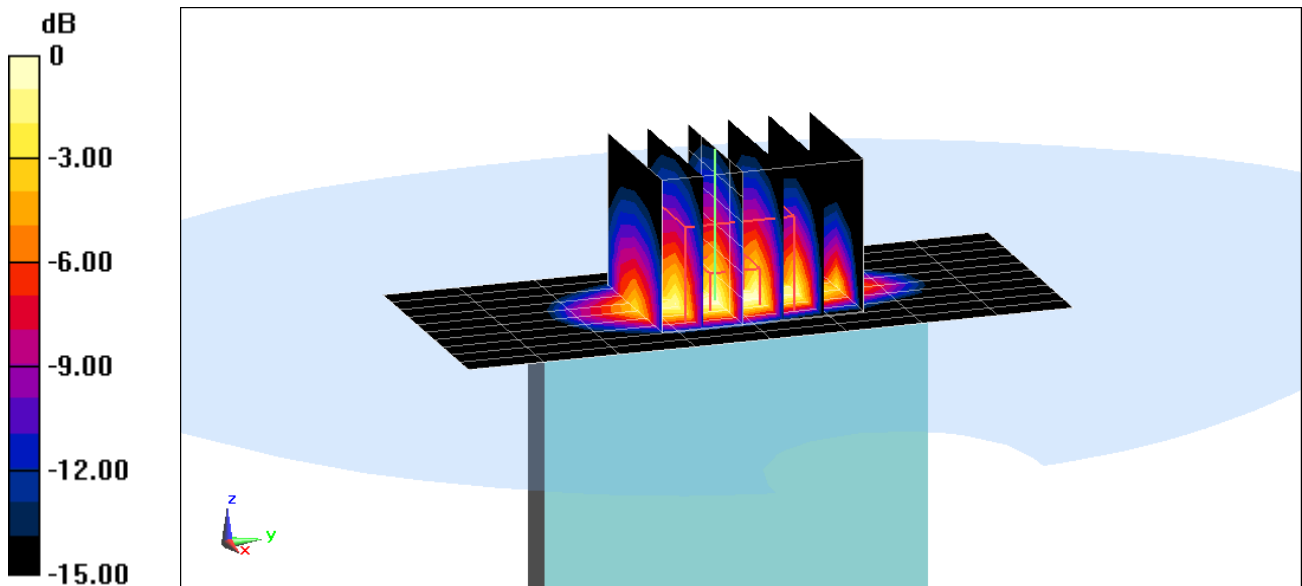
Area Scan (11x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 66.45 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 10.7 W/kg

SAR(10 g) = 2.68 W/kg



0 dB = 7.65 W/kg = 8.84 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

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

Medium: 2300 Body; Medium parameters used:

$f = 2310 \text{ MHz}$; $\sigma = 1.86 \text{ S/m}$; $\epsilon_r = 52.378$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.4 cm

Test Date: 05-10-2017; Ambient Temp: 20.3°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3318; ConvF(4.7, 4.7, 4.7); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

**Mode: LTE Band 30, Phablet SAR, Front Side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

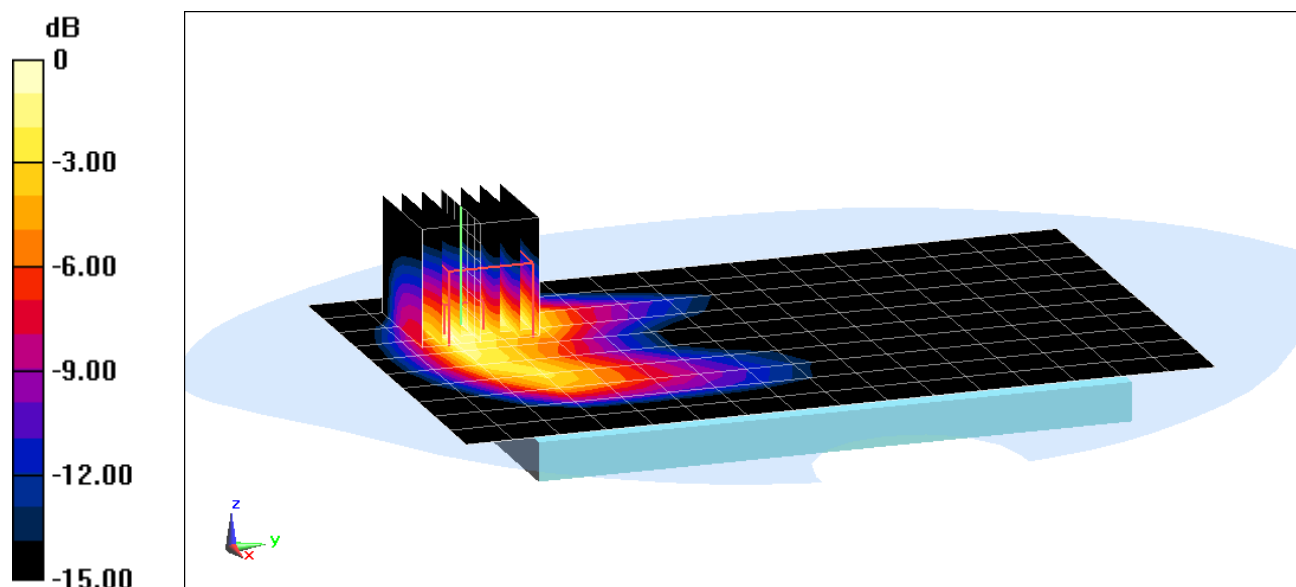
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 40.41 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 6.27 W/kg

SAR(10 g) = 1.26 W/kg



0 dB = 3.52 W/kg = 5.47 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2DFB0

Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: 2600 Body; Medium parameters used (interpolated):

$f = 2535 \text{ MHz}$; $\sigma = 2.093 \text{ S/m}$; $\epsilon_r = 51.71$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-19-2017; Ambient Temp: 21.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 7, Phablet SAR, Front Side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

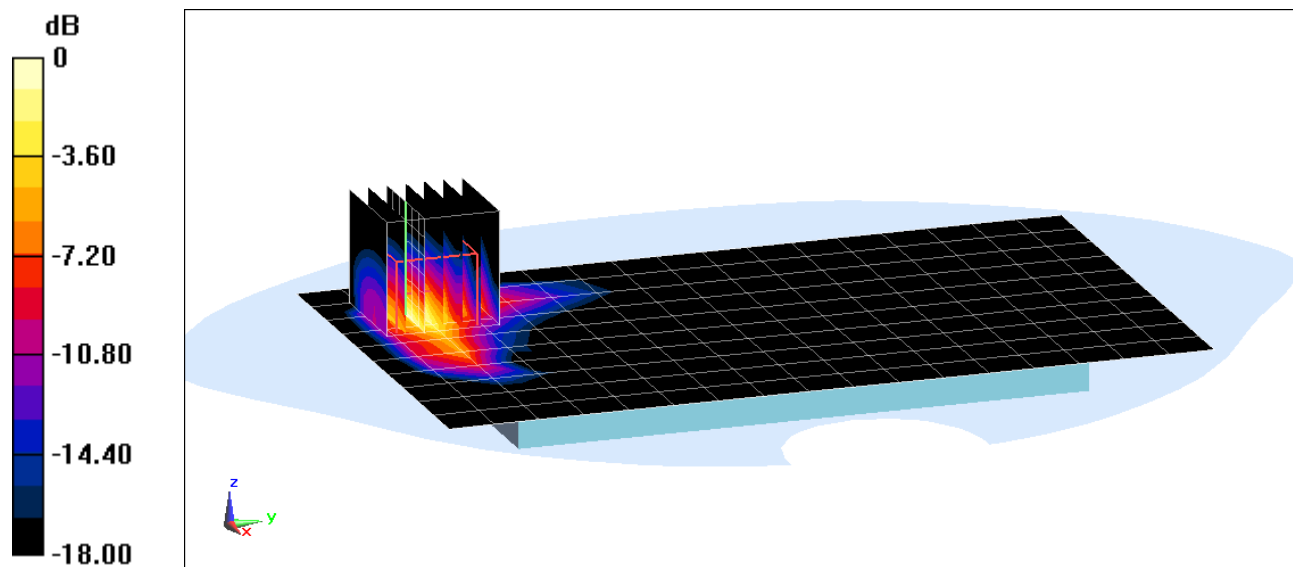
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 51.65 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(10 g) = 1.83 W/kg



0 dB = 7.62 W/kg = 8.82 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2AA6B

Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2506 \text{ MHz}$; $\sigma = 2.084 \text{ S/m}$; $\epsilon_r = 50.849$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.4 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

**Mode: LTE Band 41, Phablet SAR, Back Side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

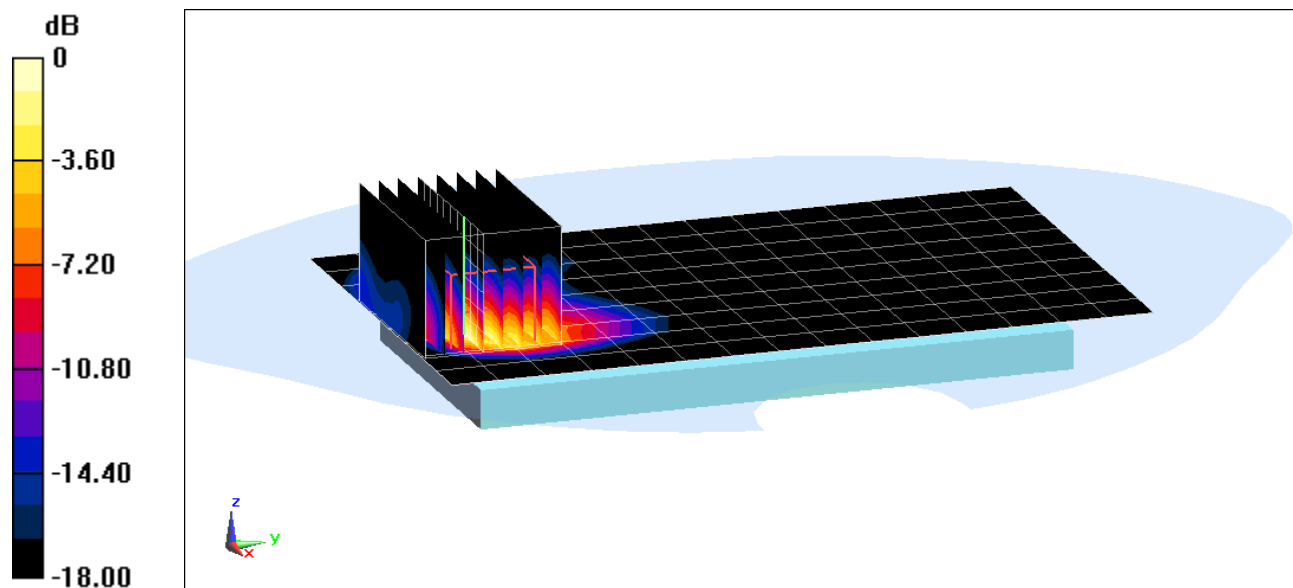
Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (11x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 41.96 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 8.24 W/kg

SAR(10 g) = 1.21 W/kg



0 dB = 4.40 W/kg = 6.43 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 5.811 \text{ S/m}$; $\epsilon_r = 47.752$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.82, 3.82, 3.82); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Antenna 1, Phablet SAR,
Top Edge, Ch 100, 6 Mbps**

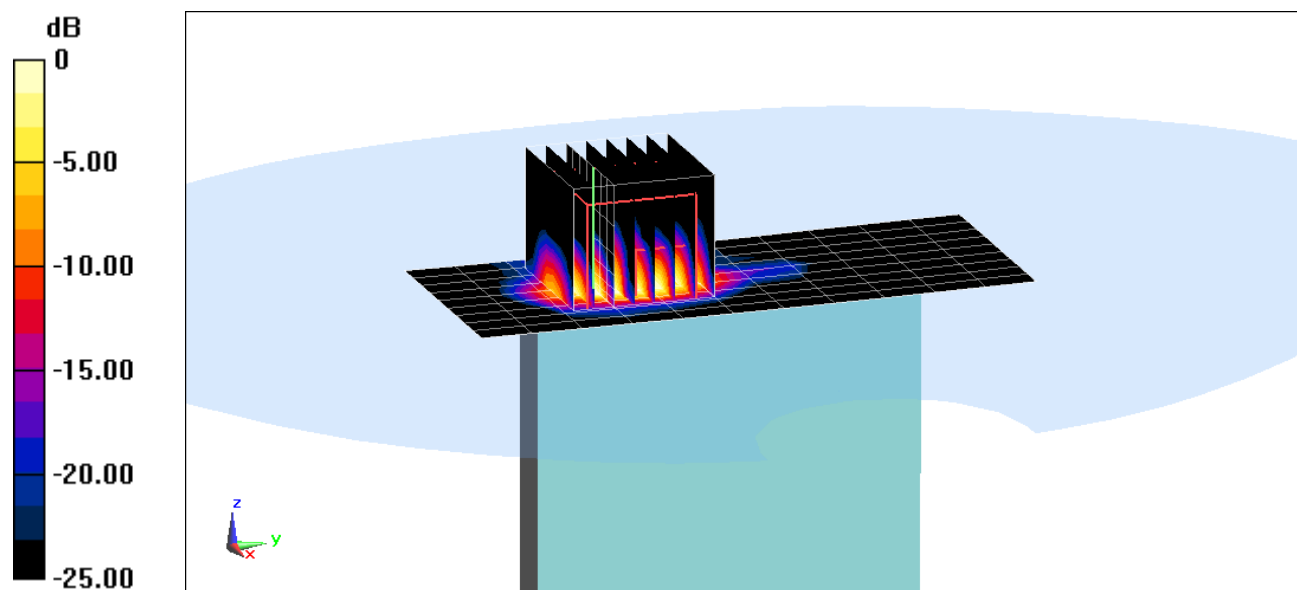
Area Scan (10x12x1): Measurement grid: $dx=5\text{mm}$, $dy=10\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 25.44 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 22.1 W/kg

SAR(10 g) = 0.834 W/kg



0 dB = 8.41 W/kg = 9.25 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG892A; Type: Portable Handset; Serial: 2CC5C

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

Medium: 2450 Body; Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$; $\sigma = 1.927 \text{ S/m}$; $\epsilon_r = 51.097$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 05-01-2017; Ambient Temp: 20.4°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

Mode: Bluetooth, Phablet SAR, Front Side, Ch 39, 1 Mbps

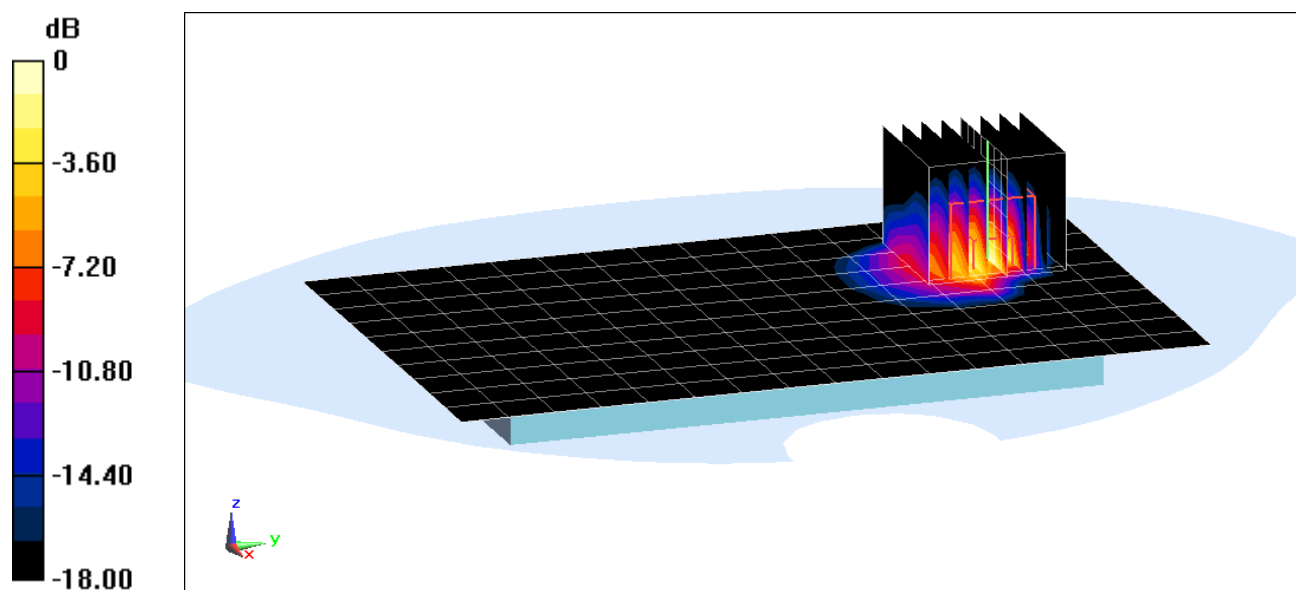
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.05 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(10 g) = 0.206 W/kg



0 dB = 0.798 W/kg = -0.98 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 750 Head; Medium parameters used (interpolated):

$f = 750 \text{ MHz}$; $\sigma = 0.902 \text{ S/m}$; $\epsilon_r = 42.781$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-17-2017; Ambient Temp: 22.9°C; Tissue Temp: 20.0°C

Probe: ES3DV3 - SN3319; ConvF(6.76, 6.76, 6.76); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

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

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

750 MHz System Verification at 23.0 dBm (200 mW)

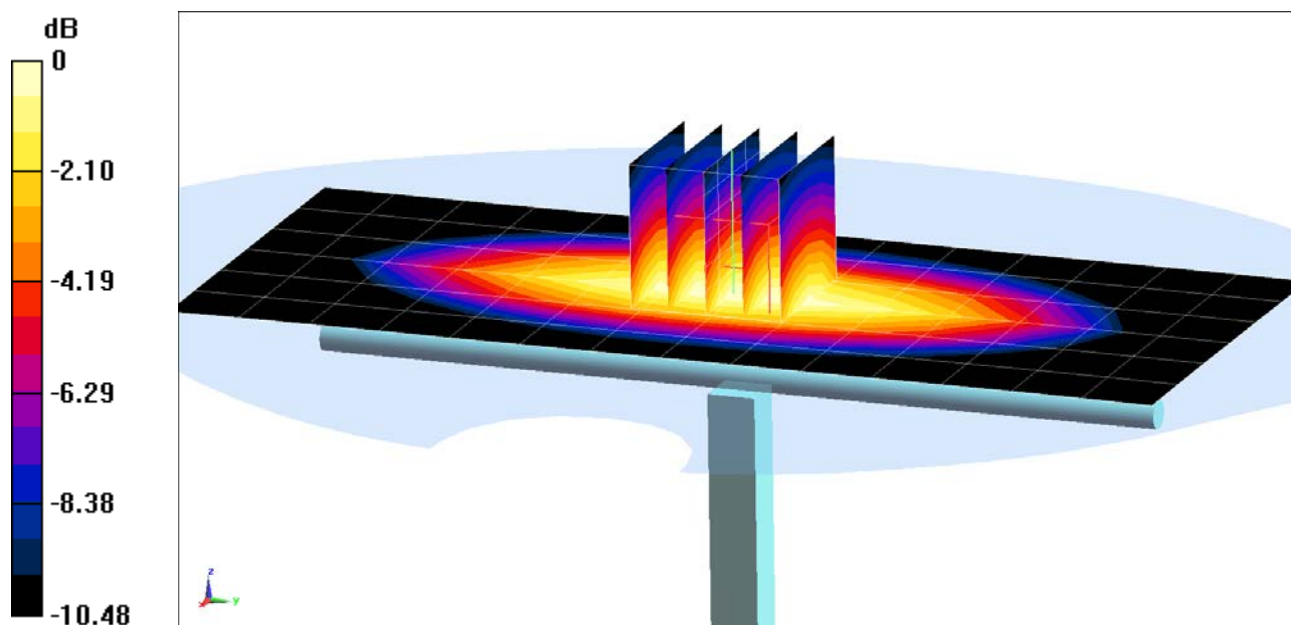
Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.26 W/kg

SAR(1 g) = 1.54 W/kg

Deviation(1 g) = -5.75%



0 dB = 1.80 W/kg = 2.55 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Head; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.908 \text{ S/m}$; $\epsilon_r = 41.988$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-18-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3334; ConvF(6.49, 6.49, 6.49); Calibrated: 11/15/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 11/11/2016

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

835 MHz System Verification at 23.0 dBm (200 mW)

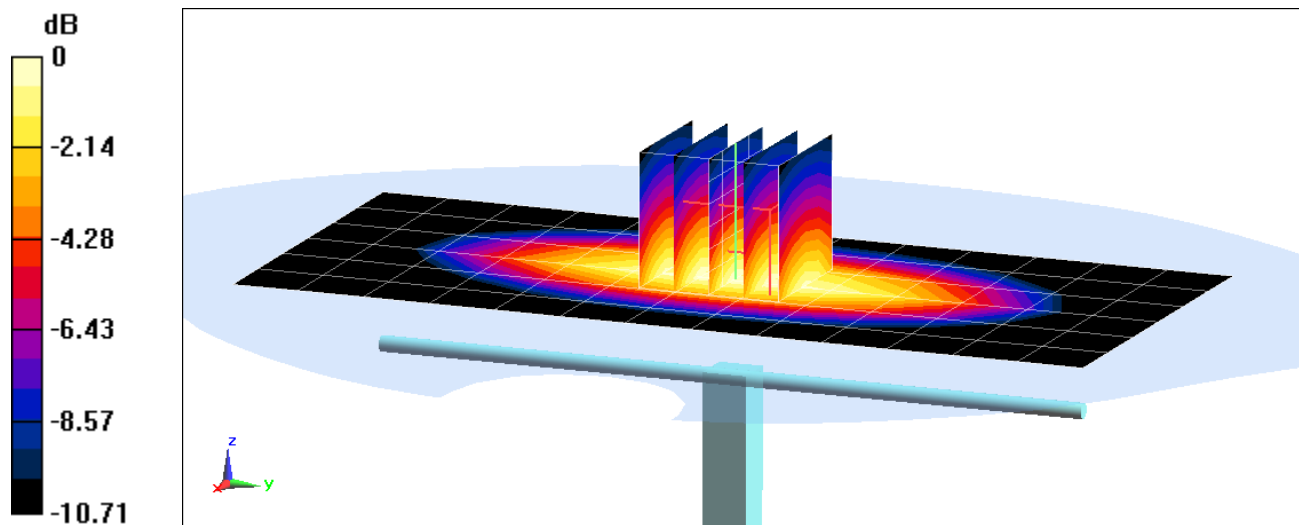
Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.95 W/kg

SAR(1 g) = 2.00 W/kg

Deviation(1 g) = 7.30%



0 dB = 2.33 W/kg = 3.67 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Head; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.892 \text{ S/m}$; $\epsilon_r = 40.328$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-21-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3318; ConvF(6.47, 6.47, 6.47); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

835 MHz System Verification at 23.0 dBm (200 mW)

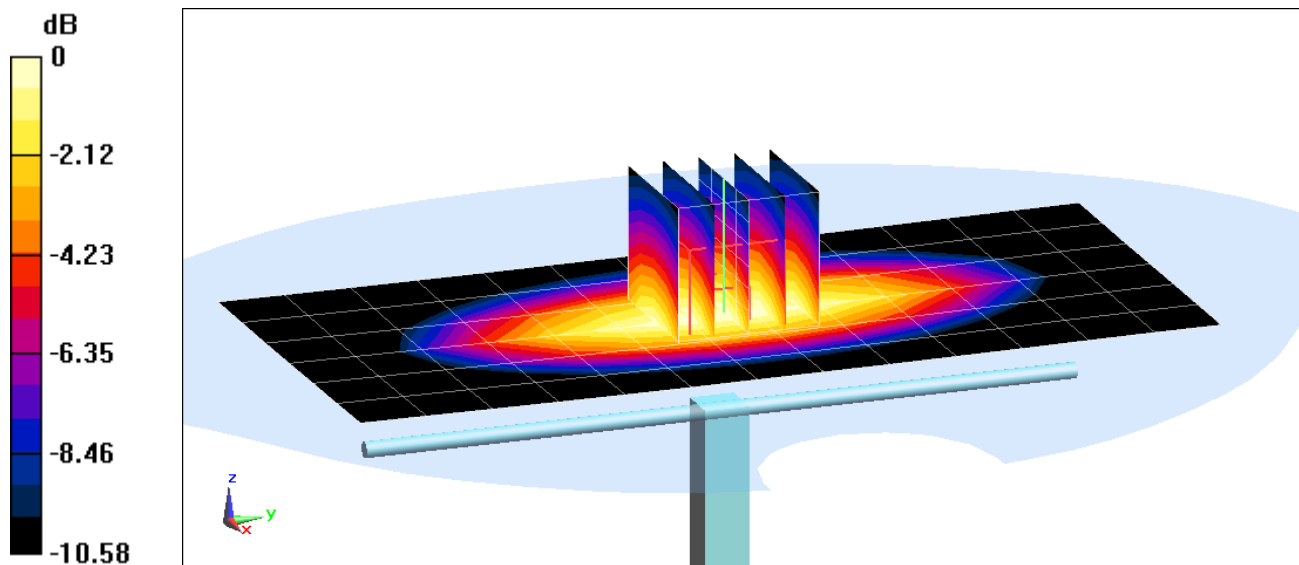
Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 2.72 W/kg

SAR(1 g) = 1.84 W/kg

Deviation(1 g) = -1.29%



0 dB = 2.15 W/kg = 3.32 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head; Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.373 \text{ S/m}$; $\epsilon_r = 39.389$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-18-2017; Ambient Temp: 23.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3319; ConvF(5.38, 5.38, 5.38); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1750 MHz System Verification at 20.0 dBm (100 mW)

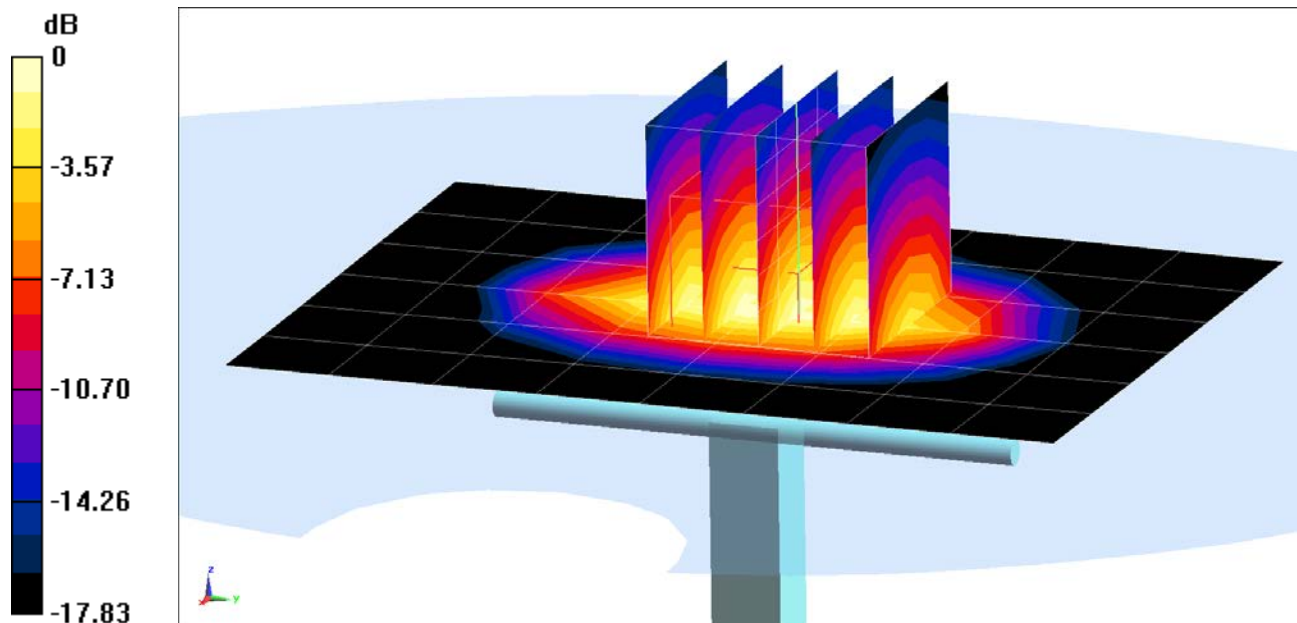
Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 6.75 W/kg

SAR(1 g) = 3.76 W/kg

Deviation(1 g) = 2.45%



0 dB = 4.68 W/kg = 6.70 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head; Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.384 \text{ S/m}$; $\epsilon_r = 39.929$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-26-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(5.49, 5.49, 5.49); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

1750 MHz System Verification at 20.0 dBm (100 mW)

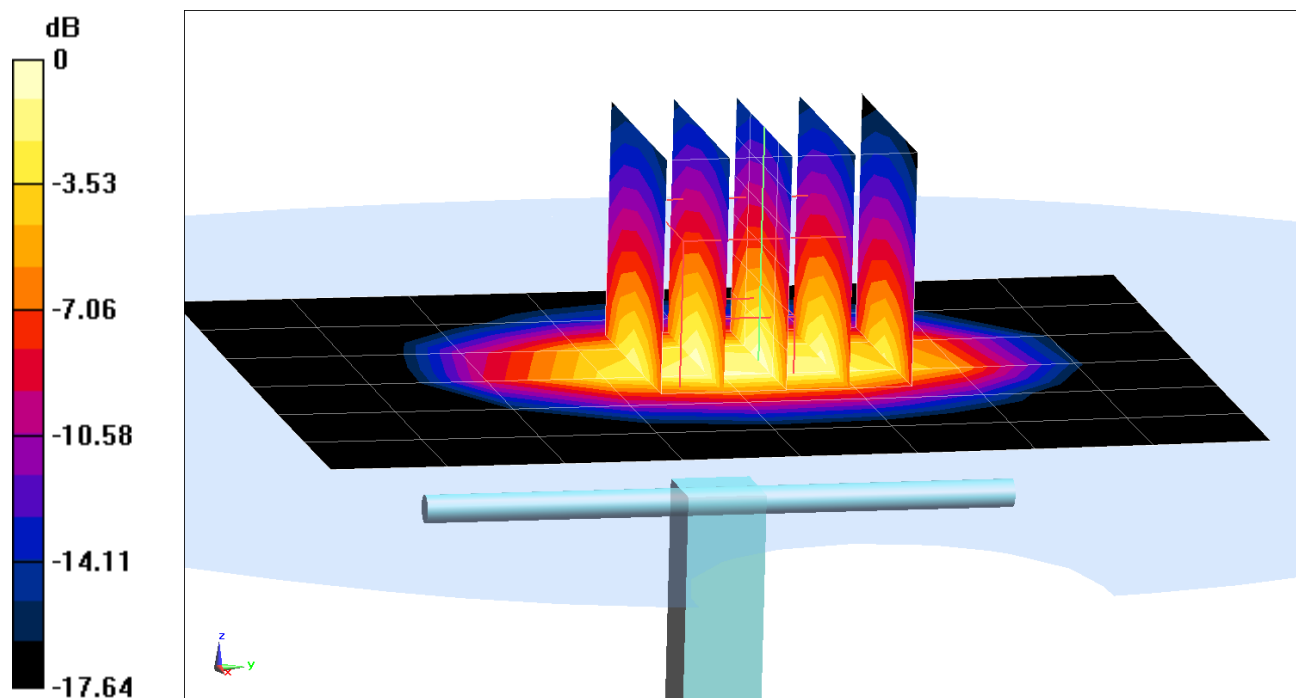
Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.36 W/kg

SAR(1 g) = 3.53 W/kg

Deviation(1 g) = -3.81%



0 dB = 4.43 W/kg = 6.46 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Head; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.457 \text{ S/m}$; $\epsilon_r = 38.261$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-19-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(5.2, 5.2, 5.2); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

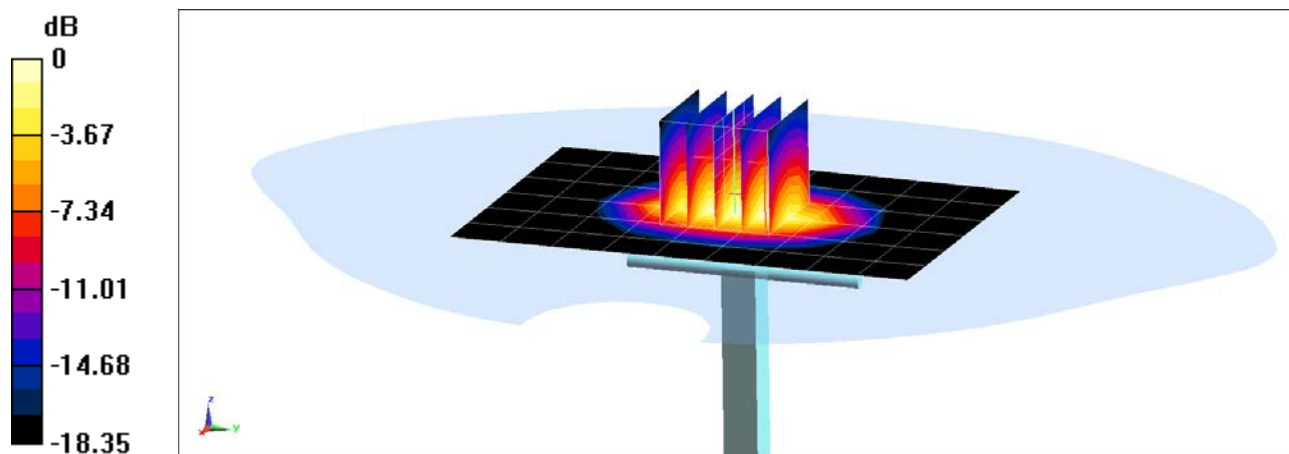
Area Scan (7x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 7.73 W/kg

SAR(1 g) = 4.18 W/kg

Deviation(1 g) = 4.24%



0 dB = 5.30 W/kg = 7.24 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1038

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2300 Head; Medium parameters used:

$f = 2300 \text{ MHz}$; $\sigma = 1.686 \text{ S/m}$; $\epsilon_r = 39.28$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-12-2017; Ambient Temp: 23.5°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(4.86, 4.86, 4.86); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

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

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

2300 MHz System Verification at 20.0 dBm (100 mW)

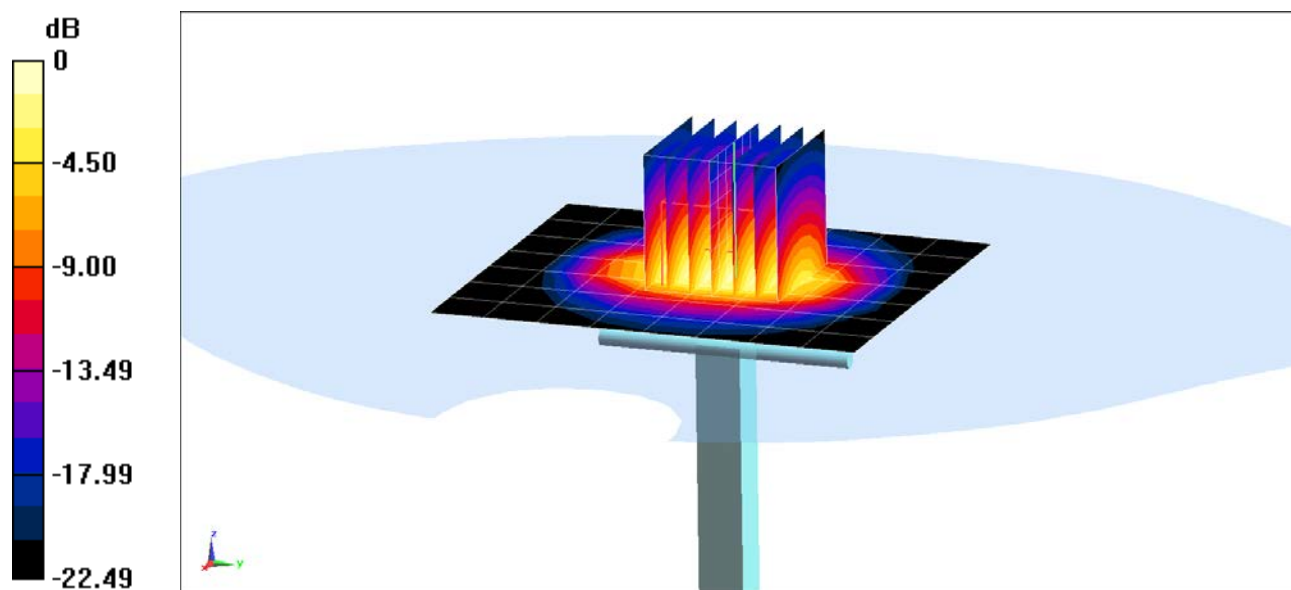
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 9.24 W/kg

SAR(1 g) = 4.47 W/kg;

Deviation(1 g) = -5.89%



0 dB = 5.87 W/kg = 7.69 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 981

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.882 \text{ S/m}$; $\epsilon_r = 38.945$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-27-2017; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3318; ConvF(4.74, 4.74, 4.74); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

2450 MHz System Verification at 20.0 dBm (100 mW)

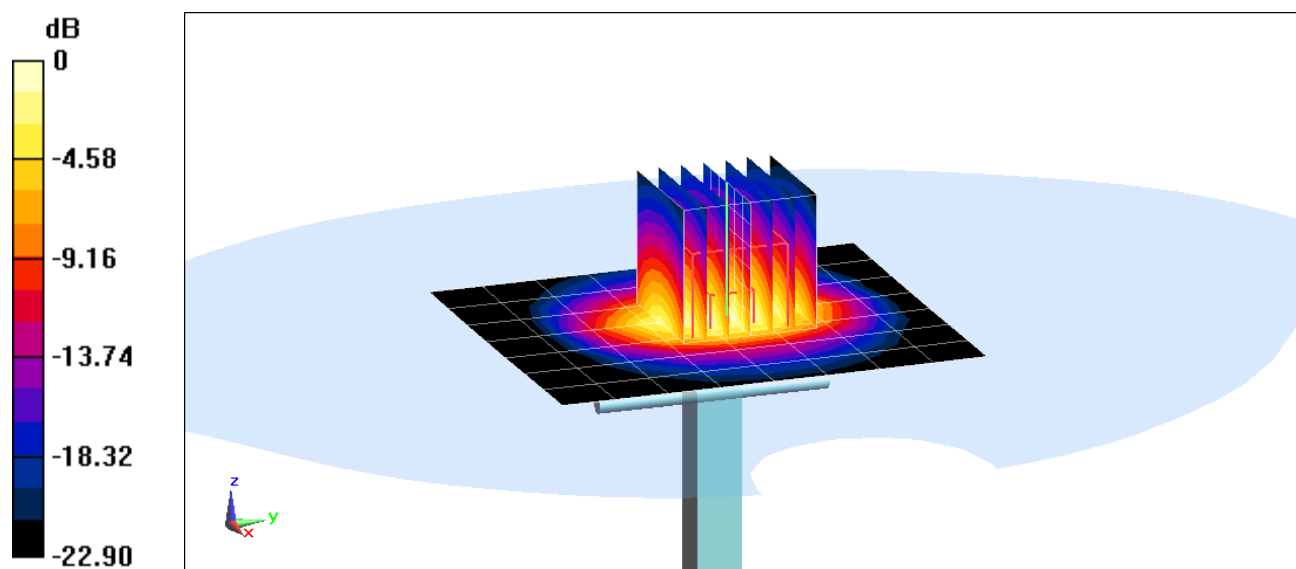
Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 5.28 W/kg

Deviation(1 g) = 0.00%



0 dB = 7.00 W/kg = 8.45 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.839 \text{ S/m}$; $\epsilon_r = 38.139$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-30-2017; Ambient Temp: 21.3°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3318; ConvF(4.74, 4.74, 4.74); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

2450 MHz System Verification at 20.0 dBm (100 mW)

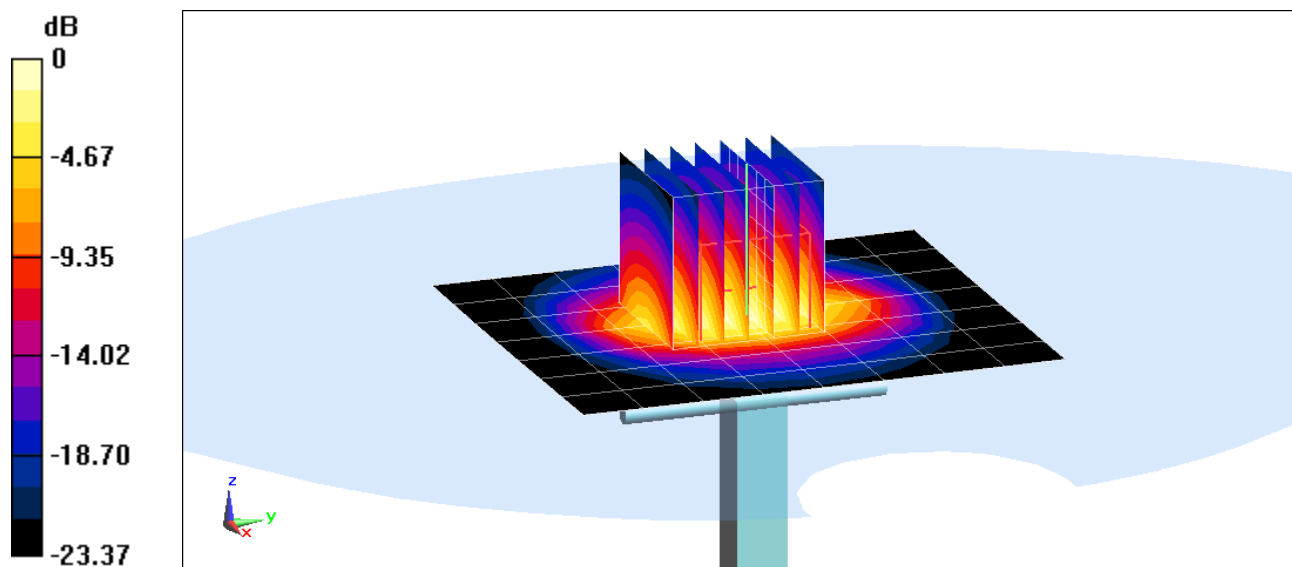
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 5.24 W/kg

Deviation(1 g) = 0.58%



0 dB = 6.88 W/kg = 8.38 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.866 \text{ S/m}$; $\epsilon_r = 38.628$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(4.7, 4.7, 4.7); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

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

2450 MHz System Verification at 20.0 dBm (100 mW)

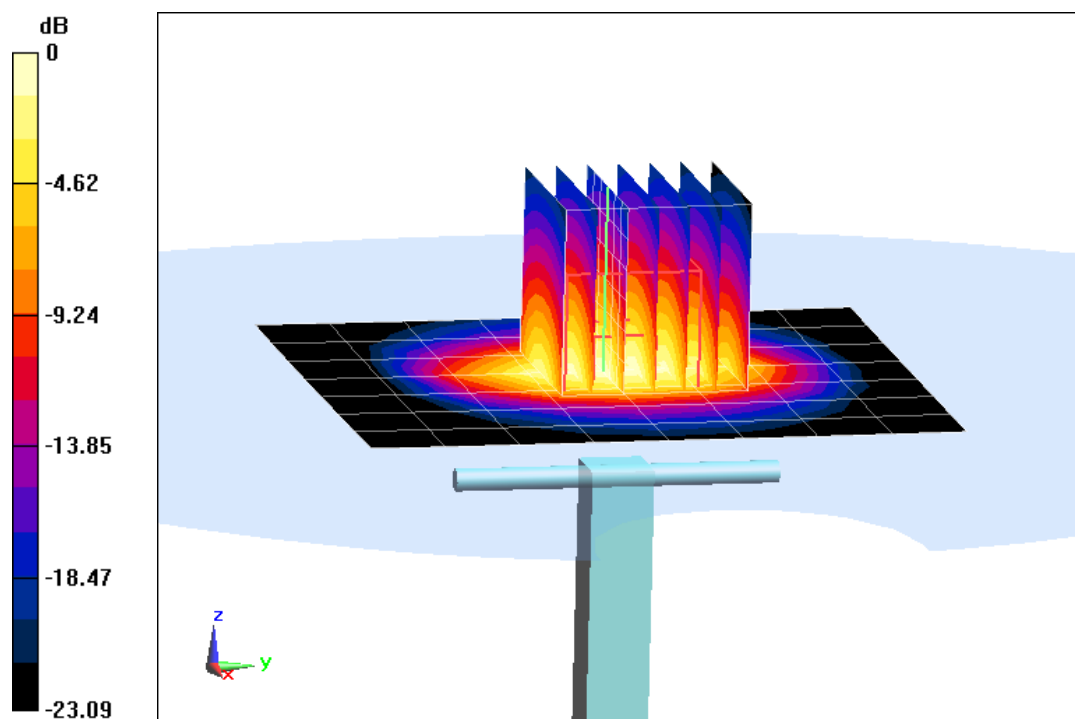
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 11.7 W/kg

SAR(1 g) = 5.61 W/kg

Deviation(1 g) = 7.68%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Head; Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.042 \text{ S/m}$; $\epsilon_r = 38.047$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2017; Ambient Temp: 23.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3213; ConvF(4.52, 4.52, 4.52); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

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

2600 MHz System Verification at 20.0 dBm (100 mW)

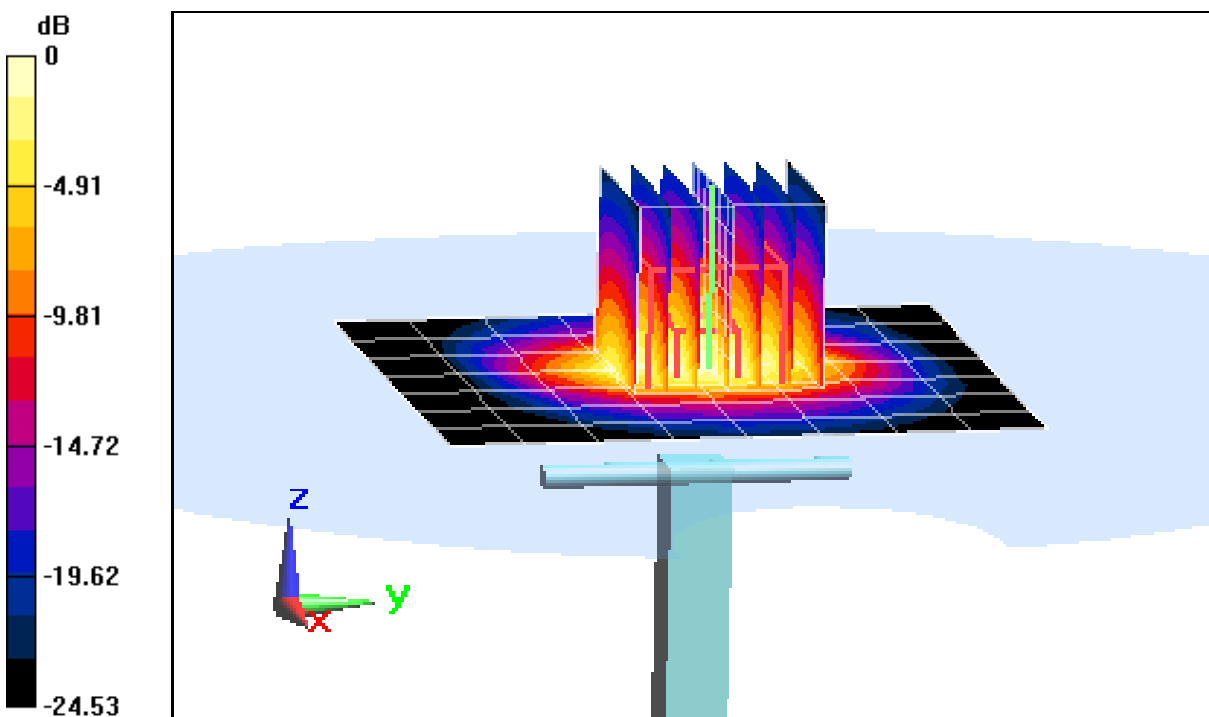
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 13.4 W/kg

SAR(1 g) = 6.04 W/kg

Deviation(1 g) = 7.28%



0 dB = 7.99 W/kg = 9.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5GHz Head; Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$; $\sigma = 4.748 \text{ S/m}$; $\epsilon_r = 34.843$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7308; ConvF(5.21, 5.21, 5.21); Calibrated: 7/21/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

5250 MHz System Verification at 17.0 dBm (50 mW)

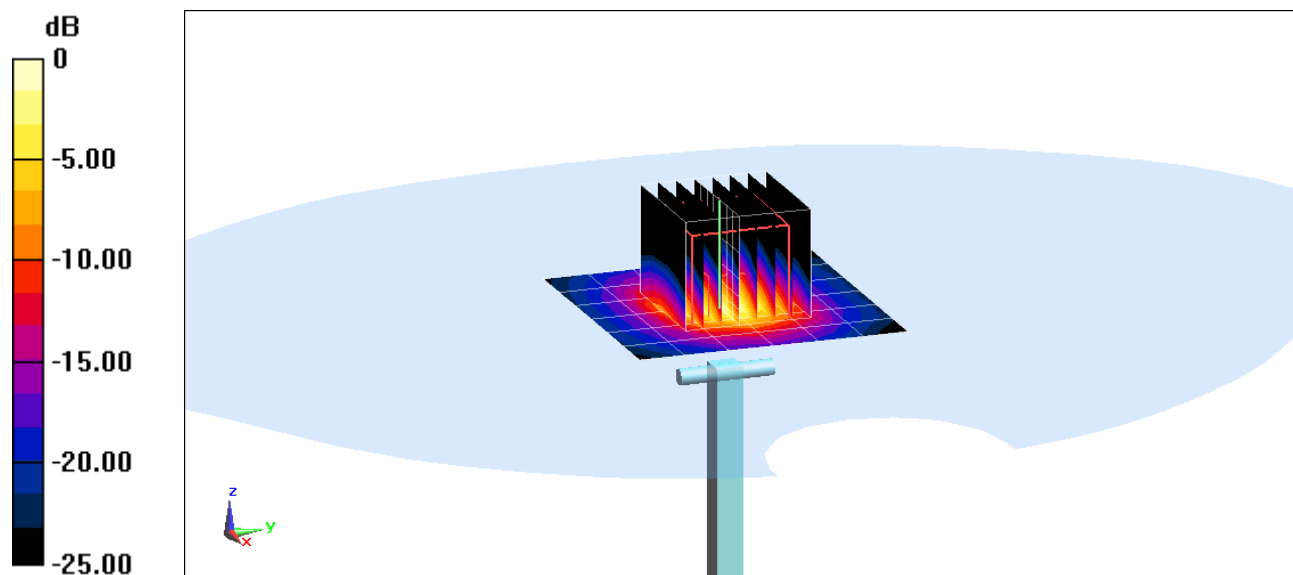
Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 4.14 W/kg

Deviation(1 g) = -0.48%



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5GHz Head; Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 5.099 \text{ S/m}$; $\epsilon_r = 34.278$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7308; ConvF(4.63, 4.63, 4.63); Calibrated: 7/21/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

5600 MHz System Verification at 17.0 dBm (50 mW)

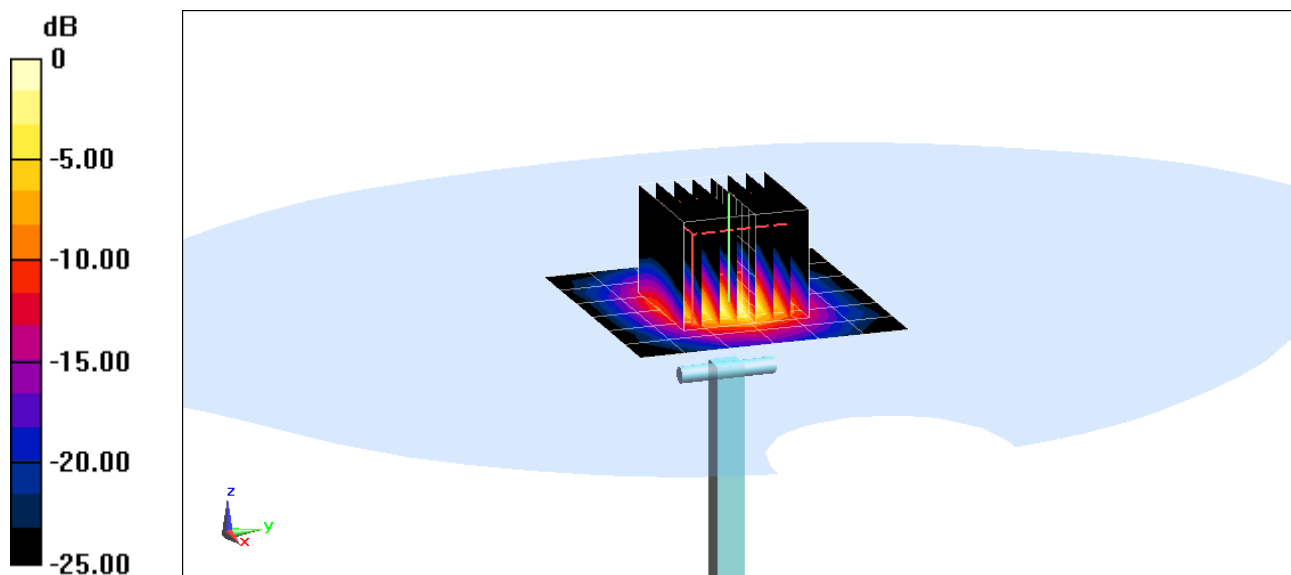
Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 4.06 W/kg

Deviation(1 g) = -5.36%



0 dB = 9.93 W/kg = 9.97 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: 5GHz Head; Medium parameters used (interpolated):

$f = 5750 \text{ MHz}$; $\sigma = 5.277 \text{ S/m}$; $\epsilon_r = 34.048$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 20.5°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7308; ConvF(4.86, 4.86, 4.86); Calibrated: 7/21/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

5750 MHz System Verification at 17.0 dBm (50 mW)

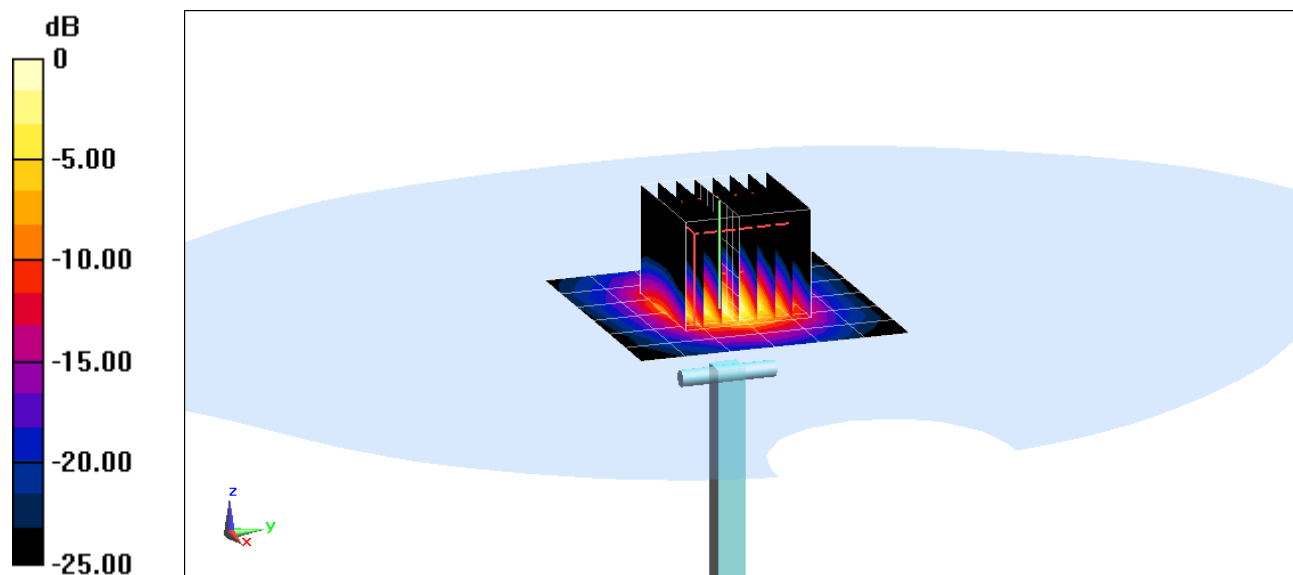
Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 17.7 W/kg

SAR(1 g) = 3.87 W/kg

Deviation(1 g) = -5.38%



0 dB = 9.53 W/kg = 9.79 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1054

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 750 Body; Medium parameters used (interpolated):

$f = 750 \text{ MHz}$; $\sigma = 0.958 \text{ S/m}$; $\epsilon_r = 54.351$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 19.9°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3334; ConvF(6.33, 6.33, 6.33); Calibrated: 11/15/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 11/11/2016

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

750 MHz System Verification at 23.0 dBm (200 mW)

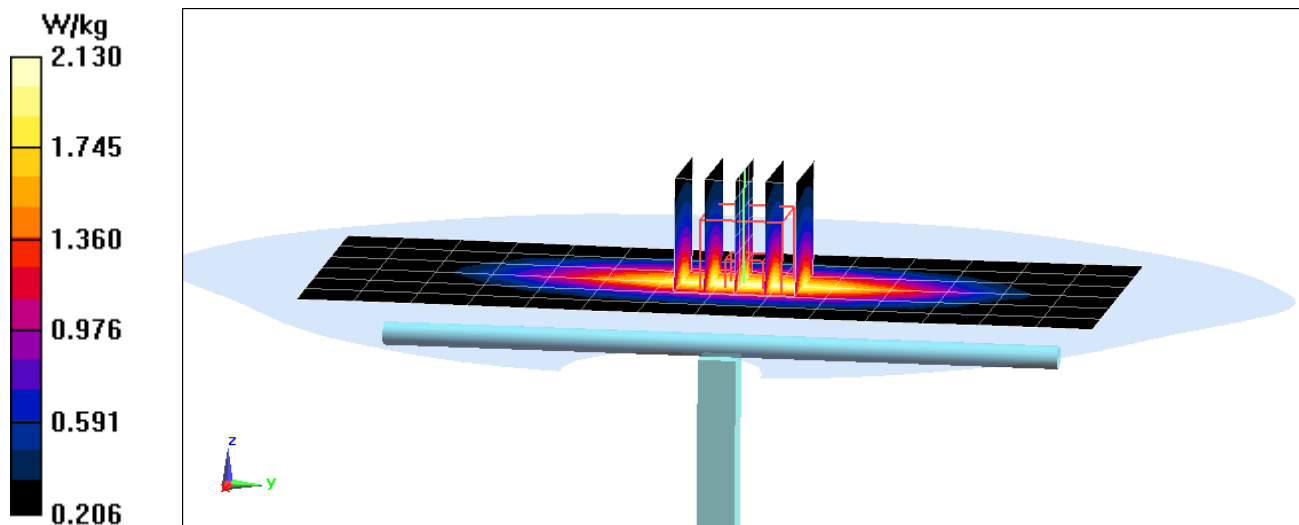
Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.69 W/kg

SAR(1 g) = 1.83 W/kg

Deviation(1 g) = 6.27%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.996 \text{ S/m}$; $\epsilon_r = 54.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-20-2017; Ambient Temp: 22.1°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3318; ConvF(6.37, 6.37, 6.37); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

835 MHz System Verification at 23.0 dBm (200 mW)

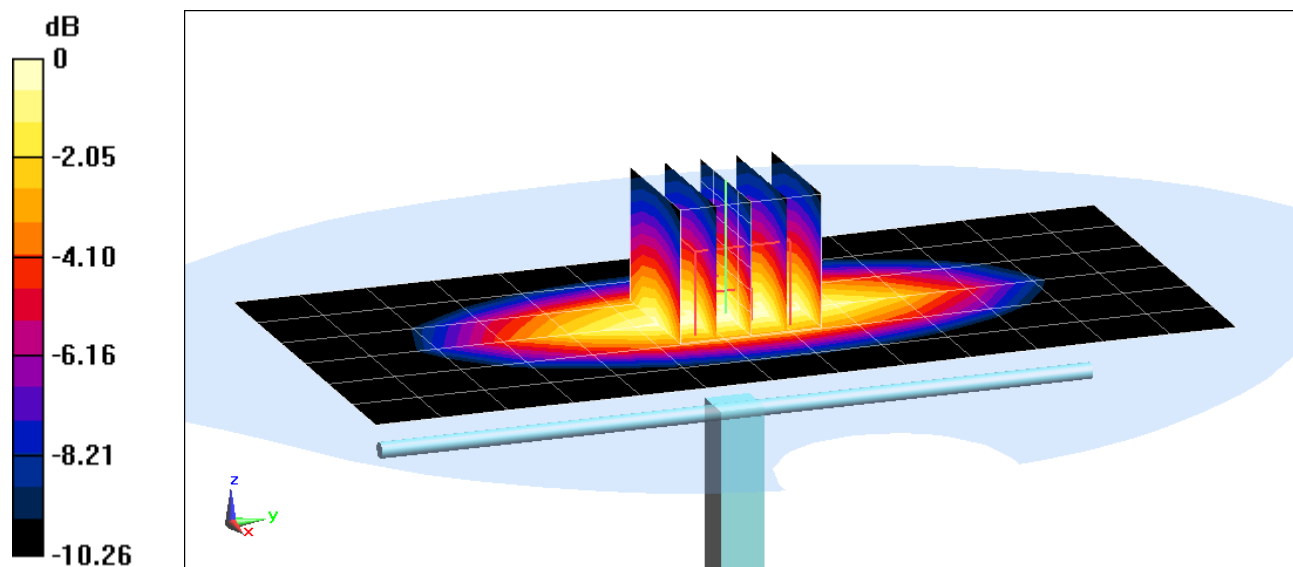
Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 2.86 W/kg

SAR(1 g) = 1.98 W/kg

Deviation(1 g) = 4.21%



0 dB = 2.30 W/kg = 3.62 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.989 \text{ S/m}$; $\epsilon_r = 54.311$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-01-2017; Ambient Temp: 21.2°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3319; ConvF(6.29, 6.29, 6.29); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

835 MHz System Verification at 23.0 dBm (200 mW)

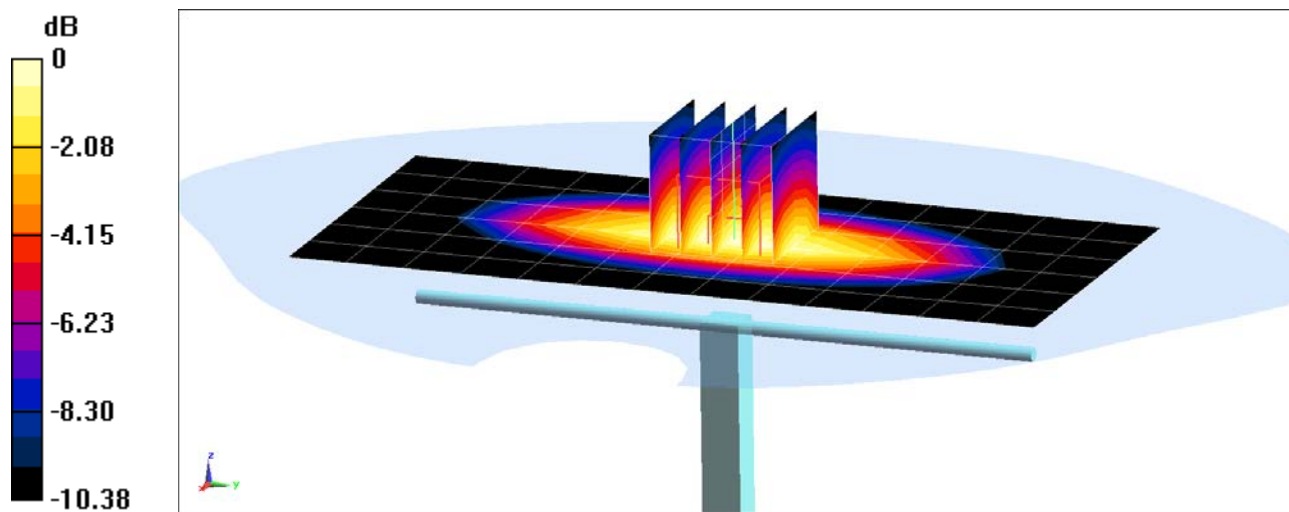
Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 3.02 W/kg

SAR(10 g) = 1.35 W/kg

Deviation(10 g) = 8.17%



0 dB = 2.41 W/kg = 3.82 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.992 \text{ S/m}$; $\epsilon_r = 53.066$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-12-2017; Ambient Temp: 21.0°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3213; ConvF(6.28, 6.28, 6.28); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2017

Phantom: SAM Right; Type: SAM; Serial: 1757

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

835 MHz System Verification at 23.0 dBm (200 mW)

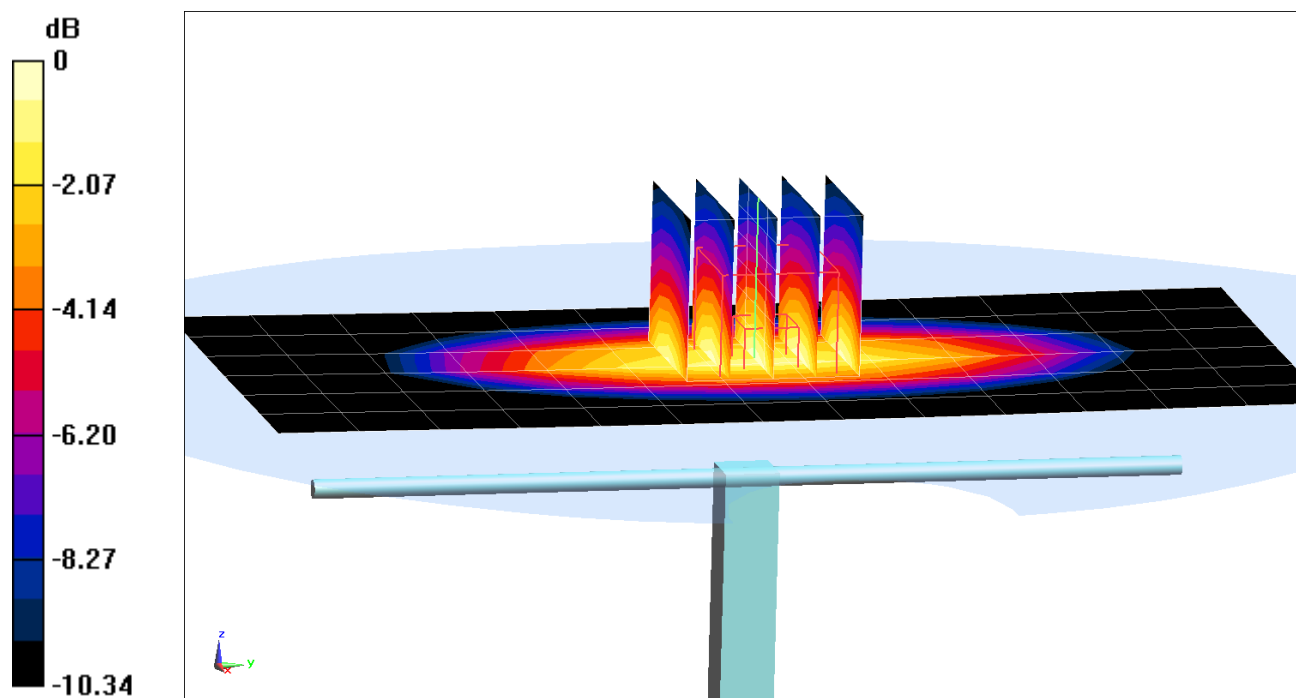
Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 2.89 W/kg

SAR(1 g) = 2.00 W/kg

Deviation(1 g) = 5.26%



0 dB = 2.30 W/kg = 3.62 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1148

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.501 \text{ S/m}$; $\epsilon_r = 51.353$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3319; ConvF(5.07, 5.07, 5.07); Calibrated: 14.03.2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 08.03.2017

Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1750 MHz System Verification at 20.0 dBm (100 mW)

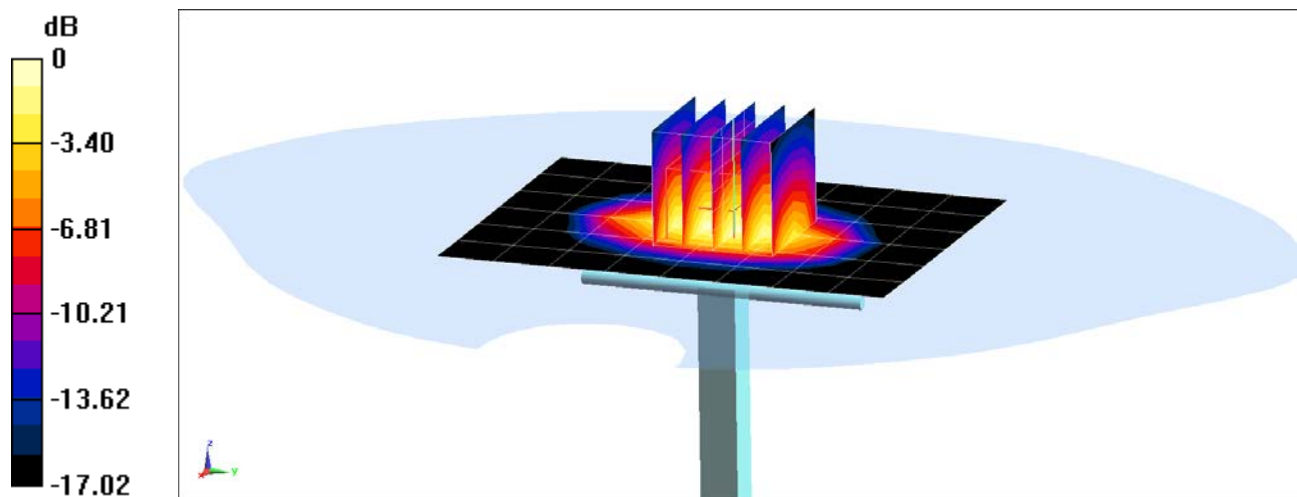
Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 5.93 W/kg

SAR(1 g) = 3.46 W/kg; SAR(10 g) = 1.87 W/kg

Deviation(1 g) = -6.74%; Deviation(10 g) = -5.08%



0 dB = 4.27 W/kg = 6.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body; Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.53 \text{ S/m}$; $\epsilon_r = 51.452$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2017; Ambient Temp: 21.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3287; ConvF(5.11, 5.11, 5.11); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

1750 MHz System Verification at 20.0 dBm (100 mW)

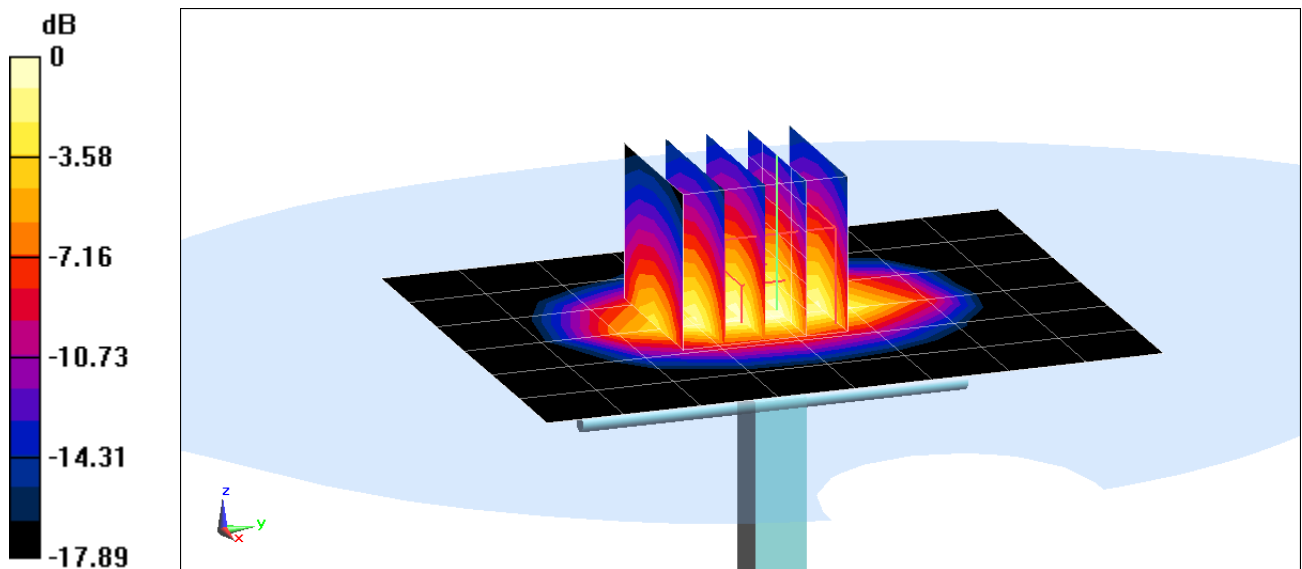
Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.77 W/kg

SAR(1 g) = 3.84 W/kg; SAR(10 g) = 2.03 W/kg

Deviation(1 g) = 3.50%; Deviation(10 g) = 2.01%



0 dB = 4.76 W/kg = 6.78 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.569 \text{ S/m}$; $\epsilon_r = 51.779$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-19-2017; Ambient Temp: 22.5°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/11/2016

Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

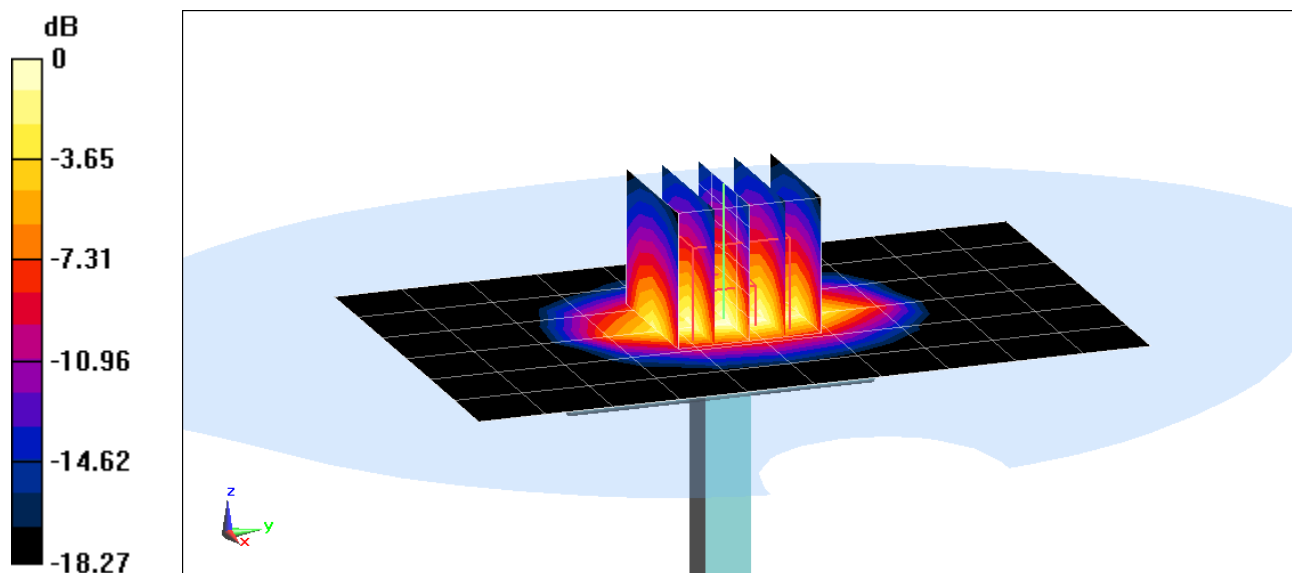
Area Scan (7x11x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 7.72 W/kg

SAR(1 g) = 4.12 W/kg; SAR(10 g) = 2.10 W/kg

Deviation(1 g) = 3.26%; Deviation(10 g) = -0.47%



0 dB = 6.50 W/kg = 8.13 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.572 \text{ S/m}$; $\epsilon_r = 52.025$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-26-2017; Ambient Temp: 22.1°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3318; ConvF(4.96, 4.96, 4.96); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

1900 MHz System Verification at 20.0 dBm (100 mW)

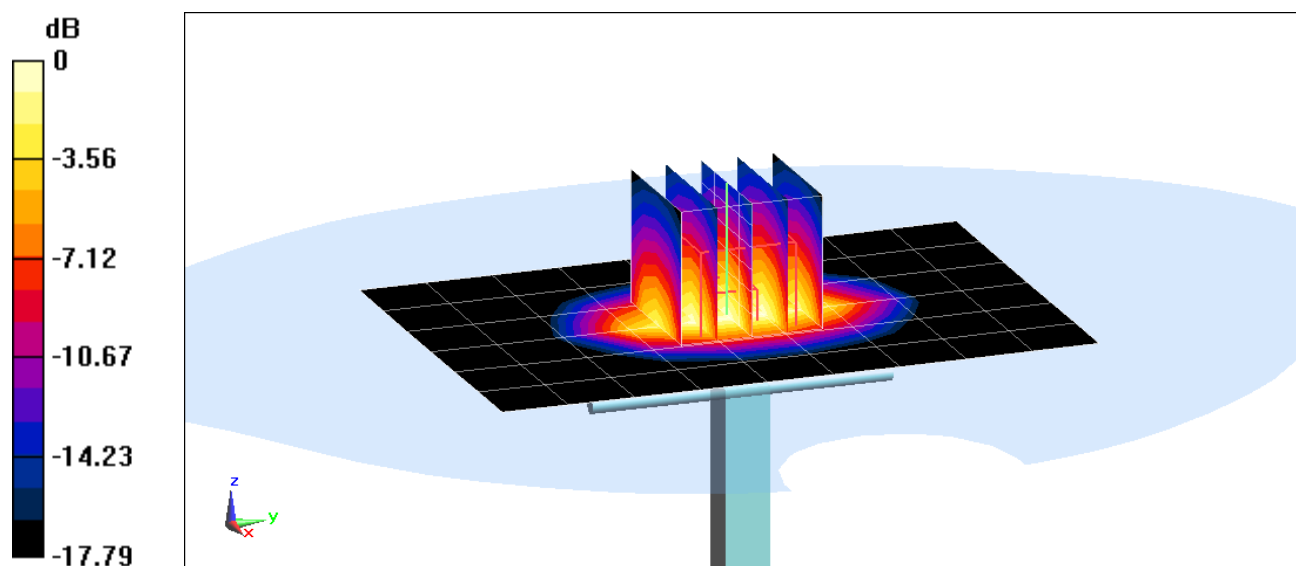
Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 7.62 W/kg

SAR(10 g) = 2.18 W/kg

Deviation(10 g) = 3.32%



0 dB = 5.37 W/kg = 7.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.58 \text{ S/m}$; $\epsilon_r = 52.662$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-01-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3288; ConvF(4.89, 4.89, 4.89); Calibrated: 1/13/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

1900 MHz System Verification at 20.0 dBm (100 mW)

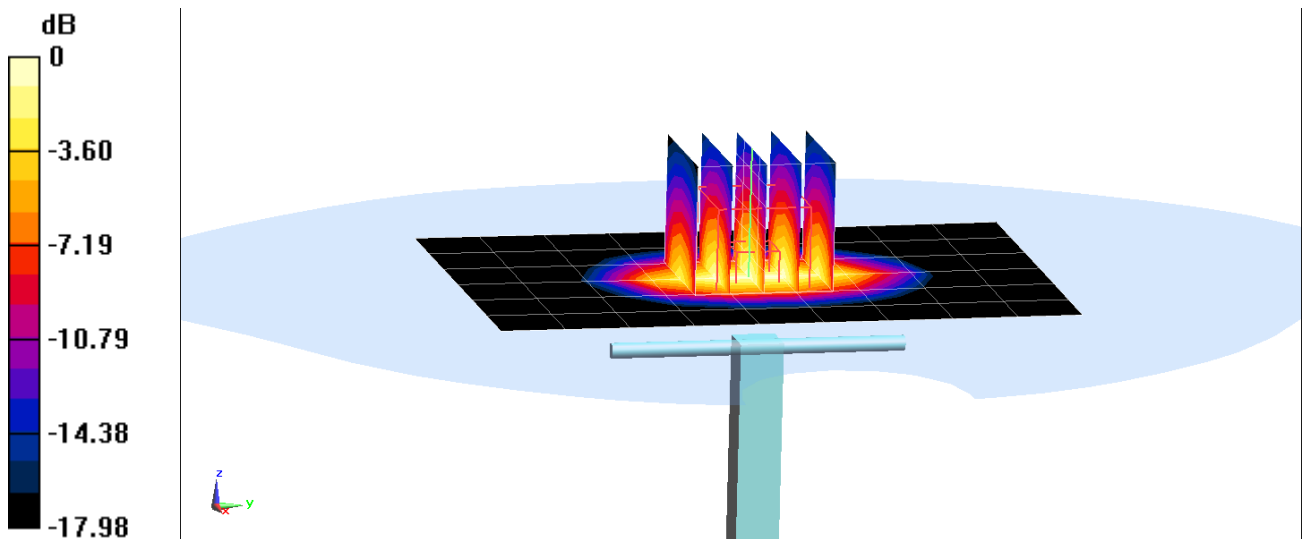
Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 7.44 W/kg

SAR(10 g) = 2.18 W/kg

Deviation(10 g) = 3.32%



0 dB = 5.32 W/kg = 7.26 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2300 Body; Medium parameters used:

$f = 2300 \text{ MHz}$; $\sigma = 1.806 \text{ S/m}$; $\epsilon_r = 53.207$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-27-2017; Ambient Temp: 20.0°C; Tissue Temp: 21.2°C

Probe: ES3DV3 - SN3287; ConvF(4.55, 4.55, 4.55); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

2300 MHz System Verification at 20.0 dBm (100 mW)

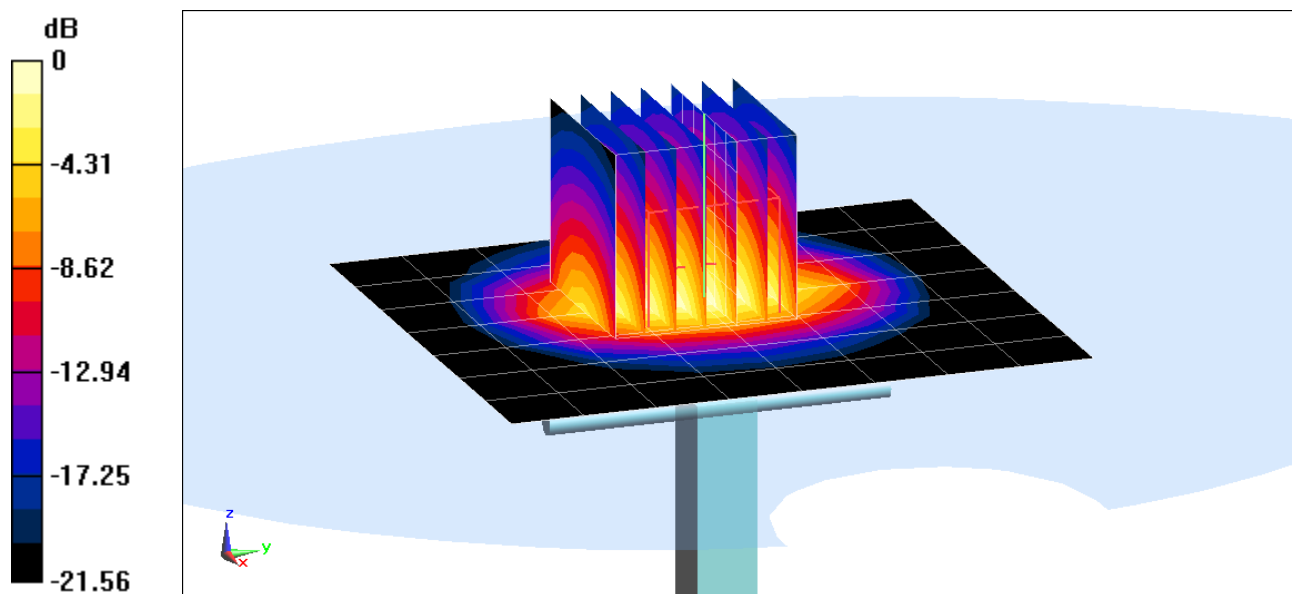
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 9.54 W/kg

SAR(1 g) = 4.80 W/kg

Deviation(1 g) = 2.13%



0 dB = 6.26 W/kg = 7.97 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1038

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2300 Body; Medium parameters used:

$f = 2300 \text{ MHz}$; $\sigma = 1.844 \text{ S/m}$; $\epsilon_r = 52.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-10-2017; Ambient Temp: 20.3°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3318; ConvF(4.7, 4.7, 4.7); Calibrated: 2/10/2017;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/9/2017

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7416)

2300 MHz System Verification at 20.0 dBm (100 mW)

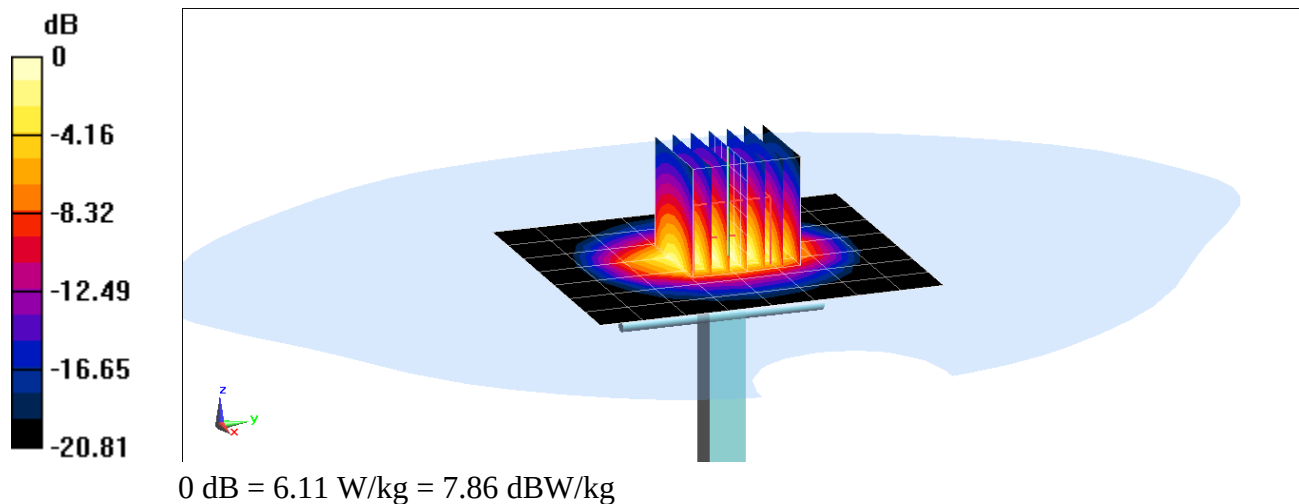
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 9.50 W/kg

SAR(1 g) = 4.72 W/kg; SAR(10 g) = 2.25 W/kg

Deviation(1 g) = -0.63%; Deviation(10 g) = -2.17%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.942 \text{ S/m}$; $\epsilon_r = 51.582$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-16-2017; Ambient Temp: 22.5°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2450 MHz System Verification at 20.0 dBm (100 mW)

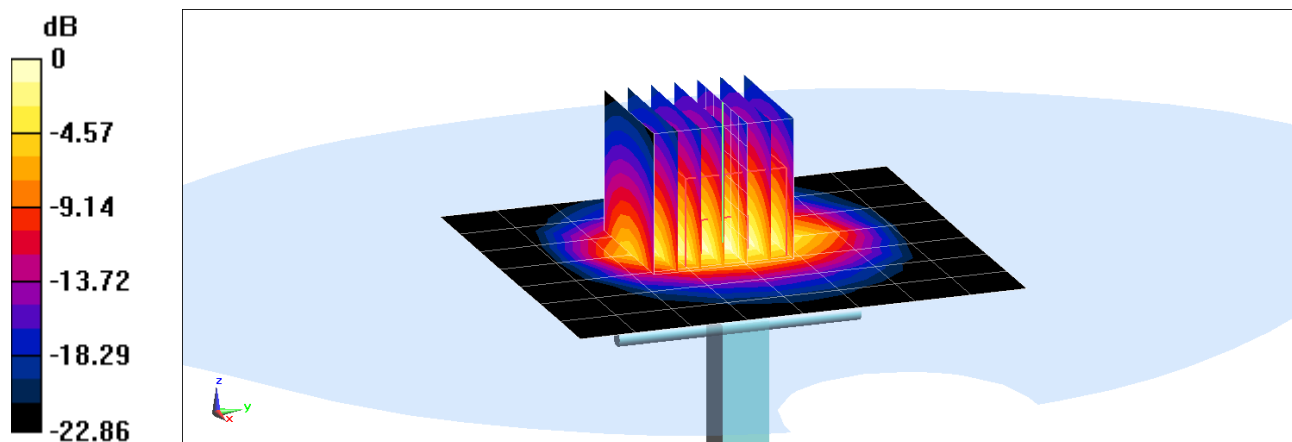
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 11.2 W/kg

SAR(1 g) = 5.44 W/kg

Deviation(1 g) = 7.30%



0 dB = 7.14 W/kg = 8.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.972 \text{ S/m}$; $\epsilon_r = 52.059$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-19-2017; Ambient Temp: 21.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3287; ConvF(4.35, 4.35, 4.35); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2450 MHz System Verification at 20.0 dBm (100 mW)

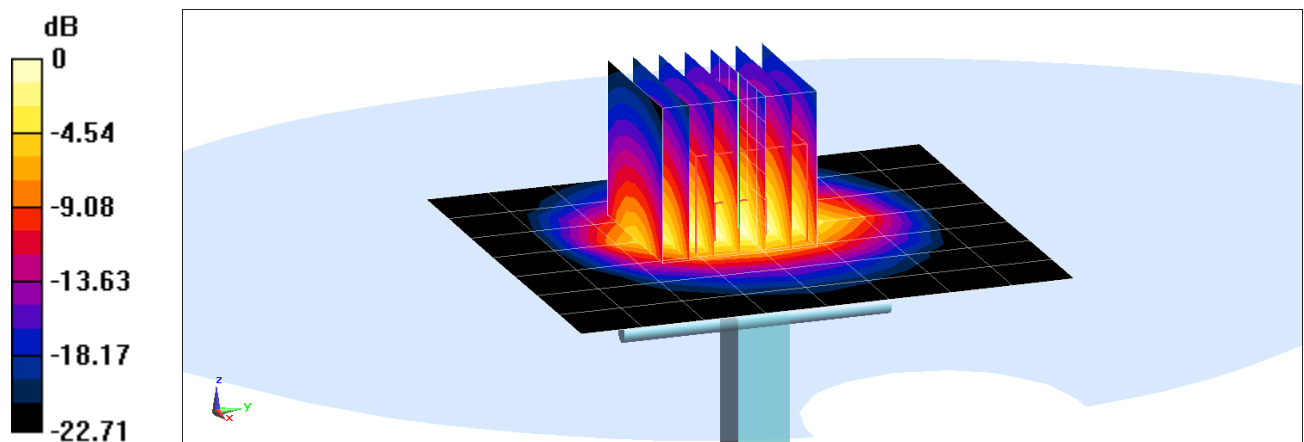
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 11.1 W/kg

SAR(10 g) = 2.51 W/kg

Deviation(10 g) = 3.72%



0 dB = 7.08 W/kg = 8.50 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Body; Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.216 \text{ S/m}$; $\epsilon_r = 50.482$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-24-2017; Ambient Temp: 21.7°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10; SEMCAD X Version 14.6.10 (7413)

2600 MHz System Verification at 20.0 dBm (100 mW)

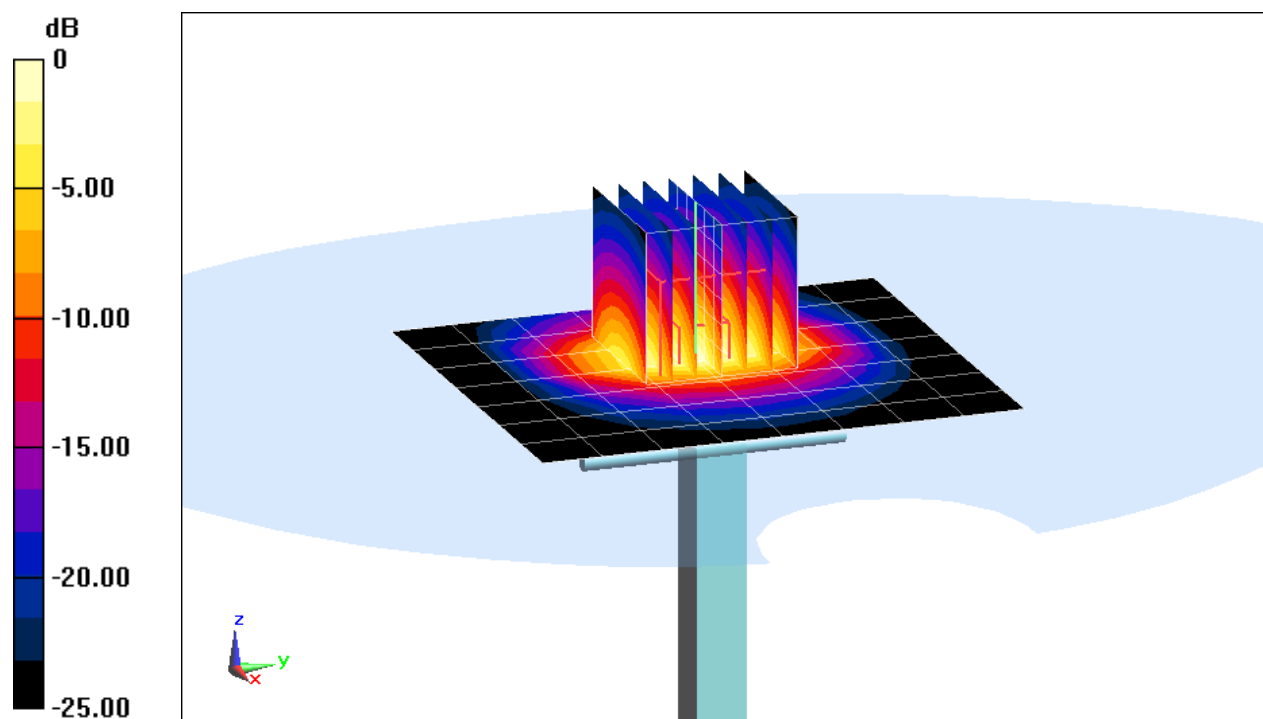
Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 12.9 W/kg

SAR(1 g) = 5.82 W/kg; SAR(10 g) = 2.48 W/kg

Deviation(1 g) = 6.79%; Deviation(10 g) = 2.06%



0 dB = 7.93 W/kg = 8.99 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Body; Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.223 \text{ S/m}$; $\epsilon_r = 51.519$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2017; Ambient Temp: 22.5°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2600 MHz System Verification at 20.0 dBm (100 mW)

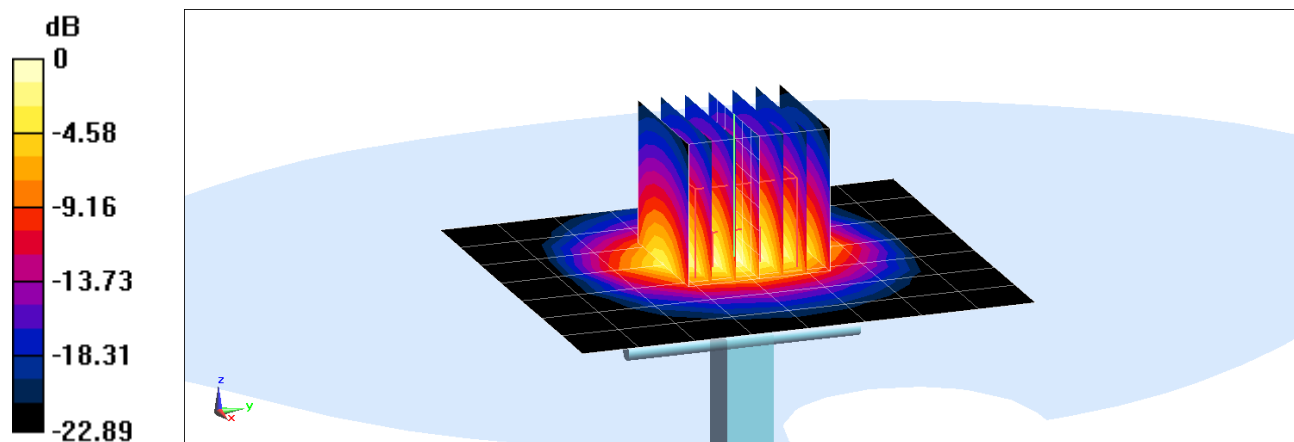
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 5.82 W/kg

Deviation(1 g) = 7.38%



0 dB = 7.73 W/kg = 8.88 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Body; Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.183 \text{ S/m}$; $\epsilon_r = 51.421$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-19-2017; Ambient Temp: 21.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3287; ConvF(4.12, 4.12, 4.12); Calibrated: 9/19/2016;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 9/14/2016

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2600 MHz System Verification at 20.0 dBm (100 mW)

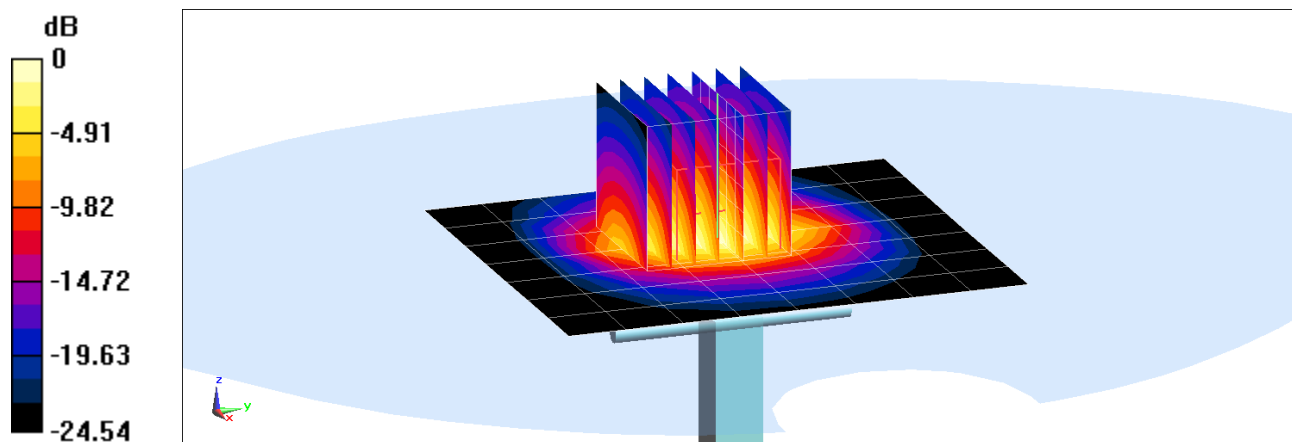
Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 12.6 W/kg

SAR(10 g) = 2.60 W/kg

Deviation(10 g) = 7.00%



0 dB = 7.72 W/kg = 8.88 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$; $\sigma = 5.503 \text{ S/m}$; $\epsilon_r = 48.182$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(4.19, 4.19, 4.19); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5250 MHz System Verification at 17.0 dBm (50 mW)

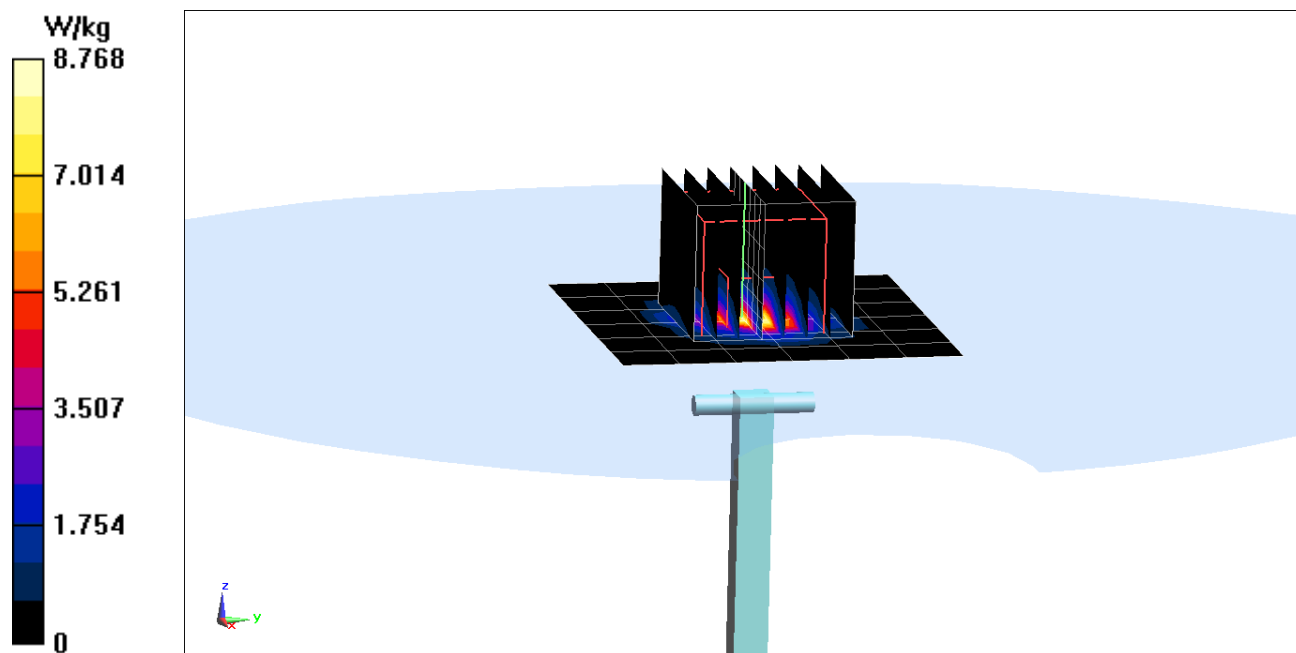
Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 15.4 W/kg

SAR(1 g) = 3.56 W/kg; SAR(10 g) = 0.995 W/kg

Deviation(1 g) = -4.81%; Deviation(10 g) = -5.24%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 5.943 \text{ S/m}$; $\epsilon_r = 47.563$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.82, 3.82, 3.82); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5600 MHz System Verification at 17.0 dBm (50 mW)

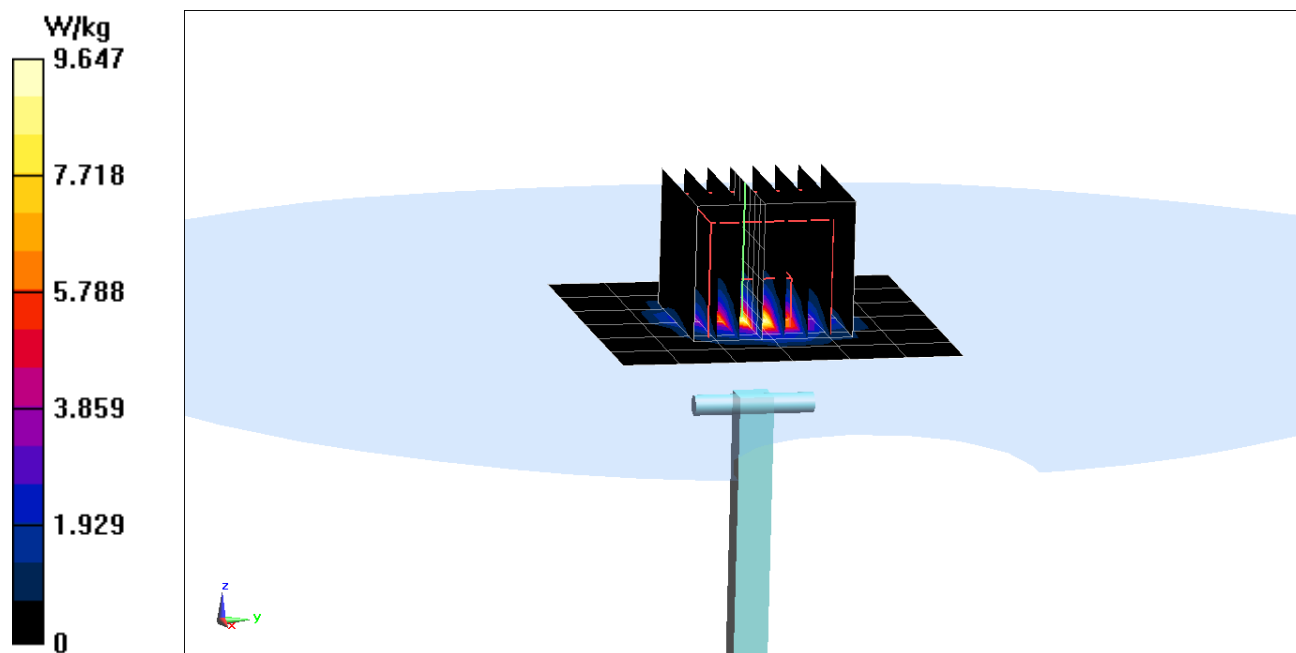
Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 3.82 W/kg; SAR(10 g) = 1.06 W/kg

Deviation(1 g) = -0.78%; Deviation(10 g) = -1.40%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body; Medium parameters used (interpolated):

$f = 5750 \text{ MHz}$; $\sigma = 6.149 \text{ S/m}$; $\epsilon_r = 47.346$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-20-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.83, 3.83, 3.83); Calibrated: 1/13/2017;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1466; Calibrated: 1/16/2017

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 15.9 W/kg

SAR(1 g) = 3.42 W/kg; SAR(10 g) = 0.957 W/kg

Deviation(1 g) = -9.28%; Deviation(10 g) = -8.42%

