



SAR EVALUATION REPORT

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
04/29/19 - 06/17/19
Test Site/Location:
PCTEST Lab, Morgan Hill, CA, USA
Document Serial No.:
1M1904240065-01-R1.A3L

FCC ID: A3LSMA205U

APPLICANT: SAMSUNG ELECTRONICS CO., LTD.

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: SM-A205U

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.21	0.30	0.51	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.14	0.15	0.27	1.49
PCE	UMTS 850	826.40 - 846.60 MHz	0.31	0.39	0.67	N/A
PCE	UMTS 1755	1712.4 - 1752.6 MHz	0.33	0.60	0.44	2.62
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.24	0.28	0.33	1.46
PCE	CDMA/EVDO BC10 (B20S)	817.90 - 823.10 MHz	0.24	0.28	0.35	N/A
PCE	CDMA/EVDO BC0 (B2CH)	824.70 - 848.31 MHz	0.31	0.31	0.42	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.22	0.25	0.37	1.50
PCE	LTE Band 71	665.5 - 695.5 MHz	0.21	0.31	0.39	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.19	0.33	0.38	N/A
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.24	0.42	0.44	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.20	0.37	0.43	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.29	0.41	0.31	2.62
PCE	LTE Band 4 (AWS)	1710.7 - 1779.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.23	0.23	0.30	1.59
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.58	0.25	0.44	N/A
PCE	LTE Band 41	2496.5 - 2567.5 MHz	1.40	0.47	1.09	3.05
PCE	LTE Band 38	2572.5 - 2617.5 MHz	N/A	N/A	N/A	N/A
DTS	2.4 GHz WLAN	2412 - 2472 MHz	< 0.1	< 0.1	0.14	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	< 0.1	0.15	N/A	0.89
NII	U-NII-2C	5500 - 5700 MHz	< 0.1	0.40	N/A	0.88
NII	U-NII-3	5745 - 5825 MHz	< 0.1	0.40	0.69	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	< 0.1	N/A	< 0.1	N/A
Simultaneous SAR per KDB 6907B3 D01v01r03:			1.48	1.14	1.37	3.94

Note: This revised Test Report (S/N: 1M1904240065-01-R1.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



The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sarrick@mwfai.info.

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
LTE Band 38	Voice/Data	2572.5 - 2617.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2472 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

1.2 Power Reduction for SAR

This device 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 Output Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 850	Maximum	34.0	34.0	32.0	30.0	28.5	27.5	25.5	24.0	22.5
	Nominal	33.0	33.0	31.0	29.0	27.5	26.5	24.5	23.0	21.5
GSM/GPRS/EDGE 1900	Maximum	31.5	31.5	29.0	27.5	26.2	26.5	24.5	23.0	21.5
	Nominal	30.5	30.5	28.0	26.5	25.2	25.5	23.5	22.0	20.5

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

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

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Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	26.0
	Nominal	25.0
LTE Band 12	Maximum	26.0
	Nominal	25.0
LTE Band 17	Maximum	26.0
	Nominal	25.0
LTE Band 13	Maximum	25.5
	Nominal	24.5
LTE Band 26 (Cell)	Maximum	26.0
	Nominal	25.0
LTE Band 5 (Cell)	Maximum	26.0
	Nominal	25.0
LTE Band 66 (AWS)	Maximum	26.0
	Nominal	25.0
LTE Band 4 (AWS)	Maximum	26.0
	Nominal	25.0
LTE Band 25 (PCS)	Maximum	26.0
	Nominal	25.0
LTE Band 2 (PCS)	Maximum	26.0
	Nominal	25.0
LTE Band 7	Maximum	23.0
	Nominal	22.0
LTE Band 41 (PC3)	Maximum	25.0
	Nominal	24.0
LTE Band 41 (PC2)	Maximum	28.0
	Nominal	27.0
LTE Band 38	Maximum	24.0
	Nominal	23.0

Mode / Band		Modulated Average - Single Tx Chain (dBm)				
Channel		1	2 - 10	11	12	13
IEEE 802.11b (2.4 GHz)	Maximum	21.0	21.0	21.0	17.0	16.0
	Nominal	20.0	20.0	20.0	16.0	15.0
IEEE 802.11g (2.4 GHz)	Maximum	19.0	19.0	19.0	12.5	10.0
	Nominal	18.0	18.0	18.0	11.5	9.0
IEEE 802.11n (2.4 GHz)	Maximum	19.0	19.0	19.0	12.0	7.0
	Nominal	18.0	18.0	18.0	11.0	6.0

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Mode / Band		Modulated Average (dBm)																						
		20 MHz Bandwidth										40 MHz Bandwidth								80 MHz Bandwidth				
	Channel	36	40-60	64	100	104-140	144	149	153-161	165	38	46-54	62	102	110-134	142	151	159	42	58	106	122	138	155
IEEE 802.11a (5 GHz)	Maximum	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0														
	Nominal	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0														
IEEE 802.11n (5 GHz)	Maximum	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	16.0	16.5	16.0	16.0	16.5	16.5	16.5	16.5						
	Nominal	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	15.0	15.5	15.0	15.0	15.5	15.5	15.5	15.5						
IEEE 802.11ac (5 GHz)	Maximum	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	16.0	16.5	16.0	16.0	16.5	16.5	16.5	16.5	14.0	14.0	14.0	14.5	14.5	14.0
	Nominal	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	15.0	15.5	15.0	15.0	15.5	15.5	15.5	15.5	13.0	13.0	13.0	13.5	13.5	13.0

Mode/Band		Modulated Average (dBm)
Bluetooth	Maximum	10.0
	Nominal	9.0
Bluetooth LE	Maximum	6.0
	Nominal	5.0

1.3.2 Reduced 3G/4G Output Power – Hotspot Mode and/or Earjack Mode Active

Mode / Band		Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GPRS/EDGE 1900	Maximum	28.5	26.0	24.5	23.2	26.5	24.5	23.0	21.5
	Nominal	27.5	25.0	23.5	22.2	25.5	23.5	22.0	20.5

Note: Hotspot Mode Active Only

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 1900	Maximum	28.5	28.5	26.0	24.5	23.2	26.5	24.5	23.0	21.5
	Nominal	27.5	27.5	25.0	23.5	22.2	25.5	23.5	22.0	20.5

Note: Earjack Mode Active Only

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	3GPP DC-HSDPA
UMTS Band 4 (1750 MHz)	Maximum	21.8	20.8	20.8	20.8
	Nominal	20.8	19.8	19.8	19.8
UMTS Band 2 (1900 MHz)	Maximum	22.8	21.8	21.8	21.8
	Nominal	21.8	20.8	20.8	20.8

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	23.0
	Nominal	22.0

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Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 4 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 25 (PCS)	Maximum	23.0
	Nominal	22.0
LTE Band 2 (PCS)	Maximum	23.0
	Nominal	22.0
LTE Band 7	Maximum	21.0
	Nominal	20.0
LTE Band 41 (PC2)	Maximum	25.0
	Nominal	24.0

1.3.3 Reduced 3G/4G Output Power – Grip Sensor Active

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 1900	Maximum	28.5	28.5	26.0	24.5	23.2	26.5	24.5	23.0	21.5
	Nominal	27.5	27.5	25.0	23.5	22.2	25.5	23.5	22.0	20.5

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	3GPP DC-HSDPA
UMTS Band 4 (1750 MHz)	Maximum	21.8	20.8	20.8	20.8
	Nominal	20.8	19.8	19.8	19.8
UMTS Band 2 (1900 MHz)	Maximum	22.8	21.8	21.8	21.8
	Nominal	21.8	20.8	20.8	20.8

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Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	23.0
	Nominal	22.0

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 4 (AWS)	Maximum	22.0
	Nominal	21.0
LTE Band 25 (PCS)	Maximum	23.0
	Nominal	22.0
LTE Band 2 (PCS)	Maximum	23.0
	Nominal	22.0

1.3.4 Reduced WLAN Output Power

Mode / Band		Modulated Average (dBm)				
Channel		1	2 - 10	11	12	13
IEEE 802.11b (2.4 GHz)	Maximum	12.0	12.0	12.0	8.0	8.0
	Nominal	11.0	11.0	11.0	7.0	7.0
IEEE 802.11g (2.4 GHz)	Maximum	12.0	12.0	12.0	8.0	8.0
	Nominal	11.0	11.0	11.0	7.0	7.0
IEEE 802.11n (2.4 GHz)	Maximum	12.0	12.0	12.0	6.0	6.0
	Nominal	11.0	11.0	11.0	5.0	5.0

Mode / Band		Modulated Average (dBm)																							
		20 MHz Bandwidth										40 MHz Bandwidth								80 MHz Bandwidth					
	Channel	36	40-60	64	100	104-140	144	149	153-165	165	38	46-54	62	102	110-134	142	151	159	42	58	106	122	138	155	
IEEE 802.11a (5 GHz)	Maximum	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0															
	Nominal	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0															
IEEE 802.11n (5 GHz)	Maximum	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0							
	Nominal	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0							
IEEE 802.11ac (5 GHz)	Maximum	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
	Nominal	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0

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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
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 7	Yes	Yes	Yes	No	No	Yes
LTE Band 41	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN	Yes	Yes	Yes	No	Yes	No
5 GHz WLAN	Yes	Yes	Yes	No	Yes	No
Bluetooth	Yes	Yes	Yes	No	Yes	No

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-1, U-NII-2A, U-NII-2C operations are disabled.

1.5 Near Field Communications (NFC) Antenna

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

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1.6 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

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

- 2.4 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 SW, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
- This device supports VOLTE.
- This device supports VoWIFI.
- This device supports Bluetooth Tethering.

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1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

Per FCC KDB 447498 D01v06, the 1g SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, body-worn Bluetooth SAR was not required; $[(10/15) * \sqrt{2.480}] = 1 < 3.0$. Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

This device supports IEEE 802.11ac with the following features:

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

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, BT, 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.

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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. The downlink carrier aggregation exclusion analysis can be found in Appendix H.

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

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

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

1.8 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE Band 41 Power Class 2/3)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)

1.9 Device Serial Numbers

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

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LTE Information					
FCC ID	A3LSMA205U				
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz) LTE Band 12 (699.7 - 715.3 MHz) LTE Band 17 (706.5 - 713.5 MHz) LTE Band 13 (779.5 - 784.5 MHz) LTE Band 26 (Cell) (814.7 - 848.3 MHz) LTE Band 5 (Cell) (824.7 - 848.3 MHz) LTE Band 66 (AWS) (1710.7 - 1779.3 MHz) LTE Band 4 (AWS) (1710.7 - 1754.3 MHz) LTE Band 25 (PCS) (1850.7 - 1914.3 MHz) LTE Band 2 (PCS) (1850.7 - 1909.3 MHz) LTE Band 7 (2502.5 - 2567.5 MHz) LTE Band 41 (2498.5 - 2687.5 MHz) LTE Band 38 (2572.5 - 2617.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 17: 5 MHz, 10 MHz LTE Band 13: 5 MHz, 10 MHz LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 38: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)	713.5 (23825)	
LTE Band 17: 10 MHz	709 (23780)		710 (23790)	711 (23800)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz		N/A	782 (23230)		N/A
LTE Band 26 (Cell): 1.4 MHz	814.7 (26987)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19967)		1732.5 (20175)	1754.3 (20383)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20383)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 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)
LTE Band 38: 5 MHz	2572.5 (37775)		2595 (38000)	2617.5 (38225)	
LTE Band 38: 10 MHz	2575 (37900)		2595 (38000)	2615 (38200)	
LTE Band 38: 15 MHz	2577.5 (37825)		2595 (38000)	2612.5 (38175)	
LTE Band 38: 20 MHz	2580 (37850)		2595 (38000)	2610 (38150)	
UE Category	DL UE Cat 6, UL UE Cat 5				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 12. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 12 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WiFi Offloading, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

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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.

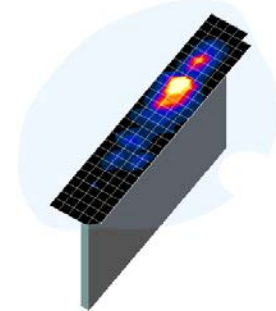


Figure 4-1
Sample SAR Area Scan

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		
			$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	$\Delta z_{\text{zoom}}(n>1)^*$	
≤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].

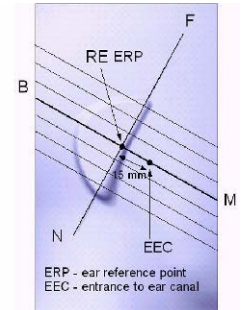


Figure 5-1
Close-Up Side view
of ERP

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

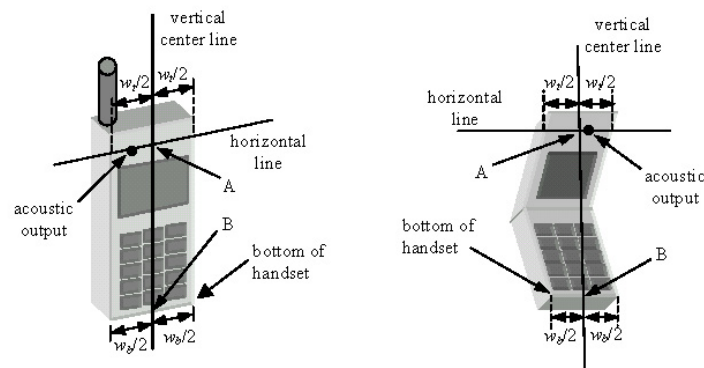


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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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.

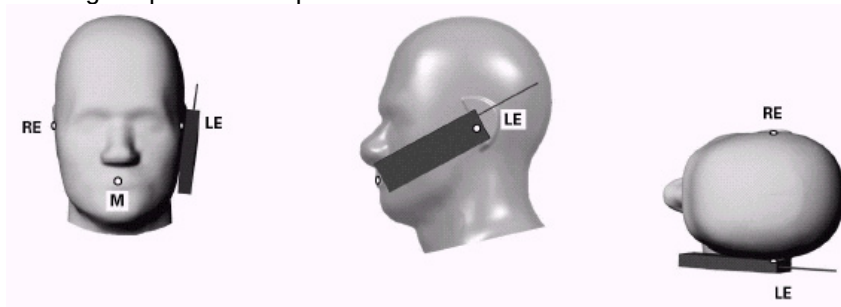


Figure 6-1 Front, Side and Top View of Cheek Position

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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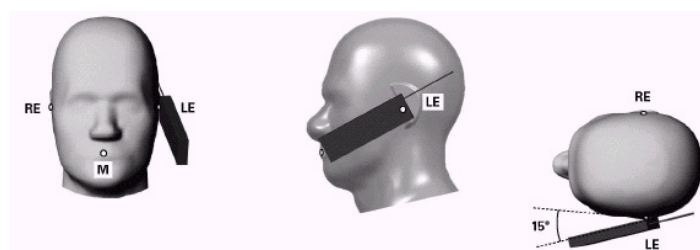


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

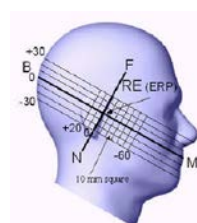


Figure 6-3 Side view w/ relevant markings

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.

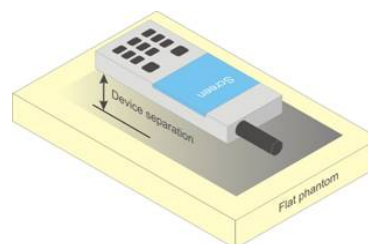


Figure 6-4 Sample Body-Worn Diagram

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

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

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.

Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

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

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

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

6.1 Proximity Sensor Considerations

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

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a nonreduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G. The sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the sensor entirely covers the antennas..

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

8.1 Measured and Reported SAR

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

8.2 3G SAR Test Reduction Procedure

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1s". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in

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12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth

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- i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
 - c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
 - d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to $\frac{1}{2}$ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

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

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8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

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

8.7.7 Initial Test Configuration Procedure

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

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

8.7.8 Subsequent Test Configuration Procedures

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

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9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.38	24.37	24.80	24.40	24.37	24.53	24.55
Cellular	1013	22H	824.7	24.24	24.21	24.73	24.23	24.20	24.35	24.52
	384	22H	836.52	24.12	24.07	24.60	24.10	24.09	24.20	24.38
	777	22H	848.31	24.19	24.56	24.72	24.18	24.27	24.02	24.01
PCS	25	24E	1851.25	23.81	23.91	24.05	23.91	23.93	24.04	24.10
	600	24E	1880	23.75	24.00	23.83	23.85	24.00	24.15	24.10
	1175	24E	1908.75	23.79	24.01	23.89	23.88	24.03	24.14	24.18

Table 9-2
Reduced Conducted Power – Hotspot Mode and/or Earjack Mode Active

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	20.77	20.91	21.20	20.80	20.92	21.07	21.19
	600	24E	1880	20.73	20.98	20.95	20.76	20.96	21.12	21.17
	1175	24E	1908.75	20.79	21.02	21.02	20.77	20.99	21.20	21.15

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Table 9-3
Reduced Conducted Power – Grip Sensor Active

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	20.78	20.90	21.10	20.87	20.90	21.08	21.22
	600	24E	1880	20.73	20.97	20.93	20.82	20.98	21.11	21.20
	1175	24E	1908.75	20.78	20.99	21.00	20.83	21.01	21.16	21.18

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



Figure 9-1
Power Measurement Setup

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9.2 GSM Conducted Powers

Table 9-4
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	32.50	32.58	30.36	28.83	27.50	26.70	24.66	23.10	21.66
	190	32.52	32.59	30.45	28.84	27.50	26.77	24.72	23.18	21.71
	251	32.67	32.80	30.53	29.02	27.56	27.00	24.93	23.37	21.93
GSM 1900	512	30.49	30.48	28.50	26.91	25.40	25.79	23.51	22.23	20.65
	661	30.00	29.95	28.27	26.85	25.35	25.73	23.44	22.15	20.56
	810	29.73	29.80	28.08	26.71	24.95	25.50	23.27	22.08	20.53

Calculated Maximum Frame-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	23.47	23.55	24.34	24.57	24.49	17.67	18.64	18.84	18.65
	190	23.49	23.56	24.43	24.58	24.49	17.74	18.70	18.92	18.70
	251	23.64	23.77	24.51	24.76	24.55	17.97	18.91	19.11	18.92
GSM 1900	512	21.46	21.45	22.48	22.65	22.39	16.76	17.49	17.97	17.64
	661	20.97	20.92	22.25	22.59	22.34	16.70	17.42	17.89	17.55
	810	20.70	20.77	22.06	22.45	21.94	16.47	17.25	17.82	17.52

GSM 850	Frame	23.97	23.97	24.98	24.74	24.49	17.47	18.48	18.74	18.49
GSM 1900	Avg.Targets:	21.47	21.47	21.98	22.24	22.19	16.47	17.48	17.74	17.49

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Table 9-5
Reduced Conducted Power – Hotspot Mode and/or Earjack Mode Active

Hotspot Reduced Burst-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 1900	512	27.14	27.16	25.65	24.29	22.17	26.03	23.64	22.34	20.96
	661	27.17	27.19	25.53	24.33	22.60	25.97	23.71	22.39	20.77
	810	27.02	26.99	25.35	23.90	22.18	25.56	23.26	21.98	20.52
Calculated Maximum Frame-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 1900	512	18.11	18.13	19.63	20.03	19.16	17.00	17.62	18.08	17.95
	661	18.14	18.16	19.51	20.07	19.59	16.94	17.69	18.13	17.76
	810	17.99	17.96	19.33	19.64	19.17	16.53	17.24	17.72	17.51
GSM 1900	Frame Avg. Targets:	18.47	18.47	18.98	19.24	19.19	16.47	17.48	17.74	17.49

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Table 9-6
Reduced Conducted Power – Grip Sensor Active

Grip Sensor Reduced Burst-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 1900	512	27.13	27.17	25.49	24.00	22.36	25.74	23.42	21.95	20.41
	661	27.08	26.92	25.45	23.78	22.27	25.67	23.31	21.83	20.23
	810	26.74	26.75	25.27	23.77	22.04	25.37	22.99	21.55	19.95
Calculated Maximum Frame-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 1900	512	18.10	18.14	19.47	19.74	19.35	16.71	17.40	17.69	17.40
	661	18.05	17.89	19.43	19.52	19.26	16.64	17.29	17.57	17.22
	810	17.71	17.72	19.25	19.51	19.03	16.34	16.97	17.29	16.94
GSM 1900	Frame Avg.Targets:	18.47	18.47	18.98	19.24	19.19	16.47	17.48	17.74	17.49

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: 33 (Max 4 Tx uplink slots)
EDGE Multislot class: 33 (Max 4 Tx uplink slots)
DTM Multislot Class: N/A



Figure 9-2
Power Measurement Setup

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9.3 UMTS Conducted Powers

Table 9-7
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	24.55	24.68	24.81	24.34	24.41	24.29	24.51	24.16	24.22	-
99		12.2 kbps AMR	24.55	24.64	24.82	24.41	24.35	24.28	24.47	24.26	24.23	-
6	HSDPA	Subtest 1	23.14	23.19	23.15	24.48	24.62	24.41	24.78	24.52	24.40	0
6		Subtest 2	22.15	22.16	22.11	22.85	22.97	22.86	23.05	22.98	22.68	0
6		Subtest 3	22.18	22.18	22.16	21.94	22.05	21.96	22.08	22.05	21.77	0.5
6		Subtest 4	21.30	21.33	21.30	21.93	22.06	21.92	22.06	22.01	21.78	0.5
6	HSUPA	Subtest 1	22.35	22.33	22.24	21.83	21.81	21.85	22.21	21.94	21.90	0
6		Subtest 2	20.45	20.42	20.27	20.10	20.31	20.51	19.86	20.36	20.27	2
6		Subtest 3	22.20	22.14	22.06	21.26	21.20	21.34	22.25	21.97	21.90	1
6		Subtest 4	20.44	20.46	20.31	20.26	20.23	20.42	19.80	20.10	20.07	2
6		Subtest 5	24.11	24.06	24.00	23.35	23.29	23.47	24.20	23.83	23.78	0
8	DC-HSDPA	Subtest 1	23.30	23.28	23.17	24.74	24.63	24.80	24.51	24.27	24.22	0
8		Subtest 2	23.33	22.81	22.67	23.29	23.72	23.61	23.42	22.85	22.97	0
8		Subtest 3	22.64	22.59	22.46	22.62	22.53	23.76	22.41	21.87	22.17	0.5
8		Subtest 4	21.49	21.44	21.34	22.22	22.19	22.43	22.29	22.04	22.02	0.5

Table 9-8
Reduced Conducted Power – Hotspot Mode and/or Earjack Mode Active

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	21.48	21.40	21.36	21.49	21.29	21.21	-
99		12.2 kbps AMR	21.50	21.40	21.33	21.44	21.28	21.19	-
6	HSDPA	Subtest 1	20.33	20.37	20.20	21.62	21.33	21.27	0
6		Subtest 2	20.37	20.45	20.24	21.64	21.36	21.33	0
6		Subtest 3	20.38	20.48	20.26	21.68	21.40	21.34	0.5
6		Subtest 4	20.36	20.42	20.23	21.69	21.39	21.31	0.5
6	HSUPA	Subtest 1	19.32	19.39	19.19	20.78	20.51	20.45	0
6		Subtest 2	18.82	18.94	18.77	19.15	18.84	18.79	2
6		Subtest 3	19.25	19.31	19.13	20.85	20.56	20.48	1
6		Subtest 4	18.67	18.77	18.68	19.65	19.35	19.28	2
6		Subtest 5	20.48	20.55	20.33	21.68	21.38	21.34	0
8	DC-HSDPA	Subtest 1	20.39	20.44	20.29	21.54	21.35	21.31	0
8		Subtest 2	20.42	20.53	20.31	21.72	21.46	21.37	0
8		Subtest 3	20.43	20.50	20.36	21.76	21.49	21.42	0.5
8		Subtest 4	20.37	20.51	20.28	21.77	21.48	21.42	0.5

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Table 9-9
Reduced Conducted Power – 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	21.47	21.51	21.37	21.42	21.27	21.20	-
99		12.2 kbps AMR	21.48	21.32	21.34	21.39	21.24	21.23	-
6	HSDPA	Subtest 1	20.41	20.50	20.31	21.65	21.42	21.40	0
6		Subtest 2	20.42	20.53	20.33	21.72	21.48	21.46	0
6		Subtest 3	20.44	20.54	20.34	21.78	21.50	21.49	0.5
6		Subtest 4	20.42	20.48	20.26	21.76	21.52	21.50	0.5
6	HSUPA	Subtest 1	19.35	19.46	19.27	20.72	20.64	20.61	0
6		Subtest 2	18.81	18.99	18.86	19.73	19.49	19.46	2
6		Subtest 3	19.33	19.39	19.27	20.93	20.67	20.68	1
6		Subtest 4	18.85	18.88	18.84	19.76	19.51	19.46	2
6		Subtest 5	20.46	20.55	20.33	21.74	21.48	21.46	0
8	DC-HSDPA	Subtest 1	20.32	20.39	20.23	21.70	21.47	21.44	0
8		Subtest 2	20.38	20.49	20.27	21.74	21.53	21.49	0
8		Subtest 3	20.40	20.52	20.31	21.77	21.52	21.42	0.5
8		Subtest 4	20.27	20.40	20.22	21.78	21.53	21.50	0.5

DC-HSDPA considerations

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

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

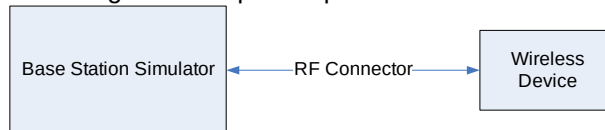


Figure 9-3
Power Measurement Setup

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9.4 LTE Conducted Powers

9.4.1

LTE Band 71

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

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.06	0	0
	1	50	25.07		0
	1	99	24.79		0
	50	0	23.97	0-1	1
	50	25	23.96		1
	50	50	23.89		1
	100	0	23.90		1
16QAM	1	0	23.87	0-1	1
	1	50	23.86		1
	1	99	23.53		1
	50	0	22.98	0-2	2
	50	25	22.98		2
	50	50	22.92		2
	100	0	22.86		2
64QAM	1	0	23.00	0-2	2
	1	50	22.94		2
	1	99	22.69		2
	50	0	22.00	0-3	3
	50	25	21.97		3
	50	50	21.91		3
	100	0	21.95		3

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

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

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.14	0	0
	1	36	25.05		0
	1	74	24.94		0
	36	0	24.09	0-1	1
	36	18	24.03		1
	36	37	24.00		1
	75	0	24.05		1
16QAM	1	0	24.09	0-1	1
	1	36	23.98		1
	1	74	23.80		1
	36	0	23.07	0-2	2
	36	18	23.06		2
	36	37	22.93		2
	75	0	23.02		2
64QAM	1	0	22.99	0-2	2
	1	36	22.98		2
	1	74	22.79		2
	36	0	22.14	0-3	3
	36	18	22.08		3
	36	37	22.03		3
	75	0	22.11		3

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

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

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133172 (668.0 MHz)	133297 (680.5 MHz)	133422 (693.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.38	25.14	24.99	0	0
	1	25	24.96	25.10	24.88		0
	1	49	24.99	24.99	24.78		0
	25	0	24.04	24.06	23.96	0-1	1
	25	12	23.95	24.05	23.90		1
	25	25	23.93	24.00	23.84		1
16QAM	50	0	23.99	24.05	23.90	0-1	1
	1	0	23.71	23.96	23.99		1
	1	25	23.84	23.99	23.84		1
	1	49	23.82	23.86	23.75	0-2	1
	25	0	23.06	23.02	22.90		2
	25	12	22.97	23.06	22.86		2
64QAM	25	25	22.90	22.97	22.80	0-2	2
	50	0	23.00	23.06	22.92		2
	1	0	22.57	23.02	22.88		0-2
	1	25	22.90	22.90	22.80	2	
	1	49	22.85	22.88	22.73	2	
	64QAM	25	0	22.07	22.03	21.92	0-3
25		12	22.00	22.03	21.93	3	
25		25	21.94	22.04	21.91	3	
50		0	22.02	22.03	21.90	3	

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133147 (665.5 MHz)	133297 (680.5 MHz)	133447 (695.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.66	25.09	24.41	0	0
	1	12	24.52	25.07	24.37		0
	1	24	24.55	25.04	24.35		0
	12	0	23.48	24.07	23.38	0-1	1
	12	6	23.48	24.01	23.38		1
	12	13	23.43	24.02	23.30		1
16QAM	25	0	23.46	24.06	23.36	0-1	1
	1	0	23.40	23.93	23.35		1
	1	12	23.44	23.88	23.33	0-1	1
	1	24	23.34	23.89	23.27		1
	12	0	22.51	23.02	22.33		0-2
	12	6	22.43	23.04	22.29	2	
12	13	22.37	23.05	22.33	2		
64QAM	25	0	22.50	23.08	22.34	0-2	2
	1	0	22.50	22.99	22.28		2
	1	12	22.40	22.95	22.13	0-2	2
	1	24	22.42	22.93	22.16		2
	12	0	21.48	22.14	21.42		0-3
	12	6	21.42	22.08	21.33	3	
12	13	21.40	22.06	21.33	3		
	25	0	21.50	22.08	21.37		3

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LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.31	0	0
	1	25	24.79		0
	1	49	24.60		0
	25	0	23.72	0-1	1
	25	12	23.68		1
	25	25	23.63		1
	50	0	23.64		1
16QAM	1	0	23.53	0-1	1
	1	25	23.43		1
	1	49	23.32		1
	25	0	22.67	0-2	2
	25	12	22.66		2
	25	25	22.64		2
	50	0	22.61		2
64QAM	1	0	22.58	0-2	2
	1	25	22.52		2
	1	49	22.37		2
	25	0	21.71	0-3	3
	25	12	21.73		3
	25	25	21.65		3
	50	0	21.67		3

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

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

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.23	24.82	24.15	0	0
	1	12	24.20	24.84	24.05		0
	1	24	24.25	24.74	24.00		0
	12	0	23.16	23.76	23.01	0-1	1
	12	6	23.13	23.69	23.03		1
	12	13	23.08	23.70	22.95		1
	25	0	23.19	23.79	23.00		1
16QAM	1	0	23.20	23.50	23.09	0-1	1
	1	12	23.11	23.52	22.99		1
	1	24	23.03	23.45	22.94		1
	12	0	22.16	22.73	22.09	0-2	2
	12	6	22.10	22.69	22.10		2
	12	13	22.15	22.76	22.04		2
	25	0	22.16	22.73	22.07		2
64QAM	1	0	22.22	22.73	21.96	0-2	2
	1	12	22.16	22.62	21.93		2
	1	24	22.20	22.74	21.97		2
	12	0	21.20	21.80	21.16	0-3	3
	12	6	21.18	21.74	21.06		3
	12	13	21.21	21.72	21.10		3
	25	0	21.14	21.79	21.05		3

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.91	24.76	23.77	0	0
	1	7	23.93	24.84	23.78		0
	1	14	23.90	24.73	23.69		0
	8	0	22.83	23.70	22.67	0-1	1
	8	4	22.80	23.67	22.67		1
	8	7	22.81	23.66	22.63		1
	15	0	22.81	23.72	22.66		1
16QAM	1	0	22.82	23.71	22.62	0-1	1
	1	7	22.91	23.70	22.63		1
	1	14	22.97	23.50	22.60		1
	8	0	21.85	22.67	21.71	0-2	2
	8	4	21.86	22.66	21.74		2
	8	7	21.88	22.65	21.74		2
	15	0	21.92	22.66	21.75		2
64QAM	1	0	22.05	22.64	21.76	0-2	2
	1	7	21.85	22.80	21.80		2
	1	14	21.80	22.60	21.54		2
	8	0	20.89	21.81	20.76	0-3	3
	8	4	20.90	21.73	20.78		3
	8	7	20.98	21.76	20.72		3
	15	0	20.95	21.75	20.86		3

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

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.76	24.97	23.64	0	0
	1	2	23.76	24.86	23.67		0
	1	5	23.75	24.96	23.65		0
	3	0	23.79	24.87	23.64		0
	3	2	23.75	24.90	23.61		0
	3	3	23.71	24.90	23.65		0
	6	0	22.72	23.85	22.59	0-1	1
16QAM	1	0	22.63	23.45	22.51	0-1	1
	1	2	22.93	23.48	22.52		1
	1	5	22.79	23.42	22.66		1
	3	0	22.80	23.94	22.76		1
	3	2	22.88	23.96	22.64		1
	3	3	22.77	23.84	22.70		1
	6	0	21.79	22.90	21.81	0-2	2
64QAM	1	0	21.65	22.69	21.84	0-2	2
	1	2	21.92	22.82	21.88		2
	1	5	21.99	22.73	21.74		2
	3	0	21.78	22.85	21.73		2
	3	2	21.92	22.99	21.75		2
	3	3	21.79	22.82	21.61		2
	6	0	20.71	21.91	20.65	0-3	3

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LTE Band 13

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

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.57	0	0
	1	25	24.57		0
	1	49	24.32		0
	25	0	23.16	0-1	1
	25	12	23.55		1
	25	25	23.51		1
	50	0	23.50		1
16QAM	1	0	22.75	0-1	1
	1	25	23.42		1
	1	49	23.35		1
	25	0	22.50	0-2	2
	25	12	22.56		2
	25	25	22.55		2
	50	0	22.51		2
64QAM	1	0	22.12	0-2	2
	1	25	22.56		2
	1	49	22.52		2
	25	0	21.50	0-3	3
	25	12	21.55		3
	25	25	21.50		3
	50	0	21.49		3

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

Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	23.99	0	0
	1	12	24.69		0
	1	24	24.71		0
	12	0	23.37	0-1	1
	12	6	23.38		1
	12	13	23.40		1
	25	0	23.34		1
16QAM	1	0	23.18	0-1	1
	1	12	23.18		1
	1	24	23.15		1
	12	0	22.35	0-2	2
	12	6	22.33		2
	12	13	22.38		2
	25	0	22.34		2
64QAM	1	0	22.23	0-2	2
	1	12	22.46		2
	1	24	22.51		2
	12	0	21.52	0-3	3
	12	6	21.53		3
	12	13	21.52		3
	25	0	21.49		3

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

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LTE Band 26 (Cell)

Table 9-20
LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26865 (831.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.68	0	0
	1	36	24.64		0
	1	74	24.10		0
	36	0	23.25	0-1	1
	36	18	23.51		1
	36	37	23.41		1
	75	0	23.21		1
16QAM	1	0	23.71	0-1	1
	1	36	23.63		1
	1	74	23.65		1
	36	0	22.60	0-2	2
	36	18	22.65		2
	36	37	22.65		2
	75	0	22.48		2
64QAM	1	0	22.71	0-2	2
	1	36	22.61		2
	1	74	22.39		2
	36	0	21.68	0-3	3
	36	18	21.62		3
	36	37	21.64		3
	75	0	21.62		3

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

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Table 9-21
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26740 (819.0 MHz)	26865 (831.5 MHz)	26990 (844.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.94	24.93	24.42	0	0
	1	25	24.99	24.90	24.70		0
	1	49	24.88	24.17	24.77		0
	25	0	23.85	23.80	23.64	0-1	1
	25	12	23.85	23.79	23.52		1
	25	25	23.83	23.70	23.44		1
16QAM	50	0	23.78	23.83	23.50	0-1	1
	1	0	23.90	23.69	23.56		1
	1	25	23.79	23.69	23.57		1
	1	49	23.70	23.73	22.77	0-2	1
	25	0	22.87	22.84	22.63		2
	25	12	22.80	22.77	22.60		2
64QAM	25	25	22.88	22.80	22.58	0-2	2
	50	0	22.88	22.86	22.57		2
	1	0	23.02	22.85	22.74		0-2
	1	25	23.02	22.80	22.58	2	
	1	49	23.05	22.72	21.77	0-3	
	25	0	21.94	21.82	21.59		3
25	12	21.92	21.82	21.56	3		
	25	25	21.85	21.84	21.54	0-3	3
	50	0	21.90	21.88	21.62		3

Table 9-22
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26715 (816.5 MHz)	26865 (831.5 MHz)	27015 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.48	24.95	24.11	0	0
	1	12	24.41	24.86	24.20		0
	1	24	24.40	24.85	23.87		0
	12	0	23.32	23.79	23.08	0-1	1
	12	6	23.32	23.71	23.09		1
	12	13	23.33	23.73	23.05		1
	25	0	23.27	23.75	23.07		1
16QAM	1	0	23.04	23.93	22.91	0-1	1
	1	12	23.20	23.63	22.99		1
	1	24	22.96	23.74	22.85		1
	12	0	22.33	22.80	22.18	0-2	2
	12	6	22.30	22.77	22.13		2
	12	13	22.32	22.73	22.09		2
	25	0	22.42	22.78	22.12		2
64QAM	1	0	22.29	22.87	22.15	0-2	2
	1	12	22.32	22.90	22.07		2
	1	24	22.26	22.94	22.06		2
	12	0	21.53	21.88	21.06	0-3	3
	12	6	21.40	21.99	21.13		3
	12	13	21.33	21.85	21.12		3
	25	0	21.52	21.86	21.15		3

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Table 9-23
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26705 (815.5 MHz)	26865 (831.5 MHz)	27025 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.28	24.85	23.83	0	0
	1	7	24.22	24.88	23.87		0
	1	14	24.27	24.80	23.94		0
	8	0	23.12	23.81	22.80	0-1	1
	8	4	23.11	23.78	22.86		1
	8	7	23.11	23.72	22.79		1
	15	0	23.14	23.74	22.74		1
16QAM	1	0	23.10	23.84	22.75	0-1	1
	1	7	23.07	23.83	22.85		1
	1	14	23.09	23.86	22.90		1
	8	0	22.24	22.78	21.80	0-2	2
	8	4	22.19	22.75	21.90		2
	8	7	22.18	22.80	21.80		2
	15	0	22.21	22.86	21.84		2
64QAM	1	0	22.27	22.87	21.81	0-2	2
	1	7	22.17	23.00	21.95		2
	1	14	22.32	22.96	21.91		2
	8	0	21.50	21.81	20.96	0-3	3
	8	4	21.22	21.90	20.97		3
	8	7	21.22	21.87	20.90		3
	15	0	21.27	21.88	20.95		3

Table 9-24
LTE Band 26 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26697 (814.7 MHz)	26865 (831.5 MHz)	27033 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.00	24.86	23.75	0	0
	1	2	24.08	24.96	23.70		0
	1	5	24.15	24.90	23.76		0
	3	0	24.07	24.89	23.69		0
	3	2	24.08	24.81	23.76		0
	3	3	24.02	24.91	23.75		0
	6	0	22.94	23.80	22.64	0-1	1
16QAM	1	0	22.72	23.75	22.73	0-1	1
	1	2	22.88	23.64	22.79		1
	1	5	22.72	23.95	22.88		1
	3	0	23.00	23.88	22.75		1
	3	2	22.93	23.86	22.70		1
	3	3	22.86	23.87	22.66	1	
64QAM	6	0	22.14	22.93	21.73	0-2	2
	1	0	21.92	22.73	21.95	0-2	2
	1	2	21.97	22.82	21.70		2
	1	5	22.10	22.78	21.66		2
	3	0	21.98	22.89	21.73		2
	3	2	22.12	22.84	21.78		2
	3	3	22.19	22.80	21.80		2
6	0	21.25	21.80	20.85	0-3	3	

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LTE Band 66 (AWS)

Table 9-25
LTE Band 66 (AWS) Maximum 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	24.67	24.72	24.57	0	0
	1	50	24.63	24.69	24.54		0
	1	99	24.53	24.68	24.48		0
	50	0	23.52	23.52	23.44	0-1	1
	50	25	23.58	23.64	23.44		1
	50	50	23.49	23.62	23.47		1
	100	0	23.44	23.59	23.41		1
16QAM	1	0	23.37	23.48	23.34	0-1	1
	1	50	23.34	23.53	23.31		1
	1	99	23.27	23.51	23.28		1
	50	0	22.47	22.55	22.41	0-2	2
	50	25	22.47	22.56	22.39		2
	50	50	22.44	22.51	22.38		2
	100	0	22.37	22.48	22.34		2
64QAM	1	0	22.31	22.36	22.12	0-2	2
	1	50	22.37	22.32	22.16		2
	1	99	22.23	22.35	22.16		2
	50	0	21.49	21.53	21.37	0-3	3
	50	25	21.49	21.53	21.41		3
	50	50	21.43	21.56	21.42		3
	100	0	21.46	21.55	21.41		3

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

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.48	24.60	24.53	0	0
	1	36	24.59	24.64	24.50		0
	1	74	24.55	24.67	24.47		0
	36	0	23.35	23.42	23.28	0-1	1
	36	18	23.45	23.56	23.39		1
	36	37	23.39	23.57	23.47		1
	75	0	23.24	23.56	23.37		1
16QAM	1	0	23.46	23.51	23.33	0-1	1
	1	36	23.43	23.56	23.37		1
	1	74	23.44	23.51	23.34		1
	36	0	22.28	22.23	22.24	0-2	2
	36	18	22.28	22.40	22.28		2
	36	37	22.28	22.41	22.20		2
	75	0	22.25	22.37	22.27		2
64QAM	1	0	22.33	22.27	22.23	0-2	2
	1	36	22.40	22.38	22.27		2
	1	74	22.39	22.48	22.23		2
	36	0	21.39	21.49	21.33	0-3	3
	36	18	21.36	21.50	21.36		3
	36	37	21.36	21.49	21.36		3
	75	0	21.33	21.48	21.35		3

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

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.58	24.74	24.49	0	0
	1	25	24.63	24.74	24.52		0
	1	49	24.51	24.61	24.48		0
	25	0	23.41	23.52	23.38	0-1	1
	25	12	23.47	23.53	23.44		1
	25	25	23.42	23.56	23.41		1
16QAM	50	0	23.44	23.59	23.43	0-1	1
	1	0	23.34	23.45	23.44		1
	1	25	23.49	23.39	23.52		1
	1	49	23.46	23.33	23.39	0-2	1
	25	0	22.45	22.52	22.56		2
	25	12	22.51	22.54	22.52		2
64QAM	25	25	22.46	22.53	22.49	0-2	2
	50	0	22.48	22.51	22.38		2
	1	0	22.38	22.38	22.37	0-2	2
	1	25	22.31	22.32	22.42		2
	1	49	22.36	22.38	22.33		2
	25	0	21.57	21.60	21.59	0-3	3
25	12	21.52	21.57	21.56	3		
25	25	21.61	21.58	21.51	3		
	50	0	21.50	21.53	21.53		3

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

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.47	24.61	24.61	0	0
	1	12	24.47	24.67	24.57		0
	1	24	24.45	24.65	24.53		0
	12	0	23.34	23.60	23.56	0-1	1
	12	6	23.42	23.55	23.52		1
	12	13	23.40	23.59	23.54		1
16QAM	25	0	23.37	23.57	23.51	0-1	1
	1	0	23.24	23.36	23.42		1
	1	12	23.32	23.48	23.41		1
	1	24	23.33	23.47	23.40	0-2	1
	12	0	22.34	22.42	22.45		2
	12	6	22.31	22.48	22.47		2
64QAM	12	13	22.32	22.49	22.47	0-2	2
	25	0	22.37	22.54	22.50		2
	1	0	22.36	22.48	22.45		0-2
	1	12	22.42	22.54	22.44	2	
	1	24	22.38	22.62	22.53	2	
	64QAM	12	0	21.37	21.52	21.49	0-3
12		6	21.41	21.53	21.43	3	
12		13	21.37	21.52	21.48	3	
25		0	21.37	21.54	21.48		3

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Table 9-29
LTE Band 66 (AWS) Maximum 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	24.35	24.58	24.55	0	0
	1	7	24.42	24.60	24.55		0
	1	14	24.43	24.56	24.56		0
	8	0	23.28	23.56	23.52	0-1	1
	8	4	23.34	23.57	23.54		1
	8	7	23.35	23.57	23.51		1
	15	0	23.34	23.57	23.57		1
16QAM	1	0	23.25	23.51	23.51	0-1	1
	1	7	23.27	23.49	23.43		1
	1	14	23.28	23.46	23.38		1
	8	0	22.30	22.46	22.51	0-2	2
	8	4	22.29	22.46	22.50		2
	8	7	22.27	22.54	22.52		2
	15	0	22.29	22.47	22.50		2
64QAM	1	0	22.27	22.55	22.35	0-2	2
	1	7	22.31	22.53	22.39		2
	1	14	22.30	22.52	22.38		2
	8	0	21.30	21.49	21.53	0-3	3
	8	4	21.29	21.51	21.47		3
	8	7	21.28	21.50	21.48		3
	15	0	21.28	21.47	21.54		3

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

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.36	24.55	24.59	0	0
	1	2	24.29	24.57	24.56		0
	1	5	24.36	24.49	24.60		0
	3	0	24.35	24.55	24.62		0
	3	2	24.38	24.59	24.59		0
	3	3	24.38	24.55	24.56		0
	6	0	23.16	23.48	23.47	0-1	1
16QAM	1	0	23.13	23.35	23.32	0-1	1
	1	2	23.08	23.31	23.29		1
	1	5	23.20	23.30	23.27		1
	3	0	23.20	23.41	23.45		1
	3	2	23.23	23.44	23.51		1
	3	3	23.22	23.45	23.47		1
64QAM	6	0	22.24	22.47	22.54	0-2	2
	1	0	22.16	22.31	22.43	0-2	2
	1	2	22.21	22.37	22.45		2
	1	5	22.14	22.36	22.43		2
	3	0	22.31	22.47	22.48		2
	3	2	22.31	22.47	22.51		2
	3	3	22.29	22.48	22.49		2
	6	0	21.21	21.42	21.47	0-3	3

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Table 9-31
LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.55	21.63	21.47	0	0
	1	50	21.51	21.57	21.48		0
	1	99	21.45	21.58	21.46		0
	50	0	21.47	21.55	21.39	0-1	0
	50	25	21.51	21.57	21.43		0
	50	50	21.47	21.59	21.41		0
	100	0	21.43	21.53	21.40		0
16QAM	1	0	21.32	21.47	21.23	0-1	0
	1	50	21.41	21.39	21.23		0
	1	99	21.25	21.38	21.18		0
	50	0	21.51	21.55	21.38	0-2	0
	50	25	21.56	21.58	21.47		0
	50	50	21.48	21.59	21.39		0
	100	0	21.42	21.55	21.41		0
64QAM	1	0	21.37	21.42	21.22	0-2	0
	1	50	21.35	21.49	21.36		0
	1	99	21.27	21.39	21.26		0
	50	0	21.45	21.64	21.46	0-3	0
	50	25	21.53	21.66	21.47		0
	50	50	21.52	21.59	21.44		0
	100	0	21.49	21.58	21.42		0

Table 9-32
LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.38	21.62	21.63	0	0
	1	36	21.58	21.60	21.54		0
	1	74	21.46	21.56	21.57		0
	36	0	21.39	21.45	21.47	0-1	0
	36	18	21.55	21.61	21.47		0
	36	37	21.48	21.53	21.60		0
	75	0	21.47	21.53	21.41		0
16QAM	1	0	21.46	21.43	21.55	0-1	0
	1	36	21.36	21.30	21.25		0
	1	74	21.43	21.35	21.28		0
	36	0	21.43	21.54	21.46	0-2	0
	36	18	21.53	21.58	21.48		0
	36	37	21.62	21.53	21.46		0
	75	0	21.47	21.54	21.37		0
64QAM	1	0	21.48	21.46	21.27	0-2	0
	1	36	21.23	21.41	21.32		0
	1	74	21.38	21.37	21.43		0
	36	0	21.32	21.35	21.39	0-3	0
	36	18	21.36	21.45	21.69		0
	36	37	21.33	21.36	21.71		0
	75	0	21.16	21.28	21.55		0

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Table 9-33
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.48	21.51	21.52	0	0
	1	25	21.61	21.58	21.53		0
	1	49	21.77	21.51	21.48		0
	25	0	21.43	21.45	21.56	0-1	0
	25	12	21.53	21.54	21.53		0
	25	25	21.57	21.56	21.54		0
	50	0	21.42	21.48	21.56		0
16QAM	1	0	21.36	21.34	21.32	0-1	0
	1	25	21.39	21.43	21.34		0
	1	49	21.31	21.32	21.27		0
	25	0	21.33	21.47	21.46	0-2	0
	25	12	21.47	21.50	21.54		0
	25	25	21.54	21.57	21.49		0
	50	0	21.51	21.46	21.45		0
64QAM	1	0	21.44	21.35	21.43	0-2	0
	1	25	21.62	21.45	21.43		0
	1	49	21.54	21.51	21.38		0
	25	0	21.48	21.43	21.51	0-3	0
	25	12	21.55	21.54	21.59		0
	25	25	21.62	21.54	21.58		0
	50	0	21.42	21.52	21.47		0

Table 9-34
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.33	21.53	21.39	0	0
	1	12	21.28	21.59	21.44		0
	1	24	21.32	21.54	21.41		0
	12	0	21.29	21.50	21.46	0-1	0
	12	6	21.34	21.48	21.46		0
	12	13	21.32	21.54	21.42		0
	25	0	21.33	21.44	21.41		0
16QAM	1	0	21.27	21.23	21.25	0-1	0
	1	12	21.17	21.34	21.29		0
	1	24	21.13	21.29	21.31		0
	12	0	21.15	21.35	21.34	0-2	0
	12	6	21.25	21.29	21.32		0
	12	13	21.28	21.41	21.31		0
	25	0	21.27	21.36	21.31		0
64QAM	1	0	21.29	21.37	21.39	0-2	0
	1	12	21.21	21.28	21.35		0
	1	24	21.42	21.36	21.31		0
	12	0	21.23	21.33	21.38	0-3	0
	12	6	21.29	21.37	21.31		0
	12	13	21.27	21.43	21.42		0
	25	0	21.30	21.44	21.41		0

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Table 9-35
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth – Hotspot Mode and/or Earjack Mode
Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.17	21.37	21.27	0	0
	1	7	21.10	21.43	21.31		0
	1	14	21.14	21.41	21.27		0
	8	0	21.22	21.37	21.38	0-1	0
	8	4	21.19	21.36	21.32		0
	8	7	21.20	21.37	21.33		0
	15	0	21.23	21.42	21.39		0
16QAM	1	0	21.15	21.15	21.31	0-1	0
	1	7	21.02	21.18	21.20		0
	1	14	21.10	21.22	21.27		0
	8	0	21.21	21.32	21.25	0-2	0
	8	4	21.22	21.43	21.41		0
	8	7	21.20	21.45	21.34		0
	15	0	21.23	21.42	21.42		0
64QAM	1	0	21.26	21.41	21.40	0-2	0
	1	7	21.29	21.44	21.35		0
	1	14	21.28	21.51	21.37		0
	8	0	21.24	21.43	21.41	0-3	0
	8	4	21.25	21.45	21.37		0
	8	7	21.23	21.46	21.39		0
	15	0	21.30	21.44	21.35		0

Table 9-36
LTE Band 66 (AWS) Reduced Conducted Powers – 1.4 MHz Bandwidth – Hotspot Mode and/or Earjack
Mode Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.19	21.44	21.42	0	0
	1	2	21.24	21.41	21.38		0
	1	5	21.22	21.42	21.40		0
	3	0	21.21	21.44	21.48		0
	3	2	21.26	21.48	21.43		0
	3	3	21.30	21.47	21.44		0
	6	0	21.24	21.48	21.41	0-1	0
16QAM	1	0	21.15	21.23	21.28	0-1	0
	1	2	21.15	21.32	21.28		0
	1	5	21.12	21.23	21.29		0
	3	0	21.09	21.32	21.41		0
	3	2	21.16	21.42	21.39		0
	3	3	21.16	21.40	21.46	0	
64QAM	6	0	21.28	21.41	21.43	0-2	0
	1	0	21.12	21.41	21.42	0-2	0
	1	2	21.17	21.39	21.34		0
	1	5	21.09	21.37	21.38		0
	3	0	21.24	21.46	21.54		0
	3	2	21.30	21.49	21.53		0
	3	3	21.24	21.47	21.49	0	
6	0	21.13	21.42	21.35	0-3	0	

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Table 9-37

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

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.55	21.62	21.46	0	0
	1	50	21.57	21.60	21.47		0
	1	99	21.44	21.59	21.55		0
	50	0	21.41	21.49	21.40	0-1	0
	50	25	21.51	21.56	21.37		0
	50	50	21.47	21.53	21.42		0
	100	0	21.49	21.51	21.38		0
16QAM	1	0	21.29	21.38	21.21	0-1	0
	1	50	21.42	21.30	21.14		0
	1	99	21.12	21.31	21.09		0
	50	0	21.52	21.50	21.34	0-2	0
	50	25	21.52	21.58	21.42		0
	50	50	21.47	21.60	21.43		0
	100	0	21.44	21.51	21.36		0
64QAM	1	0	21.28	21.42	21.26	0-2	0
	1	50	21.38	21.39	21.20		0
	1	99	21.33	21.42	21.27		0
	50	0	21.44	21.54	21.38	0-3	0
	50	25	21.51	21.54	21.43		0
	50	50	21.49	21.55	21.41		0
	100	0	21.46	21.61	21.42		0

Table 9-38

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

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.32	21.46	21.40	0	0
	1	36	21.38	21.33	21.44		0
	1	74	21.30	21.38	21.31		0
	36	0	21.40	21.37	21.34	0-1	0
	36	18	21.29	21.37	21.40		0
	36	37	21.33	21.45	21.29		0
	75	0	21.26	21.38	21.40		0
16QAM	1	0	21.20	21.27	21.34	0-1	0
	1	36	21.47	21.27	21.62		0
	1	74	21.47	21.54	21.23		0
	36	0	21.43	21.41	21.42	0-2	0
	36	18	21.45	21.53	21.34		0
	36	37	21.35	21.46	21.36		0
	75	0	21.34	21.42	21.38		0
64QAM	1	0	21.45	21.47	21.51	0-2	0
	1	36	21.50	21.81	21.28		0
	1	74	21.38	21.41	21.42		0
	36	0	21.44	21.41	21.49	0-3	0.5
	36	18	21.41	21.37	21.39		0.5
	36	37	21.43	21.47	21.48		0.5
	75	0	21.41	21.36	21.30		0.5

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Table 9-39

LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth – Grip Sensor Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.40	21.56	21.41	0	0
	1	25	21.40	21.25	21.57		0
	1	49	21.44	21.52	21.26		0
	25	0	21.41	21.47	21.46	0-1	0
	25	12	21.39	21.45	21.43		0
	25	25	21.33	21.46	21.34		0
16QAM	50	0	21.38	21.43	21.40	0-1	0
	1	0	21.54	21.54	21.08		0
	1	25	21.39	21.39	21.17		0
	1	49	21.41	21.41	21.52	0-2	0
	25	0	21.41	21.41	21.36		0
	25	12	21.46	21.46	21.46		0
64QAM	25	25	21.35	21.35	21.45	0-2	0
	50	0	21.50	21.50	21.49		0
	1	0	21.24	21.33	21.48		0-2
	1	25	21.38	21.67	21.78	0	
	1	49	21.48	21.52	21.57	0	
	25	0	21.40	21.47	21.42	0-3	0
25	12	21.34	21.39	21.39	0		
25	25	21.37	21.42	21.53	0		
	50	0	21.43	21.44	21.42		0

Table 9-40

LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth – Grip Sensor Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.23	21.45	21.42	0	0
	1	12	21.17	21.40	21.35		0
	1	24	21.27	21.39	21.51		0
	12	0	21.25	21.48	21.46	0-1	0
	12	6	21.20	21.50	21.48		0
	12	13	21.26	21.45	21.33		0
	25	0	21.24	21.51	21.40		0
16QAM	1	0	21.12	21.25	21.02	0-1	0
	1	12	21.16	21.18	21.58		0
	1	24	21.15	21.16	21.37		0
	12	0	21.27	21.48	21.53	0-2	0
	12	6	21.41	21.44	21.50		0
	12	13	21.26	21.59	21.28		0
	25	0	21.35	21.47	21.50		0
64QAM	1	0	21.34	21.43	21.66	0-2	0
	1	12	21.11	21.66	21.66		0
	1	24	21.54	21.20	21.68		0
	12	0	21.16	21.45	21.28	0-3	0
	12	6	21.22	21.52	21.48		0
	12	13	21.23	21.66	21.39		0
	25	0	21.26	21.48	21.36		0

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Table 9-41

LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth – Grip Sensor Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.30	21.48	21.31	0	0
	1	7	21.21	21.46	21.25		0
	1	14	21.11	21.27	21.34		0
	8	0	21.15	21.45	21.40	0-1	0
	8	4	21.19	21.41	21.44		0
	8	7	21.28	21.41	21.51		0
	15	0	21.19	21.44	21.46		0
16QAM	1	0	21.14	21.17	21.39	0-1	0
	1	7	21.08	21.26	21.44		0
	1	14	21.19	21.06	21.25		0
	8	0	21.31	21.45	21.37	0-2	0
	8	4	21.34	21.33	21.45		0
	8	7	21.22	21.15	21.50		0
	15	0	21.29	21.39	21.65		0
64QAM	1	0	21.20	21.33	21.41	0-2	0
	1	7	21.17	21.36	21.30		0
	1	14	21.23	21.65	21.68		0
	8	0	21.20	21.52	21.51	0-3	0
	8	4	21.30	21.54	21.36		0
	8	7	21.44	21.52	21.51		0
	15	0	21.22	21.48	21.45		0

Table 9-42

LTE Band 66 (AWS) Reduced Conducted Powers – 1.4 MHz Bandwidth – Grip Sensor Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.47	21.68	21.69	0	0
	1	2	21.48	21.64	21.67		0
	1	5	21.41	21.64	21.67		0
	3	0	21.35	21.70	21.64		0
	3	2	21.20	21.73	21.65		0
	3	3	21.20	21.72	21.66		0
	6	0	21.21	21.47	21.64	0-1	0
16QAM	1	0	21.65	21.17	21.50	0-1	0
	1	2	21.00	21.20	21.29		0
	1	5	21.30	21.60	21.15		0
	3	0	21.50	21.47	21.48		0
	3	2	21.20	21.49	21.34		0
	3	3	21.54	21.45	21.61		0
	6	0	21.12	21.57	21.57	0-2	0
64QAM	1	0	21.19	21.53	21.29	0-2	0
	1	2	21.15	21.42	21.46		0
	1	5	21.06	21.17	21.57		0
	3	0	21.24	21.30	21.62		0
	3	2	21.30	21.17	21.56		0
	3	3	21.14	21.30	21.48		0
	6	0	21.05	21.20	21.29	0-3	0

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9.4.6

LTE Band 25 (PCS)

Table 9-43
LTE Band 25 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.47	24.36	23.63	0	0
	1	50	24.41	24.23	24.10		0
	1	99	24.54	23.58	23.65		0
	50	0	23.34	23.31	23.00	0-1	1
	50	25	23.36	23.18	22.93		1
	50	50	23.39	23.17	22.85		1
	100	0	23.35	23.19	22.88		1
16QAM	1	0	23.12	22.91	22.60	0-1	1
	1	50	23.07	22.84	22.78		1
	1	99	23.14	22.70	22.61		1
	50	0	22.25	22.24	21.92	0-2	2
	50	25	22.27	22.07	21.92		2
	50	50	22.29	22.04	21.83		2
	100	0	22.24	22.15	21.88		2
64QAM	1	0	22.14	21.91	21.84	0-2	2
	1	50	22.24	21.93	22.02		2
	1	99	22.37	21.69	21.86		2
	50	0	21.24	21.17	20.93	0-3	3
	50	25	21.28	21.08	20.86		3
	50	50	21.30	21.07	20.80		3
	100	0	21.32	21.18	20.93		3

Table 9-44
LTE Band 25 (PCS) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.63	24.48	24.22	0	0
	1	36	24.65	24.44	24.16		0
	1	74	24.63	24.20	24.21		0
	36	0	23.54	23.32	23.09	0-1	1
	36	18	23.58	23.36	23.08		1
	36	37	23.50	23.35	23.08		1
16QAM	75	0	23.57	23.31	23.05	0-1	1
	1	0	23.52	23.17	23.08		1
	1	36	23.67	23.40	22.99		1
	1	74	23.20	23.44	22.98	0-2	1
	36	0	22.36	22.31	22.03		2
	36	18	22.43	22.39	21.99		2
64QAM	36	37	22.50	22.29	22.01	0-2	2
	75	0	22.44	22.26	22.02		2
	1	0	22.50	22.27	22.02	0-2	2
	1	36	22.59	22.19	22.17		2
	1	74	22.66	22.55	22.05	0-3	2
	36	0	21.53	21.34	21.10		3
36	18	21.55	21.37	21.13	3		
36	37	21.53	21.36	21.07	3		
	75	0	21.54	21.32	21.12		3

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Table 9-45
LTE Band 25 (PCS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.49	24.43	24.06	0	0
	1	25	24.53	24.40	23.96		0
	1	49	24.52	24.02	24.02		0
	25	0	23.50	23.33	22.93	0-1	1
	25	12	23.43	23.22	22.88		1
	25	25	23.46	23.27	22.82		1
	50	0	23.51	23.27	22.82		1
16QAM	1	0	23.29	23.23	22.97	0-1	1
	1	25	23.29	23.14	22.81		1
	1	49	23.32	23.17	22.80		1
	25	0	22.36	22.26	21.89	0-2	2
	25	12	22.37	22.16	21.84		2
	25	25	22.33	22.15	21.85		2
	50	0	22.42	22.24	21.94		2
64QAM	1	0	22.27	22.24	21.83	0-2	2
	1	25	22.16	22.08	21.70		2
	1	49	22.24	22.12	21.74		2
	25	0	21.43	21.29	20.92	0-3	3
	25	12	21.42	21.18	20.83		3
	25	25	21.38	21.15	20.79		3
	50	0	21.46	21.33	20.95		3

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

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.13	24.60	23.93	0	0
	1	12	23.98	24.40	23.84		0
	1	24	24.00	24.50	23.89		0
	12	0	23.09	23.52	22.93	0-1	1
	12	6	23.08	23.55	22.96		1
	12	13	23.10	23.46	22.94		1
	25	0	23.10	23.55	22.93		1
16QAM	1	0	23.07	23.50	22.88	0-1	1
	1	12	22.93	23.43	22.80		1
	1	24	23.00	23.39	22.80		1
	12	0	22.09	22.40	21.92	0-2	2
	12	6	22.07	22.44	21.91		2
	12	13	22.05	22.43	21.88		2
	25	0	22.17	22.57	21.92		2
64QAM	1	0	22.08	22.40	21.99	0-2	2
	1	12	22.00	22.25	21.97		2
	1	24	22.09	22.31	21.96		2
	12	0	21.14	21.45	20.96	0-3	3
	12	6	21.07	21.43	20.95		3
	12	13	21.14	21.46	20.94		3
	25	0	21.14	21.51	21.02		3

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Table 9-47
LTE Band 25 (PCS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.93	24.47	23.76	0	0
	1	7	23.92	24.45	23.75		0
	1	14	23.94	24.43	23.76		0
	8	0	22.82	23.49	22.72	0-1	1
	8	4	22.87	23.49	22.71		1
	8	7	22.84	23.53	22.73		1
15	0	22.88	23.48	22.74	1		
16QAM	1	0	22.89	23.45	22.74	0-1	1
	1	7	22.87	23.29	22.70		1
	1	14	22.85	23.38	22.71		1
	8	0	21.81	22.48	21.73	0-2	2
	8	4	21.82	22.45	21.72		2
	8	7	21.84	22.42	21.74		2
15	0	21.88	22.46	21.71	2		
64QAM	1	0	22.07	22.45	22.47	0-2	2
	1	7	22.03	22.45	22.63		2
	1	14	21.60	22.18	22.65		2
	8	0	21.02	21.45	21.70	0-3	3
	8	4	21.01	21.44	21.66		3
	8	7	21.04	21.40	21.69		3
	15	0	21.05	21.50	21.70		3

Table 9-48
LTE Band 25 (PCS) Maximum Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.72	24.45	23.65	0	0
	1	2	23.74	24.42	23.67		0
	1	5	23.74	24.48	23.64		0
	3	0	23.75	24.34	23.69		0
	3	2	23.77	24.35	23.64		0
	3	3	23.75	24.35	23.65		0
	6	0	22.90	23.40	22.67	0-1	1
16QAM	1	0	22.60	23.11	23.53	0-1	1
	1	2	22.58	23.09	23.55		1
	1	5	22.62	23.08	23.58		1
	3	0	22.83	23.30	23.63		1
	3	2	22.82	23.37	23.63		1
	3	3	22.79	23.38	23.63		1
	6	0	21.77	22.42	22.64	0-2	2
64QAM	1	0	22.27	22.79	21.95	0-2	2
	1	2	22.41	22.78	22.05		2
	1	5	22.47	22.77	22.01		2
	3	0	22.47	22.86	22.11		2
	3	2	22.44	22.84	22.15		2
	3	3	22.39	22.85	22.14		2
	6	0	21.41	21.81	21.13	0-3	3

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Table 9-49
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.35	22.15	21.67	0	0
	1	50	22.32	22.06	22.04		0
	1	99	22.34	21.61	21.80		0
	50	0	22.25	22.26	22.00	0-1	0
	50	25	22.24	22.06	21.85		0
	50	50	22.30	22.12	21.74		0
	100	0	22.24	22.09	21.83		0
16QAM	1	0	22.04	21.87	21.76	0-1	0
	1	50	21.94	21.73	21.83		0
	1	99	22.15	21.72	21.59		0
	50	0	22.19	22.27	21.88	0-2	0
	50	25	22.26	22.07	21.82		0
	50	50	22.29	22.03	21.77		0
	100	0	22.24	22.17	21.82		0
64QAM	1	0	22.09	22.06	21.71	0-2	0
	1	50	22.17	21.96	21.87		0
	1	99	22.16	21.75	21.63		0
	50	0	21.98	22.09	21.64	0-3	0
	50	25	21.95	22.04	21.76		0
	50	50	21.94	22.02	21.72		0
	100	0	21.91	22.01	21.62		0

Table 9-50
LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.42	22.29	22.08	0	0
	1	36	22.48	22.27	22.05		0
	1	74	22.49	22.17	22.02		0
	36	0	22.48	22.28	22.11	0-1	0
	36	18	22.47	22.27	22.00		0
	36	37	22.49	22.21	22.05		0
	75	0	22.48	22.33	21.97		0
16QAM	1	0	22.32	22.03	22.01	0-1	0
	1	36	22.23	21.99	21.81		0
	1	74	22.26	21.98	21.75		0
	36	0	22.33	22.21	22.04	0-2	0
	36	18	22.43	22.20	21.98		0
	36	37	22.38	22.24	21.76		0
	75	0	22.47	22.32	22.03		0
64QAM	1	0	22.33	22.34	22.08	0-2	0
	1	36	22.25	22.17	22.12		0
	1	74	22.43	22.09	22.08		0
	36	0	22.44	21.93	22.06	0-3	0
	36	18	22.35	21.94	22.09		0
	36	37	22.42	21.91	22.13		0
	75	0	22.46	21.95	21.97		0

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Table 9-51
LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.02	22.15	21.68	0	0
	1	25	22.05	22.15	21.89		0
	1	49	21.92	22.13	21.76		0
	25	0	22.05	22.20	21.78	0-1	0
	25	12	21.99	22.19	21.79		0
	25	25	21.94	22.19	21.75		0
	50	0	22.04	22.15	21.77		0
16QAM	1	0	21.82	22.02	21.74	0-1	0
	1	25	21.92	22.06	21.67		0
	1	49	21.91	22.08	21.67		0
	25	0	22.03	22.03	21.85	0-2	0
	25	12	21.93	22.15	21.82		0
	25	25	21.90	22.14	21.85		0
	50	0	22.03	22.20	21.82		0
64QAM	1	0	21.94	22.12	21.73	0-2	0
	1	25	21.93	22.21	21.97		0
	1	49	21.81	22.17	21.74		0
	25	0	21.73	21.98	21.64	0-3	0
	25	12	21.80	21.94	21.63		0
	25	25	21.78	21.93	21.59		0
	50	0	21.79	21.91	21.64		0

Table 9-52
LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.90	22.14	21.92	0	0
	1	12	21.86	22.17	21.86		0
	1	24	21.85	22.19	21.84		0
	12	0	21.93	22.25	21.96	0-1	0
	12	6	21.87	22.21	21.92		0
	12	13	21.87	22.26	21.90		0
	25	0	21.89	22.24	21.88		0
16QAM	1	0	21.91	22.08	21.78	0-1	0
	1	12	22.00	22.04	21.70		0
	1	24	21.86	22.05	21.73		0
	12	0	21.85	22.17	21.91	0-2	0
	12	6	21.84	22.21	21.91		0
	12	13	21.90	22.19	21.88		0
	25	0	21.92	22.21	21.93		0
64QAM	1	0	21.84	22.19	21.82	0-2	0
	1	12	21.82	22.15	21.87		0
	1	24	21.85	22.12	21.85		0
	12	0	21.69	21.99	21.58	0-3	0
	12	6	21.64	21.99	21.56		0
	12	13	21.68	22.00	21.60		0
	25	0	21.74	22.00	21.63		0

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Table 9-53
LTE Band 25 (PCS) Reduced Conducted Powers - 3 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.83	22.18	21.84	0	0
	1	7	21.97	22.19	21.86		0
	1	14	21.74	22.20	21.79		0
	8	0	21.88	22.27	21.71	0-1	0
	8	4	21.83	22.26	21.75		0
	8	7	21.85	22.25	21.77		0
	15	0	21.82	22.23	21.72		0
16QAM	1	0	21.69	22.16	21.68	0-1	0
	1	7	21.66	22.05	21.69		0
	1	14	21.61	22.06	21.59		0
	8	0	21.81	22.27	21.91	0-2	0
	8	4	21.82	22.27	21.89		0
	8	7	21.85	22.29	21.86		0
	15	0	21.79	22.25	21.91		0
64QAM	1	0	21.85	22.20	21.77	0-2	0
	1	7	21.75	22.20	21.76		0
	1	14	21.73	22.17	21.79		0
	8	0	21.54	21.98	21.34	0-3	0
	8	4	21.54	21.99	21.35		0
	8	7	21.51	21.98	21.38		0
	15	0	21.54	22.00	21.40		0

Table 9-54
LTE Band 25 (PCS) Reduced Conducted Powers – 1.4 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.75	22.41	21.69	0	0
	1	2	21.73	22.39	21.76		0
	1	5	21.71	22.36	21.70		0
	3	0	21.81	22.43	21.57		0
	3	2	21.82	22.42	21.51		0
	3	3	21.81	22.38	21.50		0
	6	0	21.79	22.39	21.53	0-1	0
16QAM	1	0	21.51	22.25	21.55	0-1	0
	1	2	21.53	22.11	21.51		0
	1	5	21.55	22.13	21.52		0
	3	0	21.82	22.35	21.78		0
	3	2	21.76	22.21	21.55		0
	3	3	21.77	22.17	21.54		0
	6	0	21.86	22.26	21.56	0-2	0
64QAM	1	0	21.65	22.20	21.53	0-2	0
	1	2	21.59	22.05	21.51		0
	1	5	21.69	22.00	21.53		0
	3	0	21.46	21.95	21.43		0
	3	2	21.43	21.96	21.46		0
	3	3	21.38	21.94	21.48		0
	6	0	21.44	21.93	21.45	0-3	0

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Table 9-55
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth – Grip Sensor Active

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.30	22.13	21.75	0	0
	1	50	22.19	22.11	22.04		0
	1	99	22.36	21.62	21.86		0
	50	0	22.18	22.09	22.01	0-1	0
	50	25	22.23	22.03	21.81		0
	50	50	22.49	22.10	21.74		0
	100	0	22.09	22.09	21.83		0
16QAM	1	0	22.08	21.86	21.79	0-1	0
	1	50	21.84	21.83	21.78		0
	1	99	21.92	21.86	21.65		0
	50	0	22.18	22.13	21.92	0-2	0
	50	25	22.25	22.17	21.84		0
	50	50	22.30	22.01	21.72		0
	100	0	22.24	22.18	21.82		0
64QAM	1	0	22.32	22.05	21.82	0-2	0
	1	50	22.30	21.94	21.89		0
	1	99	22.43	21.73	21.66		0
	50	0	22.20	22.10	21.90	0-3	0
	50	25	22.18	22.11	21.91		0
	50	50	22.16	22.07	21.87		0
	100	0	22.13	22.20	21.93		0

Table 9-56
LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth – Grip Sensor Active

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.17	22.18	22.11	0	0
	1	36	22.30	22.10	21.95		0
	1	74	22.46	21.67	21.87		0
	36	0	22.33	22.21	22.00	0-1	0
	36	18	22.25	22.18	21.85		0
	36	37	22.35	22.19	21.87		0
	75	0	22.37	22.29	21.80		0
16QAM	1	0	22.18	22.34	22.07	0-1	0
	1	36	22.23	22.02	21.81		0
	1	74	22.33	21.99	21.67		0
	36	0	22.27	22.20	21.96	0-2	0
	36	18	21.93	22.17	21.77		0
	36	37	22.31	22.15	21.87		0
	75	0	22.46	22.18	21.93		0
64QAM	1	0	22.21	22.23	21.74	0-2	0
	1	36	21.98	22.09	21.83		0
	1	74	22.31	22.05	21.75		0
	36	0	22.03	22.22	21.84	0-3	0
	36	18	21.95	22.12	21.79		0
	36	37	22.02	22.20	21.83		0
	75	0	22.00	22.19	21.80		0

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Table 9-57

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

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.39	22.25	21.95	0	0
	1	25	22.37	22.16	21.85		0
	1	49	22.30	21.95	21.87		0
	25	0	22.37	22.36	21.93	0-1	0
	25	12	22.36	22.18	21.82		0
	25	25	22.36	22.14	21.89		0
	50	0	22.39	22.25	21.86		0
16QAM	1	0	22.23	21.96	21.72	0-1	0
	1	25	22.25	21.99	21.70		0
	1	49	22.16	21.98	21.66		0
	25	0	22.39	22.29	21.91	0-2	0
	25	12	22.36	22.19	21.86		0
	25	25	22.37	22.17	21.85		0
	50	0	22.43	22.24	21.95		0
64QAM	1	0	22.45	22.11	21.91	0-2	0
	1	25	22.27	22.01	21.67		0
	1	49	22.40	22.03	21.69		0
	25	0	22.20	22.23	21.93	0-3	0
	25	12	22.27	22.22	21.87		0
	25	25	22.24	22.17	21.71		0
	50	0	22.25	22.18	21.81		0

Table 9-58

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

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.84	22.24	21.51	0	0
	1	12	21.67	22.19	21.40		0
	1	24	21.77	22.21	21.50		0
	12	0	21.91	22.25	21.55	0-1	0
	12	6	21.90	22.24	21.44		0
	12	13	21.91	22.18	21.57		0
	25	0	21.94	22.25	21.49		0
16QAM	1	0	21.82	22.14	21.43	0-1	0
	1	12	21.78	22.15	21.46		0
	1	24	21.91	22.18	21.57		0
	12	0	21.88	22.23	21.50	0-2	0
	12	6	21.88	22.20	21.49		0
	12	13	21.91	22.11	21.49		0
	25	0	21.94	22.23	21.54		0
64QAM	1	0	21.82	22.02	21.47	0-2	0
	1	12	21.87	21.99	21.42		0
	1	24	21.97	21.99	21.51		0
	12	0	21.77	22.10	21.70	0-3	0
	12	6	21.66	22.03	21.66		0
	12	13	21.71	22.14	21.68		0
	25	0	21.77	22.10	21.69		0

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Table 9-59

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

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	21.92	22.33	22.42	0	0
	1	7	21.94	22.32	22.36		0
	1	14	22.03	22.40	22.35		0
	8	0	22.02	22.49	22.46	0-1	0
	8	4	21.97	22.43	22.43		0
	8	7	22.04	22.43	22.43		0
	15	0	22.02	22.42	21.83		0
16QAM	1	0	21.85	22.32	21.66	0-1	0
	1	7	22.14	22.24	21.63		0
	1	14	22.00	22.23	21.65		0
	8	0	22.00	22.50	21.80	0-2	0
	8	4	22.06	22.37	21.84		0
	8	7	22.11	22.48	21.82		0
	15	0	22.06	22.44	21.80		0
64QAM	1	0	21.95	22.21	21.87	0-2	0
	1	7	21.94	22.28	21.84		0
	1	14	21.85	22.23	21.56		0
	8	0	21.83	22.00	21.60	0-3	0
	8	4	21.92	22.00	21.62		0
	8	7	21.82	21.98	21.59		0
	15	0	21.85	21.96	21.61		0

Table 9-60

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

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.06	22.44	21.66	0	0
	1	2	22.17	22.38	21.68		0
	1	5	22.08	22.36	21.70		0
	3	0	22.03	22.49	21.79		0
	3	2	22.00	22.45	21.81		0
	3	3	22.01	22.41	21.78		0
	6	0	21.98	22.42	21.73	0-1	0
16QAM	1	0	21.60	22.15	21.54	0-1	0
	1	2	21.63	22.12	21.39		0
	1	5	21.61	22.11	21.38		0
	3	0	21.86	22.49	21.67		0
	3	2	22.02	22.40	21.72		0
	3	3	21.89	22.61	21.71		0
	6	0	22.04	22.48	21.82	0-2	0
64QAM	1	0	21.97	22.31	21.74	0-2	0
	1	2	21.80	22.31	21.67		0
	1	5	21.75	22.37	21.61		0
	3	0	21.88	22.09	21.63		0
	3	2	21.87	22.16	21.55		0
	3	3	21.85	22.21	21.54		0
	6	0	21.80	22.22	21.55	0-3	0

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LTE Band 7

Table 9-61
LTE Band 7 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.31	22.43	22.40	0	0
	1	50	22.20	22.22	22.16		0
	1	99	22.12	22.07	22.08		0
	50	0	21.29	21.23	21.19	0-1	1
	50	25	21.25	21.19	21.10		1
	50	50	21.17	21.11	21.05		1
	100	0	21.22	21.19	21.13		1
16QAM	1	0	21.05	21.07	20.88	0-1	1
	1	50	21.01	20.95	20.72		1
	1	99	20.98	20.83	20.61		1
	50	0	20.29	20.20	20.13	0-2	2
	50	25	20.25	20.09	20.10		2
	50	50	20.16	20.06	20.03		2
	100	0	20.13	20.08	20.06		2
64QAM	1	0	20.13	20.12	20.15	0-2	2
	1	50	19.95	20.08	20.01		2
	1	99	19.90	19.91	19.90		2
	50	0	19.34	19.30	19.30	0-3	3
	50	25	19.27	19.23	19.26		3
	50	50	19.22	19.18	19.23		3
	100	0	19.30	19.29	19.30		3

Table 9-62
LTE Band 7 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.20	22.25	22.07	0	0
	1	36	22.24	22.16	21.95		0
	1	74	22.16	22.07	21.85		0
	36	0	21.22	21.18	21.01	0-1	1
	36	18	21.22	21.15	20.96		1
	36	37	21.17	21.11	20.91		1
	75	0	21.18	21.13	20.97		1
16QAM	1	0	21.10	21.18	20.91	0-1	1
	1	36	21.05	21.04	20.84		1
	1	74	21.03	20.91	20.67		1
	36	0	20.11	20.18	19.92	0-2	2
	36	18	20.08	20.12	19.87		2
	36	37	20.10	20.01	19.77		2
	75	0	20.10	20.14	19.91		2
64QAM	1	0	20.07	20.05	19.90	0-2	2
	1	36	20.06	19.96	19.85		2
	1	74	20.07	19.87	19.79		2
	36	0	19.27	19.33	19.10	0-3	3
	36	18	19.30	19.27	19.06		3
	36	37	19.25	19.22	19.05		3
	75	0	19.23	19.27	19.07		3

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Table 9-63
LTE Band 7 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.33	22.39	22.20	0	0
	1	25	22.43	22.31	22.14		0
	1	49	22.35	22.19	22.02		0
	25	0	21.37	21.35	21.12	0-1	1
	25	12	21.41	21.29	21.10		1
	25	25	21.37	21.22	21.10		1
16QAM	50	0	21.40	21.27	21.09	0-1	1
	1	0	21.20	21.18	21.07		1
	1	25	21.30	21.10	20.94		1
	1	49	21.16	20.98	20.84	0-2	1
	25	0	20.29	20.25	20.15		2
	25	12	20.30	20.20	20.05		2
64QAM	25	25	20.25	20.16	20.02	0-2	2
	50	0	20.31	20.20	20.05		2
	1	0	20.12	20.27	20.07		0-2
	1	25	20.40	20.12	19.94	2	
	1	49	20.14	19.98	20.00	0-3	
	25	0	19.44	19.38	19.24		3
25	12	19.42	19.34	19.21	3		
64QAM	25	25	19.43	19.31	19.15	0-3	3
	50	0	19.42	19.40	19.22		3

Table 9-64
LTE Band 7 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.13	22.30	22.10	0	0
	1	12	22.16	22.25	22.08		0
	1	24	22.02	22.20	22.04		0
	12	0	21.00	21.22	21.08	0-1	1
	12	6	21.05	21.21	21.01		1
	12	13	21.06	21.23	21.00		1
16QAM	25	0	21.08	21.21	21.06	0-1	1
	1	0	20.85	21.20	20.93		1
	1	12	20.85	21.12	20.91		1
	1	24	20.84	21.00	20.80	0-2	1
	12	0	19.96	20.09	20.00		2
	12	6	19.90	20.07	19.95		2
64QAM	12	13	19.93	20.09	19.92	0-2	2
	25	0	19.91	20.15	19.97		2
	1	0	19.97	20.17	20.11		0-2
	1	12	20.01	20.14	20.06	2	
	1	24	20.00	20.06	20.03	0-3	
	12	0	19.04	19.24	19.16		3
12	6	19.08	19.24	19.17	3		
64QAM	12	13	19.09	19.22	19.16	0-3	3
	25	0	19.08	19.28	19.20		3

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Table 9-65

LTE Band 7 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20850 (2510.0 MHz)	21100 (2535.0 MHz)	21350 (2560.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.37	20.39	20.26	0	0
	1	50	20.33	20.24	20.15		0
	1	99	20.22	20.10	20.10		0
	50	0	20.24	20.21	20.11	0-1	0
	50	25	20.22	20.15	20.01		0
	50	50	20.13	20.09	20.00		0
	100	0	20.21	20.11	20.08		0
16QAM	1	0	19.99	19.98	19.95	0-1	0
	1	50	19.89	19.85	19.77		0
	1	99	19.79	19.72	19.69		0
	50	0	20.29	20.27	20.13	0-2	0
	50	25	20.23	20.21	20.05		0
	50	50	20.17	20.12	19.98		0
	100	0	20.19	20.16	20.07		0
64QAM	1	0	20.22	20.16	20.12	0-2	0
	1	50	20.17	20.07	20.00		0
	1	99	20.01	20.03	19.88		0
	50	0	19.40	19.37	19.28	0-3	1
	50	25	19.34	19.28	19.20		1
	50	50	19.29	19.21	19.17		1
	100	0	19.34	19.32	19.22		1

Table 9-66

LTE Band 7 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20825 (2507.5 MHz)	21100 (2535.0 MHz)	21375 (2562.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.22	20.23	20.04	0	0
	1	36	20.25	20.06	19.93		0
	1	74	20.20	19.99	19.83		0
	36	0	20.16	20.15	20.04	0-1	0
	36	18	20.20	20.08	19.91		0
	36	37	20.21	20.04	19.84		0
	75	0	20.19	20.15	19.97		0
16QAM	1	0	20.11	20.19	19.92	0-1	0
	1	36	20.11	20.13	19.84		0
	1	74	20.04	20.00	19.81		0
	36	0	20.13	20.25	19.97	0-2	0
	36	18	20.21	20.18	19.93		0
	36	37	20.17	20.13	19.85		0
	75	0	20.18	20.21	19.99		0
64QAM	1	0	20.16	20.31	20.15	0-2	0
	1	36	20.23	20.19	19.95		0
	1	74	20.14	20.06	19.91		0
	36	0	19.35	19.34	19.16	0-3	1
	36	18	19.36	19.28	19.13		1
	36	37	19.33	19.31	19.08		1
	75	0	19.32	19.23	19.11		1

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Table 9-67

LTE Band 7 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20800 (2505.0 MHz)	21100 (2535.0 MHz)	21400 (2565.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.22	20.27	20.13	0	0
	1	25	20.34	20.26	20.07		0
	1	49	20.24	20.13	19.98		0
	25	0	20.26	20.23	20.15	0-1	0
	25	12	20.34	20.19	20.06		0
	25	25	20.26	20.13	20.07		0
	50	0	20.27	20.23	20.08		0
16QAM	1	0	20.13	20.11	20.04	0-1	0
	1	25	20.19	20.09	20.03		0
	1	49	20.09	20.05	19.96		0
	25	0	20.21	20.21	20.09	0-2	0
	25	12	20.29	20.20	20.00		0
	25	25	20.27	20.15	20.03		0
	50	0	20.26	20.23	20.12		0
64QAM	1	0	20.22	20.19	20.14	0-2	0
	1	25	20.32	20.28	20.03		0
	1	49	20.17	20.13	19.89		0
	25	0	19.38	19.41	19.15	0-3	1
	25	12	19.42	19.36	19.15		1
	25	25	19.43	19.31	19.11		1
	50	0	19.43	19.32	19.17		1

Table 9-68

LTE Band 7 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			20775 (2502.5 MHz)	21100 (2535.0 MHz)	21425 (2567.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	20.08	20.29	20.15	0	0
	1	12	20.21	20.31	20.13		0
	1	24	20.16	20.23	20.07		0
	12	0	20.19	20.28	20.20	0-1	0
	12	6	20.16	20.20	20.19		0
	12	13	20.13	20.24	20.14		0
	25	0	20.09	20.32	20.17		0
16QAM	1	0	19.92	20.35	20.12	0-1	0
	1	12	19.99	20.19	20.07		0
	1	24	20.05	20.06	19.94		0
	12	0	20.11	20.22	20.08	0-2	0
	12	6	20.13	20.22	20.02		0
	12	13	20.11	20.19	20.05		0
	25	0	20.11	20.26	20.10		0
64QAM	1	0	20.05	20.21	20.17	0-2	0
	1	12	20.01	20.16	20.04		0
	1	24	20.06	20.11	19.98		0
	12	0	19.18	19.39	19.25	0-3	1
	12	6	19.21	19.35	19.25		1
	12	13	19.25	19.29	19.21		1
	25	0	19.23	19.36	19.31		1

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LTE Band 41

Table 9-69
LTE Band 41 Maximum PC3 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.37	24.50	24.07	23.80	23.87	0	0
	1	50	24.04	24.15	23.93	23.69	23.47		0
	1	99	23.98	23.99	23.78	23.57	23.39		0
	50	0	23.11	23.08	22.92	22.71	22.49	0-1	1
	50	25	23.09	23.01	22.87	22.68	22.44		1
	50	50	23.06	22.91	22.83	22.61	22.42		1
	100	0	23.10	23.01	22.87	22.65	22.45		1
16QAM	1	0	22.81	22.77	22.53	22.51	22.47	0-1	1
	1	50	22.78	22.86	22.26	22.40	22.38		1
	1	99	22.73	22.77	22.58	22.26	22.40		1
	50	0	22.19	22.16	21.97	21.84	21.59	0-2	2
	50	25	22.15	22.05	21.92	21.75	21.55		2
	50	50	22.11	21.98	21.89	21.71	21.51		2
	100	0	22.16	22.11	21.95	21.70	21.57		2
64QAM	1	0	22.11	22.30	21.91	21.90	21.53	0-2	2
	1	50	22.00	22.11	21.83	21.77	21.45		2
	1	99	21.95	21.93	21.75	21.67	21.44		2
	50	0	21.25	21.27	21.13	21.00	20.81	0-3	3
	50	25	21.20	21.21	21.08	20.94	20.79		3
	50	50	21.19	21.11	21.03	20.90	20.74		3
	100	0	21.22	21.21	21.09	20.95	20.79		3

Table 9-70
LTE Band 41 Maximum PC3 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.01	24.04	24.12	23.54	23.23	0	0
	1	36	24.01	24.07	24.09	23.45	23.26		0
	1	74	23.93	24.01	24.05	23.48	23.22		0
	36	0	23.40	23.08	23.47	22.58	22.75	0-1	1
	36	18	23.39	23.05	23.42	22.54	22.72		1
	36	37	23.38	23.05	23.41	22.56	22.71		1
	75	0	23.43	23.07	23.40	22.57	22.73		1
16QAM	1	0	23.25	23.34	23.04	22.58	22.34	0-1	1
	1	36	23.15	23.47	22.70	22.74	22.35		1
	1	74	23.23	23.40	22.68	22.70	22.77		1
	36	0	22.44	22.50	22.06	22.02	21.74	0-2	2
	36	18	22.43	22.42	22.03	21.96	21.79		2
	36	37	22.42	22.45	22.02	21.95	21.68		2
	75	0	22.39	22.49	22.07	21.98	21.70		2
64QAM	1	0	21.92	22.31	21.73	21.63	21.56	0-2	2
	1	36	21.80	21.96	21.74	21.49	21.40		2
	1	74	21.72	21.85	21.96	21.39	21.32		2
	36	0	21.28	21.42	21.19	21.09	20.89	0-3	3
	36	18	21.34	21.38	21.25	20.99	20.85		3
	36	37	21.20	21.31	21.15	20.99	20.76		3
	75	0	21.27	21.50	21.26	20.97	20.81		3

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Table 9-71
LTE Band 41 Maximum PC3 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.77	24.05	23.83	23.47	23.32	0	0
	1	25	23.75	24.07	23.92	23.42	23.26		0
	1	49	23.75	24.05	23.82	23.38	23.25		0
	25	0	23.33	23.47	23.36	22.89	22.66	0-1	1
	25	12	23.31	23.46	23.35	22.86	22.63		1
	25	25	23.30	23.45	23.35	22.87	22.62		1
	50	0	23.33	23.47	23.32	22.86	22.65		1
16QAM	1	0	23.10	22.78	23.21	22.31	22.49	0-1	1
	1	25	23.02	22.75	23.27	22.24	22.45		1
	1	49	22.91	22.70	23.15	22.25	22.42		1
	25	0	22.43	22.49	22.35	21.95	21.68	0-2	2
	25	12	22.33	22.50	22.33	21.92	21.65		2
	25	25	22.38	22.48	22.32	21.91	21.62		2
	50	0	22.37	22.48	22.36	21.90	21.67		2
64QAM	1	0	22.04	22.11	21.54	21.47	21.31	0-2	2
	1	25	21.97	22.22	21.76	21.36	21.58		2
	1	49	22.07	21.88	21.85	21.34	21.05		2
	25	0	21.22	21.47	21.19	20.99	20.87	0-3	3
	25	12	21.23	21.34	21.22	20.86	20.77		3
	25	25	21.35	21.40	21.19	20.84	20.86		3
	50	0	21.24	21.37	21.25	20.94	20.79		3

Table 9-72
LTE Band 41 Maximum PC3 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.81	24.00	23.95	23.35	23.18	0	0
	1	12	23.80	23.99	23.94	23.34	23.20		0
	1	24	23.78	23.89	23.95	23.33	23.19		0
	12	0	23.37	23.43	23.38	22.88	22.64	0-1	1
	12	6	23.33	23.43	23.36	22.86	22.65		1
	12	13	23.33	23.45	23.40	22.90	22.66		1
	25	0	23.34	23.47	23.38	22.90	22.66		1
16QAM	1	0	22.65	23.38	22.90	22.70	22.32	0-1	1
	1	12	22.70	23.41	22.85	22.70	22.30		1
	1	24	22.68	23.40	22.87	22.81	22.33		1
	12	0	22.00	22.42	22.43	21.89	21.65	0-2	2
	12	6	22.01	22.50	22.42	21.87	21.64		2
	12	13	21.99	22.35	22.44	21.87	21.64		2
	25	0	21.97	22.46	22.39	21.94	21.60		2
64QAM	1	0	21.70	21.97	21.61	21.79	21.27	0-2	2
	1	12	21.96	22.06	21.60	21.56	21.53		2
	1	24	22.16	21.84	21.56	21.48	21.13		2
	12	0	21.28	21.31	21.29	20.88	20.82	0-3	3
	12	6	21.26	21.35	21.08	20.92	20.74		3
	12	13	21.13	21.37	21.19	20.98	20.76		3
	25	0	21.15	21.43	21.22	20.90	20.75		3

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Table 9-73
LTE Band 41 PC2 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.50	27.66	27.33	27.35	27.34	0	0
	1	50	27.41	27.63	27.56	27.19	26.98		0
	1	99	27.33	27.51	27.48	27.07	26.84		0
	50	0	26.29	26.44	26.28	25.99	25.72	0-1	1
	50	25	26.24	26.37	26.26	25.92	25.67		1
	50	50	26.20	26.30	26.23	25.88	25.65		1
	100	0	26.21	26.35	26.25	25.92	25.67		1
16QAM	1	0	26.51	26.65	26.29	25.82	25.88	0-1	1
	1	50	26.05	26.51	26.03	25.75	25.79		1
	1	99	25.82	26.41	25.99	25.62	25.68		1
	50	0	25.24	25.55	25.44	25.13	24.80	0-2	2
	50	25	25.38	25.47	25.36	25.00	24.71		2
	50	50	25.32	25.41	25.31	24.96	24.67		2
	100	0	25.35	25.48	25.33	25.02	24.76		2
64QAM	1	0	25.05	24.95	24.85	24.88	24.40	0-2	2
	1	50	24.90	24.82	24.78	24.53	24.35		2
	1	99	24.75	24.70	24.72	24.44	24.40		2
	50	0	24.40	24.59	24.43	24.12	23.77	0-3	3
	50	25	24.33	24.50	24.36	24.04	23.77		3
	50	50	24.29	24.43	24.32	23.97	23.75		3
	100	0	24.36	24.60	24.43	24.07	23.82		3

Table 9-74
LTE Band 41 PC2 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.41	27.55	27.40	26.99	26.82	0	0
	1	36	27.38	27.50	27.44	26.96	26.79		0
	1	74	27.32	27.52	27.41	26.91	26.77		0
	36	0	26.42	26.48	26.45	25.95	25.67	0-1	1
	36	18	26.35	26.44	26.40	25.91	25.65		1
	36	37	26.30	26.40	26.38	25.90	25.67		1
	75	0	26.32	26.41	26.38	25.91	25.65		1
16QAM	1	0	26.24	26.10	26.43	26.15	25.30	0-1	1
	1	36	26.12	26.20	26.46	26.18	25.29		1
	1	74	26.20	26.35	26.43	26.10	25.27		1
	36	0	25.52	25.62	25.45	24.95	24.72	0-2	2
	36	18	25.47	25.57	25.44	24.93	24.72		2
	36	37	25.44	25.56	25.44	24.91	24.70		2
	75	0	25.42	25.48	25.43	24.97	24.70		2
64QAM	1	0	25.40	24.88	24.53	24.78	24.56	0-2	2
	1	36	25.37	24.85	24.55	24.63	24.55		2
	1	74	25.23	24.75	24.50	24.34	24.56		2
	36	0	24.40	24.58	24.18	24.22	23.82	0-3	3
	36	18	24.35	24.56	24.08	23.99	23.75		3
	36	37	24.29	24.44	24.07	24.27	23.64		3
	75	0	24.56	24.58	24.18	24.25	23.50		3

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Table 9-75
LTE Band 41 PC2 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.30	27.55	27.44	26.98	26.94	0	0
	1	25	27.24	27.60	27.33	26.88	26.94		0
	1	49	27.21	27.60	27.30	26.83	26.87		0
	25	0	26.32	26.40	26.34	25.87	25.66	0-1	1
	25	12	26.30	26.40	26.35	25.84	25.65		1
	25	25	26.27	26.41	26.31	25.82	25.65		1
	50	0	26.28	26.39	26.32	25.85	25.64		1
16QAM	1	0	25.82	26.05	26.04	25.98	25.18	0-1	1
	1	25	25.77	26.28	26.00	25.96	25.14		1
	1	49	25.76	26.21	25.98	26.08	25.12		1
	25	0	25.44	25.50	25.38	25.05	24.71	0-2	2
	25	12	25.42	25.53	25.38	25.03	24.70		2
	25	25	25.39	25.52	25.36	25.03	24.70		2
	50	0	25.41	25.44	25.36	24.95	24.75		2
64QAM	1	0	25.50	24.88	24.87	24.35	24.56	0-2	2
	1	25	25.37	24.75	24.76	24.56	24.70		2
	1	49	25.40	24.77	24.58	24.89	24.66		2
	25	0	24.23	24.23	24.23	24.10	23.78	0-3	3
	25	12	24.56	24.35	24.18	24.12	23.80		3
	25	25	24.35	24.12	24.01	24.30	23.46		3
	50	0	24.29	24.17	24.02	23.89	23.50		3

Table 9-76
LTE Band 41 PC2 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	27.43	27.45	27.56	26.94	26.80	0	0
	1	12	27.40	27.43	27.50	26.91	26.82		0
	1	24	27.41	27.41	27.51	26.90	26.81		0
	12	0	26.35	26.44	26.37	25.89	25.70	0-1	1
	12	6	26.33	26.43	26.36	25.88	25.67		1
	12	13	26.32	26.42	26.36	25.90	25.68		1
	25	0	26.32	26.46	26.38	25.89	25.69		1
16QAM	1	0	25.85	26.45	26.08	25.72	25.57	0-1	1
	1	12	25.82	26.41	26.35	25.67	25.56		1
	1	24	25.85	26.40	26.08	25.65	25.54		1
	12	0	25.32	25.56	25.33	24.98	24.74	0-2	2
	12	6	25.31	25.56	25.42	24.97	24.72		2
	12	13	25.29	25.56	25.42	24.97	24.71		2
	25	0	25.39	25.51	25.43	24.93	24.77		2
64QAM	1	0	25.10	24.88	24.56	24.66	24.75	0-2	2
	1	12	25.30	24.98	24.89	24.57	24.66		2
	1	24	25.22	24.87	24.91	24.79	24.05		2
	12	0	24.33	24.69	24.23	24.20	23.88	0-3	3
	12	6	24.57	24.30	24.19	24.11	23.80		3
	12	13	24.65	24.23	24.05	24.25	23.56		3
	25	0	24.50	24.17	24.01	23.99	23.60		3

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Table 9-77

LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.59	24.90	24.58	24.23	23.74	0	0
	1	50	24.48	24.59	24.44	24.15	23.97		0
	1	99	24.37	24.47	24.43	24.12	23.90		0
	50	0	24.35	24.50	24.36	24.01	23.84	0-1	0
	50	25	24.31	24.41	24.29	23.95	23.79		0
	50	50	24.26	24.34	24.26	23.89	23.76		0
	100	0	24.29	24.43	24.30	23.93	23.84		0
16QAM	1	0	24.01	24.30	24.21	23.95	23.93	0-1	0
	1	50	23.78	23.96	23.94	23.86	23.86		0
	1	99	23.73	23.94	23.92	23.82	23.81		0
	50	0	24.33	24.51	24.35	24.01	23.88	0-2	0
	50	25	24.28	24.43	24.30	23.99	23.83		0
	50	50	24.22	24.37	24.25	23.92	23.79		0
	100	0	24.29	24.45	24.36	23.99	23.83		0
64QAM	1	0	23.79	24.17	24.04	23.77	23.57	0-2	0
	1	50	23.67	23.90	24.17	23.48	23.50		0
	1	99	23.70	23.93	23.95	23.38	23.44		0
	50	0	24.16	24.49	24.34	23.99	23.83	0-3	0
	50	25	24.13	24.42	24.29	23.95	23.79		0
	50	50	24.15	24.35	24.24	23.88	23.78		0
	100	0	24.16	24.45	24.33	23.99	23.91		0

Table 9-78

LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.62	24.65	24.55	24.22	24.23	0	0
	1	36	24.44	24.61	24.51	24.16	24.19		0
	1	74	24.31	24.55	24.44	24.17	24.20		0
	36	0	24.35	24.40	24.40	23.96	24.08	0-1	0
	36	18	24.22	24.35	24.35	23.93	24.04		0
	36	37	24.14	24.32	24.31	23.92	24.02		0
	75	0	24.24	24.36	24.32	23.91	24.03		0
16QAM	1	0	24.03	24.06	24.19	23.92	23.68	0-1	0
	1	36	24.05	23.97	24.07	23.61	23.69		0
	1	74	23.96	23.94	23.98	23.58	23.63		0
	36	0	24.33	24.41	24.42	23.99	24.07	0-2	0
	36	18	24.26	24.39	24.33	23.95	24.09		0
	36	37	24.15	24.35	24.28	23.94	24.05		0
	75	0	24.29	24.38	24.39	23.95	24.10		0
64QAM	1	0	23.98	24.05	23.93	23.41	23.50	0-2	0
	1	36	23.75	23.80	23.90	23.37	23.46		0
	1	74	23.70	23.77	23.79	23.35	23.42		0
	36	0	24.32	24.41	24.47	23.96	24.10	0-3	0
	36	18	24.23	24.38	24.42	23.94	24.07		0
	36	37	24.16	24.35	24.37	23.92	24.04		0
	75	0	24.29	24.42	24.40	23.96	24.10		0

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Table 9-79

LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.54	24.55	24.59	24.14	24.20	0	0
	1	25	24.40	24.53	24.54	24.09	24.22		0
	1	49	24.29	24.49	24.49	24.09	24.20		0
	25	0	24.26	24.37	24.35	23.93	24.03	0-1	0
	25	12	24.20	24.36	24.34	23.92	24.01		0
	25	25	24.17	24.32	24.32	23.92	24.01		0
	50	0	24.21	24.36	24.32	23.91	24.02		0
16QAM	1	0	24.31	24.19	24.34	23.65	23.77	0-1	0
	1	25	23.87	24.04	23.94	23.64	23.74		0
	1	49	23.77	24.04	24.06	23.62	23.71		0
	25	0	24.31	24.42	24.42	23.98	24.08	0-2	0
	25	12	24.24	24.42	24.38	23.95	24.09		0
	25	25	24.19	24.41	24.35	23.94	24.06		0
	50	0	24.23	24.38	24.24	23.95	24.05		0
64QAM	1	0	24.33	24.29	24.30	24.07	23.84	0-2	0
	1	25	24.34	24.02	23.97	24.11	23.74		0
	1	49	24.23	23.99	23.91	24.10	23.70		0
	25	0	24.34	24.43	24.44	24.00	24.09	0-3	0
	25	12	24.36	24.41	24.39	23.94	24.11		0
	25	25	24.24	24.36	24.36	23.95	24.09		0
	50	0	24.18	24.33	24.35	23.90	24.03		0

Table 9-80

LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode and/or Earjack Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.45	24.49	24.24	24.11	24.22	0	0
	1	12	24.41	24.47	24.23	24.11	24.25		0
	1	24	24.36	24.43	24.23	24.15	24.22		0
	12	0	24.33	24.35	24.35	23.93	24.05	0-1	0
	12	6	24.31	24.34	24.34	23.91	24.02		0
	12	13	24.27	24.33	24.32	23.91	24.03		0
16QAM	25	0	24.25	24.35	24.29	23.92	24.06	0-1	0
	1	0	24.52	24.50	24.39	23.79	23.84		0
	1	12	24.62	24.21	24.15	23.74	23.84		0
	1	24	24.57	24.88	24.16	23.79	23.74	0-2	0
	12	0	24.33	24.43	24.49	23.95	24.06		0
	12	6	24.30	24.43	24.48	23.94	24.05		0
64QAM	12	13	24.29	24.42	24.28	23.94	24.04	0-2	0
	25	0	24.25	24.41	24.36	23.95	24.07		0
	1	0	24.04	24.01	24.07	23.89	23.91		0-3
	1	12	24.01	24.07	23.96	23.81	23.95	0	
	1	24	24.04	23.95	23.96	23.84	23.95	0	
	12	0	24.28	24.37	24.36	23.92	24.08	0	
64QAM	12	6	24.22	24.33	24.31	23.93	24.04	0-3	0
	12	13	24.26	24.27	24.29	23.92	24.03		0
	25	0	24.30	24.44	24.39	23.92	24.05		0

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9.5 WLAN Conducted Powers

Table 9-81
2.4 GHz WLAN Maximum Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	20.04	18.03	18.02
2437	6	20.56	18.61	18.33
2462	11	20.07	18.15	18.04

Table 9-82
5 GHz WLAN Maximum Average RF Power

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	17.28	17.12	17.07
5200	40	17.53	17.07	17.36
5220	44	17.40	17.10	17.15
5240	48	17.12	17.21	17.23
5260	52	17.21	17.17	17.33
5280	56	17.04	16.99	17.16
5300	60	17.06	17.11	17.23
5320	64	17.67	17.29	17.17
5500	100	17.50	17.31	17.30
5600	120	17.19	17.05	17.22
5620	124	17.00	16.96	17.02
5720	144	17.52	17.03	17.06
5745	149	17.11	17.21	17.34
5785	157	17.60	17.41	17.41
5825	165	17.29	17.51	17.34

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Table 9-83
2.4 GHz WLAN Reduced Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	11.68		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	11.99	11.99	11.75
2437	6	11.94	11.81	11.98
2462	11	11.86	11.97	11.94

Table 9-84
5 GHz WLAN Reduced Average RF Power

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
		Average
5210	42	11.62
5290	58	11.97
5530	106	11.99
5610	122	11.54
5690	138	11.96
5775	155	11.90

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

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

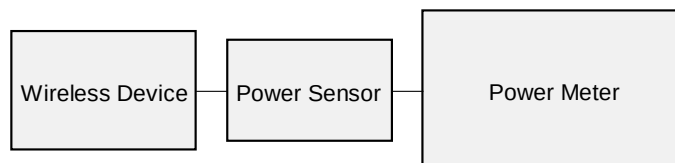


Figure 9-4
Power Measurement Setup

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9.6 Bluetooth Conducted Powers

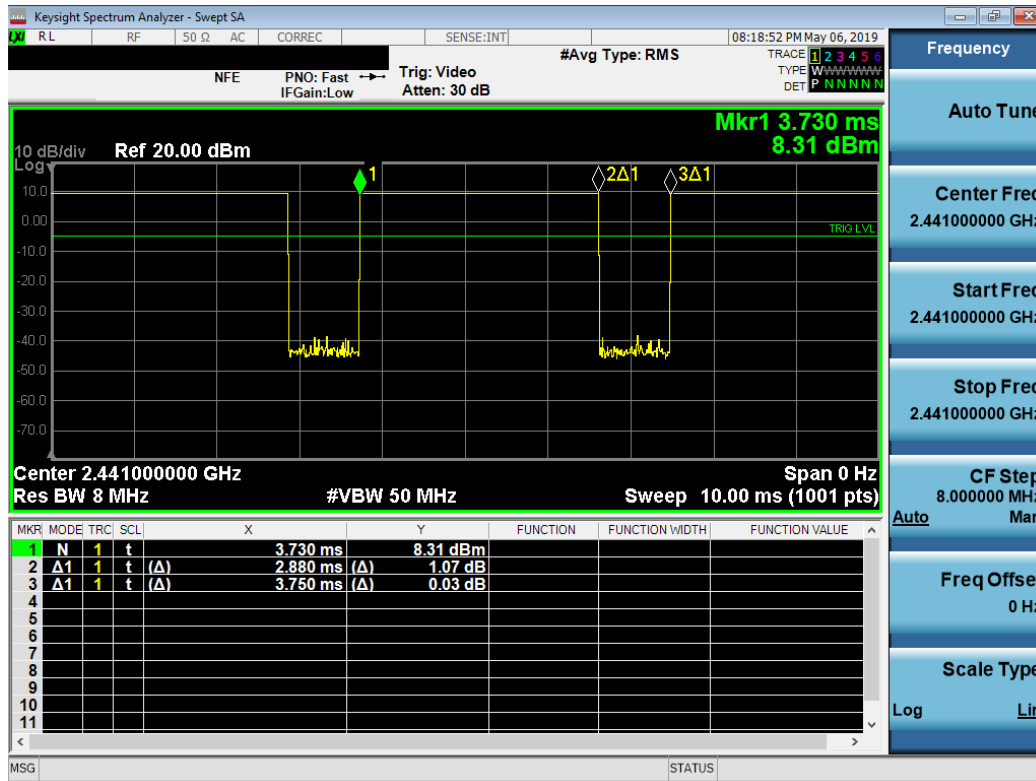
Table 9-85
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	7.50	5.621
2441	1.0	39	9.30	8.507
2480	1.0	78	8.28	6.732
2402	2.0	0	5.52	3.567
2441	2.0	39	7.46	5.574
2480	2.0	78	6.42	4.388
2402	3.0	0	5.81	3.808
2441	3.0	39	7.52	5.647
2480	3.0	78	6.48	4.444

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

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Figure 9-5
Bluetooth Transmission Plot



Equation 9-1
Bluetooth Duty Cycle Calculation

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.880\text{ms}}{3.750\text{ms}} * 100\% = 76.8\%$$

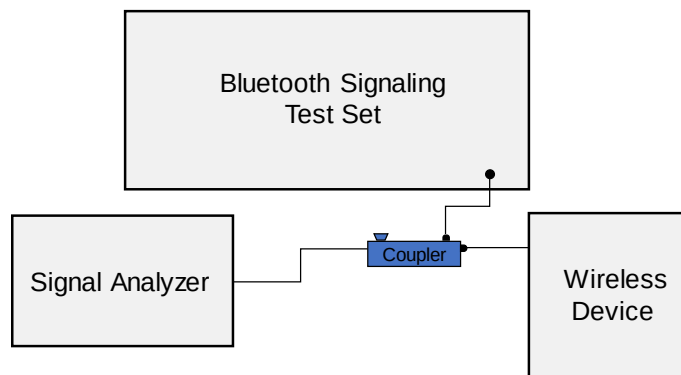


Figure 9-6
Power Measurement Setup

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10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
5/2/2019	750H	20.8	680	0.895	41.533	0.888	42.305	0.79%	-1.55%
			695	0.900	41.584	0.889	42.227	1.24%	-1.52%
			700	0.902	41.567	0.889	42.201	1.48%	-1.50%
			710	0.905	41.535	0.890	42.149	1.69%	-1.46%
			720	0.909	41.502	0.891	42.097	2.02%	-1.41%
			725	0.910	41.487	0.891	42.071	2.13%	-1.39%
			740	0.916	41.437	0.893	41.994	2.58%	-1.33%
			755	0.921	41.389	0.894	41.916	3.02%	-1.25%
			770	0.927	41.345	0.895	41.838	3.58%	-1.18%
			785	0.932	41.302	0.896	41.760	4.02%	-1.10%
			800	0.938	41.258	0.897	41.682	4.57%	-1.02%
			860	0.894	41.727	0.888	42.305	0.68%	-1.37%
5/7/2019	750H	21.8	695	0.899	41.701	0.889	42.227	1.22%	-1.25%
			700	0.901	41.690	0.889	42.201	1.35%	-1.21%
			710	0.904	41.656	0.890	42.149	1.57%	-1.15%
			720	0.908	41.636	0.891	42.097	1.91%	-1.10%
			725	0.910	41.617	0.891	42.071	2.13%	-1.08%
			740	0.915	41.555	0.893	41.994	2.46%	-1.04%
			755	0.920	41.504	0.894	41.916	2.91%	-0.98%
			770	0.926	41.463	0.895	41.838	3.46%	-0.90%
			785	0.931	41.420	0.896	41.760	3.91%	-0.81%
			800	0.936	41.375	0.897	41.682	4.35%	-0.74%
			820	0.930	41.665	0.899	41.578	3.45%	0.21%
			835	0.936	41.629	0.900	41.500	4.00%	0.31%
5/6/2019	835H	21.2	850	0.942	41.595	0.916	41.500	2.84%	0.23%
			820	0.912	41.170	0.899	41.578	1.45%	-0.88%
5/14/2019	835H	20.0	835	0.918	41.131	0.900	41.500	2.00%	-0.89%
			850	0.924	41.099	0.916	41.500	0.87%	-0.97%
4/29/2019	1750H	20.5	1710	1.360	38.837	1.348	40.142	0.89%	-3.25%
			1750	1.400	38.641	1.371	40.079	2.12%	-3.59%
5/13/2019	1750H	20.3	1730	1.441	38.442	1.384	40.016	3.37%	-3.83%
			1710	1.335	40.002	1.348	40.142	-0.96%	-0.35%
4/28/2019	1900H	20.7	1750	1.361	39.931	1.371	40.079	-0.73%	-0.37%
			1790	1.384	39.882	1.384	40.016	-0.72%	-0.33%
5/1/2019	1900H	21.0	1850	1.419	38.659	1.400	40.000	1.36%	-2.80%
			1880	1.437	38.600	1.400	40.000	3.64%	-3.03%
5/14/2019	1900H	20.0	1910	1.455	38.768	1.400	40.000	3.93%	-3.09%
			1850	1.419	39.501	1.400	40.000	1.36%	-1.25%
5/1/2019	2400H	20.5	1880	1.430	39.461	1.400	40.000	2.57%	-1.35%
			1910	1.454	38.438	1.400	40.000	3.86%	-1.40%
5/1/2019	2400H	20.5	1850	1.417	39.087	1.400	40.000	1.21%	-2.28%
			1910	1.452	38.991	1.400	40.000	3.71%	-2.52%
5/7/2019	2400H	22.1	2400	1.765	38.975	1.758	39.289	0.51%	-0.40%
			2450	1.802	38.884	1.800	39.200	0.11%	-0.78%
5/14/2019	2400-2600H	20.0	2500	1.842	38.828	1.855	39.136	-0.70%	-0.79%
			2400	1.755	38.358	1.756	39.288	-0.06%	-2.37%
5/24/2019	2400-2600H	22.3	2450	1.789	38.273	1.800	39.200	-0.61%	-2.36%
			2500	1.828	38.203	1.855	39.136	-1.40%	-2.39%
5/28/2019	2400-2600H	19.9	2400	1.788	38.288	1.756	39.288	1.82%	-2.52%
			2450	1.827	38.229	1.800	39.200	1.50%	-2.48%
05/02/2019	S200H-S800H	21.4	2500	1.867	38.162	1.855	39.136	0.65%	-2.49%
			2550	1.907	38.085	1.909	39.073	-0.10%	-2.58%
			2600	1.950	37.987	1.964	39.009	-0.71%	-2.62%
			2650	1.989	37.881	2.018	38.945	-1.44%	-2.73%
			2700	2.031	37.801	2.073	38.882	-2.03%	-2.78%
			2400	1.780	37.955	1.756	39.288	1.37%	-3.40%
			2450	1.820	37.882	1.800	39.200	1.11%	-3.36%
			2500	1.857	37.798	1.855	39.136	0.11%	-3.42%
			2550	1.898	37.708	1.909	39.073	-0.58%	-3.50%
			2600	1.936	37.638	1.964	39.009	-1.43%	-3.54%
			2650	1.976	37.535	2.018	38.945	-2.08%	-3.62%
			2700	2.017	37.460	2.073	38.882	-2.70%	-3.66%
			2400	1.742	37.955	1.756	39.288	-0.80%	-4.39%
			2450	1.780	37.496	1.800	39.200	-1.11%	-4.35%
			2500	1.820	37.412	1.855	39.136	-1.89%	-4.41%
			2550	1.859	37.330	1.909	39.073	-2.62%	-4.46%
			2600	1.900	37.249	1.964	39.009	-3.26%	-4.51%
			2650	1.941	37.137	2.018	38.945	-3.82%	-4.64%
			2700	1.981	37.059	2.073	38.882	-4.44%	-4.69%
			5180	4.467	35.176	4.635	36.009	-3.19%	-2.31%
			5200	4.506	35.148	4.655	35.986	-3.20%	-2.33%
			5220	4.528	35.110	4.676	35.963	-3.17%	-2.37%
			5240	4.546	35.081	4.696	35.940	-3.19%	-2.39%
			5260	4.569	35.036	4.717	35.917	-3.14%	-2.45%
			5280	4.595	34.989	4.737	35.894	-3.00%	-2.52%
			5300	4.614	34.958	4.758	35.871	-3.03%	-2.55%
			5320	4.633	34.939	4.778	35.849	-3.03%	-2.54%
			5300	4.632	34.627	4.963	35.643	-2.64%	-2.89%
			5520	4.853	34.578	4.983	35.620	-2.61%	-2.93%
			5540	4.879	34.555	5.004	35.597	-2.50%	-2.99%
			5560	4.904	34.532	5.024	35.574	-2.39%	-2.93%
			5580	4.924	34.491	5.045	35.551	-2.40%	-2.98%
			5600	4.946	34.446	5.065	35.529	-2.39%	-3.05%
			5630	4.967	34.402	5.086	35.506	-2.34%	-3.11%
			5640	4.991	34.367	5.106	35.483	-2.29%	-3.15%
			5660	5.015	34.337	5.127	35.460	-2.17%	-3.17%
			5680	5.041	34.321	5.147	35.437	-2.06%	-3.15%
			5700	5.062	34.278	5.168	35.414	-2.05%	-3.21%
			5745	5.114	34.192	5.214	35.363	-1.92%	-3.31%
			5765	5.135	34.173	5.234	35.340	-1.89%	-3.35%
			5785	5.158	34.149	5.255	35.317	-1.85%	-3.31%
			5800	5.172	34.109	5.270	35.300	-1.86%	-3.37%
			5805	5.177	34.098	5.275	35.294	-1.86%	-3.39%
			5825	5.205	34.058	5.296	35.271	-1.72%	-3.44%

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Document S/N: 1M1904240065-01-R1.A3L	Test Dates: 04/29/19 - 06/17/19	DUT Type: Portable Handset	Page 79 of 126		

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 Frequency (MHz)	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
4/30/2019	750B	21.4	680	0.947	53.955	0.958	55.804	-1.15%	-3.21%	
			695	0.953	53.941	0.959	55.745	-0.63%	-3.24%	
			700	0.955	53.932	0.959	55.726	-0.42%	-3.22%	
			710	0.958	53.910	0.960	55.687	-0.21%	-3.19%	
			720	0.961	53.885	0.961	55.648	0.00%	-3.17%	
			725	0.963	53.873	0.961	55.629	0.21%	-3.16%	
			740	0.968	53.890	0.963	55.570	0.52%	-3.12%	
			755	0.974	53.796	0.964	55.512	1.04%	-3.09%	
			770	0.980	53.767	0.965	55.453	1.55%	-3.04%	
			785	0.988	53.744	0.966	55.395	2.07%	-3.00%	
			800	0.993	53.720	0.967	55.336	2.58%	-2.96%	
			680	0.938	54.181	0.958	55.804	-2.09%	-2.94%	
			695	0.942	54.131	0.959	55.745	-1.77%	-2.90%	
			700	0.944	54.124	0.959	55.726	-1.56%	-2.87%	
			710	0.948	54.109	0.960	55.687	-1.25%	-2.83%	
5/6/2019	750B	21.1	720	0.952	54.091	0.961	55.648	-0.94%	-2.80%	
			725	0.954	54.084	0.961	55.629	-0.73%	-2.78%	
			740	0.960	54.049	0.963	55.570	-0.31%	-2.74%	
			755	0.966	54.009	0.964	55.512	0.21%	-2.71%	
			770	0.971	53.964	0.965	55.453	0.62%	-2.69%	
			785	0.976	53.922	0.966	55.395	1.04%	-2.65%	
			800	0.982	53.880	0.967	55.336	1.55%	-2.61%	
			820	0.981	53.896	0.969	55.258	1.24%	-3.01%	
			835	0.995	53.420	0.970	55.300	2.58%	-3.22%	
			850	1.011	53.266	0.988	55.154	2.33%	-3.42%	
			870	0.977	53.502	0.969	55.258	0.63%	-3.10%	
			885	0.992	53.348	0.970	55.300	2.27%	-3.36%	
			890	1.007	53.309	0.988	55.154	1.92%	-3.53%	
			920	1.011	53.379	0.969	55.258	4.33%	-3.40%	
			5/10/2019	835B	21.0	835	0.980	53.400	0.967	55.258
850	1.011	53.266				0.988	55.154	2.33%	-3.42%	
870	0.977	53.502				0.969	55.258	0.63%	-3.10%	
885	0.992	53.348				0.970	55.300	2.27%	-3.36%	
890	1.007	53.309				0.988	55.154	1.92%	-3.53%	
920	1.011	53.379				0.969	55.258	4.33%	-3.40%	
835	0.981	53.379				0.970	55.258	4.85%	-3.30%	
850	1.023	53.318				0.988	55.154	3.54%	-3.33%	
870	0.982	53.025				0.969	55.258	1.34%	-4.02%	
885	0.988	53.000				0.970	55.300	1.86%	-3.99%	
890	0.994	52.964				0.988	55.154	0.61%	-3.97%	
1710	1.482	51.794				1.483	53.637	1.38%	-3.28%	
1750	1.509	51.746				1.488	53.432	1.41%	-3.16%	
1790	1.538	51.689				1.514	53.326	1.59%	-3.07%	
5/9/2019	1750B	21.1				1710	1.460	52.131	1.463	53.637
			1750	1.489	52.068	1.488	53.432	0.07%	-2.58%	
			1790	1.516	51.998	1.514	53.326	0.13%	-2.49%	
			1710	1.478	52.036	1.463	53.637	1.03%	-2.80%	
			1750	1.505	51.960	1.488	53.432	1.44%	-2.70%	
			1790	1.533	51.925	1.514	53.326	1.25%	-2.67%	
			1710	1.460	52.228	1.463	53.637	-0.21%	-2.45%	
			1750	1.486	52.189	1.488	53.432	-0.13%	-2.31%	
			1790	1.514	52.150	1.514	53.326	0.00%	-2.21%	
			1850	1.535	51.124	1.520	53.300	0.89%	-4.08%	
			1880	1.559	51.040	1.520	53.300	2.57%	-4.24%	
			1910	1.585	50.963	1.520	53.300	4.28%	-4.33%	
			1850	1.543	50.950	1.520	53.300	1.51%	-4.41%	
			1880	1.567	50.868	1.520	53.300	3.05%	-4.57%	
			5/7/2019	1900B	23.0	1910	1.593	50.809	1.520	53.300
1850	1.560	50.882				1.520	53.300	2.63%	-4.54%	
1880	1.577	50.809				1.520	53.300	3.75%	-4.62%	
1910	1.595	50.804				1.520	53.300	4.93%	-4.68%	
1850	1.543	51.543				1.520	53.300	1.51%	-3.30%	
1880	1.565	51.502				1.520	53.300	2.96%	-3.37%	
1910	1.588	51.472				1.520	53.300	4.36%	-3.43%	
2400	1.987	50.736				1.902	52.767	4.47%	-3.65%	
2450	2.046	50.583				1.950	52.700	4.92%	-4.02%	
2500	2.104	50.447				2.021	52.636	4.11%	-4.16%	
2450	1.947	52.541				1.950	52.767	2.37%	-0.49%	
2450	1.995	52.477				1.950	52.700	2.36%	-0.42%	
2500	2.045	52.391				2.021	52.636	1.19%	-0.47%	
2550	2.095	52.307				2.052	52.573	0.14%	-0.51%	
5/16/2019	2400-2600B	20.4				2600	2.147	52.209	2.153	52.509
			2650	2.197	52.107	2.234	52.445	-1.66%	-0.64%	
			2700	2.246	52.007	2.305	52.382	-2.47%	-0.72%	
			2400	1.945	51.508	1.902	52.767	2.26%	-2.39%	
			2450	1.990	51.435	1.950	52.700	2.05%	-2.40%	
			2500	2.036	51.339	2.021	52.636	0.74%	-2.46%	
			2400	1.884	51.674	1.902	52.767	4.31%	-2.07%	
			2450	2.043	51.521	1.950	52.700	4.77%	-2.24%	
			2500	2.103	51.362	2.021	52.636	4.08%	-2.42%	
			2550	2.163	51.208	2.092	52.573	3.39%	-2.60%	
			2600	2.223	51.046	2.153	52.509	2.77%	-2.79%	
			2650	2.283	50.891	2.234	52.445	2.19%	-2.86%	
			2700	2.345	50.728	2.395	52.382	1.74%	-2.93%	
			2400	1.975	51.174	1.902	52.767	3.72%	-3.02%	
			5/26/2019	2400-2600B	23.9	2450	2.019	51.115	1.950	52.700
2500	2.066	51.025				2.021	52.636	2.22%	-3.08%	
2550	2.114	50.956				2.092	52.573	1.05%	-3.08%	
2600	2.165	50.852				2.153	52.509	0.09%	-3.16%	
2650	2.215	50.784				2.234	52.445	-0.88%	-3.17%	
2700	2.262	50.675				2.305	52.382	-1.87%	-3.20%	
5100	5.365	47.007				5.270	49.041	1.31%	-3.13%	
5200	5.378	47.494				5.299	49.014	1.49%	-3.10%	
5220	5.406	47.470				5.323	48.987	1.56%	-3.10%	
5240	5.423	47.403				5.346	48.960	1.44%	-3.10%	
5260	5.446	47.322				5.369	48.933	1.43%	-3.09%	
5280	5.482	47.250				5.393	48.906	1.65%	-3.30%	
5300	5.515	47.264				5.416	48.879	1.63%	-3.30%	
5320	5.541	47.259				5.439	48.851	1.88%	-3.30%	
5340	5.564	46.875				5.460	48.807	2.72%	-3.58%	
5360	5.526	46.840	5.473	48.580	2.70%	-3.58%				
5540	5.838	46.775	5.696	48.553	2.49%	-3.65%				
5560	5.870	46.738	5.720	48.526	2.62%	-3.69%				
5580	5.901	46.695	5.743	48.499	3.08%	-3.72%				
5600	5.951	46.684	5.766	48.471	3.21%	-3.69%				
5620	5.967	46.641	5.790	48.444	3.00%	-3.72%				
5640	5.984	46.676	5.813	48.417	2.94%	-3.80%				
5660	5.921	46.513	5.837	48.390	3.15%	-3.88%				
5680	6.062	46.502	5.860	48.363	3.45%	-3.85%				
5700	6.096	46.494	5.883	48.336	3.62%	-3.81%				
5745	6.131	46.340	5.936	48.275	3.29%	-4.01%				
5765	6.175	46.327	5.959	48.248	3.65%	-3.88%				
5785	6.216	46.301	5.982	48.220	3.91%	-3.94%				
5800	6.233	46.291	6.000	48.200	3.88%	-3.96%				
5865	6.234	46.281	6.006	48.193	3.85%	-3.97%				
5925	6.251	46.135	6.026	48.166	3.68%	-4.02%				
5945	6.268	46.082	6.049	48.141	3.51%	-4.07%				
5965	6.285	46.030	6.072	48.116	3.34%	-4.12%				
5985	6.302	45.978	6.095	48.091	3.17%	-4.17%				
5995	6.319	45.926	6.118	48.066	3.00%	-4.22%				
6015	6.336	45.874	6.141	48.041	2.83%	-4.27%				
6035	6.353	45.822	6.164	48.016	2.66%	-4.32%				
6055	6.370	45.770	6.187	47.991	2.49%	-4.37%				
6075	6.387	45.718	6.210	47.966	2.32%	-4.42%				
6095	6.404	45.666	6.233	47.941	2.15%	-4.47%				
6115	6.421	45.614	6.256	47.916	1.98%	-4.52%				
6135	6.438	45.562	6.279	47.891	1.81%	-4.57%				
6155	6.455	45.510	6.302	47.866	1.64%	-4.62%				
6175	6.472	45.458	6.325	47.841	1.47%	-4.67%				
6195	6.489	45.406	6.348	47.816	1.30%	-4.72%				
6215	6.506	45.354	6.371	47.791	1.13%	-4.77%				
6235	6.523	45.302	6.394	47.766	0.96%	-4.82%				
6255	6.540	45.250	6.417	47.741	0.79%	-4.87%				
6275	6.557	45.198	6.440	47.716	0.62%	-4.92%				
6295	6.574	45.146	6.463	47.691	0.45%	-4.97%				
6315	6.591	45.094	6.486	47.666	0.28%	-5.02%				
6335	6.608	45.042	6.509	47.641	0.11%	-5.07%				
6355	6.625	44.990	6.532	47.616	-0.06%	-5.12%				
6375	6.642	44.938	6.555	47.591	-0.23%	-5.17%				
6395	6.659	44.886	6.578	47.566	-0.40%	-5.22%				
6415	6.676	44.834	6.601	47.541	-0.57%	-5.27%				
6435	6.693	44.782	6.624	47.516	-0.74%	-5.32%				
6455	6.710	44.730	6.647	47.491	-0.91%	-5.37%				
6475	6.727	44.678	6.670	47.466	-1.08%	-5.42%				
6495	6.744	44.626	6.693	47.441	-1.25%	-5.47%				
6515	6.761	44.574	6.716	47.416	-1.42%	-5.52%				
6535	6.778	44.522	6.739	47.391	-1.59%	-5.57%				
6555	6.795	44.470	6.762	47.366	-1.76%	-5.62%				
6575	6.812	44.418	6.785	47.341	-1.93%	-5.67%				
6595	6.829	44.366	6.808	47.316	-2.10%	-5.72%				
6615	6.846	44.314	6.831	47.291	-2.27%	-5.77%				
6635	6.863	44.262	6.854	47.266	-2.44%	-5.82%				
6655	6.880	44.210	6.877	47.241	-2.61%	-5.87%				
6675	6.897	44.158	6.900	47.216	-2.78%	-5.92%				
6695	6.914	44.106	6.923	47.191	-2.95%	-5.97%				
6715	6.931									

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 10-3
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
AM7	750	HEAD	05/02/2019	21.8	21.6	0.200	1097	3837	1.690	8.220	8.450	2.80%
AM6	750	HEAD	05/07/2019	24.7	21.8	0.200	1034	7427	1.680	8.320	8.400	0.96%
AM6	835	HEAD	05/14/2019	21.9	20.0	0.200	4d040	7427	1.830	9.460	9.150	-3.28%
AM7	850	HEAD	05/06/2019	22.3	22.0	0.200	1009	3837	2.090	10.000	10.450	4.50%
AM2	1750	HEAD	04/29/2019	22.1	20.5	0.100	1092	7416	3.670	36.100	36.700	1.66%
AM6	1750	HEAD	05/13/2019	23.5	20.3	0.100	1083	7427	3.440	36.700	34.400	-6.27%
AM7	1900	HEAD	04/29/2019	21.9	20.7	0.100	5d026	3837	3.870	40.200	38.700	-3.73%
AM7	1900	HEAD	05/01/2019	21.5	21.0	0.100	5d026	3837	3.860	40.200	38.600	-3.98%
AM6	1900	HEAD	05/14/2019	21.7	20.0	0.100	5d180	7427	4.000	39.200	40.000	2.04%
AM3	2450	HEAD	05/01/2019	20.9	20.7	0.100	921	7420	5.630	53.100	56.300	6.03%
AM2	2450	HEAD	05/07/2019	21.1	21.5	0.100	750	7416	5.360	53.300	53.600	0.56%
AM6	2450	HEAD	05/14/2019	22.7	20.0	0.100	921	7427	5.580	53.100	55.800	5.08%
E	2450	HEAD	05/24/2019	23.2	22.7	0.100	797	3589	5.050	52.700	50.500	-4.17%
AM6	2600	HEAD	05/14/2019	22.7	20.0	0.100	1069	7427	5.790	56.900	57.900	1.76%
E	2600	HEAD	05/24/2019	23.2	22.7	0.100	1126	3589	5.430	54.500	54.300	-0.37%
AM4	2600	HEAD	05/28/2019	23.1	19.9	0.100	1009	7532	5.520	55.800	55.200	-1.08%
AM8	5250	HEAD	05/02/2019	21.7	21.4	0.050	1123	7491	3.820	81.600	76.400	-6.37%
AM8	5600	HEAD	05/02/2019	21.7	21.4	0.050	1123	7491	4.200	85.100	84.000	-1.29%
AM8	5750	HEAD	05/02/2019	21.7	21.4	0.050	1123	7491	3.790	80.600	75.800	-5.96%
AM6	750	BODY	04/30/2019	25.0	21.6	0.200	1034	7427	1.650	8.570	8.250	-3.73%
AM6	750	BODY	05/06/2019	23.5	21.1	0.200	1034	7427	1.660	8.570	8.300	-3.15%
AM4	835	BODY	05/01/2019	20.8	21.0	0.200	4d040	7532	2.040	9.560	10.200	6.69%
AM2	835	BODY	05/06/2019	21.9	20.7	0.200	4d040	7416	2.030	9.560	10.150	6.17%
AM7	835	BODY	05/09/2019	22.6	21.6	0.200	4d040	3837	2.070	9.560	10.350	8.26%
AM7	850	BODY	05/13/2019	21.3	19.9	0.200	1010	3837	2.080	10.200	10.400	1.96%
AM6	1750	BODY	05/03/2019	22.5	19.8	0.100	1083	7427	3.500	37.300	35.000	-6.17%
AM6	1750	BODY	05/06/2019	22.5	21.1	0.100	1083	7427	3.710	37.300	37.100	-0.54%
AM6	1750	BODY	05/09/2019	21.4	20.4	0.100	1083	7427	3.730	37.300	37.300	0.00%
AM5	1900	BODY	04/29/2019	22.9	22.6	0.100	5d181	3318	4.230	39.500	42.300	7.09%
AM5	1900	BODY	04/30/2019	23.6	23.4	0.100	5d180	3318	4.230	39.500	42.300	7.09%
AM7	1900	BODY	05/07/2019	23.5	22.1	0.100	5d180	3837	4.110	39.500	41.100	4.05%
AM8	1900	BODY	05/13/2019	20.9	20.3	0.100	5d181	7491	4.090	39.500	40.900	3.54%
AM1	2450	BODY	04/29/2019	22.3	20.8	0.100	750	7421	5.500	51.200	55.000	7.42%
AM1	2450	BODY	05/16/2019	20.3	20.4	0.100	921	7421	5.400	50.800	54.000	6.30%
AM6	2450	BODY	05/20/2019	20.4	19.3	0.100	921	7427	5.320	50.800	53.200	4.72%
K	2450	BODY	05/26/2019	22.8	23.1	0.100	719	7417	5.190	50.100	51.900	3.59%
AM1	2600	BODY	05/16/2019	20.3	20.4	0.100	1069	7421	5.500	55.300	55.000	-0.54%
K	2600	BODY	05/26/2019	22.8	23.1	0.100	1004	7417	5.360	54.800	53.600	-2.19%
AM8	5250	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	3.660	74.000	73.200	-1.08%
AM8	5600	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	3.830	77.600	76.600	-1.29%
AM8	5750	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	3.660	74.700	73.200	-2.01%

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Table 10-4
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
AM6	1750	BODY	05/06/2019	22.5	21.1	0.100	1083	7427	1.970	19.900	19.700	-1.01%
AM6	1750	BODY	05/13/2019	22.5	19.9	0.100	1083	7427	1.940	19.900	19.400	-2.51%
AM5	1900	BODY	04/29/2019	22.9	22.6	0.100	5d181	3318	2.170	20.900	21.700	3.83%
AM5	1900	BODY	04/30/2019	23.6	23.4	0.100	5d180	3318	2.170	20.900	21.700	3.83%
AM7	1900	BODY	05/07/2019	23.5	22.1	0.100	5d180	3837	2.090	20.900	20.900	0.00%
AM8	1900	BODY	05/13/2019	20.9	20.3	0.100	5d181	7491	2.110	20.900	21.100	0.96%
AM6	2450	BODY	06/17/2019	20.2	20.2	0.100	921	7427	2.480	23.800	24.800	4.20%
AM6	2600	BODY	06/17/2019	20.2	20.2	0.100	1069	7427	2.390	24.800	23.900	-3.63%
AM8	5250	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	1.020	20.600	20.400	-0.97%
AM8	5600	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	1.060	21.700	21.200	-2.30%
AM8	5750	BODY	05/06/2019	21.5	20.9	0.050	1123	7491	1.020	20.800	20.400	-1.92%

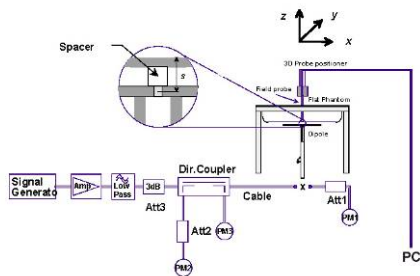


Figure 10-1
System Verification Setup Diagram



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	34.0	32.52	0.13	Right	Cheek	44526	1:8.3	0.147	1.406	0.207	A1
836.60	190	GSM 850	GSM	34.0	32.52	-0.06	Right	Tilt	44526	1:8.3	0.071	1.406	0.100	
836.60	190	GSM 850	GSM	34.0	32.52	0.04	Left	Cheek	44526	1:8.3	0.144	1.406	0.202	
836.60	190	GSM 850	GSM	34.0	32.52	-0.05	Left	Tilt	44526	1:8.3	0.083	1.406	0.117	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1850.20	512	GSM 1900	GSM	31.5	30.49	-0.06	Right	Cheek	43874	1:8.3	0.092	1.262	0.116	
1850.20	512	GSM 1900	GSM	31.5	30.49	-0.13	Right	Tilt	43874	1:8.3	0.047	1.262	0.059	
1850.20	512	GSM 1900	GSM	31.5	30.49	0.10	Left	Cheek	43874	1:8.3	0.111	1.262	0.140	A2
1850.20	512	GSM 1900	GSM	31.5	30.49	-0.08	Left	Tilt	43874	1:8.3	0.069	1.262	0.087	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.8	24.68	0.11	Right	Cheek	44526	1:1	0.243	1.294	0.314	A3
836.60	4183	UMTS 850	RMC	25.8	24.68	0.02	Right	Tilt	44526	1:1	0.117	1.294	0.151	
836.60	4183	UMTS 850	RMC	25.8	24.68	0.08	Left	Cheek	44526	1:1	0.218	1.294	0.282	
836.60	4183	UMTS 850	RMC	25.8	24.68	0.01	Left	Tilt	44526	1:1	0.130	1.294	0.168	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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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	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.02	Right	Cheek	36480	1:1	0.230	1.377	0.317	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.02	Right	Tilt	36480	1:1	0.189	1.377	0.260	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.05	Left	Cheek	36480	1:1	0.240	1.377	0.330	A4
1732.40	1412	UMTS 1750	RMC	25.8	24.41	0.06	Left	Tilt	36480	1:1	0.232	1.377	0.319	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	0.10	Right	Cheek	36480	1:1	0.098	1.459	0.143	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.12	Right	Tilt	36480	1:1	0.080	1.459	0.117	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.19	Left	Cheek	36480	1:1	0.166	1.459	0.242	A5
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.02	Left	Tilt	36480	1:1	0.091	1.459	0.133	
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 11-6
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (\$90S)	RC3 / SO55	26.0	24.37	0.03	Right	Cheek	35854	1:1	0.166	1.455	0.242	A6
820.10	564	CDMA BC10 (\$90S)	RC3 / SO55	26.0	24.37	0.03	Right	Tilt	35854	1:1	0.089	1.455	0.129	
820.10	564	CDMA BC10 (\$90S)	RC3 / SO55	26.0	24.37	0.01	Left	Cheek	35854	1:1	0.152	1.455	0.221	
820.10	564	CDMA BC10 (\$90S)	RC3 / SO55	26.0	24.37	0.07	Left	Tilt	35854	1:1	0.091	1.455	0.132	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. A	26.0	24.55	0.06	Right	Cheek	35599	1:1	0.161	1.396	0.225	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. A	26.0	24.55	0.03	Right	Tilt	35599	1:1	0.078	1.396	0.109	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. A	26.0	24.55	-0.04	Left	Cheek	35599	1:1	0.143	1.396	0.200	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. A	26.0	24.55	-0.09	Left	Tilt	35599	1:1	0.073	1.396	0.102	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	26.0	24.07	0.11	Right	Cheek	35854	1:1	0.178	1.560	0.278	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	26.0	24.07	-0.05	Right	Tilt	35854	1:1	0.088	1.560	0.137	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	26.0	24.07	-0.02	Left	Cheek	35854	1:1	0.162	1.560	0.253	
836.52	384	CDMA BC0 (\$22H)	RC3 / SO55	26.0	24.07	-0.01	Left	Tilt	35854	1:1	0.098	1.560	0.153	
824.70	1013	CDMA BC0 (\$22H)	EVDO Rev. A	26.0	24.52	-0.12	Right	Cheek	35599	1:1	0.221	1.406	0.311	A7
824.70	1013	CDMA BC0 (\$22H)	EVDO Rev. A	26.0	24.52	-0.03	Right	Tilt	35599	1:1	0.090	1.406	0.127	
824.70	1013	CDMA BC0 (\$22H)	EVDO Rev. A	26.0	24.52	-0.10	Left	Cheek	35599	1:1	0.168	1.406	0.236	
824.70	1013	CDMA BC0 (\$22H)	EVDO Rev. A	26.0	24.52	0.09	Left	Tilt	35599	1:1	0.092	1.406	0.129	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	26.0	24.00	0.04	Right	Cheek	35854	1:1	0.081	1.585	0.128	
1880.00	600	PCS CDMA	RC3 / SO55	26.0	24.00	-0.19	Right	Tilt	35854	1:1	0.065	1.585	0.103	
1880.00	600	PCS CDMA	RC3 / SO55	26.0	24.00	0.12	Left	Cheek	35854	1:1	0.136	1.585	0.216	
1880.00	600	PCS CDMA	RC3 / SO55	26.0	24.00	-0.11	Left	Tilt	35854	1:1	0.080	1.585	0.127	
1880.00	600	PCS CDMA	EVDO Rev. A	26.0	24.10	0.08	Right	Cheek	35854	1:1	0.072	1.549	0.112	
1880.00	600	PCS CDMA	EVDO Rev. A	26.0	24.10	-0.08	Right	Tilt	35854	1:1	0.069	1.549	0.107	
1880.00	600	PCS CDMA	EVDO Rev. A	26.0	24.10	-0.14	Left	Cheek	35854	1:1	0.142	1.549	0.220	A8
1880.00	600	PCS CDMA	EVDO Rev. A	26.0	24.10	-0.14	Left	Tilt	35854	1:1	0.079	1.549	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						

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)
MHz	Ch.														(W/kg)		(W/kg)
680.50	133297	Mid	LTE Band 71	20	25.07	-0.16	0	Right	Cheek	QPSK	1	50	35854	1:1	0.170	1.239	0.211
680.50	133297	Mid	LTE Band 71	20	25.07	0.01	1	Right	Cheek	QPSK	50	0	35854	1:1	0.123	1.268	0.156
680.50	133297	Mid	LTE Band 71	20	25.07	0.11	0	Right	Tilt	QPSK	1	50	35854	1:1	0.087	1.239	0.108
680.50	133297	Mid	LTE Band 71	20	25.07	-0.03	1	Right	Tilt	QPSK	50	0	35854	1:1	0.063	1.268	0.080
680.50	133297	Mid	LTE Band 71	20	25.07	0.03	0	Left	Cheek	QPSK	1	50	35854	1:1	0.157	1.239	0.195
680.50	133297	Mid	LTE Band 71	20	25.07	0.03	1	Left	Cheek	QPSK	50	0	35854	1:1	0.121	1.268	0.153
680.50	133297	Mid	LTE Band 71	20	25.07	0.18	0	Left	Tilt	QPSK	1	50	35854	1:1	0.099	1.239	0.123
680.50	133297	Mid	LTE Band 71	20	25.07	0.08	1	Left	Tilt	QPSK	50	0	35854	1:1	0.074	1.268	0.094
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram									

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Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.03	0	Right	Cheek	QPSK	1	25	35854	1:1	0.142	1.321	0.188	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.12	1	Right	Cheek	QPSK	25	0	35854	1:1	0.097	1.343	0.130	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	-0.10	0	Right	Tilt	QPSK	1	25	35854	1:1	0.092	1.321	0.122	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.08	1	Right	Tilt	QPSK	25	0	35854	1:1	0.058	1.343	0.078	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.13	0	Left	Cheek	QPSK	1	25	35854	1:1	0.143	1.321	0.189	A10
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.03	1	Left	Cheek	QPSK	25	0	35854	1:1	0.095	1.343	0.128	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.07	0	Left	Tilt	QPSK	1	25	35854	1:1	0.092	1.321	0.122	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.01	1	Left	Tilt	QPSK	25	0	35854	1:1	0.064	1.343	0.086	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.01	0	Right	Cheek	QPSK	1	25	35656	1:1	0.195	1.239	0.242	A11
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	-0.17	1	Right	Cheek	QPSK	25	12	35656	1:1	0.141	1.245	0.176	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.07	0	Right	Tilt	QPSK	1	25	35656	1:1	0.094	1.239	0.116	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.19	1	Right	Tilt	QPSK	25	12	35656	1:1	0.075	1.245	0.093	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.01	0	Left	Cheek	QPSK	1	25	35656	1:1	0.166	1.239	0.206	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.05	1	Left	Cheek	QPSK	25	12	35656	1:1	0.126	1.245	0.157	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.09	0	Left	Tilt	QPSK	1	25	35656	1:1	0.091	1.239	0.113	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.12	1	Left	Tilt	QPSK	25	12	35656	1:1	0.068	1.245	0.085	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

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

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	0.05	0	Right	Cheek	QPSK	1	0	35656	1:1	0.145	1.355	0.196	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	0.04	1	Right	Cheek	QPSK	36	18	35656	1:1	0.108	1.409	0.152	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.07	0	Right	Tilt	QPSK	1	0	35656	1:1	0.071	1.355	0.096	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.01	1	Right	Tilt	QPSK	36	18	35656	1:1	0.049	1.409	0.069	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.12	0	Left	Cheek	QPSK	1	0	35656	1:1	0.128	1.355	0.173	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.01	1	Left	Cheek	QPSK	36	18	35656	1:1	0.110	1.409	0.155	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	0.02	0	Left	Tilt	QPSK	1	0	35656	1:1	0.070	1.355	0.095	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	0.04	1	Left	Tilt	QPSK	36	18	35656	1:1	0.052	1.409	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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Table 11-13
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.12	0	Right	Cheek	QPSK	1	0	44526	1:1	0.203	1.343	0.273	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.03	1	Right	Cheek	QPSK	50	25	44526	1:1	0.159	1.368	0.218	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	-0.05	0	Right	Tilt	QPSK	1	0	44526	1:1	0.147	1.343	0.197	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.12	1	Right	Tilt	QPSK	50	25	44526	1:1	0.104	1.368	0.142	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.03	0	Left	Cheek	QPSK	1	0	44526	1:1	0.215	1.343	0.289	A13
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.05	1	Left	Cheek	QPSK	50	25	44526	1:1	0.160	1.368	0.219	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.07	0	Left	Tilt	QPSK	1	0	44526	1:1	0.190	1.343	0.255	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	-0.02	1	Left	Tilt	QPSK	50	25	44526	1:1	0.144	1.368	0.197	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.01	0	Right	Cheek	QPSK	1	99	35599	1:1	0.097	1.400	0.136	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.05	1	Right	Cheek	QPSK	50	50	35599	1:1	0.088	1.449	0.128	
1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.03	0	Right	Tilt	QPSK	1	99	35599	1:1	0.068	1.400	0.095	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.10	1	Right	Tilt	QPSK	50	50	35599	1:1	0.061	1.449	0.088	
1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	-0.10	0	Left	Cheek	QPSK	1	99	35599	1:1	0.162	1.400	0.227	A14
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	-0.11	1	Left	Cheek	QPSK	50	50	35599	1:1	0.138	1.449	0.200	
1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.11	0	Left	Tilt	QPSK	1	99	35599	1:1	0.079	1.400	0.111	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	-0.01	1	Left	Tilt	QPSK	50	50	35599	1:1	0.075	1.449	0.109	
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 11-15
LTE Band 7 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2535.00	21100	Mid	LTE Band 7	20	23.0	22.43	-0.13	0	Right	Cheek	QPSK	1	0	48675	1:1	0.509	1.140	0.580	A15
2510.00	20850	Low	LTE Band 7	20	22.0	21.29	-0.13	1	Right	Cheek	QPSK	50	0	48675	1:1	0.442	1.178	0.521	
2535.00	21100	Mid	LTE Band 7	20	23.0	22.43	0.16	0	Right	Tilt	QPSK	1	0	48675	1:1	0.309	1.140	0.352	
2510.00	20850	Low	LTE Band 7	20	22.0	21.29	0.01	1	Right	Tilt	QPSK	50	0	48675	1:1	0.284	1.178	0.335	
2535.00	21100	Mid	LTE Band 7	20	23.0	22.43	0.04	0	Left	Cheek	QPSK	1	0	48675	1:1	0.227	1.140	0.259	
2510.00	20850	Low	LTE Band 7	20	22.0	21.29	-0.04	1	Left	Cheek	QPSK	50	0	48675	1:1	0.216	1.178	0.254	
2535.00	21100	Mid	LTE Band 7	20	23.0	22.43	0.12	0	Left	Tilt	QPSK	1	0	48675	1:1	0.199	1.140	0.227	
2510.00	20850	Low	LTE Band 7	20	22.0	21.29	0.14	1	Left	Tilt	QPSK	50	0	48675	1:1	0.187	1.178	0.220	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-16
LTE Band 41 Head SAR

MEASUREMENT RESULTS																				
Power Class	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
	MHz	Ch.														(W/kg)		(W/kg)		
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.37	0.08	0	Right	Cheek	QPSK	1	0	44526	1:1.58	0.620	1.156	0.717	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	-0.19	0	Right	Cheek	QPSK	1	0	44526	1:1.58	0.825	1.122	0.926	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.07	0.15	0	Right	Cheek	QPSK	1	0	44526	1:1.58	0.814	1.239	1.009	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	23.80	0.09	0	Right	Cheek	QPSK	1	0	44526	1:1.58	0.457	1.318	0.602	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.12	0	Right	Cheek	QPSK	1	0	44526	1:1.58	0.840	1.297	1.089	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.08	1	Right	Cheek	QPSK	50	0	44526	1:1.58	0.417	1.227	0.512	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.10	-0.10	1	Right	Cheek	QPSK	100	0	44526	1:1.58	0.448	1.230	0.551	
Power Class 2	2680.00	41490	High	LTE Band 41	20	28.0	27.34	0.13	0	Right	Cheek	QPSK	1	0	44526	1:2.31	1.200	1.164	1.397	A16
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.37	0.06	0	Right	Tilt	QPSK	1	0	44526	1:1.58	0.454	1.156	0.525	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.01	0	Right	Tilt	QPSK	1	0	44526	1:1.58	0.542	1.122	0.608	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.07	0.11	0	Right	Tilt	QPSK	1	0	44526	1:1.58	0.445	1.239	0.551	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	23.80	0.14	0	Right	Tilt	QPSK	1	0	44526	1:1.58	0.531	1.318	0.700	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.05	0	Right	Tilt	QPSK	1	0	44526	1:1.58	0.412	1.297	0.534	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	-0.06	1	Right	Tilt	QPSK	50	0	44526	1:1.58	0.339	1.227	0.416	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.10	0.04	1	Right	Tilt	QPSK	100	0	44526	1:1.58	0.344	1.230	0.423	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.17	0	Left	Cheek	QPSK	1	0	44526	1:1.58	0.354	1.122	0.397	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.01	1	Left	Cheek	QPSK	50	0	44526	1:1.58	0.156	1.227	0.191	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.12	0	Left	Tilt	QPSK	1	0	44526	1:1.58	0.283	1.122	0.318	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.03	1	Left	Tilt	QPSK	50	0	44526	1:1.58	0.156	1.227	0.191	
Power Class 2	2680.00	41490	High	LTE Band 41	20	28.0	27.34	-0.13	0	Right	Cheek	QPSK	1	0	44526	1:2.31	1.200	1.164	1.397	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Blue entry represents variability measurement

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**Table 11-17
DTS Head SAR**

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	12.0	11.99	0.15	Right	Cheek	35912	1	99.4	0.038	-	1.002	1.006	-	
2412	1	802.11b	DSSS	22	12.0	11.99	0.18	Right	Tilt	35912	1	99.4	0.035	-	1.002	1.006	-	
2412	1	802.11b	DSSS	22	12.0	11.99	-0.14	Left	Cheek	35912	1	99.4	0.060	0.039	1.002	1.006	0.039	A17
2412	1	802.11b	DSSS	22	12.0	11.99	-0.14	Left	Tilt	35912	1	99.4	0.057	-	1.002	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									

**Table 11-18
NII Head SAR**

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	12.0	11.97	0.15	Right	Cheek	35912	29.3	88.8	0.040	-	1.007	1.126	-	
5290	58	802.11ac	OFDM	80	12.0	11.97	0.19	Right	Tilt	35912	29.3	88.8	0.049	-	1.007	1.126	-	
5290	58	802.11ac	OFDM	80	12.0	11.97	0.12	Left	Cheek	35912	29.3	88.8	0.057	-	1.007	1.126	-	
5290	58	802.11ac	OFDM	80	12.0	11.97	-0.19	Left	Tilt	35912	29.3	88.8	0.079	0.032	1.007	1.126	0.036	
5530	106	802.11ac	OFDM	80	12.0	11.99	0.13	Right	Cheek	35912	29.3	88.8	0.082	-	1.002	1.126	-	
5530	106	802.11ac	OFDM	80	12.0	11.99	0.15	Right	Tilt	35912	29.3	88.8	0.085	-	1.002	1.126	-	
5530	106	802.11ac	OFDM	80	12.0	11.99	0.14	Left	Cheek	35912	29.3	88.8	0.216	0.055	1.002	1.126	0.062	A18
5530	106	802.11ac	OFDM	80	12.0	11.99	0.10	Left	Tilt	35912	29.3	88.8	0.159	-	1.002	1.126	-	
5775	155	802.11ac	OFDM	80	12.0	11.90	0.13	Right	Cheek	35912	29.3	88.8	0.073	-	1.023	1.126	-	
5775	155	802.11ac	OFDM	80	12.0	11.90	0.19	Right	Tilt	35912	29.3	88.8	0.077	-	1.023	1.126	-	
5775	155	802.11ac	OFDM	80	12.0	11.90	0.12	Left	Cheek	35912	29.3	88.8	0.141	0.043	1.023	1.126	0.050	
5775	155	802.11ac	OFDM	80	12.0	11.90	0.15	Left	Tilt	35912	29.3	88.8	0.126	-	1.023	1.126	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																		
Spatial Peak									Head									
Uncontrolled Exposure/General Population									1.6 W/kg (mW/g)									
									averaged over 1 gram									

**Table 11-19
DSS Head SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	10.0	9.30	-0.13	Right	Cheek	35912	1	76.8	0.002	1.175	1.302	0.003	
2441.00	39	Bluetooth	FHSS	10.0	9.30	0.17	Right	Tilt	35912	1	76.8	0.008	1.175	1.302	0.012	
2441.00	39	Bluetooth	FHSS	10.0	9.30	0.12	Left	Cheek	35912	1	76.8	0.011	1.175	1.302	0.017	A19
2441.00	39	Bluetooth	FHSS	10.0	9.30	-0.02	Left	Tilt	35912	1	76.8	0.009	1.175	1.302	0.014	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram								

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11.2 Standalone Body-Worn SAR Data

Table 11-20
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	34.0	32.52	-0.02	15 mm	43874	1:8.3	back	0.212	1.406	0.298	A20
1850.20	512	GSM 1900	GSM	31.5	30.49	-0.16	15 mm	43874	1:8.3	back	0.122	1.262	0.154	A22
836.60	4183	UMTS 850	RMC	25.8	24.68	0.02	15 mm	43874	1:1	back	0.298	1.294	0.386	A24
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.03	15 mm	35854	1:1	back	0.435	1.377	0.599	A26
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.13	15 mm	35854	1:1	back	0.194	1.459	0.283	A28
820.10	564	CDMA BC10 (\$90S)	TDSO / SO32	26.0	24.37	-0.01	15 mm	36480	1:1	back	0.189	1.455	0.275	A30
836.52	384	CDMA BC0 (\$22H)	TDSO / SO32	26.0	24.09	0.07	15 mm	36480	1:1	back	0.198	1.552	0.307	A32
1880.00	600	PCS CDMA	TDSO / SO32	26.0	24.00	-0.02	15 mm	35854	1:1	back	0.159	1.585	0.252	A34
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-21
LTE Body-Worn SAR

MEASUREMENT RESULTS																				
Power Class	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
	MHz	Ch.														(W/kg)		(W/kg)		
N/A	680.50	133297	Mid	LTE Band 71	20	26.0	25.07	-0.12	0	35532	QPSK	1	50	15 mm	back	1:1	0.248	1.239	0.307	A36
N/A	680.50	133297	Mid	LTE Band 71	20	25.0	23.97	0.01	1	35532	QPSK	50	0	15 mm	back	1:1	0.190	1.268	0.241	
N/A	707.50	23095	Mid	LTE Band 12	10	26.0	24.79	-0.02	0	35532	QPSK	1	25	15 mm	back	1:1	0.247	1.321	0.326	A38
N/A	707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.02	1	35532	QPSK	25	0	15 mm	back	1:1	0.188	1.343	0.252	
N/A	782.00	23230	Mid	LTE Band 13	10	25.5	24.57	-0.13	0	35656	QPSK	1	25	15 mm	back	1:1	0.339	1.239	0.420	A40
N/A	782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.01	1	35656	QPSK	25	12	15 mm	back	1:1	0.262	1.245	0.326	
N/A	831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.05	0	35532	QPSK	1	0	15 mm	back	1:1	0.271	1.355	0.367	A42
N/A	831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	0.01	1	35532	QPSK	36	18	15 mm	back	1:1	0.172	1.409	0.242	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	-0.08	0	44526	QPSK	1	0	15 mm	back	1:1	0.308	1.343	0.414	A44
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.01	1	44526	QPSK	50	25	15 mm	back	1:1	0.248	1.368	0.339	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	-0.06	0	35656	QPSK	1	99	15 mm	back	1:1	0.161	1.400	0.225	A46
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.01	1	35656	QPSK	50	50	15 mm	back	1:1	0.124	1.449	0.180	
N/A	2535.00	21100	Mid	LTE Band 7	20	23.0	22.43	-0.02	0	48675	QPSK	1	0	15 mm	back	1:1	0.219	1.140	0.250	A48
N/A	2510.00	20850	Low	LTE Band 7	20	22.0	21.29	0.07	1	48675	QPSK	50	0	15 mm	back	1:1	0.184	1.178	0.217	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	-0.05	0	44526	QPSK	1	0	15 mm	back	1:1.58	0.341	1.122	0.383	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.04	1	44526	QPSK	50	0	15 mm	back	1:1.58	0.164	1.227	0.201	
Power Class 2	2549.50	40185	Low-Mid	LTE Band 41	20	28.0	27.66	-0.03	0	44526	QPSK	1	0	15 mm	back	1:2.31	0.435	1.081	0.470	A50
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 11-22
DTS Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.0	20.56	-0.16	15 mm	35912	1	back	99.4	0.055	0.047	1.107	1.006	0.052	A52
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
NII Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5320	64	802.11a	OFDM	20	18.0	17.67	0.13	15 mm	35912	6	back	98.3	0.213	0.141	1.079	1.017	0.155	
5720	144	802.11a	OFDM	20	18.0	17.52	0.20	15 mm	35912	6	back	98.3	0.764	0.352	1.117	1.017	0.400	
5785	157	802.11a	OFDM	20	18.0	17.60	0.11	15 mm	35912	6	back	98.3	0.809	0.360	1.096	1.017	0.401	A54
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

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11.3 Standalone Hotspot SAR Data

Table 11-24
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	30.0	28.84	-0.01	10 mm	43874	3	1:2.76	back	0.391	1.306	0.511	A21
836.60	190	GSM 850	GPRS	30.0	28.84	-0.05	10 mm	43874	3	1:2.76	front	0.198	1.306	0.259	
836.60	190	GSM 850	GPRS	30.0	28.84	-0.03	10 mm	43874	3	1:2.76	bottom	0.155	1.306	0.202	
836.60	190	GSM 850	GPRS	30.0	28.84	-0.06	10 mm	43874	3	1:2.76	right	0.298	1.306	0.389	
836.60	190	GSM 850	GPRS	30.0	28.84	-0.07	10 mm	43874	3	1:2.76	left	0.141	1.306	0.184	
1880.00	661	GSM 1900	GPRS	23.2	22.60	0.10	10 mm	44526	4	1:2.076	back	0.232	1.148	0.266	A23
1880.00	661	GSM 1900	GPRS	23.2	22.60	-0.07	10 mm	44526	4	1:2.076	front	0.132	1.148	0.152	
1880.00	661	GSM 1900	GPRS	23.2	22.60	-0.06	10 mm	44526	4	1:2.076	bottom	0.188	1.148	0.216	
1880.00	661	GSM 1900	GPRS	23.2	22.60	0.01	10 mm	44526	4	1:2.076	right	0.050	1.148	0.057	
1880.00	661	GSM 1900	GPRS	23.2	22.60	-0.08	10 mm	44526	4	1:2.076	left	0.143	1.148	0.164	
826.40	4132	UMTS 850	RMC	25.8	24.55	0.01	10 mm	43874	N/A	1:1	back	0.502	1.334	0.670	A25
836.60	4183	UMTS 850	RMC	25.8	24.68	0.08	10 mm	43874	N/A	1:1	back	0.488	1.294	0.631	
846.60	4233	UMTS 850	RMC	25.8	24.81	-0.05	10 mm	43874	N/A	1:1	back	0.388	1.256	0.487	
836.60	4183	UMTS 850	RMC	25.8	24.68	-0.01	10 mm	43874	N/A	1:1	front	0.233	1.294	0.302	
836.60	4183	UMTS 850	RMC	25.8	24.68	-0.07	10 mm	43874	N/A	1:1	bottom	0.182	1.294	0.236	
836.60	4183	UMTS 850	RMC	25.8	24.68	-0.05	10 mm	43874	N/A	1:1	right	0.322	1.294	0.417	
836.60	4183	UMTS 850	RMC	25.8	24.68	0.01	10 mm	43874	N/A	1:1	left	0.153	1.294	0.198	
1732.40	1412	UMTS 1750	RMC	21.8	21.40	-0.05	10 mm	36480	N/A	1:1	back	0.397	1.096	0.435	A27
1732.40	1412	UMTS 1750	RMC	21.8	21.40	0.02	10 mm	36480	N/A	1:1	front	0.276	1.096	0.302	
1732.40	1412	UMTS 1750	RMC	21.8	21.40	-0.03	10 mm	36480	N/A	1:1	bottom	0.281	1.096	0.308	
1732.40	1412	UMTS 1750	RMC	21.8	21.40	-0.01	10 mm	36480	N/A	1:1	right	0.097	1.096	0.106	
1732.40	1412	UMTS 1750	RMC	21.8	21.40	-0.06	10 mm	36480	N/A	1:1	left	0.180	1.096	0.197	
1880.00	9400	UMTS 1900	RMC	22.8	21.29	0.04	10 mm	35854	N/A	1:1	back	0.232	1.416	0.329	
1880.00	9400	UMTS 1900	RMC	22.8	21.29	0.02	10 mm	35854	N/A	1:1	front	0.132	1.416	0.187	
1880.00	9400	UMTS 1900	RMC	22.8	21.29	-0.06	10 mm	35854	N/A	1:1	bottom	0.234	1.416	0.331	A29
1880.00	9400	UMTS 1900	RMC	22.8	21.29	0.05	10 mm	35854	N/A	1:1	right	0.032	1.416	0.045	
1880.00	9400	UMTS 1900	RMC	22.8	21.29	-0.01	10 mm	35854	N/A	1:1	left	0.122	1.416	0.173	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. 0	26.0	24.53	0.01	10 mm	36480	N/A	1:1	back	0.246	1.403	0.345	A31
820.10	564	CDMA BC10 (S90S)	EVDO Rev. 0	26.0	24.53	0.01	10 mm	36480	N/A	1:1	front	0.148	1.403	0.208	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. 0	26.0	24.53	-0.04	10 mm	36480	N/A	1:1	bottom	0.062	1.403	0.087	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. 0	26.0	24.53	-0.01	10 mm	36480	N/A	1:1	right	0.191	1.403	0.268	
820.10	564	CDMA BC10 (S90S)	EVDO Rev. 0	26.0	24.53	0.07	10 mm	36480	N/A	1:1	left	0.113	1.403	0.159	
836.52	384	CDMA BC0 (S22H)	EVDO Rev. 0	26.0	24.20	0.02	10 mm	36480	N/A	1:1	back	0.279	1.514	0.422	A33
836.52	384	CDMA BC0 (S22H)	EVDO Rev. 0	26.0	24.20	0.01	10 mm	36480	N/A	1:1	front	0.164	1.514	0.248	
836.52	384	CDMA BC0 (S22H)	EVDO Rev. 0	26.0	24.20	0.11	10 mm	36480	N/A	1:1	bottom	0.076	1.514	0.115	
836.52	384	CDMA BC0 (S22H)	EVDO Rev. 0	26.0	24.20	-0.10	10 mm	36480	N/A	1:1	right	0.217	1.514	0.329	
836.52	384	CDMA BC0 (S22H)	EVDO Rev. 0	26.0	24.20	-0.17	10 mm	36480	N/A	1:1	left	0.121	1.514	0.183	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.12	0.05	10 mm	35854	N/A	1:1	back	0.173	1.542	0.267	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.12	0.11	10 mm	35854	N/A	1:1	front	0.115	1.542	0.177	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.12	0.01	10 mm	35854	N/A	1:1	bottom	0.241	1.542	0.372	A35
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.12	0.04	10 mm	35854	N/A	1:1	right	0.028	1.542	0.043	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.12	-0.06	10 mm	35854	N/A	1:1	left	0.115	1.542	0.177	
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 11-25
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	26.0	25.07	0.03	0	35532	QPSK	1	50	10 mm	back	1:1	0.312	1.239	0.387	A37
680.50	133297	Mid	LTE Band 71	20	25.0	23.97	-0.04	1	35532	QPSK	50	0	10 mm	back	1:1	0.254	1.268	0.322	
680.50	133297	Mid	LTE Band 71	20	26.0	25.07	0.03	0	35532	QPSK	1	50	10 mm	front	1:1	0.150	1.239	0.186	
680.50	133297	Mid	LTE Band 71	20	25.0	23.97	-0.02	1	35532	QPSK	50	0	10 mm	front	1:1	0.112	1.268	0.142	
680.50	133297	Mid	LTE Band 71	20	26.0	25.07	-0.02	0	35532	QPSK	1	50	10 mm	bottom	1:1	0.049	1.239	0.061	
680.50	133297	Mid	LTE Band 71	20	25.0	23.97	0.02	1	35532	QPSK	50	0	10 mm	bottom	1:1	0.036	1.268	0.046	
680.50	133297	Mid	LTE Band 71	20	26.0	25.07	-0.02	0	35532	QPSK	1	50	10 mm	right	1:1	0.228	1.239	0.282	
680.50	133297	Mid	LTE Band 71	20	25.0	23.97	0.01	1	35532	QPSK	50	0	10 mm	right	1:1	0.174	1.268	0.221	
680.50	133297	Mid	LTE Band 71	20	26.0	25.07	0.02	0	35532	QPSK	1	50	10 mm	left	1:1	0.164	1.239	0.203	
680.50	133297	Mid	LTE Band 71	20	25.0	23.97	0.01	1	35532	QPSK	50	0	10 mm	left	1:1	0.125	1.268	0.159	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-26
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	-0.04	0	35532	QPSK	1	25	10 mm	back	1:1	0.284	1.321	0.375	A39
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	-0.02	1	35532	QPSK	25	0	10 mm	back	1:1	0.215	1.343	0.289	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.01	0	35532	QPSK	1	25	10 mm	front	1:1	0.139	1.321	0.184	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.03	1	35532	QPSK	25	0	10 mm	front	1:1	0.106	1.343	0.142	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.03	0	35532	QPSK	1	25	10 mm	bottom	1:1	0.056	1.321	0.074	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	0.10	1	35532	QPSK	25	0	10 mm	bottom	1:1	0.040	1.343	0.054	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	0.10	0	35532	QPSK	1	25	10 mm	right	1:1	0.227	1.321	0.300	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	-0.03	1	35532	QPSK	25	0	10 mm	right	1:1	0.179	1.343	0.240	
707.50	23095	Mid	LTE Band 12	10	26.0	24.79	-0.09	0	35532	QPSK	1	25	10 mm	left	1:1	0.150	1.321	0.198	
707.50	23095	Mid	LTE Band 12	10	25.0	23.72	-0.05	1	35532	QPSK	25	0	10 mm	left	1:1	0.115	1.343	0.154	
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 11-27
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	-0.05	0	35656	QPSK	1	25	10 mm	back	1:1	0.355	1.239	0.440	A41
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	-0.08	1	35656	QPSK	25	12	10 mm	back	1:1	0.285	1.245	0.355	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.05	0	35656	QPSK	1	25	10 mm	front	1:1	0.205	1.239	0.254	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	-0.01	1	35656	QPSK	25	12	10 mm	front	1:1	0.157	1.245	0.195	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	0.05	0	35656	QPSK	1	25	10 mm	bottom	1:1	0.097	1.239	0.120	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.03	1	35656	QPSK	25	12	10 mm	bottom	1:1	0.074	1.245	0.092	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	-0.12	0	35656	QPSK	1	25	10 mm	right	1:1	0.325	1.239	0.403	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	-0.18	1	35656	QPSK	25	12	10 mm	right	1:1	0.244	1.245	0.304	
782.00	23230	Mid	LTE Band 13	10	25.5	24.57	-0.18	0	35656	QPSK	1	25	10 mm	left	1:1	0.250	1.239	0.310	
782.00	23230	Mid	LTE Band 13	10	24.5	23.55	0.05	1	35656	QPSK	25	12	10 mm	left	1:1	0.187	1.245	0.233	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-28
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.10	0	35532	QPSK	1	0	10 mm	back	1:1	0.314	1.355	0.425	A43
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.08	1	35532	QPSK	36	18	10 mm	back	1:1	0.227	1.409	0.320	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	0.01	0	35532	QPSK	1	0	10 mm	front	1:1	0.175	1.355	0.237	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.08	1	35532	QPSK	36	18	10 mm	front	1:1	0.124	1.409	0.175	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.01	0	35532	QPSK	1	0	10 mm	bottom	1:1	0.099	1.355	0.134	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.03	1	35532	QPSK	36	18	10 mm	bottom	1:1	0.073	1.409	0.103	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	-0.05	0	35532	QPSK	1	0	10 mm	right	1:1	0.281	1.355	0.381	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	-0.02	1	35532	QPSK	36	18	10 mm	right	1:1	0.176	1.409	0.248	
831.50	26865	Mid	LTE Band 26 (Cell)	15	26.0	24.68	0.01	0	35532	QPSK	1	0	10 mm	left	1:1	0.156	1.355	0.211	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	23.51	0.02	1	35532	QPSK	36	18	10 mm	left	1:1	0.092	1.409	0.130	
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 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.63	0.09	0	44526	QPSK	1	0	10 mm	back	1:1	0.272	1.089	0.296	A45
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.59	-0.01	0	44526	QPSK	50	50	10 mm	back	1:1	0.282	1.099	0.310	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.63	-0.17	0	44526	QPSK	1	0	10 mm	front	1:1	0.204	1.089	0.222	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.59	-0.12	0	44526	QPSK	50	50	10 mm	front	1:1	0.206	1.099	0.226	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.63	-0.05	0	44526	QPSK	1	0	10 mm	bottom	1:1	0.169	1.089	0.184	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.59	0.01	0	44526	QPSK	50	50	10 mm	bottom	1:1	0.180	1.099	0.198	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.63	0.05	0	44526	QPSK	1	0	10 mm	right	1:1	0.065	1.089	0.071	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.59	0.11	0	44526	QPSK	50	50	10 mm	right	1:1	0.067	1.099	0.074	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.63	0.11	0	44526	QPSK	1	0	10 mm	left	1:1	0.138	1.089	0.150	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.59	-0.08	0	44526	QPSK	50	50	10 mm	left	1:1	0.147	1.099	0.162	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-30
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.35	0.02	0	35656	QPSK	1	0	10 mm	back	1:1	0.259	1.161	0.301	A47
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.30	0.02	0	35656	QPSK	50	50	10 mm	back	1:1	0.256	1.175	0.301	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.35	0.07	0	35656	QPSK	1	0	10 mm	front	1:1	0.125	1.161	0.145	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.30	0.05	0	35656	QPSK	50	50	10 mm	front	1:1	0.134	1.175	0.157	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.35	0.07	0	35656	QPSK	1	0	10 mm	bottom	1:1	0.125	1.161	0.145	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.30	0.16	0	35656	QPSK	50	50	10 mm	bottom	1:1	0.183	1.175	0.215	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.35	0.21	0	35656	QPSK	1	0	10 mm	right	1:1	0.068	1.161	0.079	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.30	-0.03	0	35656	QPSK	50	50	10 mm	right	1:1	0.054	1.175	0.063	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.35	0.04	0	35656	QPSK	1	0	10 mm	left	1:1	0.166	1.161	0.193	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.30	0.03	0	35656	QPSK	50	50	10 mm	left	1:1	0.154	1.175	0.181	
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 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	21.0	20.39	0.05	0	48675	QPSK	1	0	10 mm	back	1:1	0.339	1.151	0.390	A49
2510.00	20850	Low	LTE Band 7	20	21.0	20.24	-0.03	0	48675	QPSK	50	0	10 mm	back	1:1	0.368	1.191	0.438	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	0.14	0	48675	QPSK	1	0	10 mm	front	1:1	0.060	1.151	0.069	
2510.00	20850	Low	LTE Band 7	20	21.0	20.24	0.05	0	48675	QPSK	50	0	10 mm	front	1:1	0.082	1.191	0.098	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	0.12	0	48675	QPSK	1	0	10 mm	top	1:1	0.046	1.151	0.053	
2510.00	20850	Low	LTE Band 7	20	21.0	20.24	0.01	0	48675	QPSK	50	0	10 mm	top	1:1	0.043	1.191	0.051	
2535.00	21100	Mid	LTE Band 7	20	21.0	20.39	-0.01	0	48675	QPSK	1	0	10 mm	left	1:1	0.170	1.151	0.196	
2510.00	20850	Low	LTE Band 7	20	21.0	20.24	0.05	0	48675	QPSK	50	0	10 mm	left	1:1	0.163	1.191	0.194	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-32
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																				
Power Class	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
	MHz	Ch.														(W/kg)		(W/kg)		
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.37	0.05	0	44526	QPSK	1	0	10 mm	back	1:1.58	0.552	1.156	0.638	A51
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.07	0	44526	QPSK	1	0	10 mm	back	1:1.58	0.847	1.122	0.950	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.07	0.13	0	44526	QPSK	1	0	10 mm	back	1:1.58	0.661	1.239	0.819	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	23.80	0.01	0	44526	QPSK	1	0	10 mm	back	1:1.58	0.403	1.318	0.531	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	23.87	0.09	0	44526	QPSK	1	0	10 mm	back	1:1.58	0.769	1.297	0.997	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.05	1	44526	QPSK	50	0	10 mm	back	1:1.58	0.459	1.227	0.563	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.10	-0.04	1	44526	QPSK	100	0	10 mm	back	1:1.58	0.457	1.230	0.562	
Power Class 2	2680.00	41490	High	LTE Band 41	20	25.0	23.74	-0.04	0	44526	QPSK	1	0	10 mm	back	1:2.31	0.527	1.337	0.705	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.01	0	44526	QPSK	1	0	10 mm	front	1:1.58	0.248	1.122	0.278	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	0.11	1	44526	QPSK	50	0	10 mm	front	1:1.58	0.117	1.227	0.144	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	0.01	0	44526	QPSK	1	0	10 mm	top	1:1.58	0.124	1.122	0.139	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	-0.12	1	44526	QPSK	50	0	10 mm	top	1:1.58	0.047	1.227	0.058	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	-0.15	0	44526	QPSK	1	0	10 mm	left	1:1.58	0.451	1.122	0.506	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	-0.04	1	44526	QPSK	50	0	10 mm	left	1:1.58	0.209	1.227	0.256	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																				
Spatial Peak									Body											
Uncontrolled Exposure/General Population									1.6 W/kg (mW/g) averaged over 1 gram											

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**Table 11-33
WLAN Hotspot SAR**

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	21.0	20.56	0.14	10 mm	35912	1	back	99.4	0.152	0.121	1.107	1.006	0.135	A53
2437	6	802.11b	DSSS	22	21.0	20.56	-0.15	10 mm	35912	1	front	99.4	0.049	-	1.107	1.006	-	-
2437	6	802.11b	DSSS	22	21.0	20.56	0.18	10 mm	35912	1	top	99.4	0.124	-	1.107	1.006	-	-
2437	6	802.11b	DSSS	22	21.0	20.56	-0.13	10 mm	35912	1	right	99.4	0.031	-	1.107	1.006	-	-
5745	149	802.11a	OFDM	20	18.0	17.11	0.01	10 mm	35912	6	back	98.3	0.827	0.403	1.227	1.017	0.503	-
5785	157	802.11a	OFDM	20	18.0	17.60	0.01	10 mm	35912	6	back	98.3	1.061	0.618	1.096	1.017	0.689	A55
5825	165	802.11a	OFDM	20	18.0	17.29	0.02	10 mm	35912	6	back	98.3	0.826	0.447	1.178	1.017	0.536	-
5785	157	802.11a	OFDM	20	18.0	17.60	0.14	10 mm	35912	6	front	98.3	0.160	-	1.096	1.017	-	-
5785	157	802.11a	OFDM	20	18.0	17.60	0.12	10 mm	35912	6	top	98.3	0.465	0.188	1.096	1.017	0.210	-
5785	157	802.11a	OFDM	20	18.0	17.60	0.16	10 mm	35912	6	right	98.3	0.237	-	1.096	1.017	-	-
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 11-34
DSS Hotspot SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	10.0	9.30	-0.09	10 mm	35912	1	back	76.8	0.007	1.175	1.302	0.011	A56
2441	39	Bluetooth	FHSS	10.0	9.30	-0.16	10 mm	35912	1	front	76.8	0.000	1.175	1.302	0.000	
2441	39	Bluetooth	FHSS	10.0	9.30	-0.18	10 mm	35912	1	top	76.8	0.002	1.175	1.302	0.003	
2441	39	Bluetooth	FHSS	10.0	9.30	-0.11	10 mm	35912	1	right	76.8	0.000	1.175	1.302	0.000	
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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11.4 Standalone Phablet SAR Data

Table 11-35
GPRS/UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GPRS	26.2	25.35	-0.01	9 mm	44526	4	1:2.076	back	0.258	1.216	0.314	
1880.00	661	GSM 1900	GPRS	26.2	25.35	0.03	0 mm	44526	4	1:2.076	front	0.890	1.216	1.082	
1880.00	661	GSM 1900	GPRS	26.2	25.35	0.02	2 mm	44526	4	1:2.076	bottom	0.704	1.216	0.856	
1880.00	661	GSM 1900	GPRS	26.2	25.35	0.09	0 mm	44526	4	1:2.076	right	0.081	1.216	0.098	
1880.00	661	GSM 1900	GPRS	26.2	25.35	0.05	0 mm	44526	4	1:2.076	left	0.897	1.216	1.091	
1880.00	661	GSM 1900	GPRS	23.2	22.27	-0.01	0 mm	44526	4	1:2.076	back	1.200	1.239	1.487	A57
1880.00	661	GSM 1900	GPRS	23.2	22.27	-0.01	0 mm	44526	4	1:2.076	bottom	0.600	1.239	0.743	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	0.03	9 mm	36480	N/A	1:1	back	0.536	1.377	0.738	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	0.13	0 mm	36480	N/A	1:1	front	1.450	1.377	1.997	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.06	2 mm	36480	N/A	1:1	bottom	1.200	1.377	1.652	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	0.01	0 mm	36480	N/A	1:1	right	0.273	1.377	0.376	
1732.40	1412	UMTS 1750	RMC	25.8	24.41	-0.01	0 mm	36480	N/A	1:1	left	1.070	1.377	1.473	
1712.40	1312	UMTS 1750	RMC	21.8	21.47	-0.04	0 mm	36480	N/A	1:1	back	2.050	1.079	2.212	
1732.40	1412	UMTS 1750	RMC	21.8	21.51	0.01	0 mm	36480	N/A	1:1	back	2.450	1.069	2.619	A58
1752.60	1513	UMTS 1750	RMC	21.8	21.37	-0.05	0 mm	36480	N/A	1:1	back	2.230	1.104	2.462	
1732.40	1412	UMTS 1750	RMC	21.8	21.51	-0.05	0 mm	36480	N/A	1:1	bottom	1.060	1.069	1.133	
1732.40	1412	UMTS 1750	RMC	21.8	21.51	0.01	0 mm	36480	N/A	1:1	back	2.420	1.069	2.587	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.04	9 mm	35854	N/A	1:1	back	0.273	1.459	0.398	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	0.06	0 mm	35854	N/A	1:1	front	0.872	1.459	1.272	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	-0.01	2 mm	35854	N/A	1:1	bottom	0.923	1.459	1.347	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	0.14	0 mm	35854	N/A	1:1	right	0.067	1.459	0.098	
1880.00	9400	UMTS 1900	RMC	25.8	24.16	0.03	0 mm	35854	N/A	1:1	left	1.000	1.459	1.459	
1880.00	9400	UMTS 1900	RMC	22.8	21.27	-0.10	0 mm	35854	N/A	1:1	back	1.010	1.422	1.436	A59
1880.00	9400	UMTS 1900	RMC	22.8	21.27	-0.02	0 mm	35854	N/A	1:1	bottom	0.889	1.422	1.264	
1880.00	600	PCS CDMA	EVDO Rev. 0	26.0	24.15	-0.05	9 mm	35854	N/A	1:1	back	0.222	1.531	0.340	
1880.00	600	PCS CDMA	EVDO Rev. 0	26.0	24.15	-0.12	0 mm	35854	N/A	1:1	front	0.824	1.531	1.262	
1880.00	600	PCS CDMA	EVDO Rev. 0	26.0	24.15	-0.03	2 mm	35854	N/A	1:1	bottom	0.929	1.531	1.422	
1880.00	600	PCS CDMA	EVDO Rev. 0	26.0	24.15	-0.11	0 mm	35854	N/A	1:1	right	0.055	1.531	0.084	
1880.00	600	PCS CDMA	EVDO Rev. 0	26.0	24.15	-0.02	0 mm	35854	N/A	1:1	left	0.978	1.531	1.497	A60
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.11	0.07	0 mm	35854	N/A	1:1	back	0.892	1.545	1.378	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	21.11	-0.05	0 mm	35854	N/A	1:1	bottom	0.746	1.545	1.153	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Phablet								
Spatial Peak							4.0 W/kg (mW/g)								
Uncontrolled Exposure/General Population							averaged over 10 grams								

Note: Blue entry represents variability measurement

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Table 11-36
LTE Phablet SAR

MEASUREMENT RESULTS																				
Power Class	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
	MHz	Ch.														(W/kg)		(W/kg)		
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	-0.14	0	44526	QPSK	1	0	9 mm	back	1:1	0.420	1.343	0.564	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.12	1	44526	QPSK	50	25	9 mm	back	1:1	0.342	1.368	0.468	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.06	0	44526	QPSK	1	0	0 mm	front	1:1	0.971	1.343	1.304	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.06	1	44526	QPSK	50	25	0 mm	front	1:1	0.834	1.368	1.141	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.16	0	44526	QPSK	1	0	2 mm	bottom	1:1	1.040	1.343	1.397	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.10	1	44526	QPSK	50	25	2 mm	bottom	1:1	0.879	1.368	1.202	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	0.12	0	44526	QPSK	1	0	0 mm	right	1:1	0.178	1.343	0.239	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	0.03	1	44526	QPSK	50	25	0 mm	right	1:1	0.151	1.368	0.207	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	26.0	24.72	-0.12	0	44526	QPSK	1	0	0 mm	left	1:1	0.765	1.343	1.027	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	23.64	-0.13	1	44526	QPSK	50	25	0 mm	left	1:1	0.606	1.368	0.829	
N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.57	-0.03	0	44526	QPSK	1	50	0 mm	back	1:1	1.790	1.104	1.976	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.62	0.09	0	44526	QPSK	1	0	0 mm	back	1:1	1.920	1.091	2.095	
N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	21.55	0.06	0	44526	QPSK	1	99	0 mm	back	1:1	2.360	1.109	2.617	A61
N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	22.0	21.51	0.05	0	44526	QPSK	50	25	0 mm	back	1:1	1.870	1.119	2.093	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.56	0.01	0	44526	QPSK	50	25	0 mm	back	1:1	2.000	1.107	2.214	
N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	22.0	21.42	-0.16	0	44526	QPSK	50	50	0 mm	back	1:1	2.180	1.143	2.492	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.51	0.08	0	44526	QPSK	100	0	0 mm	back	1:1	2.310	1.119	2.585	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.62	-0.02	0	44526	QPSK	1	0	0 mm	bottom	1:1	0.744	1.091	0.812	
N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	22.0	21.56	-0.02	0	44526	QPSK	50	25	0 mm	bottom	1:1	0.798	1.107	0.883	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	-0.15	0	35656	QPSK	1	99	9 mm	back	1:1	0.251	1.400	0.351	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.02	1	35656	QPSK	50	50	9 mm	back	1:1	0.188	1.449	0.272	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.03	0	35656	QPSK	1	99	0 mm	front	1:1	0.925	1.400	1.295	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.05	1	35656	QPSK	50	50	0 mm	front	1:1	0.724	1.449	1.049	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.05	0	35656	QPSK	1	99	2 mm	bottom	1:1	0.768	1.400	1.075	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.02	1	35656	QPSK	50	50	2 mm	bottom	1:1	0.593	1.449	0.859	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	0.11	0	35656	QPSK	1	99	0 mm	right	1:1	0.082	1.400	0.115	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	0.12	1	35656	QPSK	50	50	0 mm	right	1:1	0.072	1.449	0.104	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	26.0	24.54	-0.01	0	35656	QPSK	1	99	0 mm	left	1:1	1.120	1.400	1.568	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	23.39	-0.01	1	35656	QPSK	50	50	0 mm	left	1:1	0.902	1.449	1.307	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.36	-0.02	0	35656	QPSK	1	99	0 mm	back	1:1	1.370	1.159	1.588	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.49	-0.03	0	35656	QPSK	50	50	0 mm	back	1:1	1.410	1.125	1.586	A62
N/A	1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.0	22.10	-0.01	0	35656	QPSK	50	50	0 mm	back	1:1	1.120	1.230	1.378	
N/A	1905.00	26590	High	LTE Band 25 (PCS)	20	23.0	22.01	0.01	0	35656	QPSK	50	0	0 mm	back	1:1	1.110	1.256	1.394	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.36	-0.01	0	35656	QPSK	1	99	0 mm	bottom	1:1	0.894	1.159	1.036	
N/A	1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.49	0.09	0	35656	QPSK	50	50	0 mm	bottom	1:1	0.966	1.125	1.087	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	25.0	24.37	-0.14	0	44526	QPSK	1	0	0 mm	back	1:1.58	2.130	1.156	2.462	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	25.0	24.50	-0.13	0	44526	QPSK	1	0	0 mm	back	1:1.58	2.120	1.122	2.379	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	25.0	24.07	-0.12	0	44526	QPSK	1	0	0 mm	back	1:1.58	1.990	1.239	2.466	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	25.0	23.80	-0.13	0	44526	QPSK	1	0	0 mm	back	1:1.58	1.550	1.318	2.043	
Power Class 3	2680.00	41490	High	LTE Band 41	20	25.0	23.87	-0.12	0	44526	QPSK	1	0	0 mm	back	1:1.58	1.420	1.297	1.842	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.11	-0.13	1	44526	QPSK	50	0	0 mm	back	1:1.58	1.790	1.227	2.196	
Power Class 3	2549.50	40185	Low-Mid	LTE Band 41	20	24.0	23.08	-0.14	1	44526	QPSK	50	0	0 mm	back	1:1.58	1.680	1.236	2.076	
Power Class 3	2593.00	40620	Mid	LTE Band 41	20	24.0	22.92	-0.13	1	44526	QPSK	50	0	0 mm	back	1:1.58	1.770	1.282	2.269	
Power Class 3	2636.50	41055	Mid-High	LTE Band 41	20	24.0	22.71	-0.12	1	44526	QPSK	50	0	0 mm	back	1:1.58	1.260	1.346	1.696	
Power Class 3	2680.00	41490	High	LTE Band 41	20	24.0	22.49	-0.12	1	44526	QPSK	50	0	0 mm	back	1:1.58	1.110	1.416	1.572	
Power Class 3	2506.00	39750	Low	LTE Band 41	20	24.0	23.10	-0.14	1	44526	QPSK	100	0	0 mm	back	1:1.58	1.830	1.230	2.251	
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	28.0	27.33	-0.12	0	44526	QPSK	1	0	0 mm	back	1:2.31	2.610	1.167	3.046	A63
Power Class 2	2593.00	40620	Mid	LTE Band 41	20	28.0	27.33	-0.12	0	44526	QPSK	1	0	0 mm	back	1:2.31	2.600	1.167	3.034	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																				
Spatial Peak									Phablet											
Uncontrolled Exposure/General Population									4.0 W/kg (mW/g) averaged over 10 grams											

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Table 11-37
WLAN Phablet SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5320	64	802.11a	OFDM	20	18.0	17.67	0.02	0 mm	35912	6	back	98.3	6.995	0.810	1.079	1.017	0.889	A64
5320	64	802.11a	OFDM	20	18.0	17.67	0.14	0 mm	35912	6	front	98.3	1.008	-	1.079	1.017	-	-
5320	64	802.11a	OFDM	20	18.0	17.67	0.12	0 mm	35912	6	top	98.3	3.034	-	1.079	1.017	-	-
5320	64	802.11a	OFDM	20	18.0	17.67	0.12	0 mm	35912	6	right	98.3	0.643	-	1.079	1.017	-	-
5720	144	802.11a	OFDM	20	18.0	17.52	0.08	0 mm	35912	6	back	98.3	5.430	0.787	1.117	1.017	0.894	-
5720	144	802.11a	OFDM	20	18.0	17.52	0.10	0 mm	35912	6	front	98.3	0.852	-	1.117	1.017	-	-
5720	144	802.11a	OFDM	20	18.0	17.52	0.01	0 mm	35912	6	top	98.3	1.999	-	1.117	1.017	-	-
5720	144	802.11a	OFDM	20	18.0	17.52	0.14	0 mm	35912	6	right	98.3	0.655	-	1.117	1.017	-	-
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Phablet 4.0 W/kg (mW/g) 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.
- Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.

GSM Test Notes:

- Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
- 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

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GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.

3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

CDMA Notes:

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

UMTS Notes:

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

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power

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and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.

6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.

WLAN Notes:

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

Bluetooth Notes

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

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

When standalone SAR is not required to be measured, per FCC KDB 447498 D01v06 4.3.2 b), the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated SAR} = \frac{\sqrt{f(\text{GHz})}}{7.5} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

Table 12-1
Estimated SAR

Mode	Frequency	Maximum Allowed Power	Separation Distance (Body)	Estimated SAR (Body)
	[MHz]	[dBm]	[mm]	[W/kg]
Bluetooth	2480	10.00	15	0.140

Note: Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

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12.3 Head SAR Simultaneous Transmission Analysis

Table 12-2
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.207	0.039	0.246
	GSM 1900	0.140	0.039	0.179
	UMTS 850	0.314	0.039	0.353
	UMTS 1750	0.330	0.039	0.369
	UMTS 1900	0.242	0.039	0.281
	CDMA/EVDO BC10 (§90S)	0.242	0.039	0.281
	CDMA/EVDO BC0 (§22H)	0.311	0.039	0.350
	PCS CDMA/EVDO	0.220	0.039	0.259
	LTE Band 71	0.211	0.039	0.250
	LTE Band 12	0.189	0.039	0.228
	LTE Band 13	0.242	0.039	0.281
	LTE Band 26 (Cell)	0.196	0.039	0.235
	LTE Band 66 (AWS)	0.289	0.039	0.328
	LTE Band 25 (PCS)	0.227	0.039	0.266
	LTE Band 7	0.580	0.039	0.619
	LTE Band 41	1.397	0.039	1.436

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Table 12-3
Simultaneous Transmission Scenario with 5 GHz WLAN (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.207	0.062	0.269
	GSM 1900	0.140	0.062	0.202
	UMTS 850	0.314	0.062	0.376
	UMTS 1750	0.330	0.062	0.392
	UMTS 1900	0.242	0.062	0.304
	CDMA/EVDO BC10 (§90S)	0.242	0.062	0.304
	CDMA/EVDO BC0 (§22H)	0.311	0.062	0.373
	PCS CDMA/EVDO	0.220	0.062	0.282
	LTE Band 71	0.211	0.062	0.273
	LTE Band 12	0.189	0.062	0.251
	LTE Band 13	0.242	0.062	0.304
	LTE Band 26 (Cell)	0.196	0.062	0.258
	LTE Band 66 (AWS)	0.289	0.062	0.351
	LTE Band 25 (PCS)	0.227	0.062	0.289
	LTE Band 7	0.580	0.062	0.642
	LTE Band 41	1.397	0.062	1.459

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.207	0.017	0.224
	GSM 1900	0.140	0.017	0.157
	UMTS 850	0.314	0.017	0.331
	UMTS 1750	0.330	0.017	0.347
	UMTS 1900	0.242	0.017	0.259
	CDMA/EVDO BC10 (§90S)	0.242	0.017	0.259
	CDMA/EVDO BC0 (§22H)	0.311	0.017	0.328
	PCS CDMA/EVDO	0.220	0.017	0.237
	LTE Band 71	0.211	0.017	0.228
	LTE Band 12	0.189	0.017	0.206
	LTE Band 13	0.242	0.017	0.259
	LTE Band 26 (Cell)	0.196	0.017	0.213
	LTE Band 66 (AWS)	0.289	0.017	0.306
	LTE Band 25 (PCS)	0.227	0.017	0.244
	LTE Band 7	0.580	0.017	0.597
	LTE Band 41	1.397	0.017	1.414

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	0.207	0.017	0.062	0.224	0.269	0.286
	GSM 1900	0.140	0.017	0.062	0.157	0.202	0.219
	UMTS 850	0.314	0.017	0.062	0.331	0.376	0.393
	UMTS 1750	0.330	0.017	0.062	0.347	0.392	0.409
	UMTS 1900	0.242	0.017	0.062	0.259	0.304	0.321
	CDMA/EVDO BC10 (§90S)	0.242	0.017	0.062	0.259	0.304	0.321
	CDMA/EVDO BC0 (§22H)	0.311	0.017	0.062	0.328	0.373	0.390
	PCS CDMA/EVDO	0.220	0.017	0.062	0.237	0.282	0.299
	LTE Band 71	0.211	0.017	0.062	0.228	0.273	0.290
	LTE Band 12	0.189	0.017	0.062	0.206	0.251	0.268
	LTE Band 13	0.242	0.017	0.062	0.259	0.304	0.321
	LTE Band 26 (Cell)	0.196	0.017	0.062	0.213	0.258	0.275
	LTE Band 66 (AWS)	0.289	0.017	0.062	0.306	0.351	0.368
	LTE Band 25 (PCS)	0.227	0.017	0.062	0.244	0.289	0.306
	LTE Band 7	0.580	0.017	0.062	0.597	0.642	0.659
	LTE Band 41	1.397	0.017	0.062	1.414	1.459	1.476

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-6
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 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM 850	0.298	0.052	0.350
	GSM 1900	0.154	0.052	0.206
	UMTS 850	0.386	0.052	0.438
	UMTS 1750	0.599	0.052	0.651
	UMTS 1900	0.283	0.052	0.335
	CDMA BC10 (§90S)	0.275	0.052	0.327
	CDMA BC0 (§22H)	0.307	0.052	0.359
	PCS CDMA	0.252	0.052	0.304
	LTE Band 71	0.307	0.052	0.359
	LTE Band 12	0.326	0.052	0.378
	LTE Band 13	0.420	0.052	0.472
	LTE Band 26 (Cell)	0.367	0.052	0.419
	LTE Band 66 (AWS)	0.414	0.052	0.466
	LTE Band 25 (PCS)	0.225	0.052	0.277
	LTE Band 7	0.250	0.052	0.302
	LTE Band 41	0.470	0.052	0.522

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Table 12-7
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 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM 850	0.298	0.401	0.699
	GSM 1900	0.154	0.401	0.555
	UMTS 850	0.386	0.401	0.787
	UMTS 1750	0.599	0.401	1.000
	UMTS 1900	0.283	0.401	0.684
	CDMA BC10 (\$90S)	0.275	0.401	0.676
	CDMA BC0 (\$22H)	0.307	0.401	0.708
	PCS CDMA	0.252	0.401	0.653
	LTE Band 71	0.307	0.401	0.708
	LTE Band 12	0.326	0.401	0.727
	LTE Band 13	0.420	0.401	0.821
	LTE Band 26 (Cell)	0.367	0.401	0.768
	LTE Band 66 (AWS)	0.414	0.401	0.815
	LTE Band 25 (PCS)	0.225	0.401	0.626
	LTE Band 7	0.250	0.401	0.651
	LTE Band 41	0.470	0.401	0.871

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Table 12-8
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM 850	0.298	0.140	0.438
	GSM 1900	0.154	0.140	0.294
	UMTS 850	0.386	0.140	0.526
	UMTS 1750	0.599	0.140	0.739
	UMTS 1900	0.283	0.140	0.423
	CDMA BC10 (\$90S)	0.275	0.140	0.415
	CDMA BC0 (\$22H)	0.307	0.140	0.447
	PCS CDMA	0.252	0.140	0.392
	LTE Band 71	0.307	0.140	0.447
	LTE Band 12	0.326	0.140	0.466
	LTE Band 13	0.420	0.140	0.560
	LTE Band 26 (Cell)	0.367	0.140	0.507
	LTE Band 66 (AWS)	0.414	0.140	0.554
	LTE Band 25 (PCS)	0.225	0.140	0.365
	LTE Band 7	0.250	0.140	0.390
	LTE Band 41	0.470	0.140	0.610

Note: Bluetooth SAR was not required to be measured per FCC KDB Publication 447498 D01v06. Estimated SAR results were used in the above table to determine simultaneous transmission SAR test exclusion.

Table 12-9
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.298	0.140	0.401	0.438	0.699	0.839
	GSM 1900	0.154	0.140	0.401	0.294	0.555	0.695
	UMTS 850	0.386	0.140	0.401	0.526	0.787	0.927
	UMTS 1750	0.599	0.140	0.401	0.739	1.000	1.140
	UMTS 1900	0.283	0.140	0.401	0.423	0.684	0.824
	CDMA BC10 (\$90S)	0.275	0.140	0.401	0.415	0.676	0.816
	CDMA BC0 (\$22H)	0.307	0.140	0.401	0.447	0.708	0.848
	PCS CDMA	0.252	0.140	0.401	0.392	0.653	0.793
	LTE Band 71	0.307	0.140	0.401	0.447	0.708	0.848
	LTE Band 12	0.326	0.140	0.401	0.466	0.727	0.867
	LTE Band 13	0.420	0.140	0.401	0.560	0.821	0.961
	LTE Band 26 (Cell)	0.367	0.140	0.401	0.507	0.768	0.908
	LTE Band 66 (AWS)	0.414	0.140	0.401	0.554	0.815	0.955
	LTE Band 25 (PCS)	0.225	0.140	0.401	0.365	0.626	0.766
	LTE Band 7	0.250	0.140	0.401	0.390	0.651	0.791
	LTE Band 41	0.470	0.140	0.401	0.610	0.871	1.011

Note: Bluetooth SAR was not required to be measured per FCC KDB Publication 447498 D01v06. Estimated SAR results were used in the above table to determine simultaneous transmission SAR test exclusion.

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12.5 Hotspot SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.511	0.135	0.646
	GPRS 1900	0.266	0.135	0.401
	UMTS 850	0.670	0.135	0.805
	UMTS 1750	0.435	0.135	0.570
	UMTS 1900	0.331	0.135	0.466
	EVDO BC10 (\$90S)	0.345	0.135	0.480
	EVDO BC0 (\$22H)	0.422	0.135	0.557
	PCS EVDO	0.372	0.135	0.507
	LTE Band 71	0.387	0.135	0.522
	LTE Band 12	0.375	0.135	0.510
	LTE Band 13	0.440	0.135	0.575
	LTE Band 26 (Cell)	0.425	0.135	0.560
	LTE Band 66 (AWS)	0.310	0.135	0.445
	LTE Band 25 (PCS)	0.301	0.135	0.436
	LTE Band 7	0.438	0.135	0.573
	LTE Band 41	0.997	0.135	1.132

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.511	0.689	1.200
	GPRS 1900	0.266	0.689	0.955
	UMTS 850	0.670	0.689	1.359
	UMTS 1750	0.435	0.689	1.124
	UMTS 1900	0.331	0.689	1.020
	EVDO BC10 (\$90S)	0.345	0.689	1.034
	EVDO BC0 (\$22H)	0.422	0.689	1.111
	PCS EVDO	0.372	0.689	1.061
	LTE Band 71	0.387	0.689	1.076
	LTE Band 12	0.375	0.689	1.064
	LTE Band 13	0.440	0.689	1.129
	LTE Band 26 (Cell)	0.425	0.689	1.114
	LTE Band 66 (AWS)	0.310	0.689	0.999
	LTE Band 25 (PCS)	0.301	0.689	0.990
	LTE Band 7	0.438	0.689	1.127
	LTE Band 41	0.997	0.689	See Table Below

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Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.997	0.689	See Note 1
	Front	0.278	0.689*	0.967
	Top	0.139	0.210	0.349
	Right	-	0.689*	0.689
	Left	0.506	-	0.506

Table 12-12
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	0.511	0.011	0.522
	GPRS 1900	0.266	0.011	0.277
	UMTS 850	0.670	0.011	0.681
	UMTS 1750	0.435	0.011	0.446
	UMTS 1900	0.331	0.011	0.342
	EVDO BC10 (S90S)	0.345	0.011	0.356
	EVDO BC0 (S22H)	0.422	0.011	0.433
	PCS EVDO	0.372	0.011	0.383
	LTE Band 71	0.387	0.011	0.398
	LTE Band 12	0.375	0.011	0.386
	LTE Band 13	0.440	0.011	0.451
	LTE Band 26 (Cell)	0.425	0.011	0.436
	LTE Band 66 (AWS)	0.310	0.011	0.321
	LTE Band 25 (PCS)	0.301	0.011	0.312
	LTE Band 7	0.438	0.011	0.449
	LTE Band 41	0.997	0.011	1.008

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.511	0.011	0.689	0.522	1.200	1.211
	GPRS 1900	0.266	0.011	0.689	0.277	0.955	0.966
	UMTS 850	0.670	0.011	0.689	0.681	1.359	1.370
	UMTS 1750	0.435	0.011	0.689	0.446	1.124	1.135
	UMTS 1900	0.331	0.011	0.689	0.342	1.020	1.031
	EVDO BC10 (\$90S)	0.345	0.011	0.689	0.356	1.034	1.045
	EVDO BC0 (\$22H)	0.422	0.011	0.689	0.433	1.111	1.122
	PCS EVDO	0.372	0.011	0.689	0.383	1.061	1.072
	LTE Band 71	0.387	0.011	0.689	0.398	1.076	1.087
	LTE Band 12	0.375	0.011	0.689	0.386	1.064	1.075
	LTE Band 13	0.440	0.011	0.689	0.451	1.129	1.140
	LTE Band 26 (Cell)	0.425	0.011	0.689	0.436	1.114	1.125
	LTE Band 66 (AWS)	0.310	0.011	0.689	0.321	0.999	1.010
	LTE Band 25 (PCS)	0.301	0.011	0.689	0.312	0.990	1.001
	LTE Band 7	0.438	0.011	0.689	0.449	1.127	1.138
	LTE Band 41	0.997	0.011	0.689	1.008	See Table Below	See Table Below

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR		
		1	2	3	1+2+3	1+2	1+3	2+3
Hotspot SAR	Back	0.997	0.011	0.689	See Note 1	0.02	0.04	0.03
	Front	0.278	0.000	0.689*	0.967	N/A	N/A	N/A
	Top	0.139	0.003	0.210	0.352	N/A	N/A	N/A
	Right	-	0.000	0.689*	0.689	N/A	N/A	N/A
	Left	0.506	-	-	0.506	N/A	N/A	N/A

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12.6 Phablet Simultaneous Transmission Analysis

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

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

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

Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	GPRS 1900	1.487	0.894	2.381
	UMTS 1750	2.619	0.894	3.513
	UMTS 1900	1.459	0.894	2.353
	PCS EVDO	1.497	0.894	2.391
	LTE Band 66 (AWS)	2.617	0.894	3.511
	LTE Band 25 (PCS)	1.588	0.894	2.482
	LTE Band 41	3.046	0.894	3.940

Notes:

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

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12.7 SPLSR Evaluation and Analysis

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

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

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

12.7.1 Hotspot Back Side SPLSR Evaluation and Analysis

Table 12-15
Peak SAR Locations for Hotspot Back Side

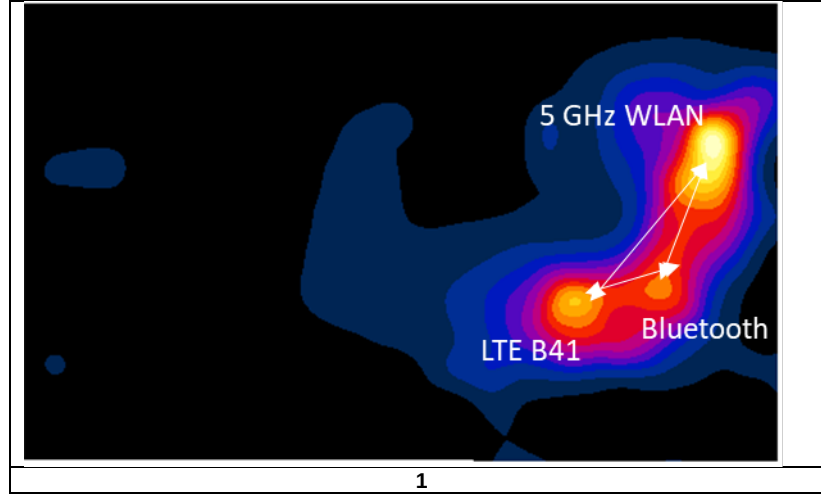
Mode/Band	x (mm)	y (mm)
5 GHz WLAN	-51.00	67.00
Bluetooth	-32.40	75.60
LTE Band 41	2.50	43.20

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Table 12-16
Hotspot Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
LTE Band 41	Bluetooth	0.997	0.011	1.008	47.62	0.02	1
LTE Band 41	5 GHz WLAN	0.997	0.689	1.686	58.56	0.04	
Bluetooth	5 GHz WLAN	0.011	0.689	0.7	20.49	0.03	

Table 12-17
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



12.8 Simultaneous Transmission Conclusion

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

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS													
Band	FREQUENCY		Mode/Band	Service	Side	Test Position	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)	
2600	2680.00	41490	LTE Band 41, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	Right	Cheek	1.200	1.200	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 13-2
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)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1732.40	1412	UMTS 1750	RMC	back	0 mm	2.450	2.420	1.01	N/A	N/A	N/A	N/A
2600	2593.00	40620	LTE Band 41, 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	0 mm	2.610	2.600	1.00	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

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13.2 Measurement Uncertainty

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

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14 ADDITIONAL TESTING PER FCC GUIDANCE

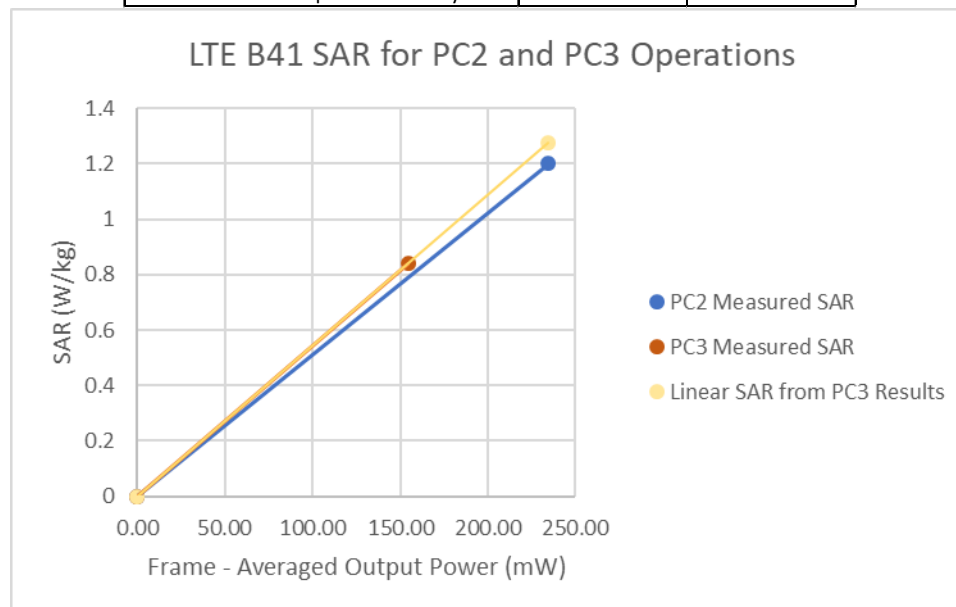
14.1 LTE Band 41 Power Class 2 and Power Class 3 Linearity

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

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

Table 14-1
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	28
Measured Output Power (dBm)	23.87	27.34
Measured SAR (W/kg)	0.84	1.2
Measured Power (mW)	243.78	542.00
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	154.31	234.69
% deviation from expected linearity		-6.07%

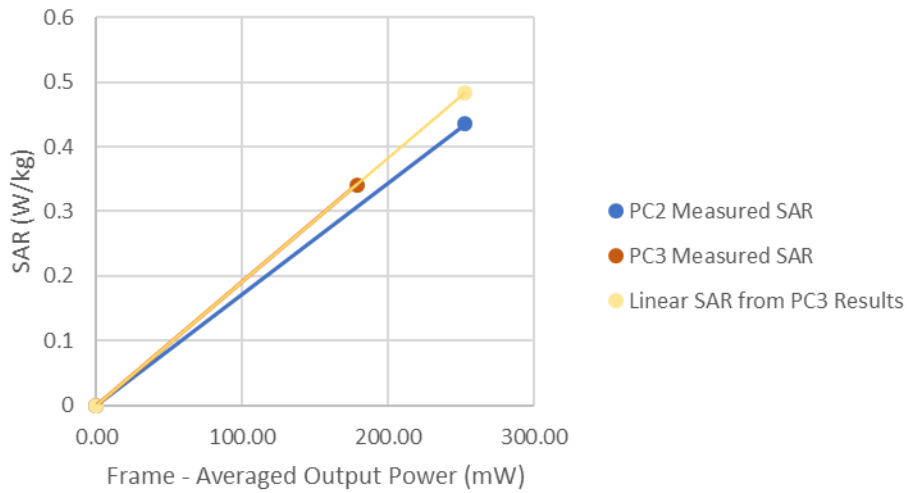


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Table 14-2
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	28
Measured Output Power (dBm)	24.5	27.66
Measured SAR (W/kg)	0.341	0.435
Measured Power (mW)	281.84	583.45
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	178.40	252.63
% deviation from expected linearity		-9.92%

LTE B41 SAR for PC2 and PC3 Operations

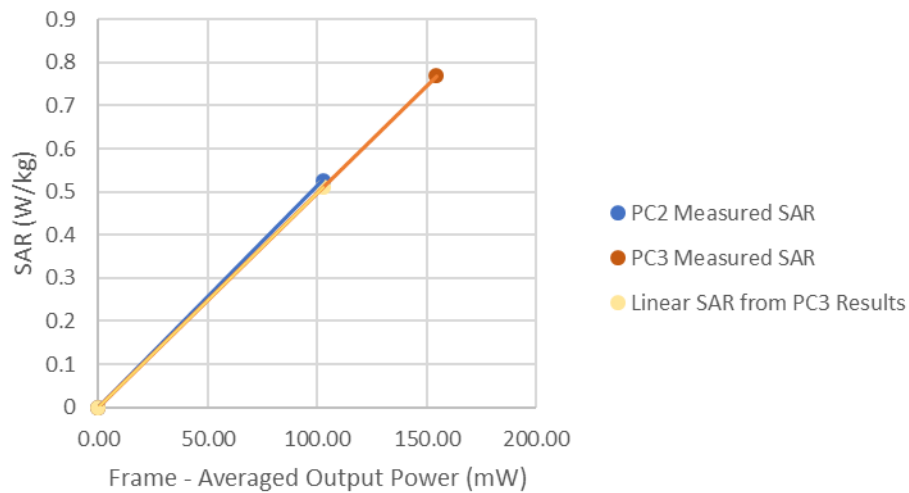


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Table 14-3
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	25
Measured Output Power (dBm)	23.87	23.74
Measured SAR (W/kg)	0.769	0.527
Measured Power (mW)	243.78	236.59
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	154.31	102.44
% deviation from expected linearity		3.23%

LTE B41 SAR for PC2 and PC3 Operations

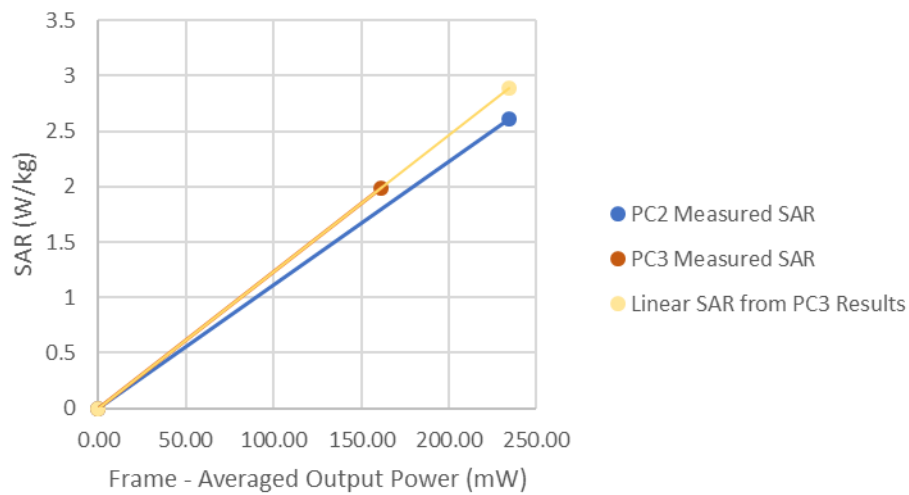


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Table 14-4
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25	28
Measured Output Power (dBm)	24.07	27.33
Measured SAR (W/kg)	1.99	2.61
Measured Power (mW)	255.27	540.75
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	161.59	234.15
% deviation from expected linearity		-9.49%

LTE B41 SAR for PC2 and PC3 Operations



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15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85033E	3.5mm Standard Calibration Kit	8/13/2018	Annual	8/13/2019	MY53402352
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	E4438C	ESG Vector Signal Generator	6/22/2018	Annual	6/22/2019	MY53401181
Agilent	E4440A	PSA Series Spectrum Analyzer	11/14/2018	Annual	11/14/2019	MY46186272
Agilent	E5515C	Wireless Communications Test Set	2/28/2018	Biennial	2/28/2020	GB41450275
Agilent	N5182A	MXG Vector Signal Generator	6/15/2018	Annual	6/15/2019	MY47420837
Amplifier Research	150A100C	Amplifier	CBT	N/A	CBT	350132
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	343972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	343971
Anritsu	MA24106A	USB Power Sensor	7/17/2018	Annual	7/17/2019	1827527
Anritsu	MA24106A	USB Power Sensor	6/5/2018	Annual	6/5/2019	1231535
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	ML2495A	Power Meter	11/20/2018	Annual	11/20/2019	1039008
Anritsu	ML2496A	Power Meter	10/21/2018	Annual	10/21/2019	1138001
Anritsu	MT8820C	Radio Communication Analyzer	6/27/2018	Annual	6/27/2019	6201240328
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	6/6/2018	Biennial	6/6/2020	181334698
Control Company	4352	Ultra Long Stem Thermometer	6/6/2018	Biennial	6/6/2020	181334678
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	AT/N6705B	DC Power Supply	CBT	N/A	CBT	MY53001315
Narda	4014C-G	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE5011-1	Torque Wrench	7/19/2017	Biennial	7/19/2019	N/A
Pasternack	PE5011-1	Torque Wrench	7/19/2017	Biennial	7/19/2019	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	7/5/2018	Annual	7/5/2019	106578
Rohde & Schwarz	CMW500	Radio Communication Tester	4/15/2019	Annual	4/15/2020	167284
Rohde & Schwarz	CMW500	Radio Communication Tester	4/17/2019	Annual	4/17/2020	167285
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	7/6/2018	Annual	7/6/2019	151849
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	7/5/2018	Annual	7/5/2019	145663
SPEAG	D750V3	750 MHz SAR Dipole	9/8/2017	Biennial	9/8/2019	1097
SPEAG	D750V3	750 MHz SAR Dipole	5/18/2018	Annual	5/18/2019	1034
SPEAG	D835V2	835 MHz SAR Dipole	6/13/2017	Biennial	6/13/2019	404040
SPEAG	D850V2	850 MHz SAR Dipole	8/16/2017	Biennial	8/16/2019	1009
SPEAG	D850V2	850 MHz SAR Dipole	9/8/2017	Biennial	9/8/2019	1010
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2018	Annual	5/15/2019	1092
SPEAG	D1750V2	1750 MHz SAR Dipole	6/9/2017	Biennial	6/9/2019	1083
SPEAG	D1900V2	1900 MHz SAR Dipole	5/14/2018	Annual	5/14/2019	50206
SPEAG	D1900V2	1900 MHz SAR Dipole	8/16/2017	Biennial	8/16/2019	50180
SPEAG	D1900V2	1900 MHz SAR Dipole	9/7/2017	Biennial	9/7/2019	50181
SPEAG	D2450V2	2450 MHz SAR Dipole	11/12/2018	Annual	11/12/2019	921
SPEAG	D2450V2	2450 MHz SAR Dipole	6/7/2017	Biennial	6/7/2019	750
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Biennial	8/17/2019	719
SPEAG	D2600V2	2600 MHz SAR Dipole	9/11/2017	Biennial	9/11/2019	1069
SPEAG	D2600V2	2600 MHz SAR Dipole	8/13/2018	Annual	8/13/2019	1126
SPEAG	D2600V2	2600 MHz SAR Dipole	6/19/2018	Annual	6/19/2019	1009
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	3/13/2018	Biennial	3/13/2020	1123
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	793
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	1403
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/10/2018	Annual	7/10/2019	1402
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/12/2018	Annual	11/12/2019	1449
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/18/2018	Annual	10/18/2019	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/17/2019	Annual	4/17/2020	501
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/14/2018	Annual	8/14/2019	1408
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/13/2019	Annual	3/13/2020	604
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/22/2018	Annual	8/22/2019	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/15/2018	Annual	5/15/2019	1070
SPEAG	DAKS-3.5	Portable DAK	9/11/2018	Annual	9/11/2019	1045
SPEAG	EX3DV4	SAR Probe	1/28/2019	Annual	1/28/2020	3837
SPEAG	EX3DV4	E-field Probes	2/19/2019	Annual	2/19/2020	7427
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7416
SPEAG	EX3DV4	SAR Probe	9/18/2018	Annual	9/18/2019	7420
SPEAG	EX3DV4	SAR Probe	1/25/2019	Annual	1/25/2020	3589
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7491
SPEAG	EX3DV4	E-field Probe	4/12/2019	Annual	4/12/2020	7532
SPEAG	ES3DV3	SAR Probe	11/19/2018	Annual	11/19/2019	3318
SPEAG	EX3DV4	E-field Probe	3/18/2019	Annual	3/18/2020	7421
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements. Each Equipment item 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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18 REFERENCES

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FCC ID: A3LSMA205U	 SAR EVALUATION REPORT 		Approved by: Quality Manager
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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.919 \text{ S/m}$; $\epsilon_r = 41.128$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-14-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7427; ConvF(9.92, 9.92, 9.92) @ 836.6 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

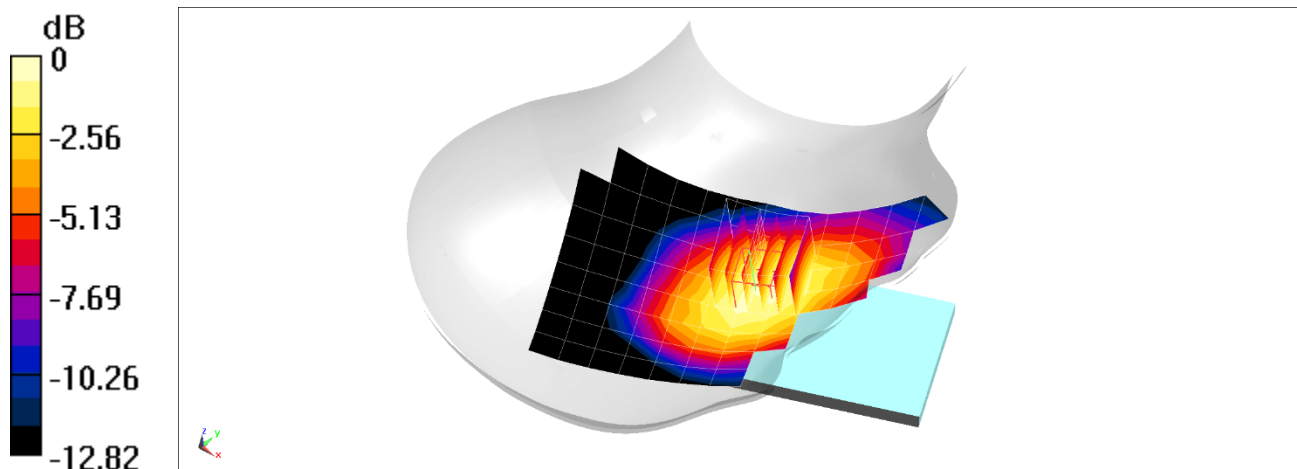
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.41 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.187 W/kg

SAR(1 g) = 0.147 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

Communication System: UID 0, GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: 1900 Head; Medium parameters used (interpolated):

$f = 1850.2 \text{ MHz}$; $\sigma = 1.417 \text{ S/m}$; $\epsilon_r = 39.087$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-14-2019; Ambient Temp: 21.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7427; ConvF(8.18, 8.18, 8.18) @ 1850.2 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

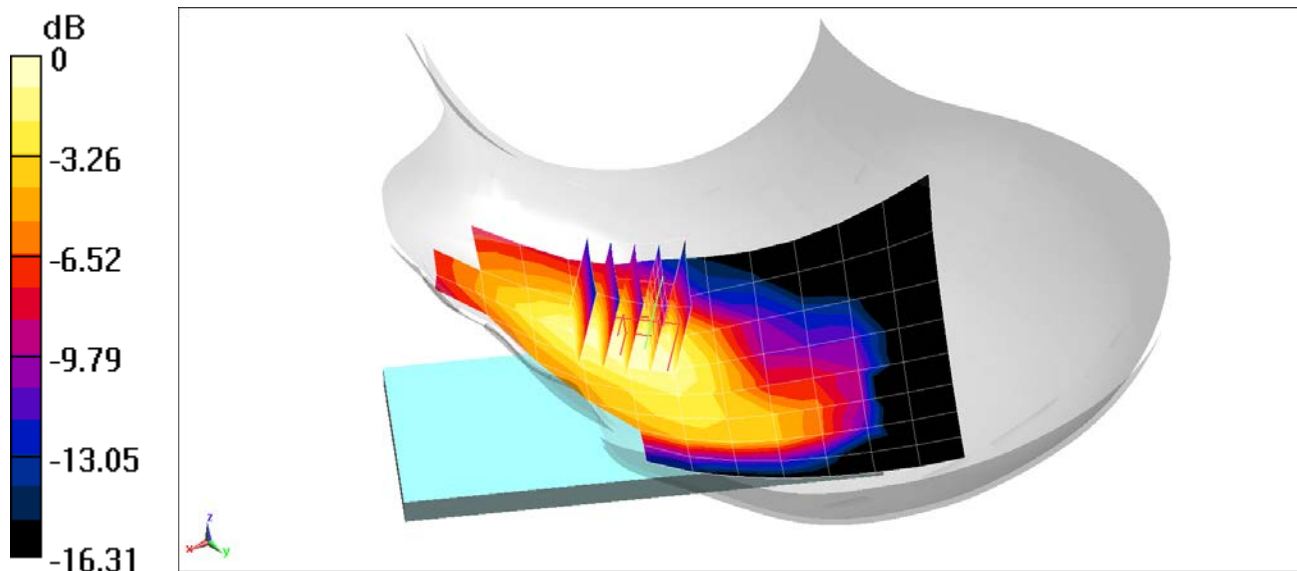
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 9.055 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.177 W/kg

SAR(1 g) = 0.111 W/kg



0 dB = 0.150 W/kg = -8.24 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.919 \text{ S/m}$; $\epsilon_r = 41.128$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-14-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7427; ConvF(9.92, 9.92, 9.92) @ 836.6 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

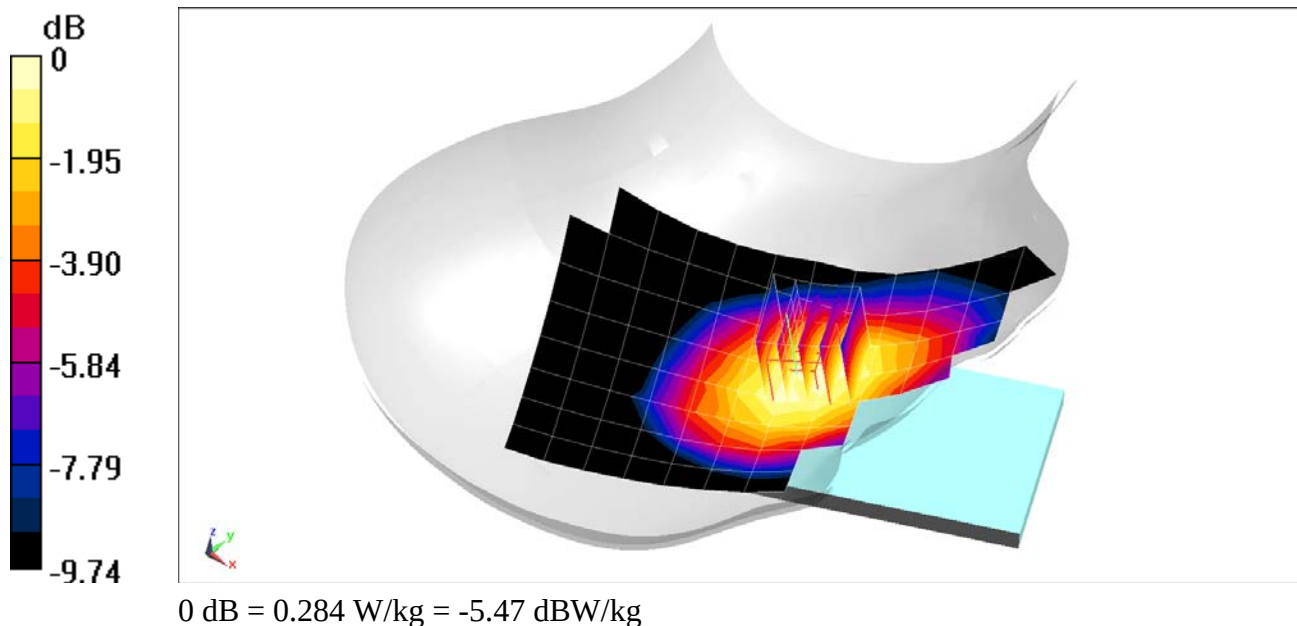
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 16.55 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.309 W/kg

SAR(1 g) = 0.243 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

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

Medium: 1750 Head Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.382 \text{ S/m}$; $\epsilon_r = 38.727$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-29-2019; Ambient Temp: 22.1°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7416; ConvF(8.37, 8.37, 8.37) @ 1732.4 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

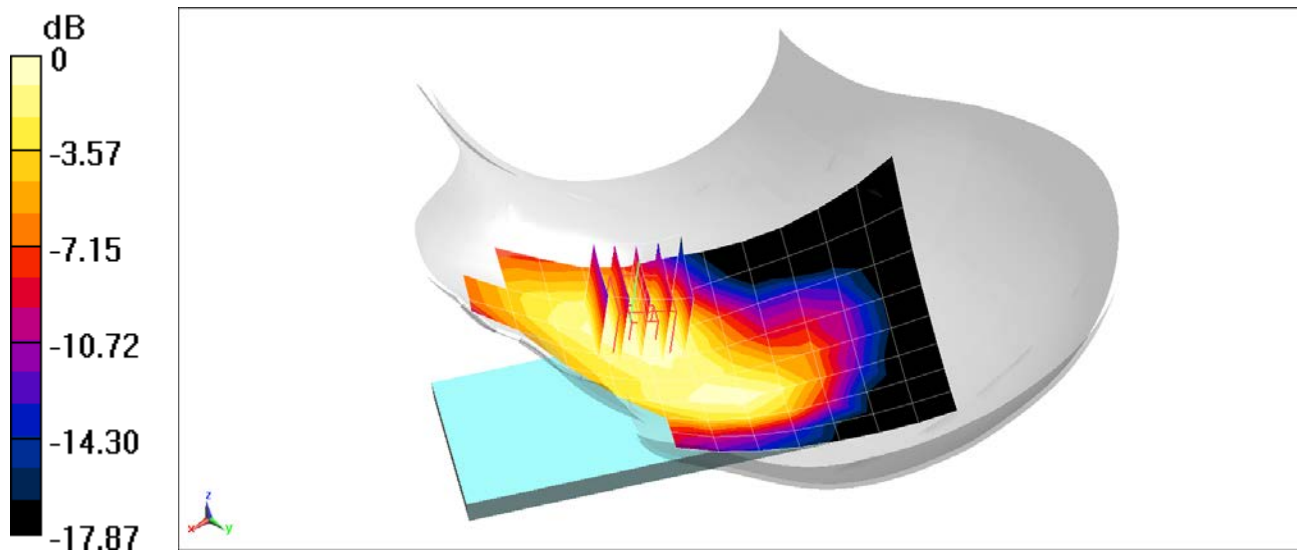
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 3.898 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.363 W/kg

SAR(1 g) = 0.240 W/kg



0 dB = 0.311 W/kg = -5.07 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.437 \text{ S/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 04-29-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN3837; ConvF(7.85, 7.85, 7.85) @ 1880 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

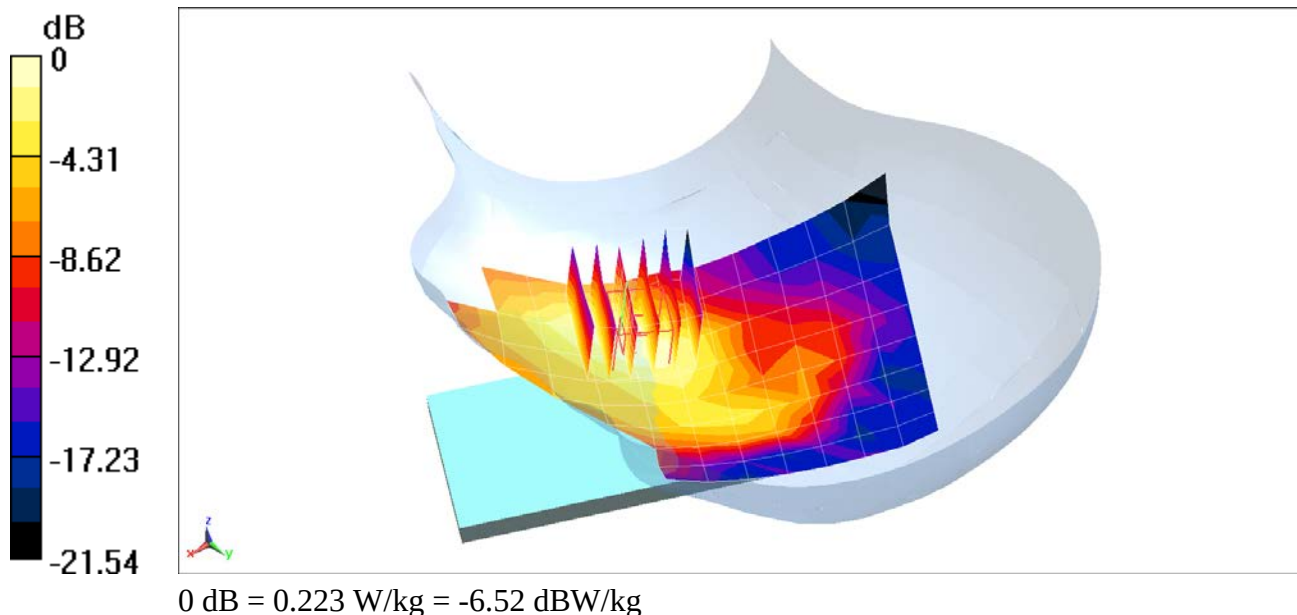
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 11.02 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.273 W/kg

SAR(1 g) = 0.166 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium: 835 Head Medium parameters used (interpolated):

$f = 820.1 \text{ MHz}$; $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 41.665$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-06-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN3837; ConvF(9.37, 9.37, 9.37) @ 820.1 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

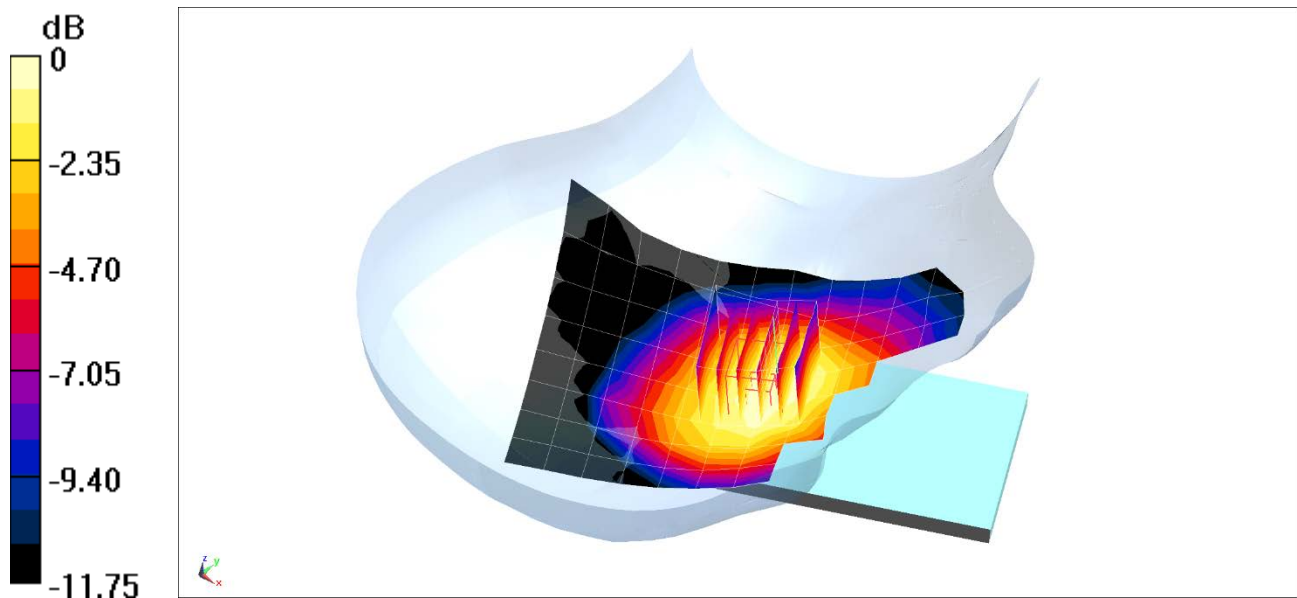
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.74 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.222 W/kg

SAR(1 g) = 0.166 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35599

Communication System: UID 0, CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium: 835 Head Medium parameters used (interpolated):

$f = 824.7 \text{ MHz}$; $\sigma = 0.932 \text{ S/m}$; $\epsilon_r = 41.654$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-06-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN3837; ConvF(9.37, 9.37, 9.37) @ 824.7 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. A, Rule Part 22H, Right Head, Cheek, Low.ch

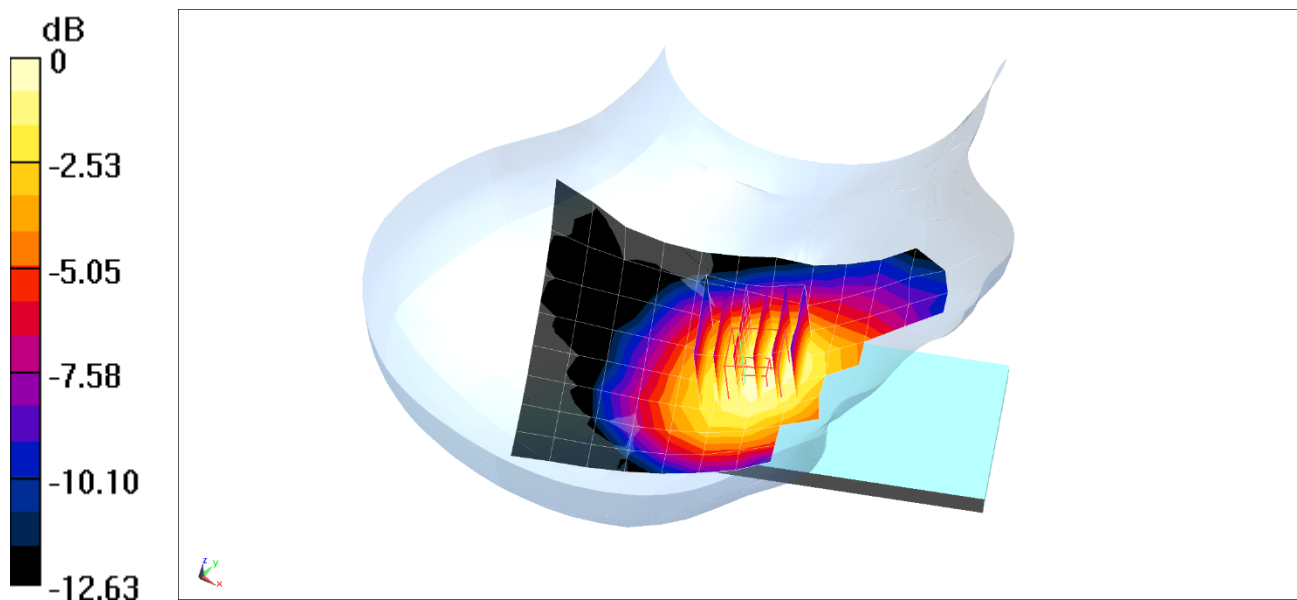
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 15.66 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.297 W/kg

SAR(1 g) = 0.221 W/kg



0 dB = 0.269 W/kg = -5.70 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.436 \text{ S/m}$; $\epsilon_r = 39.461$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-01-2019; Ambient Temp: 21.5°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN3837; ConvF(7.85, 7.85, 7.85) @ 1880 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

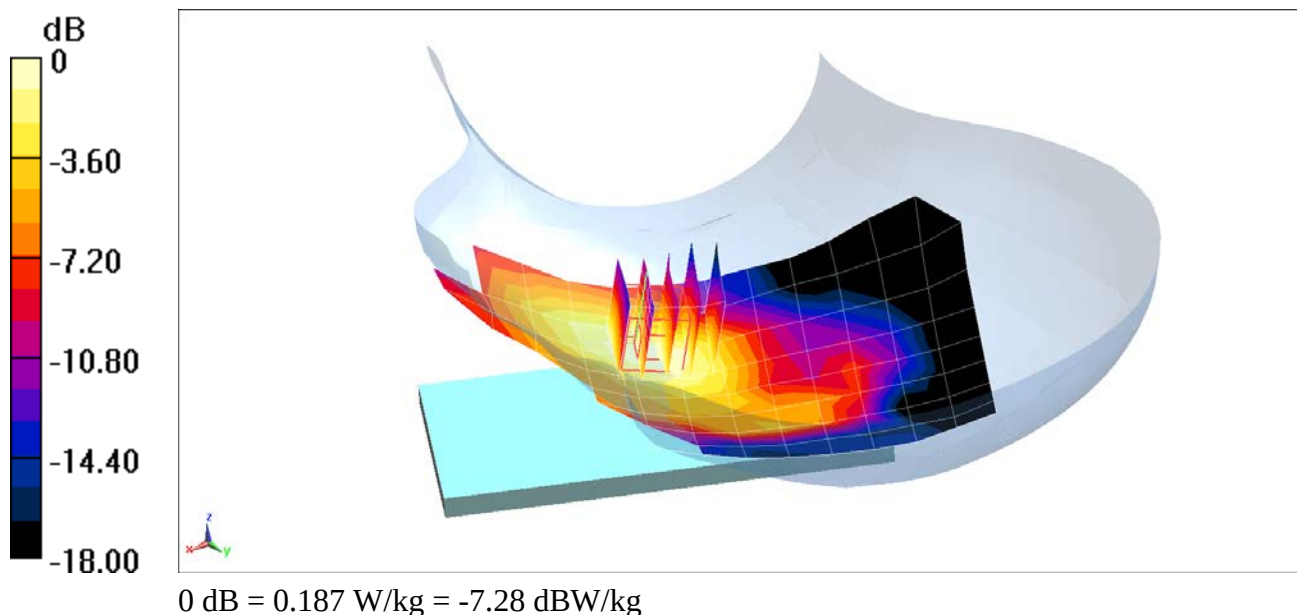
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.03 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.238 W/kg

SAR(1 g) = 0.142 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 750 Head Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$; $\sigma = 0.895 \text{ S/m}$; $\epsilon_r = 41.631$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-02-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3837; ConvF(9.71, 9.71, 9.71) @ 680.5 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

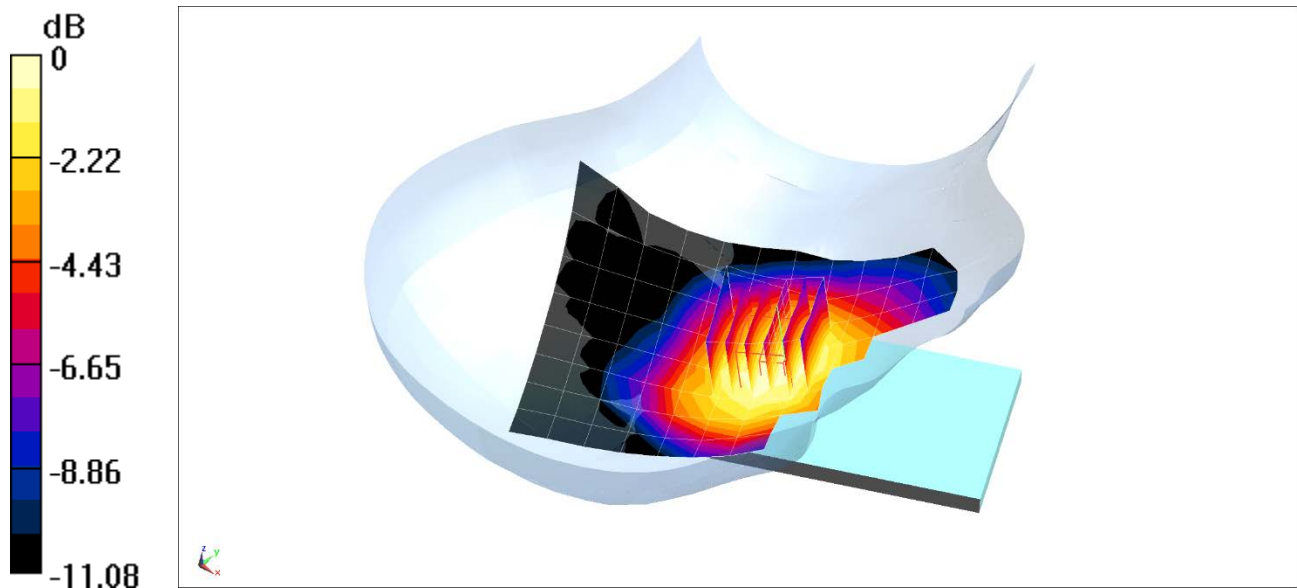
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 14.33 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.218 W/kg

SAR(1 g) = 0.170 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 750 Head Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.904 \text{ S/m}$; $\epsilon_r = 41.543$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-02-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3837; ConvF(9.71, 9.71, 9.71) @ 707.5 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

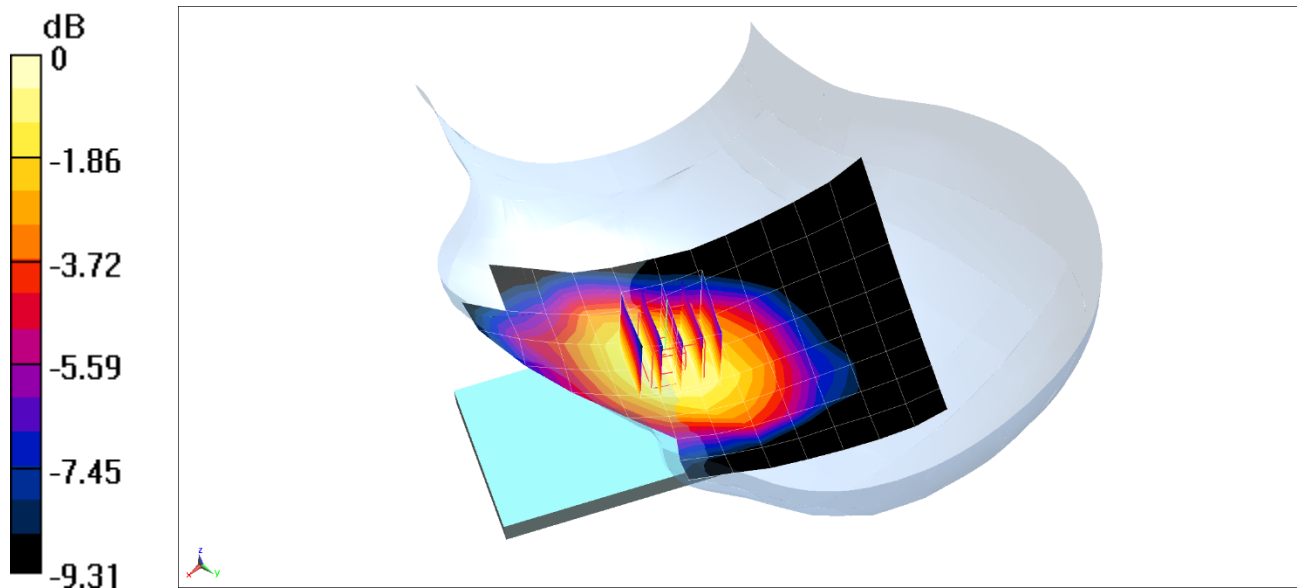
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.74 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.184 W/kg

SAR(1 g) = 0.143 W/kg



0 dB = 0.169 W/kg = -7.72 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: 750 Head Medium parameters used (interpolated):

$f = 782 \text{ MHz}$; $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 41.429$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-07-2019; Ambient Temp: 24.7°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7427; ConvF(10.11, 10.11, 10.11) @ 782 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

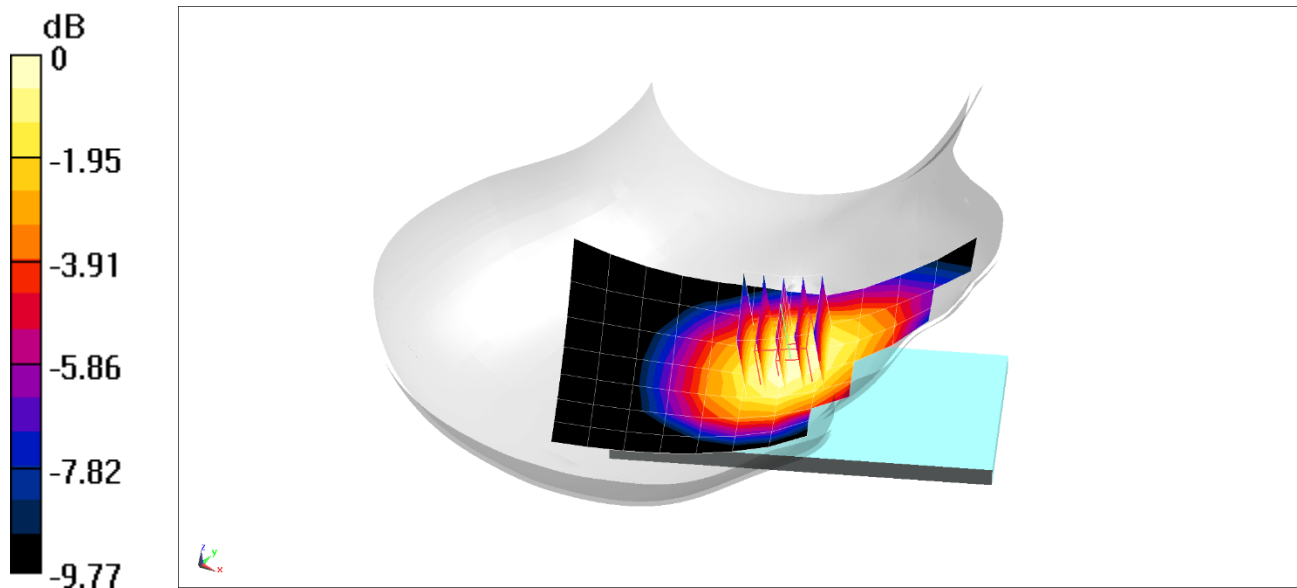
Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 15.46 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.242 W/kg

SAR(1 g) = 0.195 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: 835 Head Medium parameters used (interpolated):

$f = 831.5 \text{ MHz}$; $\sigma = 0.935 \text{ S/m}$; $\epsilon_r = 41.637$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-06-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN3837; ConvF(9.37, 9.37, 9.37) @ 831.5 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

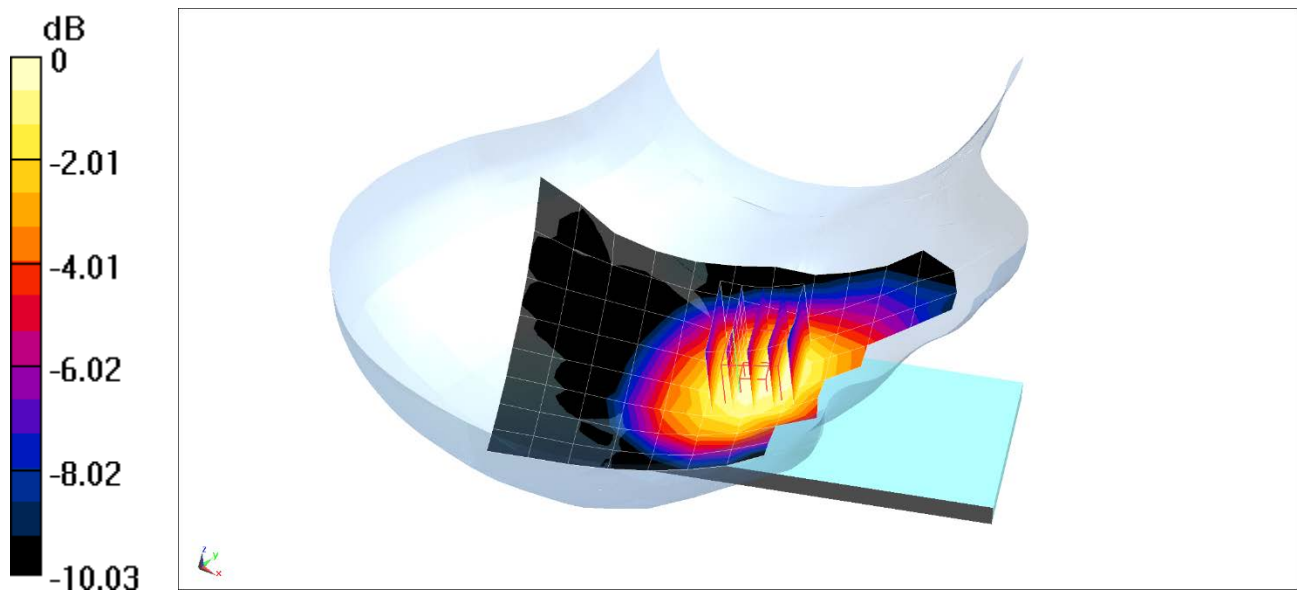
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.10 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.194 W/kg

SAR(1 g) = 0.145 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

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

Medium: 1750 Head Medium parameters used (interpolated):

$f = 1745 \text{ MHz}$; $\sigma = 1.358 \text{ S/m}$; $\epsilon_r = 39.94$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-13-2019; Ambient Temp: 23.5°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7427; ConvF(8.58, 8.58, 8.58) @ 1745 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

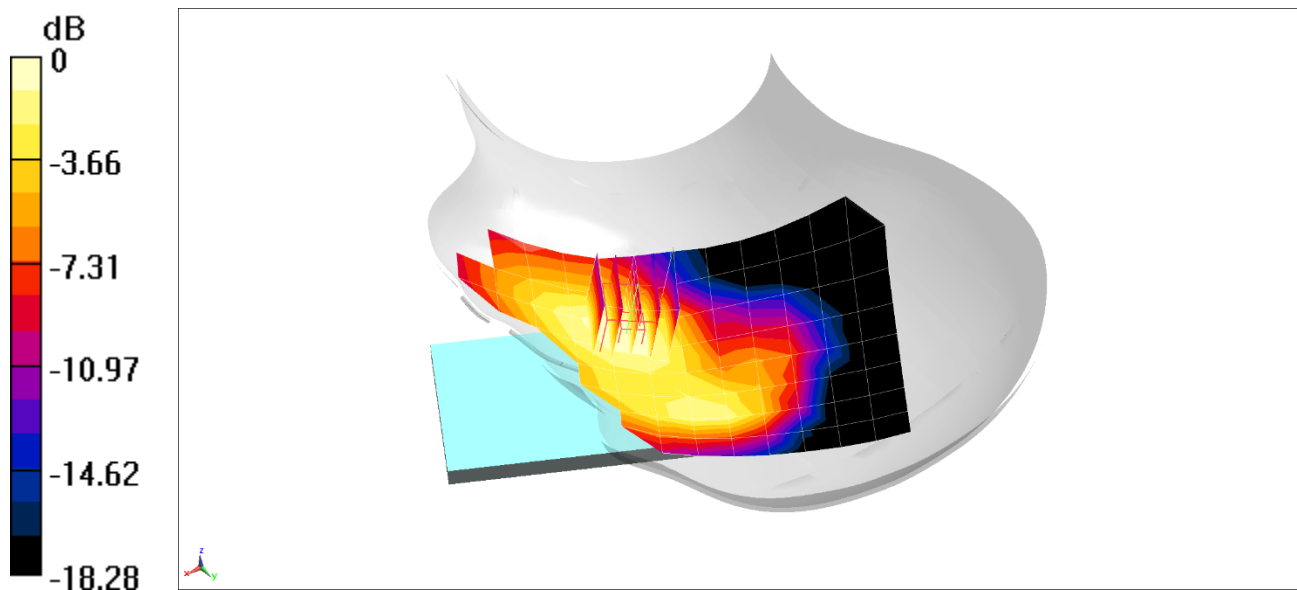
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 13.68 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.329 W/kg

SAR(1 g) = 0.215 W/kg



0 dB = 0.288 W/kg = -5.41 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35599

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.425 \text{ S/m}$; $\epsilon_r = 39.488$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-01-2019; Ambient Temp: 21.5°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN3837; ConvF(7.85, 7.85, 7.85) @ 1860 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 25 (PCS), Left Head, Cheek, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset**

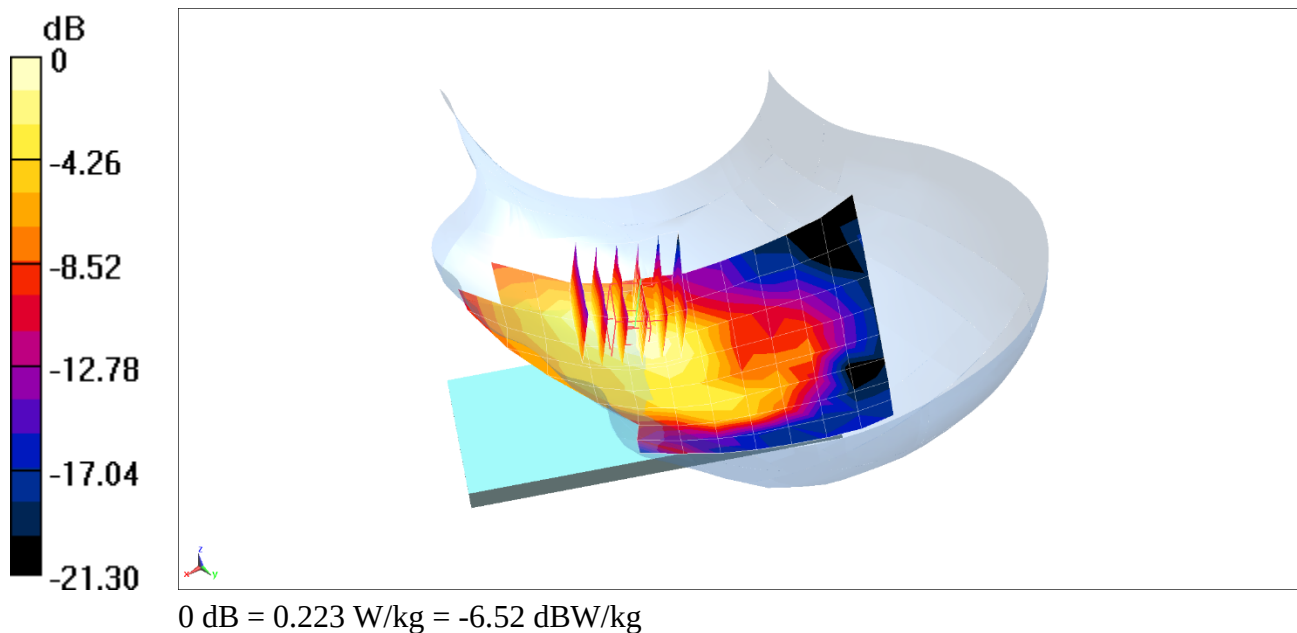
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 11.19 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.266 W/kg

SAR(1 g) = 0.162 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 48675

Communication System: UID 0, _LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1

Medium: 2400-2600 Head Medium parameters used (interpolated):

$f = 2535 \text{ MHz}$; $\sigma = 1.886 \text{ S/m}$; $\epsilon_r = 37.734$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 05-24-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2535 MHz; Calibrated: 1/25/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1450; Calibrated: 8/22/2018

Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

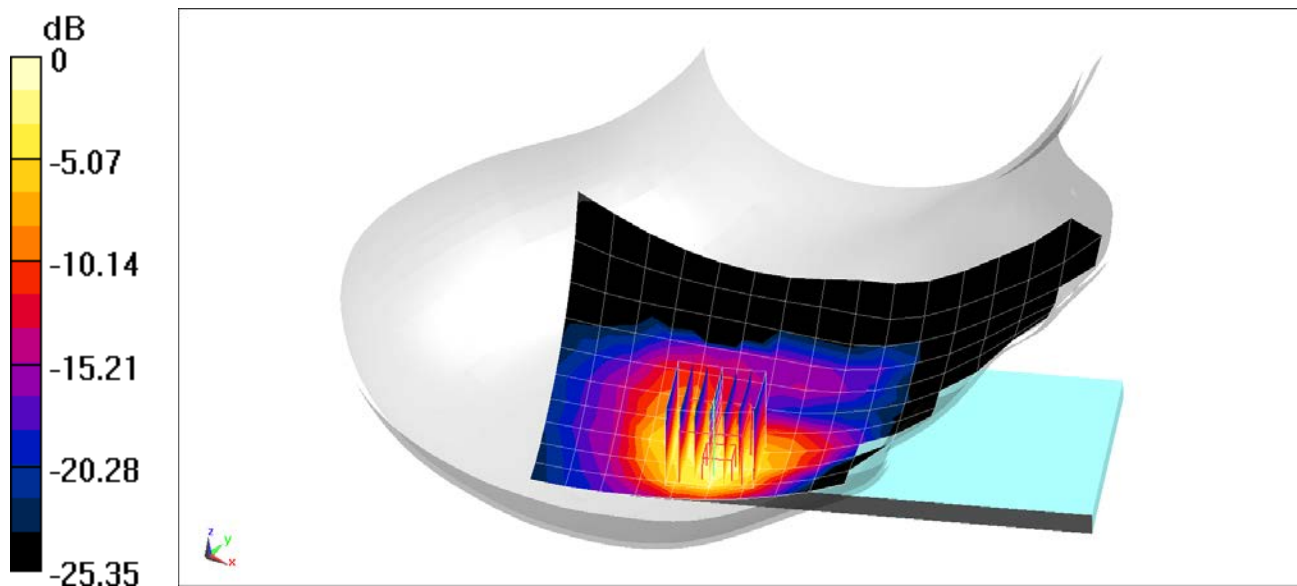
Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 18.43 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.509 W/kg



0 dB = 0.923 W/kg = -0.35 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2680 MHz; Duty Cycle: 1:2.31

Medium: 2400-2600 MHz Head Medium parameters used (interpolated):

$f = 2680$ MHz; $\sigma = 2.014$ S/m; $\epsilon_r = 37.833$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Test Date: 05-14-2019; Ambient Temp: 22.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7427; ConvF(7.14, 7.14, 7.14) @ 2680 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

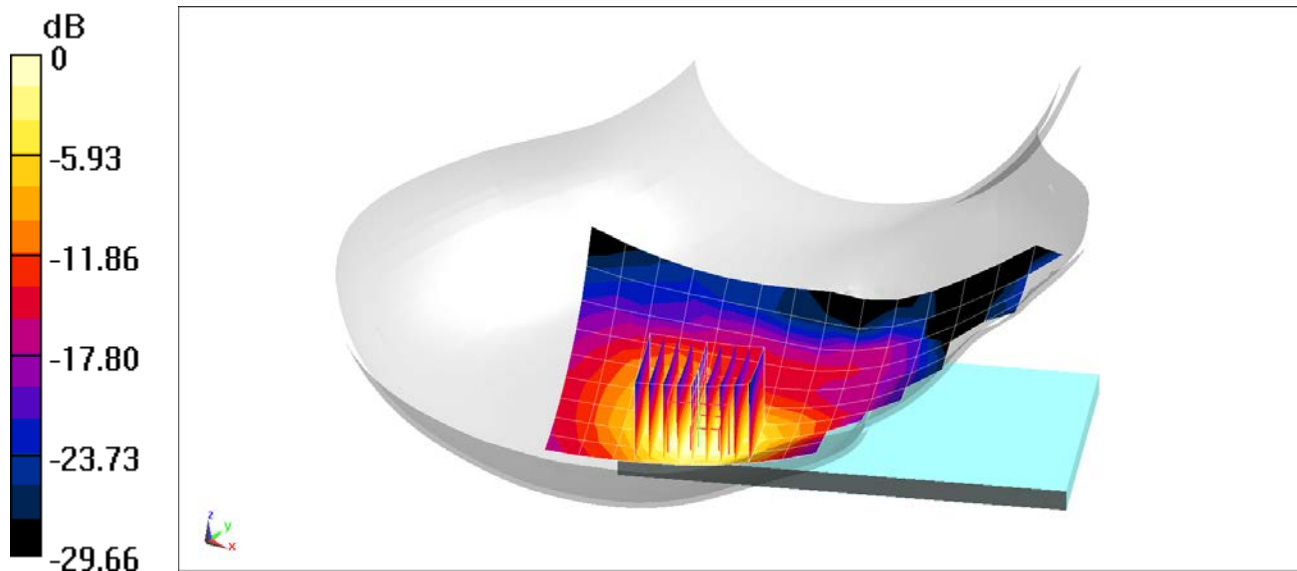
Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm

Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.21 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 2.84 W/kg

SAR(1 g) = 1.2 W/kg



0 dB = 2.11 W/kg = 3.24 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35912

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

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.774 \text{ S/m}$; $\epsilon_r = 38.956$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-01-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7420; ConvF(7.19, 7.19, 7.19) @ 2412 MHz; Calibrated: 9/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1449; Calibrated: 11/12/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1596

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

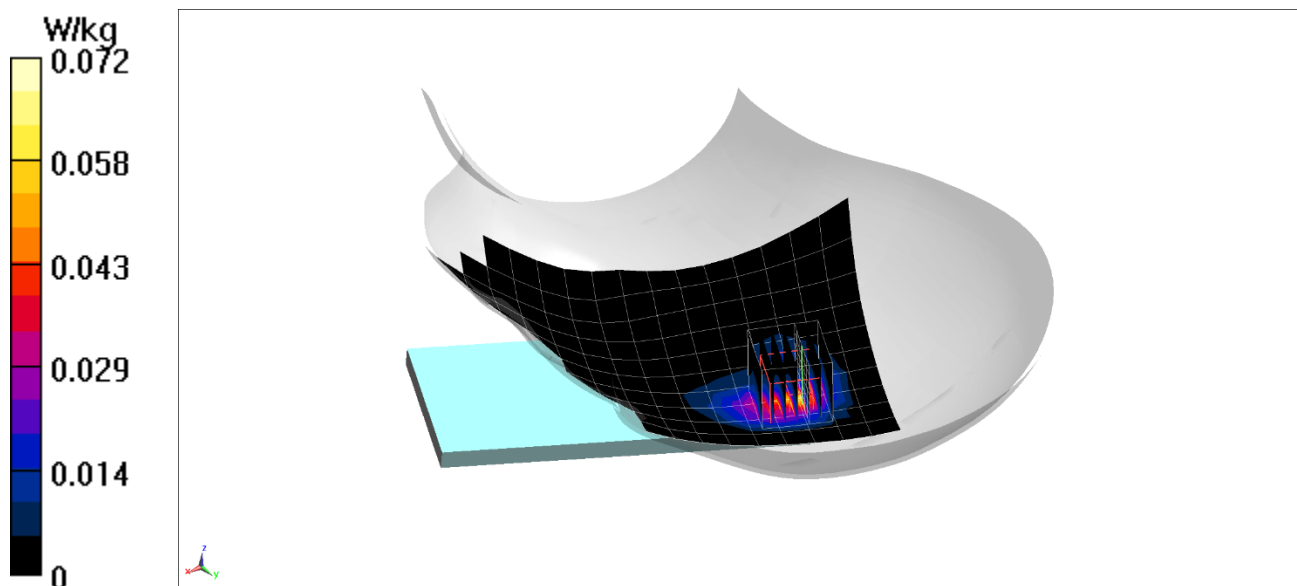
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 2.765 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.117 W/kg

SAR(1 g) = 0.039 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35912

Communication System: UID 0, IEEE 802.11ac; Frequency: 5530 MHz; Duty Cycle: 1:1

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

$f = 5530 \text{ MHz}$; $\sigma = 4.866 \text{ S/m}$; $\epsilon_r = 34.567$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-02-2019; Ambient Temp: 21.7°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7491; ConvF(5.05, 5.05, 5.05) @ 5530 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11ac, U-NII-2C, 80 MHz Bandwidth,
Left Head, Cheek, Ch 106, 29.3 Mbps**

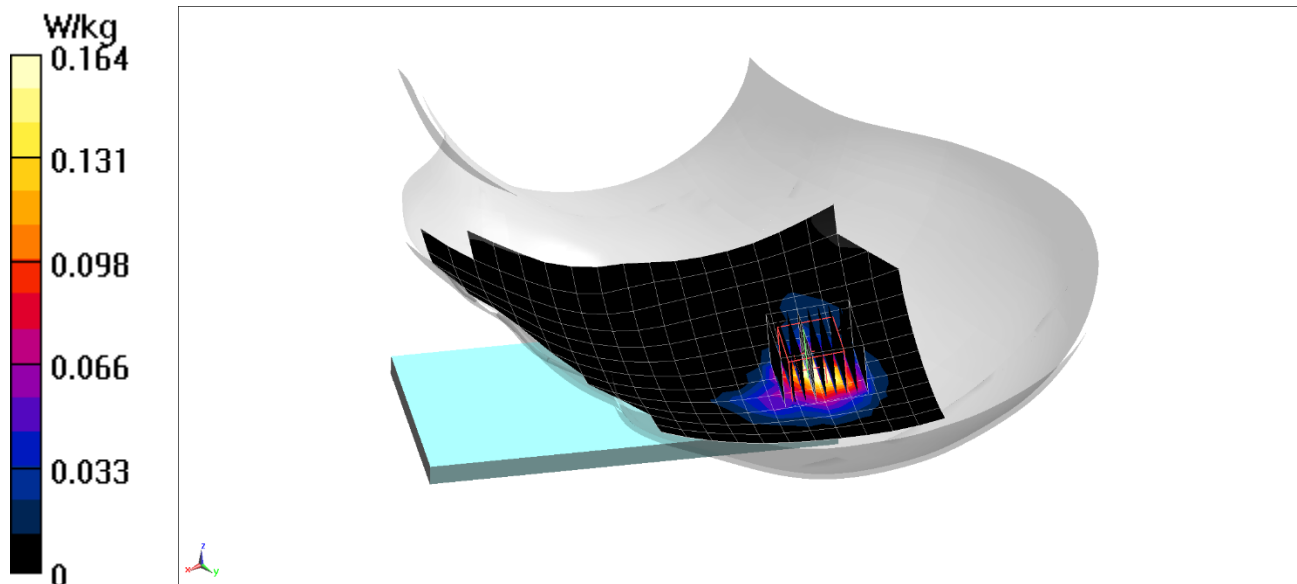
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (8x9x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 2.539 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.327 W/kg

SAR(1 g) = 0.055 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35912

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.302

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$; $\sigma = 1.783 \text{ S/m}$; $\epsilon_r = 38.288$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 05-07-2019; Ambient Temp: 21.1°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7416; ConvF(7.25, 7.25, 7.25) @ 2441 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

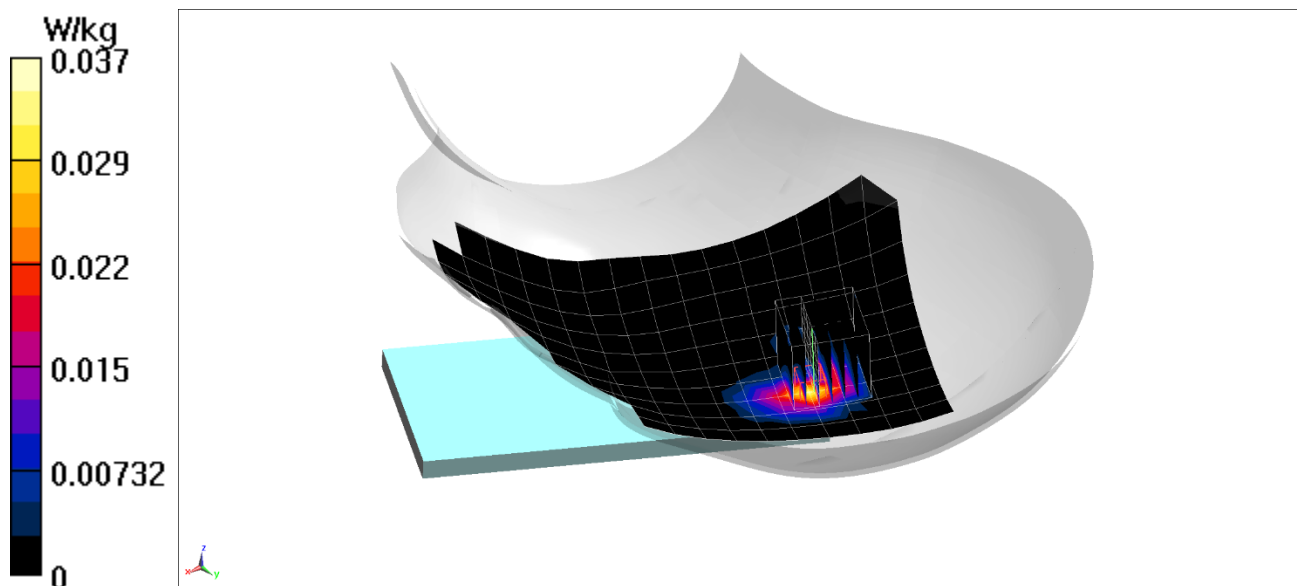
Area Scan (11x19x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 3.399 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.0780 W/kg

SAR(1 g) = 0.011 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.989 \text{ S/m}$; $\epsilon_r = 52.996$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-13-2019; Ambient Temp: 21.3°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN3837; ConvF(9.08, 9.08, 9.08) @ 836.6 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

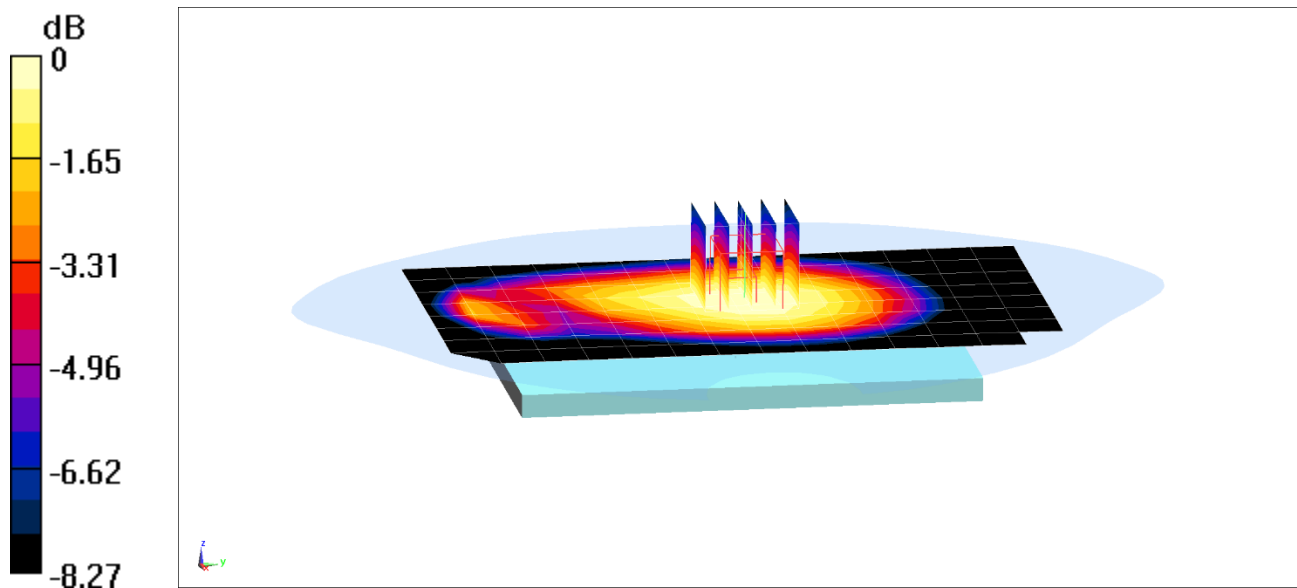
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.89 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.212 W/kg



0 dB = 0.260 W/kg = -5.85 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

Communication System: UID 0, _GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.989 \text{ S/m}$; $\epsilon_r = 52.996$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-13-2019; Ambient Temp: 21.3°C; Tissue Temp: 19.9°C

Probe: EX3DV4 - SN3837; ConvF(9.08, 9.08, 9.08) @ 836.6 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 850, Body SAR, Back side, Mid.ch, 3 Tx Slots

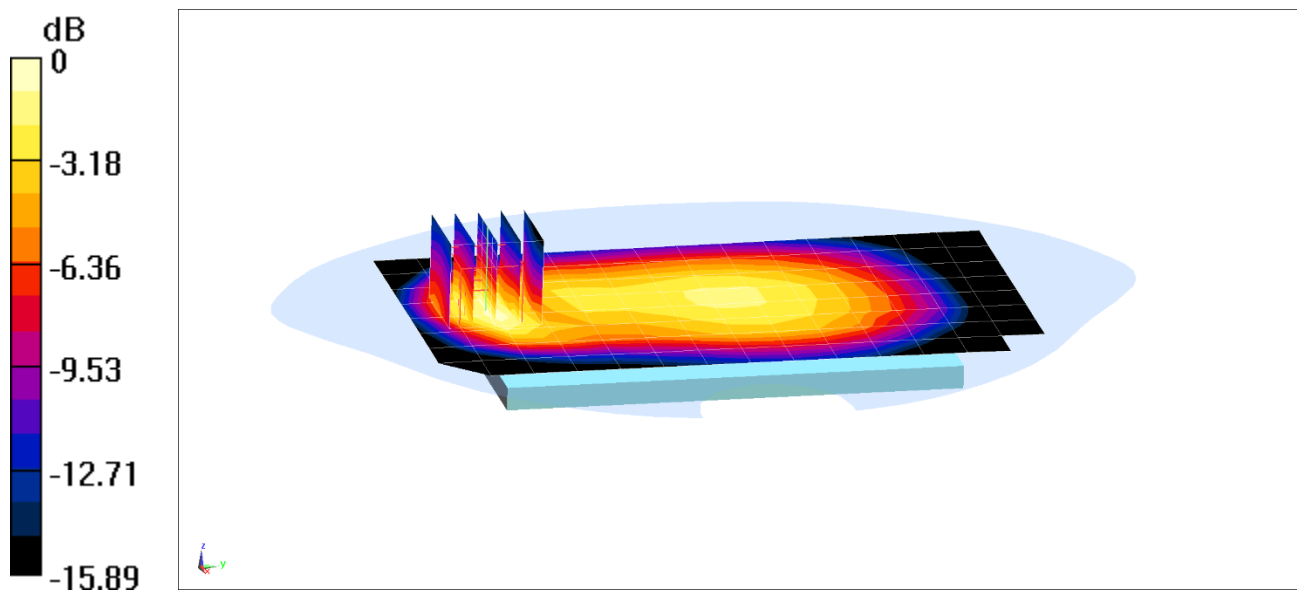
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 21.09 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.758 W/kg

SAR(1 g) = 0.391 W/kg



0 dB = 0.603 W/kg = -2.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

Communication System: UID 0, GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1850.2 \text{ MHz}$; $\sigma = 1.543 \text{ S/m}$; $\epsilon_r = 51.543$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-13-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7491; ConvF(8.19, 8.19, 8.19) @ 1850.2 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GSM 1900, Body SAR, Back side, Low.ch

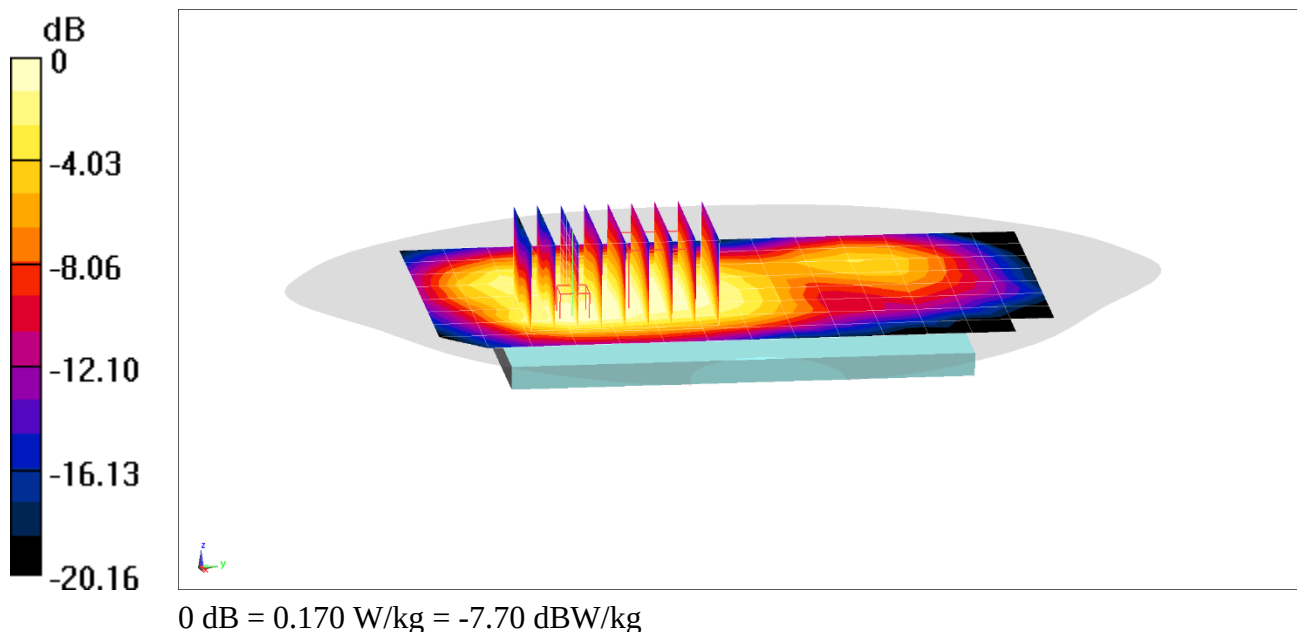
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (7x9x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.889 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.122 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.565 \text{ S/m}$; $\epsilon_r = 51.502$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-13-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7491; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0_Left; Type: QD 000 P41 AA; Serial: 1935

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

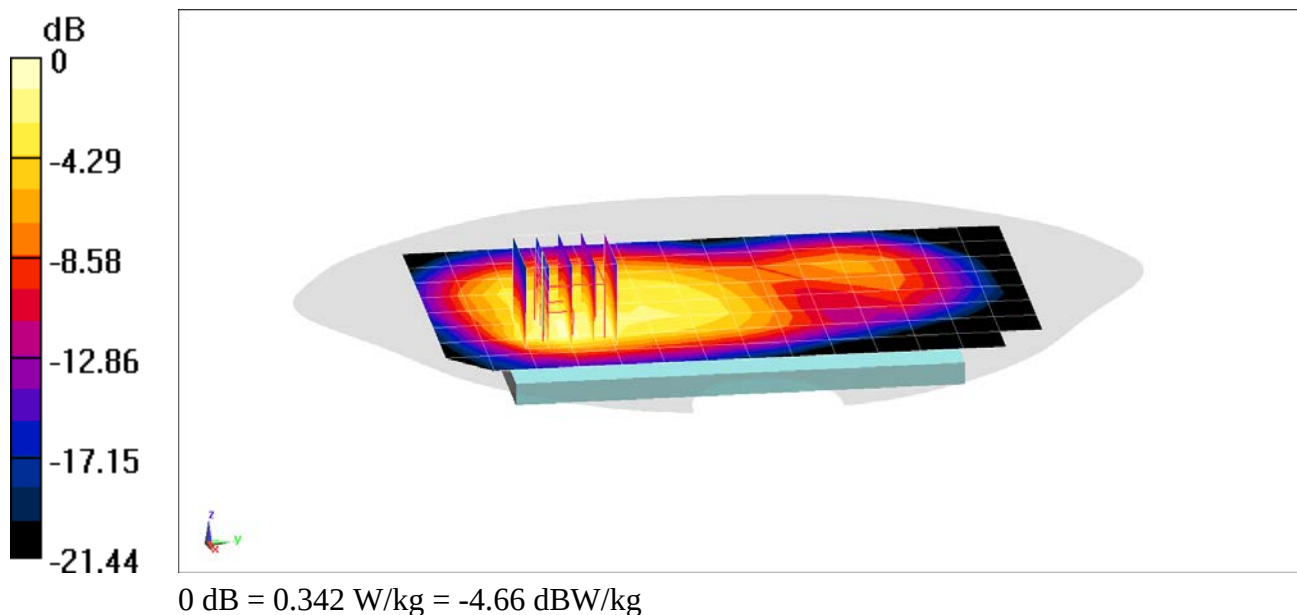
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.55 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.432 W/kg

SAR(1 g) = 0.232 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 1.018 \text{ S/m}$; $\epsilon_r = 53.341$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2019; Ambient Temp: 22.6°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3837; ConvF(9.08, 9.08, 9.08) @ 836.6 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

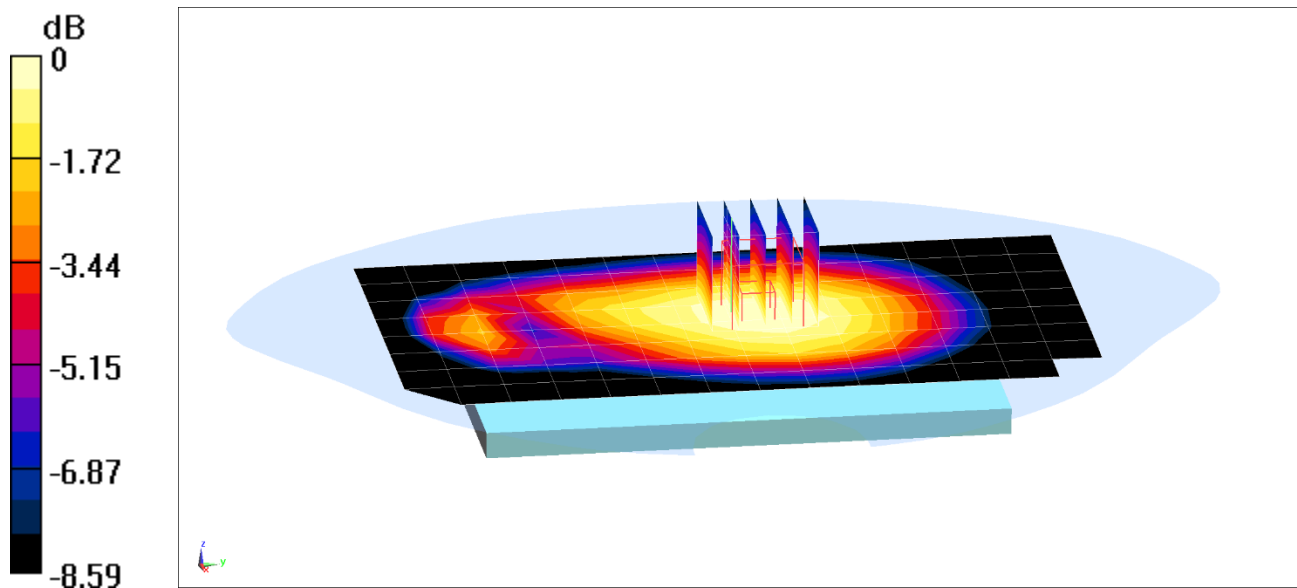
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 17.50 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.404 W/kg

SAR(1 g) = 0.298 W/kg



0 dB = 0.366 W/kg = -4.37 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 43874

Communication System: UID 0, UMTS; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 826.4 \text{ MHz}$; $\sigma = 1.014 \text{ S/m}$; $\epsilon_r = 53.364$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2019; Ambient Temp: 22.6°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3837; ConvF(9.08, 9.08, 9.08) @ 826.4 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

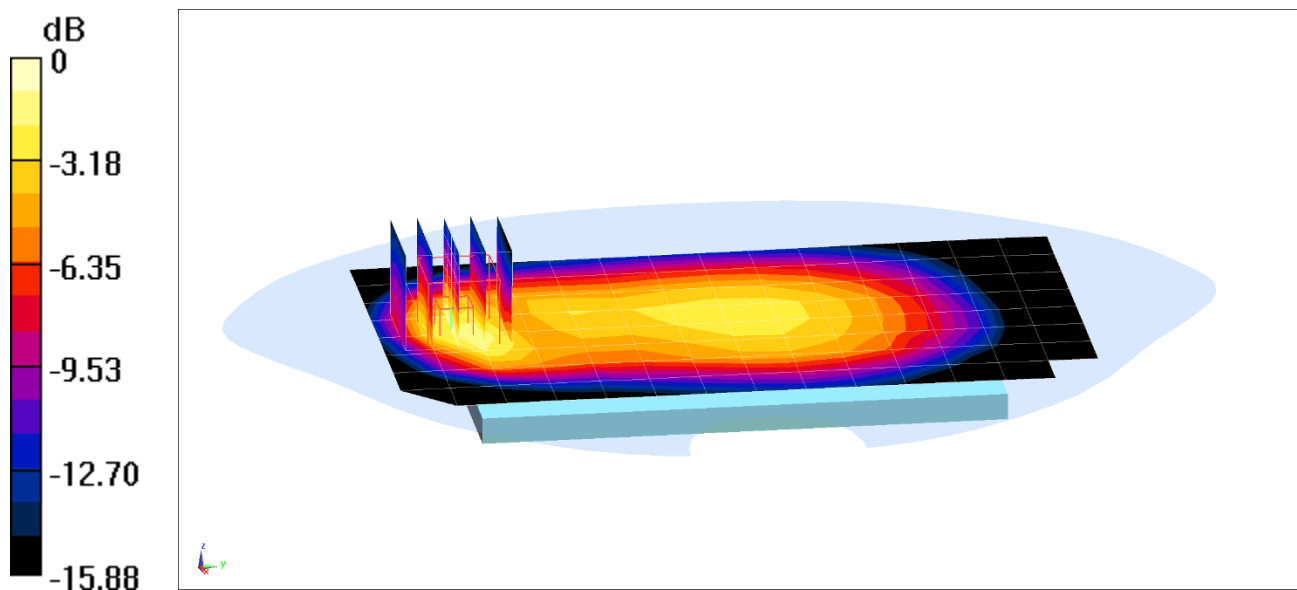
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 23.39 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.983 W/kg

SAR(1 g) = 0.502 W/kg



0 dB = 0.813 W/kg = -0.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.497 \text{ S/m}$; $\epsilon_r = 51.767$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-03-2019; Ambient Temp: 22.5°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7427; ConvF(8.14, 8.14, 8.14) @ 1732.4 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

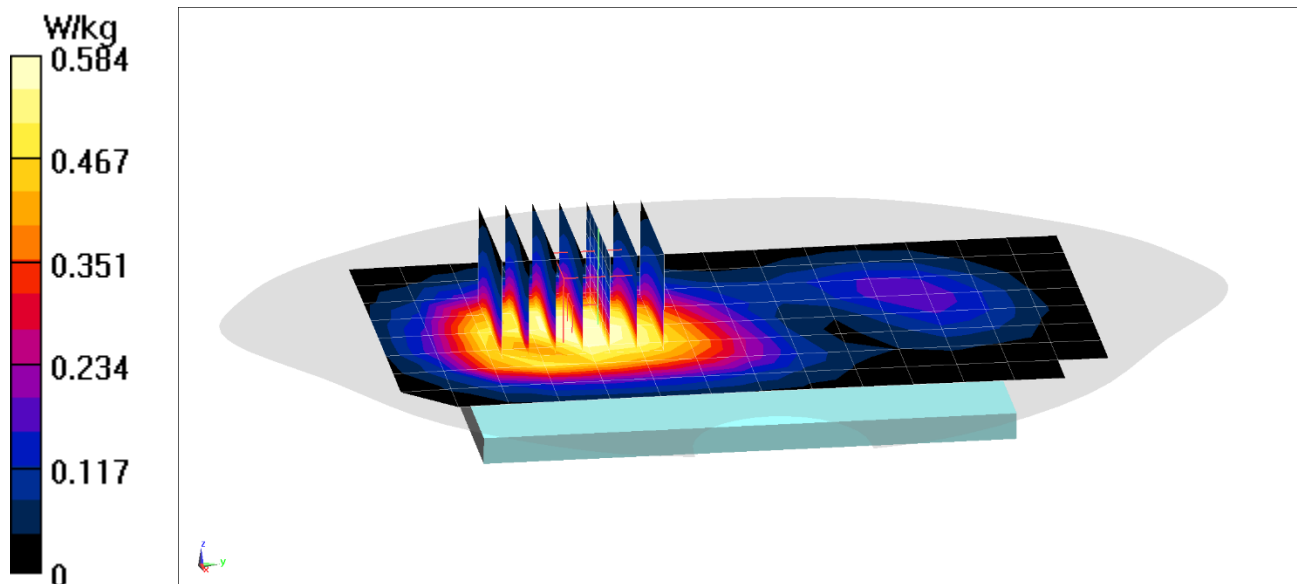
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.49 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.670 W/kg

SAR(1 g) = 0.435 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

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

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.476 \text{ S/m}$; $\epsilon_r = 52.096$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 22.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7427; ConvF(8.14, 8.14, 8.14) @ 1732.4 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

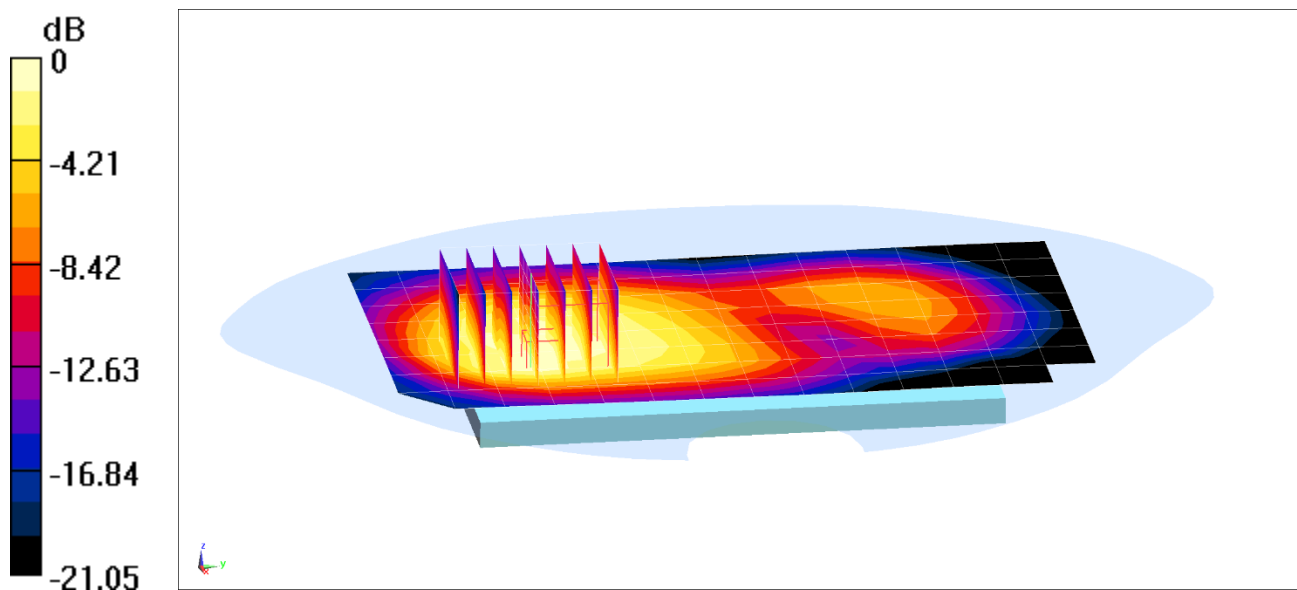
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 13.12 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.695 W/kg

SAR(1 g) = 0.397 W/kg



0 dB = 0.556 W/kg = -2.55 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.559 \text{ S/m}$; $\epsilon_r = 51.04$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-29-2019; Ambient Temp: 22.9°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3318; ConvF(4.79, 4.79, 4.79) @ 1880 MHz; Calibrated: 11/19/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 8/14/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

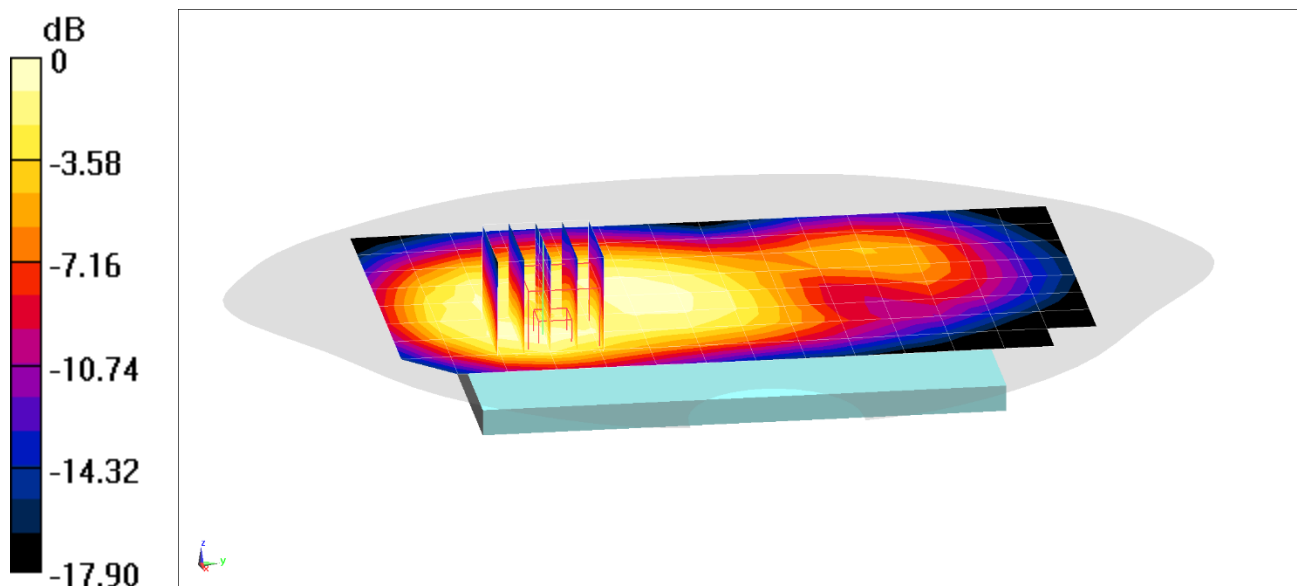
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.16 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.333 W/kg

SAR(1 g) = 0.194 W/kg



0 dB = 0.234 W/kg = -6.31 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.559 \text{ S/m}$; $\epsilon_r = 51.04$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-29-2019; Ambient Temp: 22.9°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3318; ConvF(4.79, 4.79, 4.79) @ 1880 MHz; Calibrated: 11/19/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 8/14/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

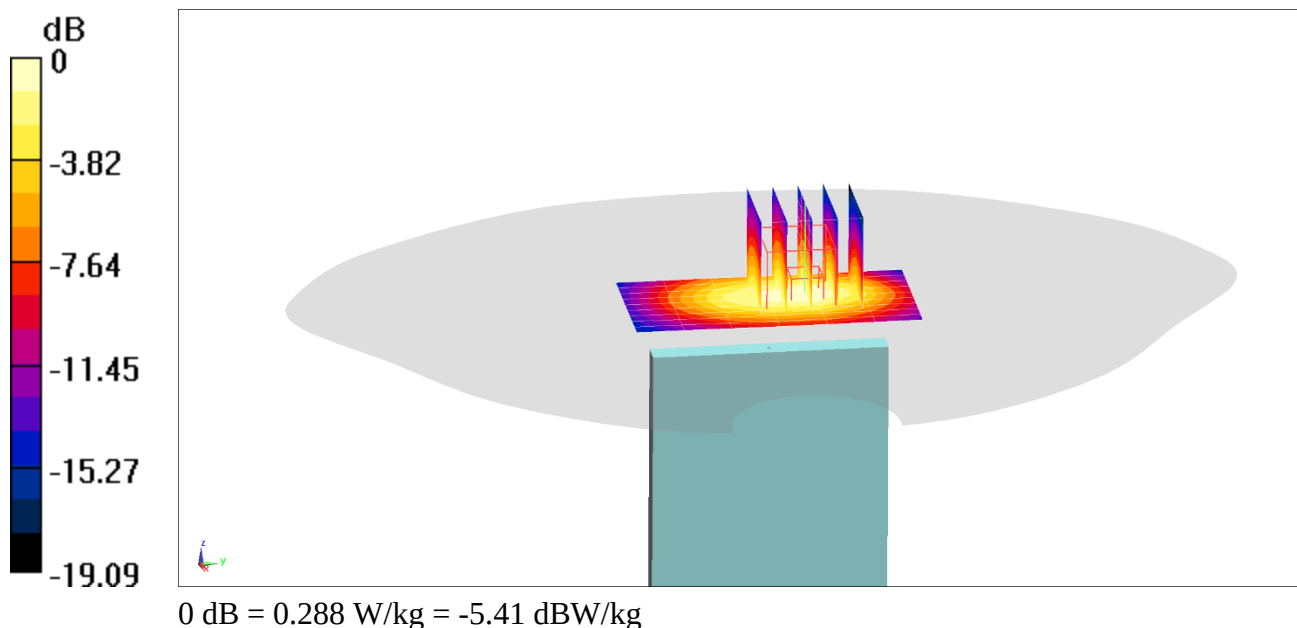
Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 13.24 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.398 W/kg

SAR(1 g) = 0.234 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 820.1 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 53.584$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-01-2019; Ambient Temp: 20.8°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7532; ConvF(10.14, 10.14, 10.14) @ 820.1 MHz; Calibrated: 4/12/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn501; Calibrated: 4/17/2019

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC10, Rule Part 90S, Body SAR, Back side, Mid.ch

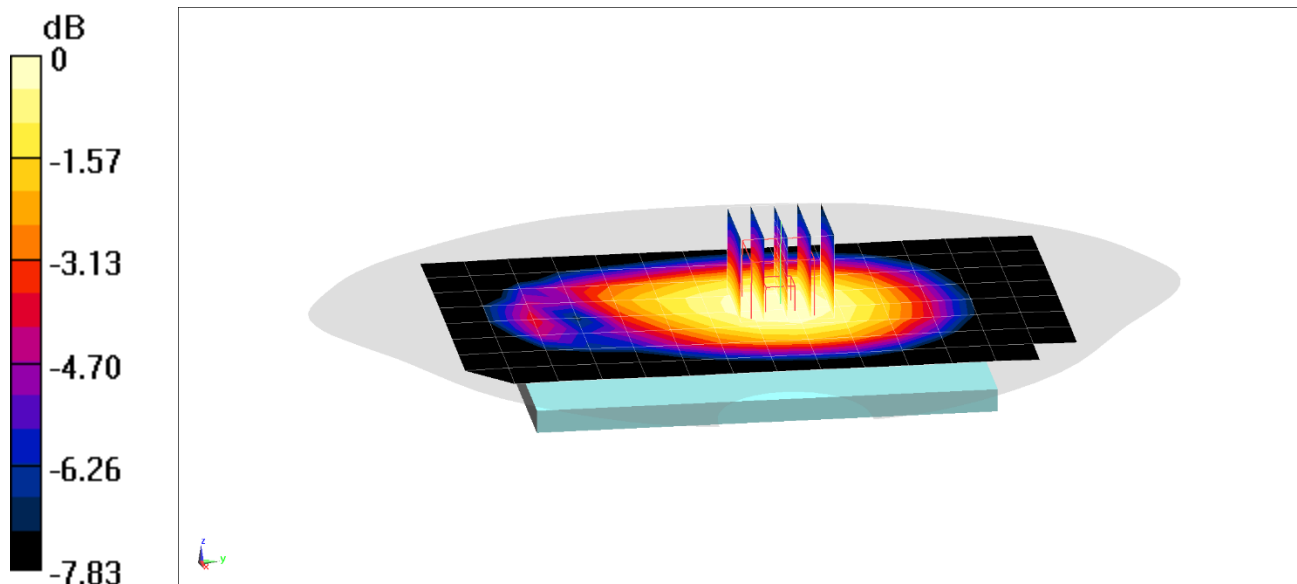
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.13 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.246 W/kg

SAR(1 g) = 0.189 W/kg



0 dB = 0.228 W/kg = -6.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 820.1 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 53.584$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-01-2019; Ambient Temp: 20.8°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7532; ConvF(10.14, 10.14, 10.14) @ 820.1 MHz; Calibrated: 4/12/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn501; Calibrated: 4/17/2019

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CC; Serial: 1179

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO BC10, Rule Part 90S, Body SAR, Back side, Mid.ch

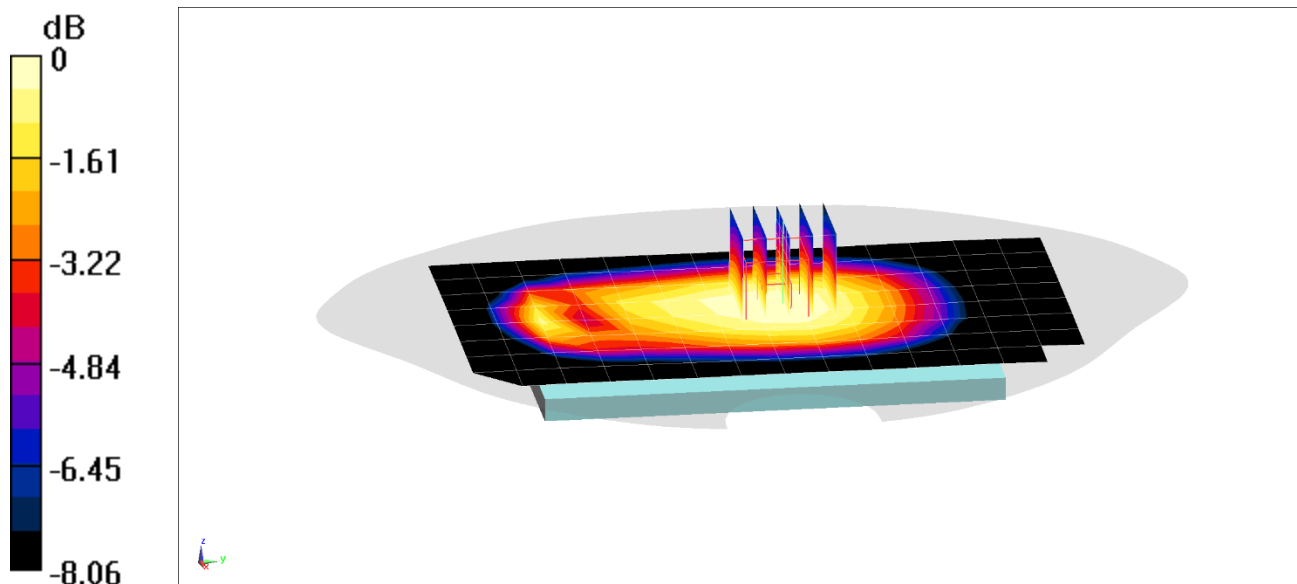
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 15.85 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.315 W/kg

SAR(1 g) = 0.246 W/kg



0 dB = 0.292 W/kg = -5.35 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.332$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7416; ConvF(9.4, 9.4, 9.4) @ 836.52 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

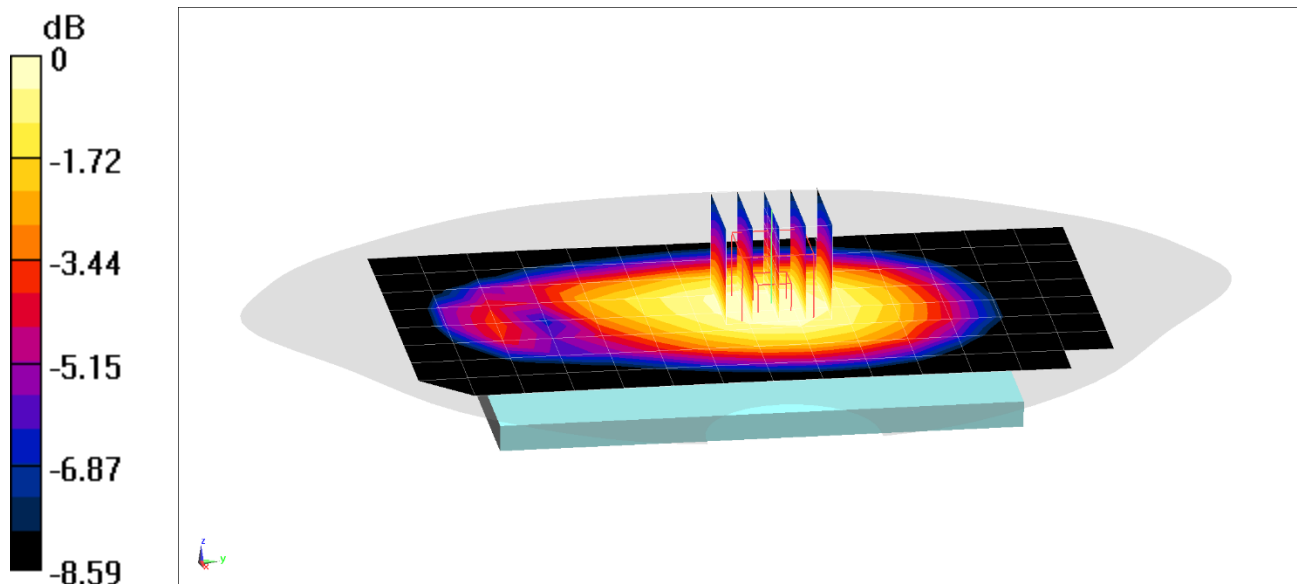
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 14.21 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.280 W/kg

SAR(1 g) = 0.198 W/kg



0 dB = 0.244 W/kg = -6.13 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 36480

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.332$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7416; ConvF(9.4, 9.4, 9.4) @ 836.52 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

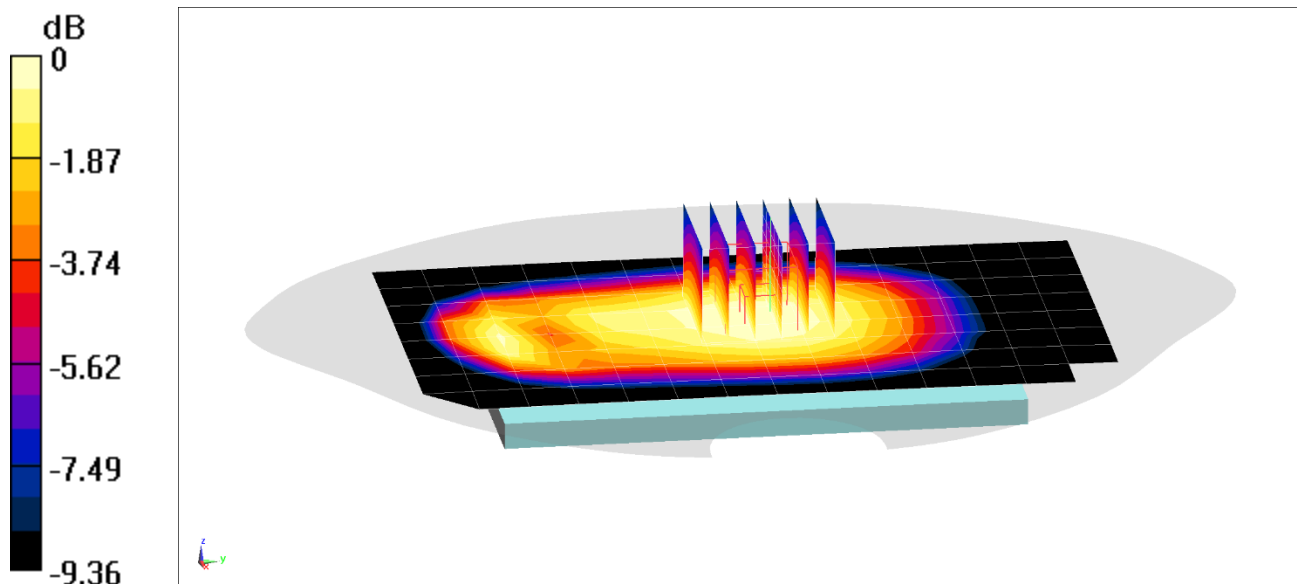
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.75 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.394 W/kg

SAR(1 g) = 0.279 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.577 \text{ S/m}$; $\epsilon_r = 50.835$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-07-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN3837; ConvF(7.54, 7.54, 7.54) @ 1880 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

Mode: PCS CDMA, Body SAR, Back side, Mid.ch

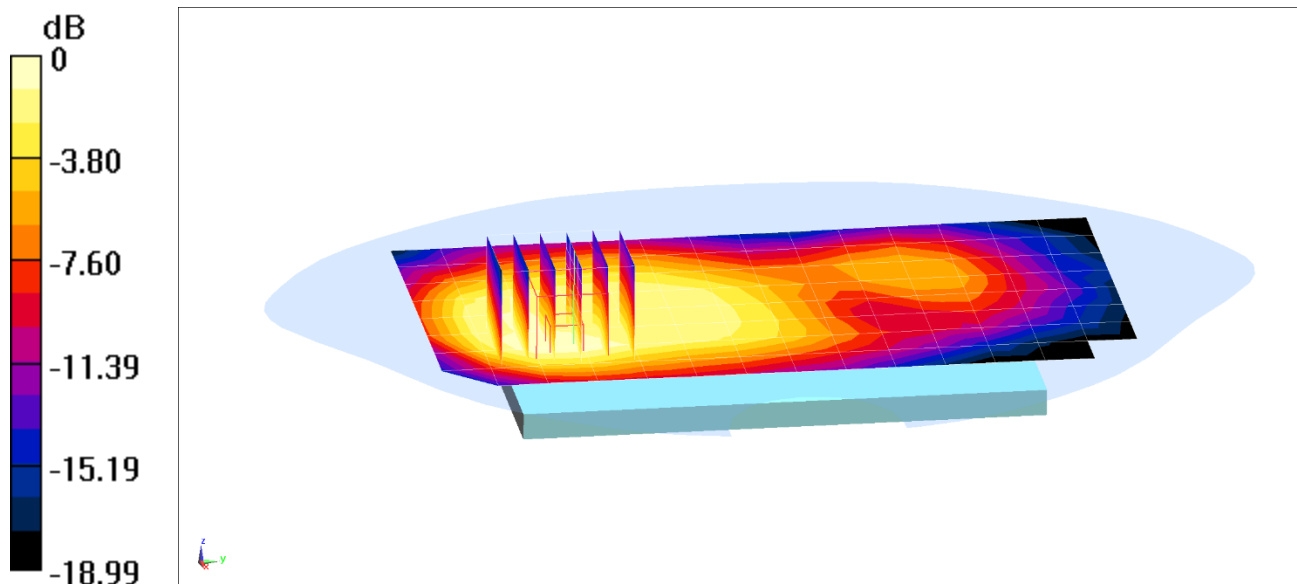
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 10.31 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.274 W/kg

SAR(1 g) = 0.159 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35854

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.577 \text{ S/m}$; $\epsilon_r = 50.835$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-07-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN3837; ConvF(7.54, 7.54, 7.54) @ 1880 MHz; Calibrated: 1/28/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn793; Calibrated: 1/15/2019

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

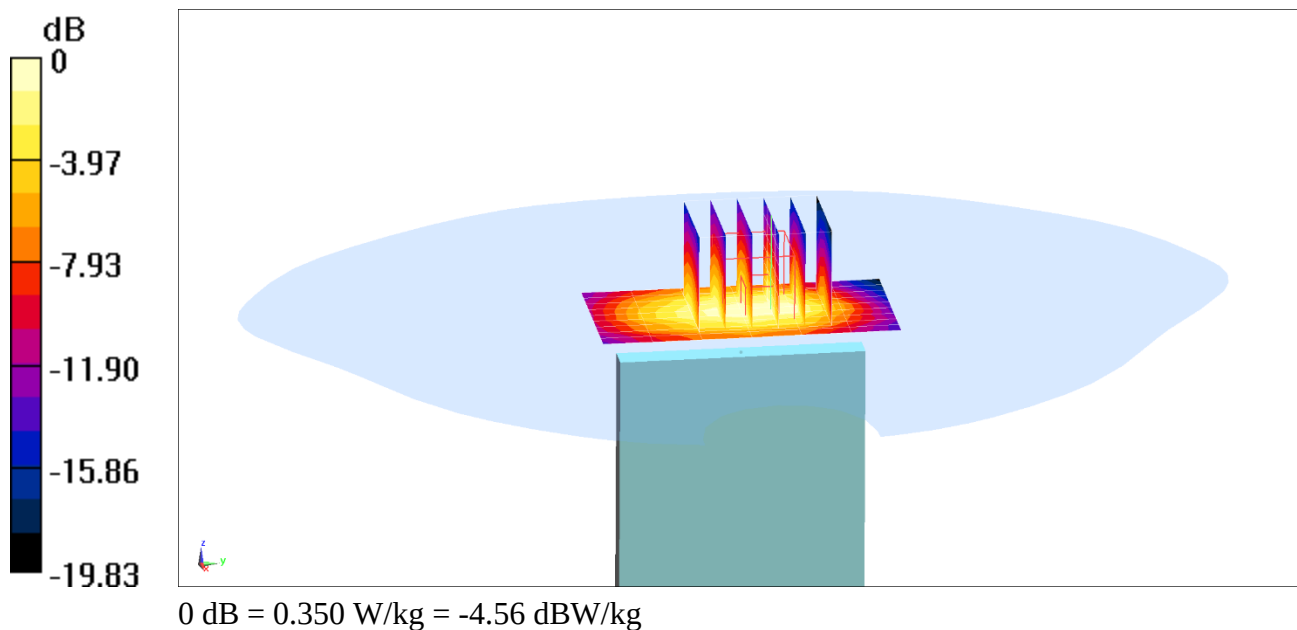
Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 12.75 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.431 W/kg

SAR(1 g) = 0.241 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

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

Medium: 750 Body Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 53.955$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-30-2019; Ambient Temp: 25.0°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 680.5 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

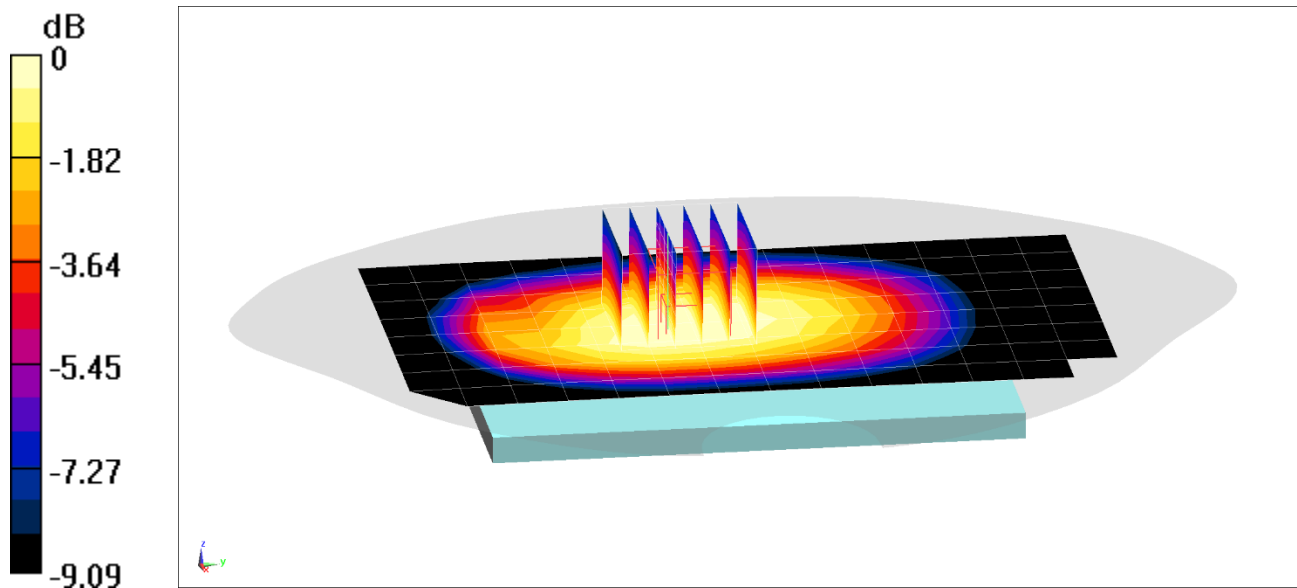
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 16.57 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.340 W/kg

SAR(1 g) = 0.248 W/kg



0 dB = 0.305 W/kg = -5.16 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

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

Medium: 750 Body Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 53.955$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-30-2019; Ambient Temp: 25.0°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 680.5 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Sub; Type: QD 000 P40 CC; Serial: 1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset**

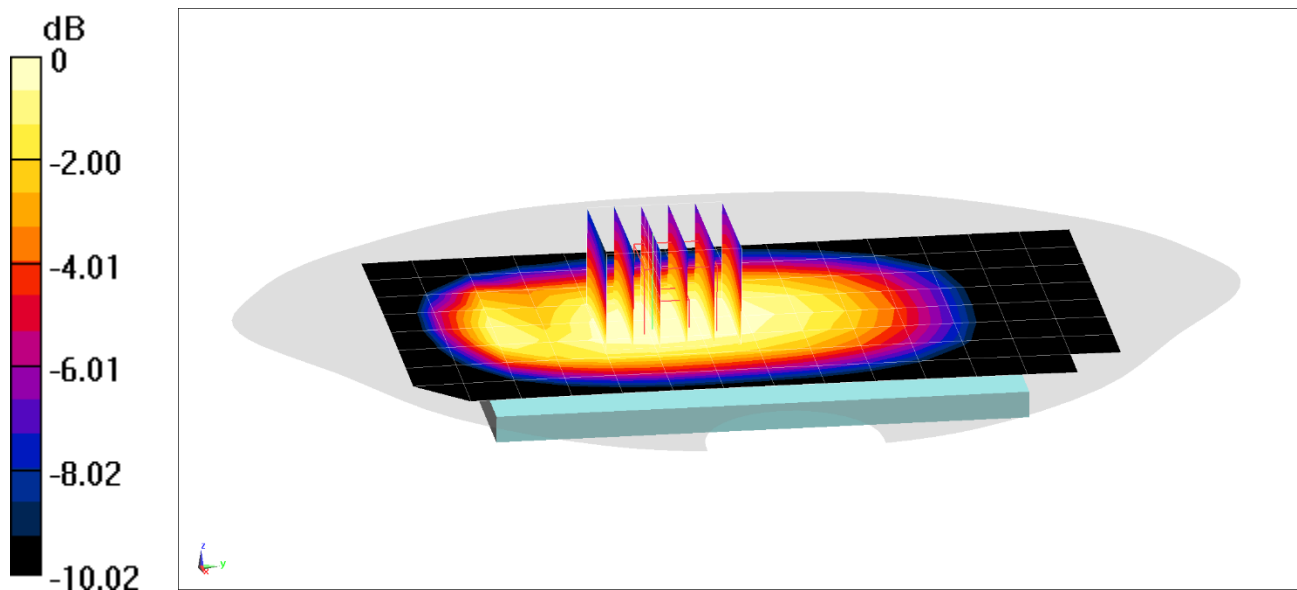
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.27 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.421 W/kg

SAR(1 g) = 0.312 W/kg



0 dB = 0.380 W/kg = -4.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

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

Medium: 750 Body Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 54.113$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-06-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 707.5 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

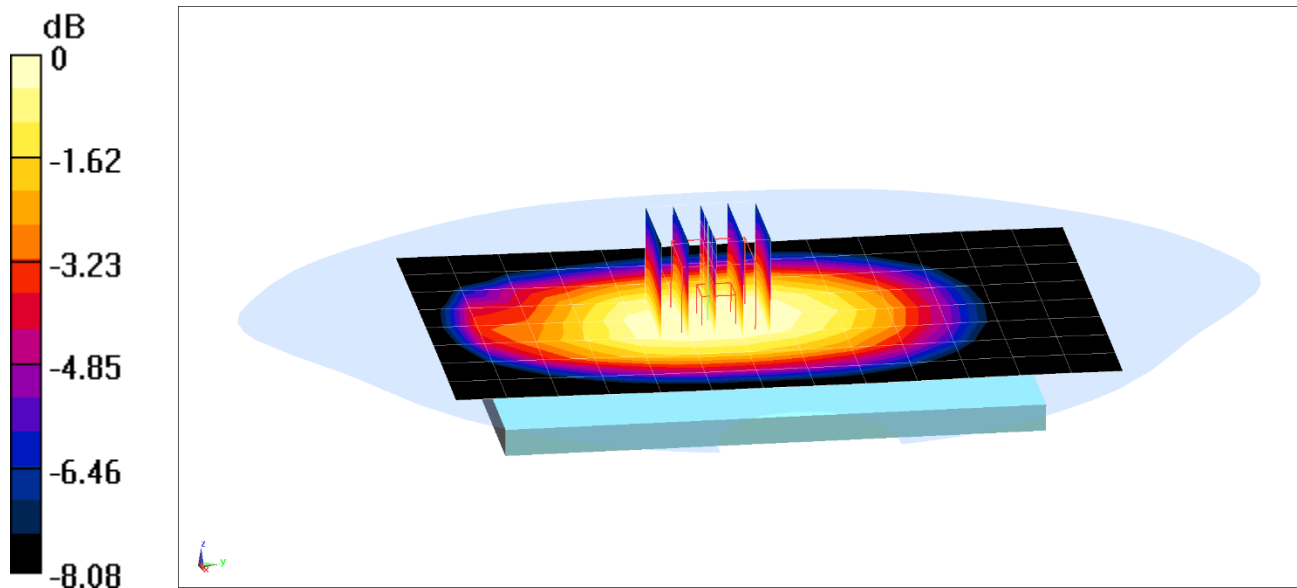
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.41 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.324 W/kg

SAR(1 g) = 0.247 W/kg



0 dB = 0.297 W/kg = -5.27 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

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

Medium: 750 Body Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 54.113$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 707.5 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

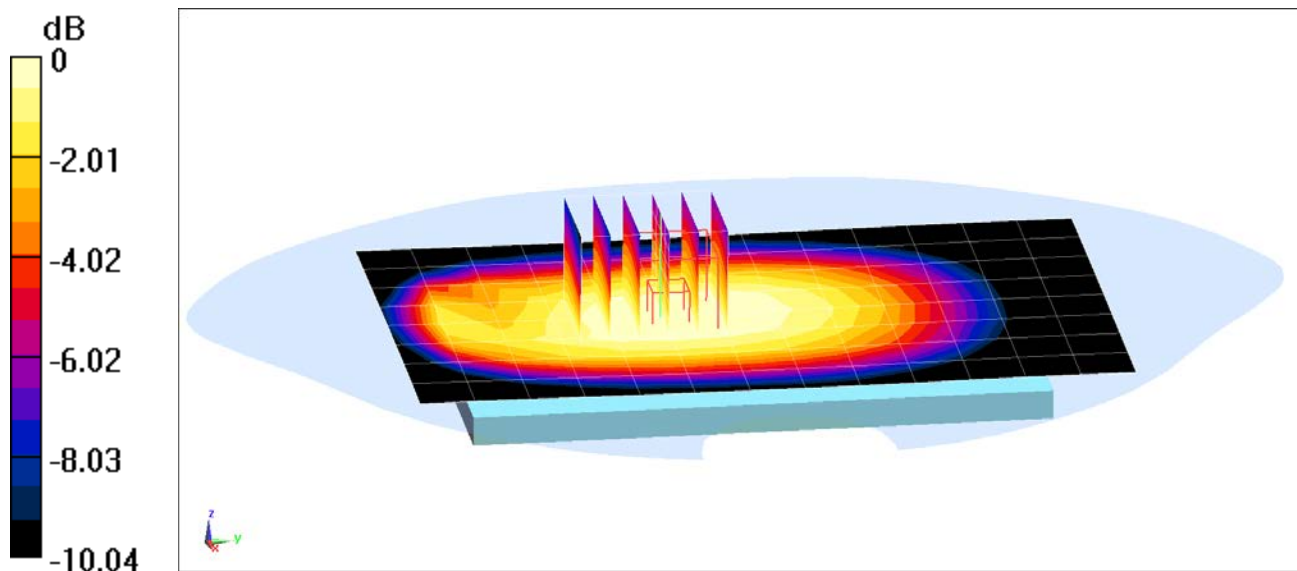
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 17.37 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.369 W/kg

SAR(1 g) = 0.284 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: 750 Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$; $\sigma = 0.975 \text{ S/m}$; $\epsilon_r = 53.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-06-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 782 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

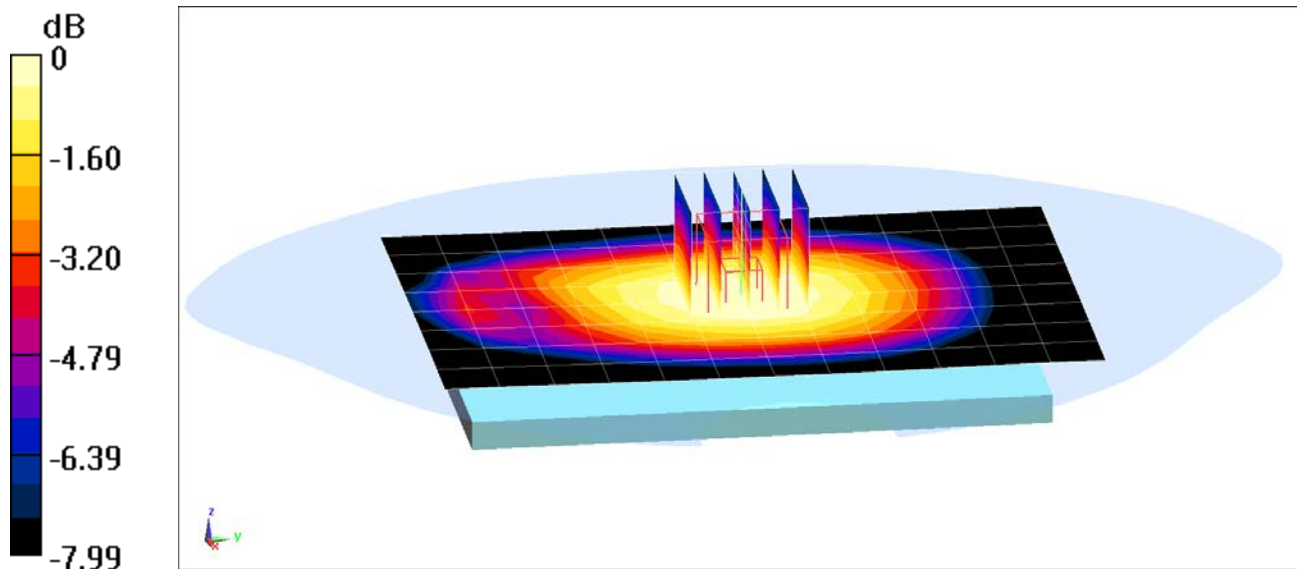
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.95 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.450 W/kg

SAR(1 g) = 0.339 W/kg



0 dB = 0.410 W/kg = -3.87 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1

Medium: 750 Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$; $\sigma = 0.975 \text{ S/m}$; $\epsilon_r = 53.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7427; ConvF(10.34, 10.34, 10.34) @ 782 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

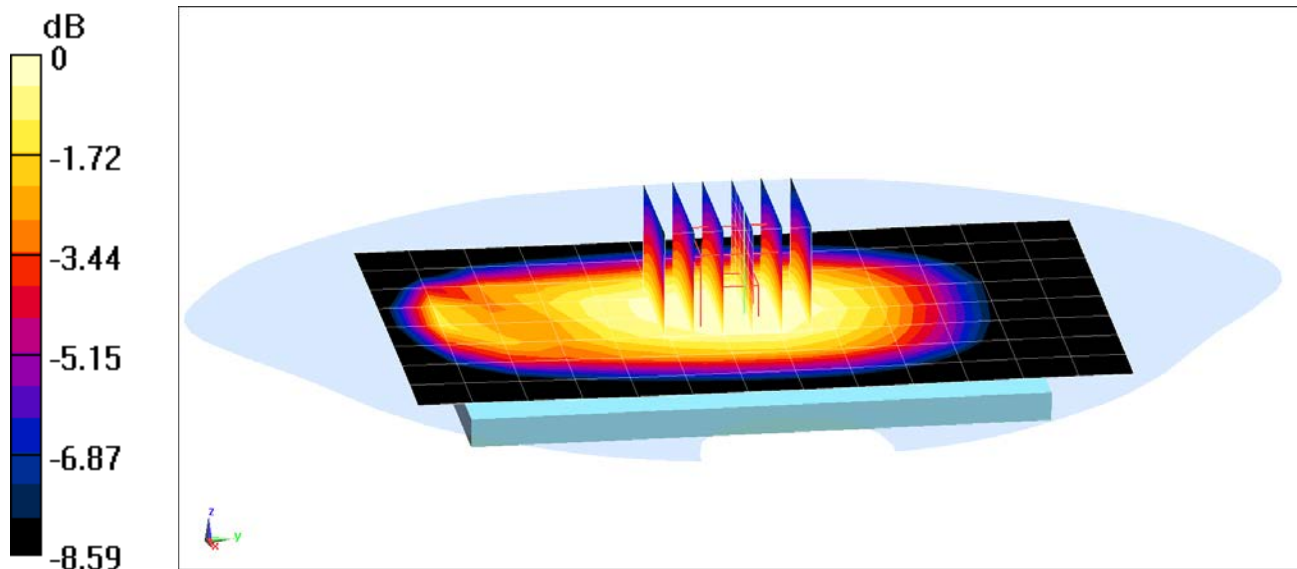
Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 19.35 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.471 W/kg

SAR(1 g) = 0.355 W/kg



0 dB = 0.429 W/kg = -3.68 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 831.5$ MHz; $\sigma = 0.988$ S/m; $\epsilon_r = 53.382$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7416; ConvF(9.4, 9.4, 9.4) @ 831.5 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

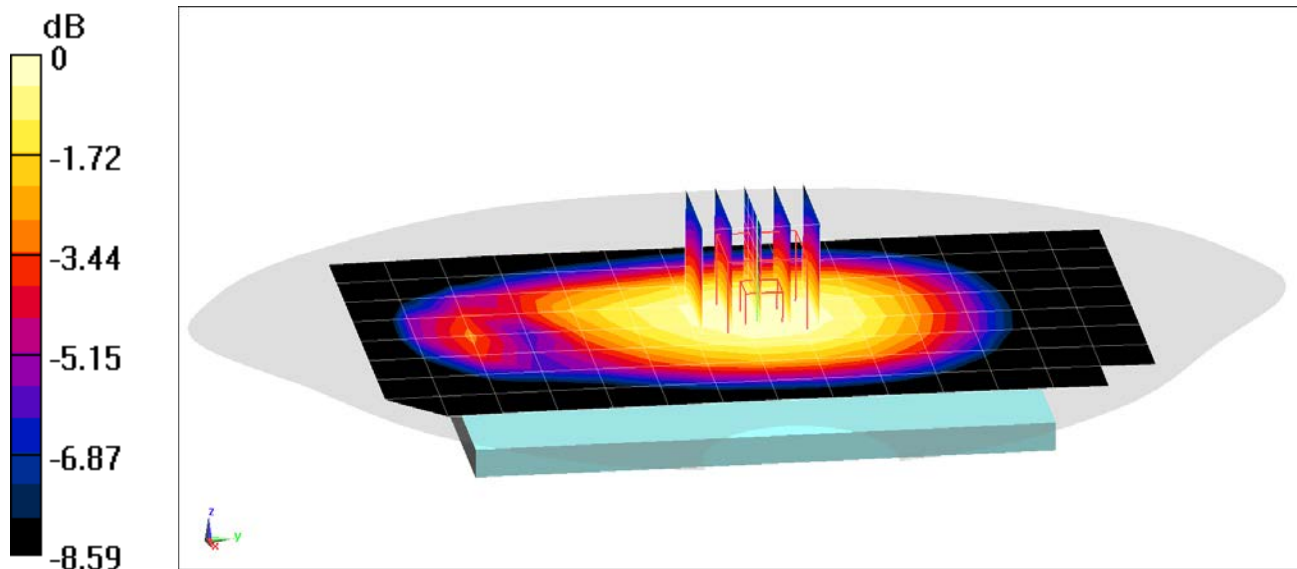
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.70 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.379 W/kg

SAR(1 g) = 0.271 W/kg



0 dB = 0.336 W/kg = -4.74 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35532

Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 831.5 \text{ MHz}$; $\sigma = 0.988 \text{ S/m}$; $\epsilon_r = 53.382$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-06-2019; Ambient Temp: 21.9°C; Tissue Temp: 20.7°C

Probe: EX3DV4 - SN7416; ConvF(9.4, 9.4, 9.4) @ 831.5 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1402; Calibrated: 7/10/2018

Phantom: Twin-SAM V4.0; Type: QD 000 P40 CA; Serial: 1275

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

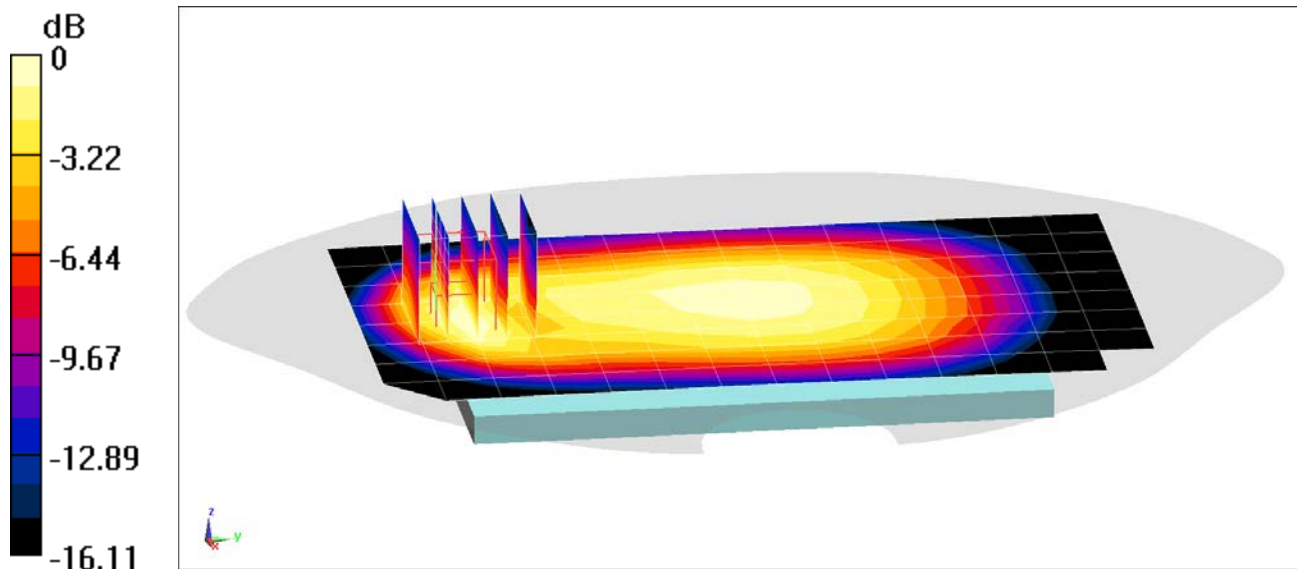
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 17.59 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.635 W/kg

SAR(1 g) = 0.314 W/kg



0 dB = 0.468 W/kg = -3.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

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

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

$f = 1745 \text{ MHz}$; $\sigma = 1.502 \text{ S/m}$; $\epsilon_r = 51.996$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-09-2019; Ambient Temp: 21.4°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7427; ConvF(8.14, 8.14, 8.14) @ 1745 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

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

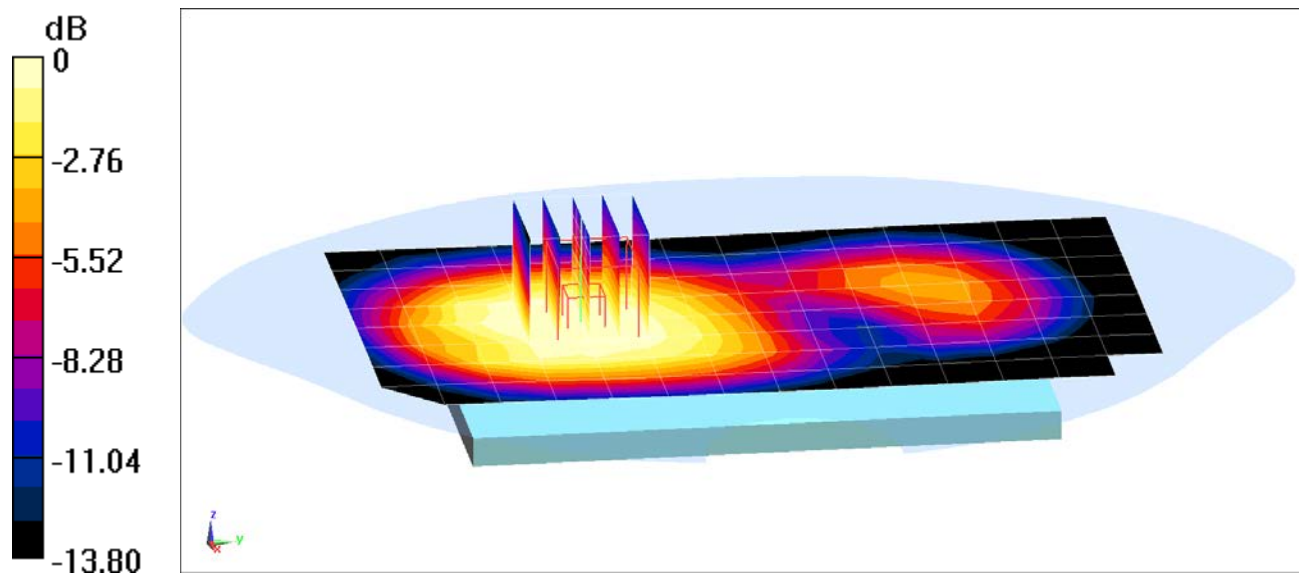
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.78 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.462 W/kg

SAR(1 g) = 0.308 W/kg



0 dB = 0.407 W/kg = -3.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 44526

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

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1745 \text{ MHz}$; $\sigma = 1.502 \text{ S/m}$; $\epsilon_r = 51.996$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-09-2019; Ambient Temp: 21.4°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7427; ConvF(8.14, 8.14, 8.14) @ 1745 MHz; Calibrated: 2/19/2019

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1403; Calibrated: 2/13/2019

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 66 (AWS), Body SAR, Back side, Mid.ch,
20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset**

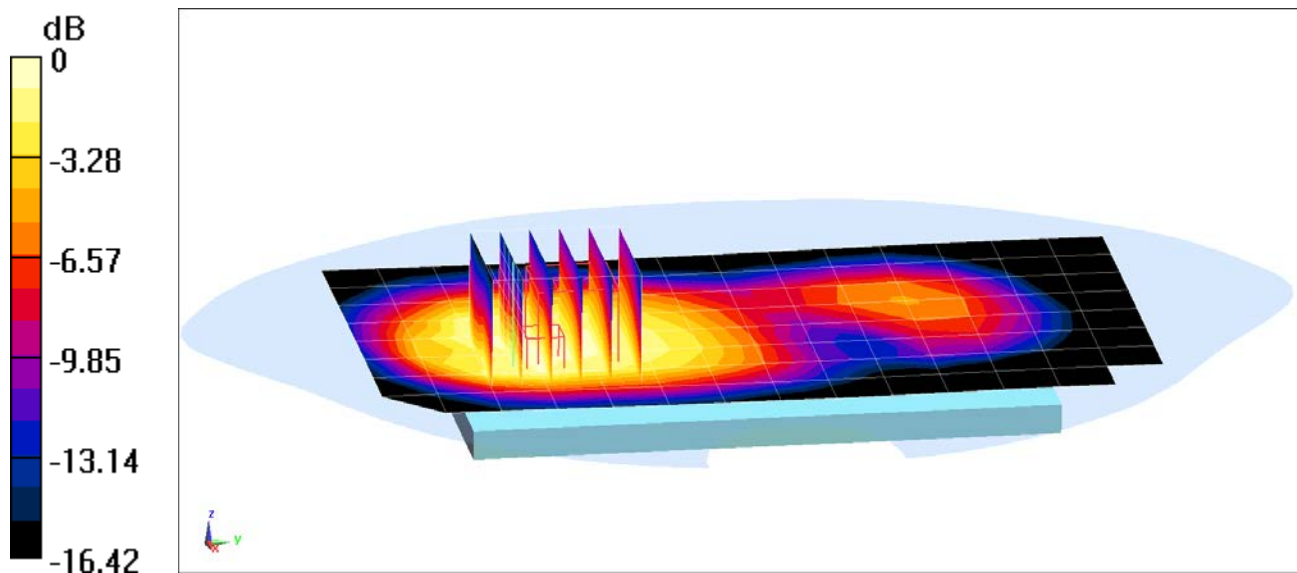
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.30 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.469 W/kg

SAR(1 g) = 0.282 W/kg



0 dB = 0.390 W/kg = -4.09 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.551 \text{ S/m}$; $\epsilon_r = 50.922$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-30-2019; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3318; ConvF(4.79, 4.79, 4.79) @ 1860 MHz; Calibrated: 11/19/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 8/14/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 25 (PCS), Body SAR, Back side, Low.ch,
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset**

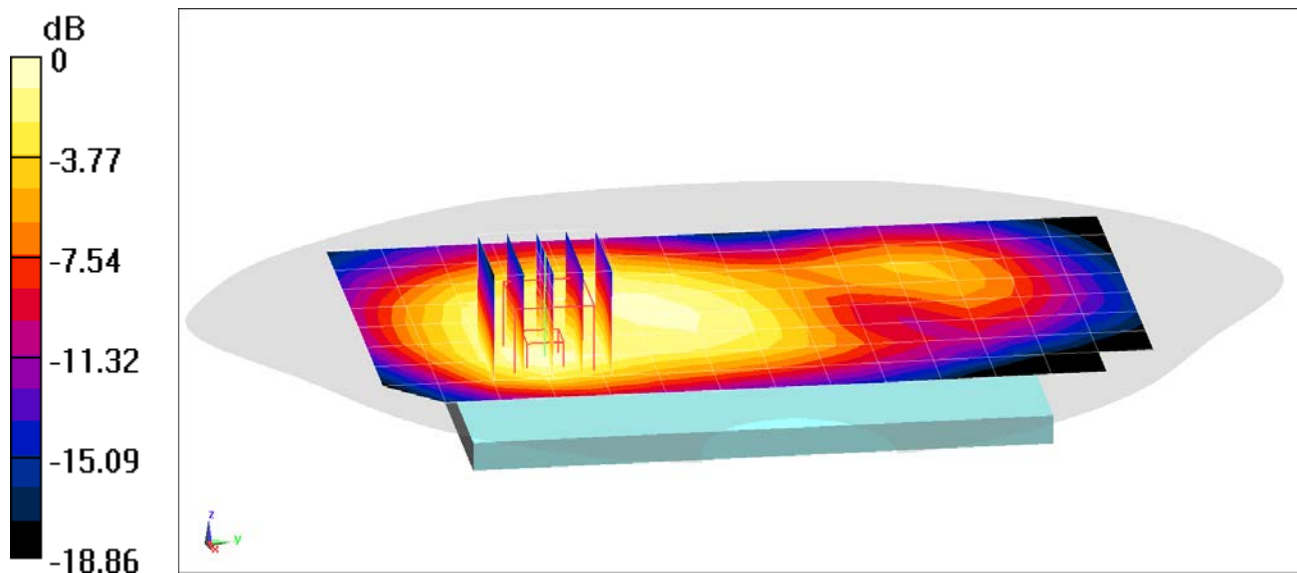
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 10.93 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.280 W/kg

SAR(1 g) = 0.161 W/kg



0 dB = 0.196 W/kg = -7.08 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMA205U; Type: Portable Handset; Serial: 35656

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.551 \text{ S/m}$; $\epsilon_r = 50.922$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-30-2019; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3318; ConvF(4.79, 4.79, 4.79) @ 1860 MHz; Calibrated: 11/19/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 8/14/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1936

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

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

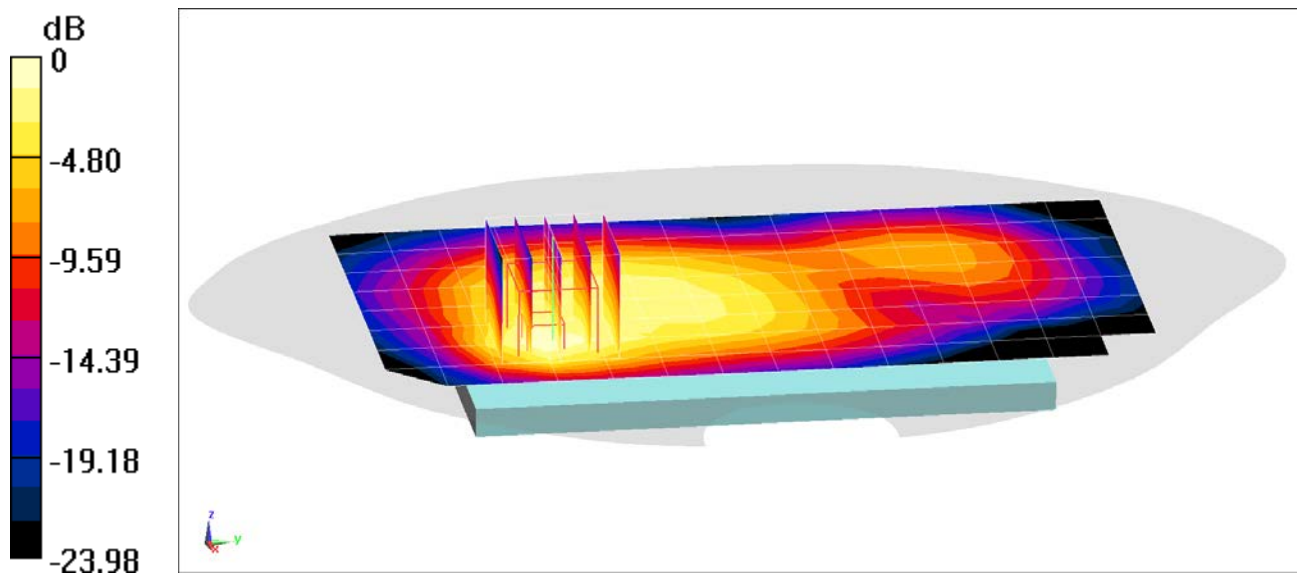
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 13.58 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.500 W/kg

SAR(1 g) = 0.259 W/kg



0 dB = 0.308 W/kg = -5.11 dBW/kg