



SAR EVALUATION REPORT

Applicant Name:

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APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

DUT Type:

Portable Handset

Application Type:

Certification

FCC Rule Part(s):

CFR §2.1093

Model(s):

SM-G928P

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)	10 gm Extremity (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.21	0.29	0.69	
PCE	CDMA/EVDO BC10 (S90S)	817.90 - 823.10 MHz	0.36	0.35	0.66	1.68
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	0.34	0.45	0.62	1.90
PCE	UMTS 850	826.40 - 846.60 MHz	0.17	0.29	0.44	
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.27	0.99	
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.33	0.73	1.02	3.29
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.14	0.55	1.00	1.95
PCE	LTE Band 12	699.7 - 715.3 MHz	0.13	0.32	0.63	
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.32	0.74	0.79	
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A			
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.14	0.70	1.10	3.16
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.18	0.69	1.08	3.20
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A			
PCE	LTE Band 41	2506 - 2593 MHz	< 0.1	0.20	1.10	
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.54	0.19	0.19	
NII	U-NII-1	5180 - 5240 MHz	N/A			
NII	U-NII-2A	5260 - 5320 MHz	0.27	< 0.1		0.46
NII	U-NII-2C	5500 - 5720 MHz	0.38	< 0.1		0.53
NII	U-NII-3	5745 - 5825 MHz	0.40	< 0.1	0.21	
DSS/DTS	Bluetooth	2402 - 2480 MHz	N/A			
Simultaneous SAR per KDB 690783 D01v01r03:			1.20	1.09	1.48	3.85

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

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


Randy Ortanez
President



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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
CDMA/EVDO BC10 (\$90S)	Voice/Data	817.90 - 823.10 MHz
Cell. CDMA/EVDO	Voice/Data	824.70 - 848.31 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Data	699.7 - 715.3 MHz
LTE Band 26 (Cell)	Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Data	824.7 - 848.3 MHz
LTE Band 4 (AWS)	Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Data	1850.7 - 1909.3 MHz
LTE Band 41	Data	2506 - 2593 MHz
2.4 GHz WLAN	Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
ANT +	Data	2402 - 2480 MHz
MST	Data	1 - 8.3 kHz

1.2 Power Reduction for SAR

This device utilizes independent power reduction mechanisms for SAR compliance for the licensed transmitter and the WLAN transmitter. For the main transmitter, the device utilizes power reduction for some exposure and use conditions as outlined in Section 1.3.

Additionally, this device uses an independent single-step 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.

The reduced powers for the power reduction mechanisms were confirmed via conducted power measurements at the RF port (See Section 9). Detailed descriptions of the mechanisms are included in the operational description.

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1.3 RF Output Target 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 D01v05.

Main Band – GSM/GPRS/EDGE:

	Mode / Band	Exposure Condition(s)		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	
Maximum	GSM/GPRS/EDGE 850	Head, Body-Worn, Hotspot	Maximum	33.5	33.5	32.0	30.5	29.5	27.5	26.0	24.0	23.5	
			Nominal	33.0	33.0	31.5	30.0	29.0	27.0	25.5	23.5	23.0	
Maximum	GSM/GPRS/EDGE 1900	Head, Body-Worn, Hotspot	Maximum	30.5	30.5	30.0	27.5	26.5	26.5	25.5	24.0	22.5	
			Nominal	30.0	30.0	29.5	27.0	26.0	26.0	25.0	23.5	22.0	

Main Band – UMTS:

	Mode / Band	Exposure Condition(s)		Modulated Average (dBm)		
				3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
Maximum	UMTS Band 5 (850 MHz)	Head, Body-Worn, Hotspot	Maximum	23.5	22.5	22.5
			Nominal	23.0	22.0	22.0
Maximum	UMTS Band 2 (1900 MHz)	Head, Body-Worn, Hand	Maximum	23.5	22.5	22.5
			Nominal	23.0	22.0	22.0
Reduced	UMTS Band 2 (1900 MHz)	Hotspot, Hand	Maximum	21.5	21.5	21.5
			Nominal	21.0	21.0	21.0

Main Band – CDMA/EVDO:

	Mode / Band	Exposure Condition(s)		Modulated Average (dBm)
Maximum	Cell. BC10 CDMA/EVDO	Head, Body-Worn, Hand	Maximum	25.0
			Nominal	24.5
Reduced	Cell. BC10 CDMA/EVDO	Head, Hotspot, Hand	Maximum	24.5
			Nominal	24.0
Maximum	Cell. BC0 CDMA/EVDO	Head, Body-Worn	Maximum	25.0
			Nominal	24.5
Reduced	Cell. BC0 CDMA/EVDO	Head, Hotspot, Hand	Maximum	24.5
			Nominal	24.0
Maximum	PCS CDMA/EVDO	Head, Body-Worn, Hand	Maximum	25.0
			Nominal	24.5
Reduced	PCS CDMA/EVDO	Head, Hotspot, Hand	Maximum	22.5
			Nominal	22.0

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Main Band – LTE:

	Mode / Band	Exposure Condition(s)		Modulated Average (dBm)
Maximum	LTE Band 12	Head, Body-Worn, Hotspot	Maximum	24.5
			Nominal	24.0
Maximum	LTE Band 26 (Cell)	Head, Body-Worn, Hotspot	Maximum	24.5
			Nominal	24.0
Maximum	LTE Band 5 (Cell)	Head, Body-Worn, Hotspot	Maximum	24.5
			Nominal	24.0
Maximum	LTE Band 4 (AWS)	Head, Body-Worn, Hand	Maximum	24.5
			Nominal	24.0
Reduced	LTE Band 4 (AWS)	Head, Hotspot, Hand	Maximum	22.5
			Nominal	22.0
Maximum	LTE Band 25 (PCS)	Head, Body-Worn, Hand	Maximum	24.5
			Nominal	24.0
Reduced	LTE Band 25 (PCS)	Head, Hotspot, Hand	Maximum	21.0
			Nominal	20.5
Maximum	LTE Band 2 (PCS)	Head, Body-Worn, Hand	Maximum	24.5
			Nominal	24.0
Reduced	LTE Band 2 (PCS)	Head, Hotspot, Hand	Maximum	21.0
			Nominal	20.5
Maximum	LTE Band 41	Head, Body-Worn, Hotspot	Maximum	24.5
			Nominal	24.0

BT/WLAN - Maximum Power:

Mode / Band		Modulated Average (dBm)
IEEE 802.11b (2.4 GHz SISO)	Maximum	17.5
	Nominal	17.0
IEEE 802.11g (2.4 GHz SISO)	Maximum	14.5
	Nominal	14.0
IEEE 802.11n (2.4 GHz SISO)	Maximum	13.5
	Nominal	13.0
IEEE 802.11n (2.4 GHz MIMO)	Maximum	16.5
	Nominal	16.0
Bluetooth	Maximum	10.5
	Nominal	10.0
Bluetooth LE	Maximum	6.0
	Nominal	5.5

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	13.5		
	Nominal	13.0		
IEEE 802.11n (5 GHz)	Maximum	13.5	12.5	
	Nominal	13.0	12.0	
IEEE 802.11ac (5 GHz)	Maximum	13.5	12.5	11.5
	Nominal	13.0	12.0	11.0
Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11n (5 GHz)	Maximum	16.5	15.5	
	Nominal	16.0	15.0	
IEEE 802.11ac (5 GHz)	Maximum	16.5	15.5	14.5
	Nominal	16.0	15.0	14.0

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BT/WLAN - Reduced Power - Held to Ear:

Mode / Band		Modulated Average (dBm)	
IEEE 802.11b (2.4 GHz SISO)	Maximum	15.5	
	Nominal	15.0	
IEEE 802.11g (2.4 GHz SISO)	Maximum	13.5	
	Nominal	13.0	
IEEE 802.11n (2.4 GHz SISO)	Maximum	13.5	
	Nominal	13.0	
IEEE 802.11n (2.4 GHz MIMO)	Maximum	16.5	
	Nominal	16.0	

Mode / Band		Modulated Average (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	10.5		
	Nominal	10.0		
IEEE 802.11n (5 GHz)	Maximum	9.5	9.5	
	Nominal	9.0	9.0	
IEEE 802.11ac (5 GHz)	Maximum	9.5	9.5	9.5
	Nominal	9.0	9.0	9.0

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11n (5 GHz)	Maximum	12.5	12.5	
	Nominal	12.0	12.0	
IEEE 802.11ac (5 GHz)	Maximum	12.5	12.5	12.5
	Nominal	12.0	12.0	12.0

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1.4 DUT Antenna Locations

Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC Filing. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a “phablet.” A diagram showing the location of the device antennas can be found in appendix F.

**Table 1-1
Mobile Sides for SAR Testing**

Mode	Condition	Back	Front	Top	Bottom	Right	Left
GPRS 850	Hotspot	Yes	Yes	No	Yes	Yes	Yes
EVDO BC10 (\$90S)	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
Cell. EVDO	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Hotspot	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Hotspot	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Hotspot	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Hotspot	Yes	Yes	No	Yes	Yes	Yes
LTE Band 4 (AWS)	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Hotspot/Extremity	Yes	Yes	No	Yes	Yes	Yes
LTE Band 41	Hotspot	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN	Hotspot	Yes	Yes	Yes	No	No	Yes
U-NII-2A, U-NII-2C	Extremity	Yes	Yes	Yes	No	No	Yes
U-NII-3	Hotspot	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for Wireless Router SAR or Extremity SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02 guidance, page 2 and FCC KDB 648474 D04v01r02. 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, and U-NII-2C WLAN operations are disabled.

1.5 Near Field Communications (NFC) Antenna

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

1.6 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D05v01, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the DUT are shown in

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



**Figure 1-1
Simultaneous Transmission Paths**

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v05 3) procedures.

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Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Extremity	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	N/A	Yes	N/A	Yes	
4	1x CDMA voice + 2.4 GHz WIFI MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz WIFI MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	Yes	Yes	N/A	Yes	
7	1x CDMA voice + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	Yes	Yes	N/A	Yes	
8	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
9	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
10	GSM voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	
11	GSM voice + 2.4 GHz WIFI MIMO	Yes	Yes	N/A	Yes	
12	GSM voice + 5 GHz WIFI MIMO	Yes	Yes	N/A	Yes	
13	GSM voice + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	Yes	Yes	N/A	Yes	
14	GSM voice + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	Yes	Yes	N/A	Yes	
15	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
16	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
17	UMTS + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	
18	UMTS + 2.4 GHz WIFI MIMO	Yes	Yes	Yes	Yes	
19	UMTS + 5 GHz WIFI MIMO	Yes	Yes	Yes	Yes	
20	UMTS + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	Yes	Yes	Yes	Yes	
21	UMTS + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	Yes	Yes	Yes	Yes	
22	LTE + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
23	LTE + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
24	LTE + 2.4 GHz Bluetooth	N/A	Yes*	N/A	Yes	* - Pre-installed VOIP applications are considered
25	LTE + 2.4 GHz WIFI MIMO	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
26	LTE + 5 GHz WIFI MIMO	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
27	LTE + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
28	LTE + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
29	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
30	CDMA/EVDO data + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
31	CDMA/EVDO data + 2.4 GHz Bluetooth	N/A	Yes*	N/A	Yes	* - Pre-installed VOIP applications are considered
32	CDMA/EVDO data + 2.4 GHz WIFI MIMO	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
33	CDMA/EVDO data + 5 GHz WIFI MIMO	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
34	CDMA/EVDO data + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
35	CDMA/EVDO data + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	Yes*	Yes*	Yes	Yes	* - Pre-installed VOIP applications are considered
36	GPRS/EDGE + 2.4 GHz Wi-Fi	N/A	N/A	Yes	Yes	
37	GPRS/EDGE + 5 GHz Wi-Fi	N/A	N/A	Yes	Yes	
38	GPRS/EDGE + 2.4 GHz WIFI MIMO	N/A	N/A	Yes	Yes	
39	GPRS/EDGE + 5 GHz WIFI MIMO	N/A	N/A	Yes	Yes	
40	GPRS/EDGE + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 2	N/A	N/A	Yes	Yes	
41	GPRS/EDGE + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 1	N/A	N/A	Yes	Yes	
42	GSM voice + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
43	GSM voice + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW
44	1x CDMA voice + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
45	1x CDMA voice + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW
46	UMTS + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
47	UMTS + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW
48	LTE + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
49	LTE + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW
50	GPRS/EDGE + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
51	GPRS/EDGE + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW
52	CDMA/EVDO data + 2.4 GHz WIFI Ant 1 + 5 GHz WIFI Ant 1	N/A	N/A	N/A	N/A	Not Supported by HW
53	CDMA/EVDO data + 2.4 GHz WIFI Ant 2 + 5 GHz WIFI Ant 2	N/A	N/A	N/A	N/A	Not Supported by HW

1. 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.
2. 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 is no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
3. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
4. This device supports 2x2 MIMO Tx for IEEE 802.11n/ac.
5. 2.4 GHz WLAN, 5 GHz WLAN, and 2.4 GHz Bluetooth that share the same antenna path cannot transmit simultaneously.
6. All licensed modes share the same antenna and cannot transmit simultaneously.

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1.7 SAR Test Exclusions Applied

(A) WIFI/BT

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 D06v02.

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 for 1g SAR and is less than 3.0 W/kg for 10g SAR, SAR is not required for U-NII-1 band according to FCC KDB 248227 D01v02r01.

This device supports IEEE 802.11ac with the following features:

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

Per FCC KDB 447498 D01v05, 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; $[(11/15) * \sqrt{2.480}] = 1.2 < 3.0$. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.

Per FCC KDB 447498 D01v05, the 10g SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 7.5$$

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, extremity Bluetooth SAR was not required; $[(11/5) * \sqrt{2.480}] = 3.5 < 7.5$. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.

Per FCC KDB Publication 648474 D04v01r01, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.

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(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.

CDMA 1X Advanced technology was not required for SAR since the maximum output powers for 1x Advanced was not more than 0.25 dB higher than the maximum measured powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg per FCC KDB Publication 941225 D01v03.

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 D01v02.

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 D05v02r03.

This device supports both LTE B26 (Cell) and LTE B5 (Cell). Since the supported frequency span for LTE B2 (PCS) falls completely within the supported frequency span for LTE B26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE B26 (Cell).

This device supports both LTE B25 (PCS) and LTE B2 (PCS). Since the supported frequency span for LTE B2 (PCS) falls completely within the supported frequency span for LTE B25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE B25 (PCS).

This device supports intra-band LTE Carrier Aggregation (CA) in the downlink only. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r01, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

Per FCC KDB Publication 648474 D04v01r01, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR (scaled to the maximum output power, including tolerance) > 1.2 W/kg. For some modes, Extremity SAR was additionally evaluated at maximum output power due to reduced power (See Section 6.7 for more information).

1.8 Guidance Applied

- IEEE 1528-2003
- FCC KDB Publication 941225 D01v03, D05v02r03, D06v02, D05Av01r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r01 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v05r02 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r03, D02v01r01 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r02 (Phablet Procedures)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)

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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.

	Head (Maximum/Reduced)	Body-Worn Serial Number	Hotspot Serial Number	Extremity (Maximum/Reduced)
GSM/GPRS/EDGE 850	95AB1	95AB1	95AB1	-
CDMA/EVDO BC10 (§90S)	95AB5/9653A	95AB5	9653A	95AB5/9653A
Cell. CDMA/EVDO	95AB5/9653A	95AB5	9653A	95AB5/9653A
UMTS 850	95AB1	95AB1	95AB1	-
GSM/GPRS/EDGE 1900	95AB1	95AB1	95AB1	-
PCS CDMA/EVDO	95AB5/9653A	95AB5	9653A	95AB5/9653A
UMTS 1900	95AB1	95AB1	95AB6	95AB1/95AB6
LTE Band 12	95AB3	95AB3	95AB3	-
LTE Band 26 (Cell)	95AB3	95AB3	95AB3	-
LTE Band 4 (AWS)	9653C/95A35	AC258	95A35	AC258/95A35
LTE Band 25 (PCS)	9653C/95A35	95AB1	95A35	95AB1/95A35
LTE Band 41	9653C	9653C	9653C	-
2.4 GHz WLAN	9587C	9587C	9587C	-
5 GHz WLAN	9587C	9587C	9587C	9587C

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LTE INFORMATION

LTE Information				
FCC ID	A3LSMG928P			
Form Factor	Portable Handset			
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)			
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)			
	LTE Band 5 (Cell) (824.7 - 848.3 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)			
Channel Bandwidths	LTE Band 41 (2506 - 2593 MHz)			
	LTE Band 12: 1.4 MHz, 3 MHz, 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 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			
Channel Numbers and Frequencies (MHz)	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz			
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz			
	Low	Mid	High	
	LTE Band 12: 1.4 MHz	699.7 (23017)	707.5 (23095)	715.3 (23173)
	LTE Band 12: 3 MHz	700.5 (23025)	707.5 (23095)	714.5 (23165)
	LTE Band 12: 5 MHz	701.5 (23035)	707.5 (23095)	713.5 (23155)
	LTE Band 12: 10 MHz	704 (23060)	707.5 (23095)	711 (23130)
	LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)	831.5 (26865)	848.3 (27033)
	LTE Band 26 (Cell): 3 MHz	815.5 (26705)	831.5 (26865)	847.5 (27025)
	LTE Band 26 (Cell): 5 MHz	816.5 (26715)	831.5 (26865)	846.5 (27015)
	LTE Band 26 (Cell): 10 MHz	819 (26740)	831.5 (26865)	844 (26990)
	LTE Band 26 (Cell): 15 MHz	831.5 (26865)	836.5 (26915)	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 4 (AWS): 1.4 MHz	1710.7 (19957)	1732.5 (20175)	1754.3 (20393)
	LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	1732.5 (20175)	1753.5 (20385)
	LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	1732.5 (20175)	1752.5 (20375)
	LTE Band 4 (AWS): 10 MHz	1715 (20000)	1732.5 (20175)	1750 (20350)
	LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	1732.5 (20175)	1747.5 (20325)
	LTE Band 4 (AWS): 20 MHz	1720 (20050)	1732.5 (20175)	1745 (20300)
	LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)	1882.5 (26365)	1914.3 (26683)
	LTE Band 25 (PCS): 3 MHz	1851.5 (26055)	1882.5 (26365)	1913.5 (26675)
	LTE Band 25 (PCS): 5 MHz	1852.5 (26065)	1882.5 (26365)	1912.5 (26665)
	LTE Band 25 (PCS): 10 MHz	1855 (26090)	1882.5 (26365)	1910 (26640)
	LTE Band 25 (PCS): 15 MHz	1857.5 (26115)	1882.5 (26365)	1907.5 (26615)
	LTE Band 25 (PCS): 20 MHz	1860 (26140)	1882.5 (26365)	1905 (26590)
	LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)	1880 (18900)	1909.3 (19193)
	LTE Band 2 (PCS): 3 MHz	1851.5 (18615)	1880 (18900)	1908.5 (19185)
	LTE Band 2 (PCS): 5 MHz	1852.5 (18625)	1880 (18900)	1907.5 (19175)
	LTE Band 2 (PCS): 10 MHz	1855 (18650)	1880 (18900)	1905 (19150)
	LTE Band 2 (PCS): 15 MHz	1857.5 (18675)	1880 (18900)	1902.5 (19125)
	LTE Band 2 (PCS): 20 MHz	1860 (18700)	1880 (18900)	1900 (19100)
	Low	Low-Mid	Mid	High-Mid
	LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)
	LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)
	LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)
	LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)
UE Category				
6				
Modulations Supported in UL				
QPSK, 16QAM				
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 possible carrier aggregation combinations				
LTE Release 10 Additional Information				
This device does not support full CA features on 3GPP Release 10. It supports a maximum of 2 carriers in the downlink. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. Due to carrier capability, only the combinations listed above are supported. The following LTE Release 10 Features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

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3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

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DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01 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 D01v01 (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 D01v01 (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.

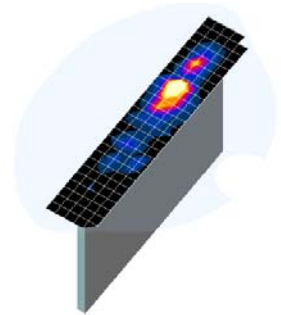


Figure 4-1
Sample SAR Area Scan

Table 4-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01*

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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5.1 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].

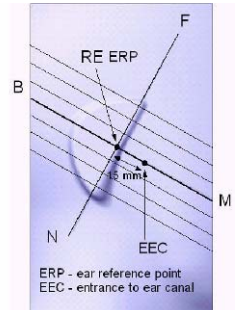


Figure 5-1
Close-Up Side view
of ERP

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

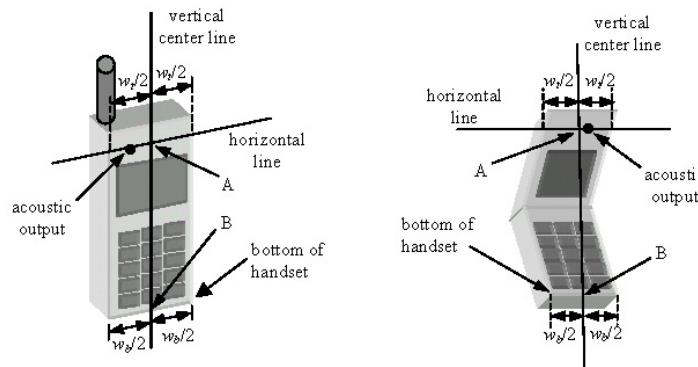


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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6 TEST CONFIGURATION POSITIONS FOR HANDSETS

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.

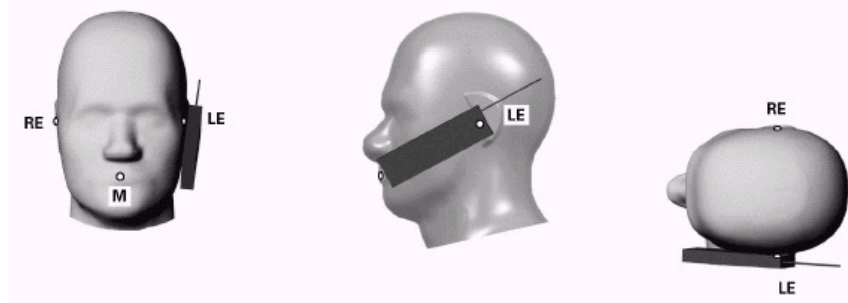


Figure 6-1 Front, Side and Top View of Cheek Position

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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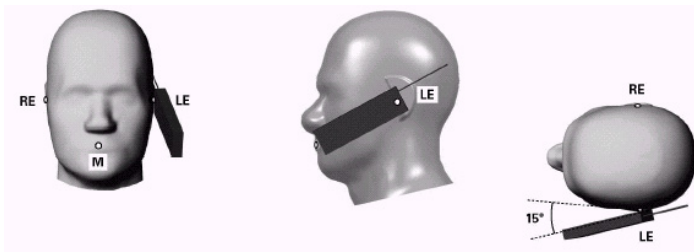


Figure 6-2 Front, Side and Top View of Ear/15° Tilt Position

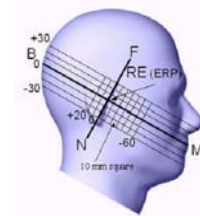


Figure 6-3 Side view w/ relevant markings

6.4 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 D04v01, 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 D01v05 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 $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

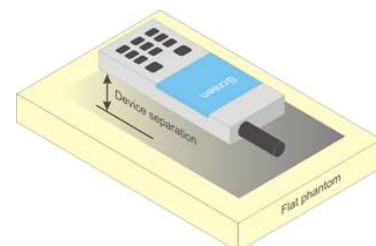


Figure 6-4 Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

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

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6.5 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v05 should be applied to determine SAR test requirements.

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04 v01r02 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 10-g SAR. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including intolerance) is 1-g SAR > 1.2 W/kg.

6.6 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 D06v02 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 D01v05 publication 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.

There is power reduction for some bands and modes, as indicated in Section 1.3. The reduced powers were confirmed via conducted power measurements at the RF port (See Section 9). Detailed description of the hotspot power reduction mechanism are included in the operational description

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6.7 Additional Test Positions due to Proximity Conditions

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

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

FCC KDB 616217 D04 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional exposure conditions. The smallest separation distance determined by the sensor triggering and sensor coverage for each applicable edge, minus 1 mm, was used as the test separation distance for SAR testing. Sensor triggering distance summary data is included in Appendix G.

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

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7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

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8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v05, 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 D01v01r02.

8.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03, 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 D01v03 “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 D01v03 “3G SAR Measurement Procedures.”

8.4.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by FCC KDB Publication 941225 D01v03 “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 Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do 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 Ev-Do 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 Ev-Do Rev. 0 and Rev. A as the respective primary modes. Otherwise, the 'Body-Worn Accessory SAR' procedures in the '3GPP2 CDMA 2000 1x Handsets' section are applied.

8.4.6 CDMA2000 1x Advanced

This device additionally supports 1x Advanced. Conducted powers are measured using SO75 with RC8 on the uplink and RC11 on the downlink per FCC KDB Publication 941225 D01v03. Smart blanking is disabled for all measurements. The EUT is configured with forward power control Mode 000 and reverse power control at 400 bps. Conducted powers are measured on an Agilent 8960 Series 10 Wireless Communications Test Set, Model E5515C using the CDMA2000 1x Advanced application, Option E1962B-410.

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

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8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.6 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r03 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.

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8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r03:

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

8.6.5 TDD

LTE TDD testing is performed using guidance from FCC KDB 941225 D05v02r03 and the SAR test guidance provided in April 2013 TCB workshop notes. 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 D05v02r03. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

8.6.6 Downlink Carrier Aggregation

LTE Carrier Aggregation (CA) measurements are made in accordance to 3GPP TS 36.521-1 V10.4.0 (2012-12). 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 the Secondary component carrier (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to release 8 specifications on the PCC. Additional output powers are measured using two carriers in the downlink for the release 8 configurations with the highest output power among all channels, RB configurations and bandwidths for each uplink band. Per FCC KDB Publication 941225 D05A v01r01, no SAR measurements are required when the average output power with downlink carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink carrier aggregation inactive.

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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 D01v02r01 for more details.

8.7.1 General Device Setup

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

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

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

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg for 1g SAR or > 3.0 for 10g SAR. 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 for 1g SAR or > 3.0 for 10g SAR.

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

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 for 1g SAR or ≤ 1.0 W/kg for 10g SAR, 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 for 1g SAR or ≤ 2.0 W/kg for 10g SAR or all test positions are measured.

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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 for 1g SAR and ≤ 2.0 W/kg for 10g SAR, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg for 1g SAR or > 2.0 W/kg for 10g SAR, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg for 1g SAR or > 3.0 W/kg for 10g SAR, 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 for 1g SAR or > 3.0 W/kg for 10g SAR. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz bands, 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 and lowest order 802.11a/g/n/ac mode. 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.

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8.7.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, 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 and lowest data rate and lowest order 802.11a/g/n/ac 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 for 1g SAR and ≤ 2.0 W/kg for 10g SAR, 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 for 1g or ≤ 3.0 W/kg for 10g 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).

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 for 1g SAR and ≤ 3.0 W/kg for 10g SAR, no additional SAR tests for the subsequent test configurations are required.

8.7.9 MIMO SAR considerations

Per KDB 248227 D01v02r01, the simultaneous SAR provisions in KDB Publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg for 1g SAR and ≤ 4.0 W/kg for 10g SAR, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

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9 RF CONDUCTED POWERS

9.1 GSM Conducted Powers

Table 9-1
Maximum Average RF Output Powers

		Maximum Burst-Averaged Output Power								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	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	32.93	32.95	31.98	29.81	29.12	26.98	25.58	23.61	23.19
	190	33.14	33.13	31.83	30.07	29.23	26.94	25.41	23.52	23.23
	251	32.86	32.83	31.90	30.01	28.95	26.87	25.21	23.36	23.05
GSM 1900	512	30.48	30.46	29.68	27.41	26.44	26.34	25.39	23.48	22.26
	661	30.50	30.49	29.80	27.45	26.50	26.45	25.50	23.64	22.39
	810	30.14	30.17	29.82	27.11	26.09	26.25	25.19	23.37	22.10
		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	23.90	23.92	25.96	25.55	26.11	17.95	19.56	19.35	20.18
	190	24.11	24.10	25.81	25.81	26.22	17.91	19.39	19.26	20.22
	251	23.83	23.80	25.88	25.75	25.94	17.84	19.19	19.10	20.04
GSM 1900	512	21.45	21.43	23.66	23.15	23.43	17.31	19.37	19.22	19.25
	661	21.47	21.46	23.78	23.19	23.49	17.42	19.48	19.38	19.38
	810	21.11	21.14	23.80	22.85	23.08	17.22	19.17	19.11	19.09
GSM 850	Frame	23.97	23.97	25.48	25.74	25.99	17.97	19.48	19.24	19.99
GSM 1900	Avg. Targets:	20.97	20.97	23.48	22.74	22.99	16.97	18.98	19.24	18.99

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 9-1
Power Measurement Setup

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9.2 UMTS Conducted Powers

Table 9-2
Maximum Average RF Output Powers

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.24	23.21	23.17	23.13	23.24	23.16	-
99		12.2 kbps AMR	23.20	23.22	23.15	23.07	23.20	23.12	-
6	HSDPA	Subtest 1	22.20	22.16	22.08	21.89	22.02	21.94	0
6		Subtest 2	22.24	22.15	22.08	21.90	21.99	21.95	0
6		Subtest 3	21.69	21.67	21.48	21.40	21.51	21.44	0.5
6		Subtest 4	21.68	21.63	21.55	21.42	21.51	21.45	0.5
6	HSUPA	Subtest 1	22.00	21.98	21.88	21.25	21.36	21.26	0
6		Subtest 2	20.74	20.71	20.63	20.70	20.84	20.76	2
6		Subtest 3	20.33	20.26	20.17	20.90	21.04	20.94	1
6		Subtest 4	21.73	21.68	20.87	20.86	20.70	20.63	2
6		Subtest 5	22.24	22.18	22.12	21.93	22.08	21.96	0

Table 9-3
Reduced Average RF Output Powers – Hotspot, Extremity

3GPP Release Version	Mode	3GPP 34.121 Subtest	PCS Band [dBm]			3GPP MPR [dB]
			9262	9400	9538	
99	WCDMA	12.2 kbps RMC	21.13	21.09	21.15	-
99		12.2 kbps AMR	21.10	21.07	21.11	-
6	HSDPA	Subtest 1	19.96	19.87	20.00	0
6		Subtest 2	19.97	19.89	20.02	0
6		Subtest 3	19.97	19.78	19.88	0.5
6		Subtest 4	20.70	20.58	20.71	0.5
6	HSUPA	Subtest 1	19.60	19.58	19.68	0
6		Subtest 2	19.53	19.47	19.56	2
6		Subtest 3	19.51	19.48	19.54	1
6		Subtest 4	18.73	18.72	18.75	2
6		Subtest 5	19.94	20.18	20.11	0

This device does not support DC-HSDPA.

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



Figure 9-2
Power Measurement Setup

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9.3 CDMA2000 Conducted Powers

Table 9-4
Maximum Average RF Output Powers

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	24.59	24.55	24.67	24.56	24.64	24.60	24.38
Cellular	1013	22H	824.7	24.58	24.60	24.69	24.55	24.55	24.60	24.37
	384	22H	836.52	24.77	24.77	24.78	24.96	24.73	24.75	24.48
	777	22H	848.31	24.59	24.58	24.67	24.38	24.52	24.58	24.31
PCS	25	24E	1851.25	24.66	24.66	24.74	24.73	24.69	24.51	24.52
	600	24E	1880	24.68	24.58	24.76	24.70	24.72	24.55	24.46
	1175	24E	1908.75	24.60	24.71	24.66	24.60	24.87	25.00	24.79

Note: RC1 is only applicable for IS-95 compatibility.

Table 9-5
Reduced Average RF Output Powers – Head, Hotspot, Extremity

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	24.08	24.00	24.13	24.11	24.10	24.16	23.98
Cellular	1013	22H	824.7	24.03	24.23	24.00	24.01	24.02	24.06	23.85
	384	22H	836.52	24.00	23.99	24.10	24.19	24.18	24.23	24.04
	777	22H	848.31	24.13	24.05	24.01	24.05	24.06	24.07	23.90
PCS	25	24E	1851.25	22.38	22.30	22.33	22.36	22.33	22.36	22.35
	600	24E	1880	22.13	22.22	22.45	22.23	22.24	22.43	22.32
	1175	24E	1908.75	22.23	22.36	22.34	22.20	22.22	22.21	22.19

Note: RC1 is only applicable for IS-95 compatibility.



Figure 9-3
Power Measurement Setup

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9.4 Maximum LTE Conducted Powers

9.4.1 Maximum LTE Band 12 Conducted Powers

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	707.5	23095	10	QPSK	1	0	23.92	0	0
	707.5	23095	10	QPSK	1	25	23.78	0	0
	707.5	23095	10	QPSK	1	49	23.74	0	0
	707.5	23095	10	QPSK	25	0	22.65	0-1	1
	707.5	23095	10	QPSK	25	12	22.62	0-1	1
	707.5	23095	10	QPSK	25	25	22.55	0-1	1
	707.5	23095	10	QPSK	50	0	22.54	0-1	1
	707.5	23095	10	16QAM	1	0	23.37	0-1	1
	707.5	23095	10	16QAM	1	25	23.29	0-1	1
	707.5	23095	10	16QAM	1	49	23.27	0-1	1
	707.5	23095	10	16QAM	25	0	21.66	0-2	2
	707.5	23095	10	16QAM	25	12	21.65	0-2	2
	707.5	23095	10	16QAM	25	25	21.60	0-2	2
	707.5	23095	10	16QAM	50	0	21.56	0-2	2

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	701.5	23035	5	QPSK	1	0	23.69	0	0
	701.5	23035	5	QPSK	1	12	23.59	0	0
	701.5	23035	5	QPSK	1	24	23.60	0	0
	701.5	23035	5	QPSK	12	0	22.69	0-1	1
	701.5	23035	5	QPSK	12	6	22.63	0-1	1
	701.5	23035	5	QPSK	12	13	22.54	0-1	1
	701.5	23035	5	QPSK	25	0	22.65	0-1	1
	701.5	23035	5	16-QAM	1	0	22.91	0-1	1
	701.5	23035	5	16-QAM	1	12	23.16	0-1	1
	701.5	23035	5	16-QAM	1	24	22.87	0-1	1
	701.5	23035	5	16-QAM	12	0	21.63	0-2	2
	701.5	23035	5	16-QAM	12	6	21.61	0-2	2
Mid	701.5	23035	5	16-QAM	12	13	21.54	0-2	2
	701.5	23035	5	16-QAM	25	0	21.62	0-2	2
	707.5	23095	5	QPSK	1	0	23.63	0	0
	707.5	23095	5	QPSK	1	12	23.79	0	0
	707.5	23095	5	QPSK	1	24	23.49	0	0
	707.5	23095	5	QPSK	12	0	22.48	0-1	1
	707.5	23095	5	QPSK	12	6	22.47	0-1	1
	707.5	23095	5	QPSK	12	13	22.34	0-1	1
	707.5	23095	5	QPSK	25	0	22.47	0-1	1
	707.5	23095	5	16-QAM	1	0	22.96	0-1	1
	707.5	23095	5	16-QAM	1	12	22.84	0-1	1
	707.5	23095	5	16-QAM	1	24	22.79	0-1	1
High	707.5	23095	5	16-QAM	12	0	21.48	0-2	2
	707.5	23095	5	16-QAM	12	6	21.46	0-2	2
	707.5	23095	5	16-QAM	12	13	21.33	0-2	2
	707.5	23095	5	16-QAM	25	0	21.40	0-2	2
	713.5	23155	5	QPSK	1	0	23.63	0	0
	713.5	23155	5	QPSK	1	12	23.59	0	0
	713.5	23155	5	QPSK	1	24	23.48	0	0
	713.5	23155	5	QPSK	12	0	22.32	0-1	1
	713.5	23155	5	QPSK	12	6	22.43	0-1	1
	713.5	23155	5	QPSK	12	13	22.28	0-1	1
	713.5	23155	5	QPSK	25	0	22.28	0-1	1
	713.5	23155	5	16-QAM	1	0	22.92	0-1	1
	713.5	23155	5	16-QAM	1	12	22.46	0-1	1
	713.5	23155	5	16-QAM	1	24	22.83	0-1	1
	713.5	23155	5	16-QAM	12	0	21.28	0-2	2
	713.5	23155	5	16-QAM	12	6	21.34	0-2	2
	713.5	23155	5	16-QAM	12	13	21.25	0-2	2
	713.5	23155	5	16-QAM	25	0	21.23	0-2	2

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Table 9-8
Maximum LTE Band 12 Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	700.5	23025	3	QPSK	1	0	24.01	0	0
	700.5	23025	3	QPSK	1	7	23.87	0	0
	700.5	23025	3	QPSK	1	14	23.92	0	0
	700.5	23025	3	QPSK	8	0	22.99	0-1	1
	700.5	23025	3	QPSK	8	4	23.02	0-1	1
	700.5	23025	3	QPSK	8	7	22.96	0-1	1
	700.5	23025	3	QPSK	15	0	22.95	0-1	1
	700.5	23025	3	16-QAM	1	0	23.50	0-1	1
	700.5	23025	3	16-QAM	1	7	23.44	0-1	1
	700.5	23025	3	16-QAM	1	14	23.39	0-1	1
	700.5	23025	3	16-QAM	8	0	22.04	0-2	2
	700.5	23025	3	16-QAM	8	4	22.09	0-2	2
Mid	700.5	23025	3	16-QAM	8	7	21.96	0-2	2
	700.5	23025	3	16-QAM	15	0	21.94	0-2	2
	707.5	23095	3	QPSK	1	0	23.51	0	0
	707.5	23095	3	QPSK	1	7	23.60	0	0
	707.5	23095	3	QPSK	1	14	23.40	0	0
	707.5	23095	3	QPSK	8	0	22.49	0-1	1
	707.5	23095	3	QPSK	8	4	22.48	0-1	1
	707.5	23095	3	QPSK	8	7	22.62	0-1	1
	707.5	23095	3	QPSK	15	0	22.70	0-1	1
	707.5	23095	3	16-QAM	1	0	23.04	0-1	1
	707.5	23095	3	16-QAM	1	7	23.26	0-1	1
	707.5	23095	3	16-QAM	1	14	23.22	0-1	1
High	707.5	23095	3	16-QAM	8	0	21.86	0-2	2
	707.5	23095	3	16-QAM	8	4	21.86	0-2	2
	707.5	23095	3	16-QAM	8	7	21.75	0-2	2
	707.5	23095	3	16-QAM	15	0	21.76	0-2	2
	714.5	23165	3	QPSK	1	0	23.33	0	0
	714.5	23165	3	QPSK	1	7	23.76	0	0
	714.5	23165	3	QPSK	1	14	23.54	0	0
	714.5	23165	3	QPSK	8	0	22.32	0-1	1
	714.5	23165	3	QPSK	8	4	22.36	0-1	1
	714.5	23165	3	QPSK	8	7	22.31	0-1	1
	714.5	23165	3	QPSK	15	0	22.61	0-1	1
	714.5	23165	3	16-QAM	1	0	23.27	0-1	1
	714.5	23165	3	16-QAM	1	7	23.20	0-1	1
	714.5	23165	3	16-QAM	1	14	23.16	0-1	1
	714.5	23165	3	16-QAM	8	0	21.62	0-2	2
	714.5	23165	3	16-QAM	8	4	21.67	0-2	2
	714.5	23165	3	16-QAM	8	7	21.66	0-2	2
	714.5	23165	3	16-QAM	15	0	21.63	0-2	2

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	699.7	23017	1.4	QPSK	1	0	24.01	0	0
	699.7	23017	1.4	QPSK	1	2	24.50	0	0
	699.7	23017	1.4	QPSK	1	5	24.13	0	0
	699.7	23017	1.4	QPSK	3	0	24.29	0	0
	699.7	23017	1.4	QPSK	3	2	24.34	0	0
	699.7	23017	1.4	QPSK	3	3	24.24	0	0
	699.7	23017	1.4	QPSK	6	0	23.26	0-1	1
	699.7	23017	1.4	16-QAM	1	0	23.49	0-1	1
	699.7	23017	1.4	16-QAM	1	2	23.43	0-1	1
	699.7	23017	1.4	16-QAM	1	5	23.30	0-1	1
	699.7	23017	1.4	16-QAM	3	0	23.24	0-1	1
	699.7	23017	1.4	16-QAM	3	2	23.40	0-1	1
	699.7	23017	1.4	16-QAM	3	3	23.41	0-1	1
	699.7	23017	1.4	16-QAM	6	0	22.36	0-2	2
Mid	707.5	23095	1.4	QPSK	1	0	23.86	0	0
	707.5	23095	1.4	QPSK	1	2	23.91	0	0
	707.5	23095	1.4	QPSK	1	5	23.53	0	0
	707.5	23095	1.4	QPSK	3	0	23.33	0	0
	707.5	23095	1.4	QPSK	3	2	23.42	0	0
	707.5	23095	1.4	QPSK	3	3	23.55	0	0
	707.5	23095	1.4	QPSK	6	0	22.59	0-1	1
	707.5	23095	1.4	16-QAM	1	0	23.04	0-1	1
	707.5	23095	1.4	16-QAM	1	2	22.87	0-1	1
	707.5	23095	1.4	16-QAM	1	5	22.88	0-1	1
	707.5	23095	1.4	16-QAM	3	0	22.63	0-1	1
	707.5	23095	1.4	16-QAM	3	2	22.82	0-1	1
	707.5	23095	1.4	16-QAM	3	3	22.82	0-1	1
	707.5	23095	1.4	16-QAM	6	0	21.85	0-2	2
High	715.3	23173	1.4	QPSK	1	0	23.28	0	0
	715.3	23173	1.4	QPSK	1	2	23.41	0	0
	715.3	23173	1.4	QPSK	1	5	23.17	0	0
	715.3	23173	1.4	QPSK	3	0	23.22	0	0
	715.3	23173	1.4	QPSK	3	2	23.30	0	0
	715.3	23173	1.4	QPSK	3	3	23.40	0	0
	715.3	23173	1.4	QPSK	6	0	22.49	0-1	1
	715.3	23173	1.4	16-QAM	1	0	22.64	0-1	1
	715.3	23173	1.4	16-QAM	1	2	22.69	0-1	1
	715.3	23173	1.4	16-QAM	1	5	22.71	0-1	1
	715.3	23173	1.4	16-QAM	3	0	22.44	0-1	1
	715.3	23173	1.4	16-QAM	3	2	22.63	0-1	1
	715.3	23173	1.4	16-QAM	3	3	22.57	0-1	1
	715.3	23173	1.4	16-QAM	6	0	21.66	0-2	2

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9.4.2 Maximum LTE Band 26 (Cell) Conducted Powers

Table 9-10
Maximum LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	836.5	26915	15	QPSK	1	0	23.86	0	0
	836.5	26915	15	QPSK	1	36	23.62	0	0
	836.5	26915	15	QPSK	1	74	23.65	0	0
	836.5	26915	15	QPSK	36	0	22.60	0-1	1
	836.5	26915	15	QPSK	36	18	22.62	0-1	1
	836.5	26915	15	QPSK	36	37	22.50	0-1	1
	836.5	26915	15	QPSK	75	0	22.52	0-1	1
	836.5	26915	15	16QAM	1	0	23.12	0-1	1
	836.5	26915	15	16QAM	1	36	22.78	0-1	1
	836.5	26915	15	16QAM	1	74	22.66	0-1	1
	836.5	26915	15	16QAM	36	0	21.59	0-2	2
	836.5	26915	15	16QAM	36	18	21.61	0-2	2
	836.5	26915	15	16QAM	36	37	21.55	0-2	2
	836.5	26915	15	16QAM	75	0	21.56	0-2	2

Note: LTE Band 26 at 15 MHz bandwidth is only supported for FCC Rule Part 22H. There are not three non overlapping channels within FCC Rule Part 22H. 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
Maximum LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	819	26740	10	QPSK	1	0	23.74	0	0
	819	26740	10	QPSK	1	25	23.73	0	0
	819	26740	10	QPSK	1	49	23.76	0	0
	819	26740	10	QPSK	25	0	22.57	0-1	1
	819	26740	10	QPSK	25	12	22.54	0-1	1
	819	26740	10	QPSK	25	25	22.62	0-1	1
	819	26740	10	QPSK	50	0	22.67	0-1	1
	819	26740	10	16QAM	1	0	22.89	0-1	1
	819	26740	10	16QAM	1	25	22.88	0-1	1
	819	26740	10	16QAM	1	49	22.94	0-1	1
	819	26740	10	16QAM	25	0	21.57	0-2	2
	819	26740	10	16QAM	25	12	21.54	0-2	2
	819	26740	10	16QAM	25	25	21.62	0-2	2
	819	26740	10	16QAM	50	0	21.63	0-2	2
Mid	831.5	26865	10	QPSK	1	0	23.81	0	0
	831.5	26865	10	QPSK	1	25	23.69	0	0
	831.5	26865	10	QPSK	1	49	23.63	0	0
	831.5	26865	10	QPSK	25	0	22.60	0-1	1
	831.5	26865	10	QPSK	25	12	22.59	0-1	1
	831.5	26865	10	QPSK	25	25	22.55	0-1	1
	831.5	26865	10	QPSK	50	0	22.59	0-1	1
	831.5	26865	10	16QAM	1	0	23.00	0-1	1
	831.5	26865	10	16QAM	1	25	22.90	0-1	1
	831.5	26865	10	16QAM	1	49	22.74	0-1	1
	831.5	26865	10	16QAM	25	0	21.59	0-2	2
	831.5	26865	10	16QAM	25	12	21.59	0-2	2
	831.5	26865	10	16QAM	25	25	21.51	0-2	2
	831.5	26865	10	16QAM	50	0	21.54	0-2	2
High	844	26990	10	QPSK	1	0	23.72	0	0
	844	26990	10	QPSK	1	25	23.51	0	0
	844	26990	10	QPSK	1	49	23.39	0	0
	844	26990	10	QPSK	25	0	22.37	0-1	1
	844	26990	10	QPSK	25	12	22.35	0-1	1
	844	26990	10	QPSK	25	25	22.32	0-1	1
	844	26990	10	QPSK	50	0	22.35	0-1	1
	844	26990	10	16QAM	1	0	22.80	0-1	1
	844	26990	10	16QAM	1	25	22.71	0-1	1
	844	26990	10	16QAM	1	49	22.62	0-1	1
	844	26990	10	16QAM	25	0	21.37	0-2	2
	844	26990	10	16QAM	25	12	21.35	0-2	2
	844	26990	10	16QAM	25	25	21.29	0-2	2
	844	26990	10	16QAM	50	0	21.31	0-2	2

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Table 9-12
Maximum LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	816.5	26715	5	QPSK	1	0	23.68	0	0
	816.5	26715	5	QPSK	1	12	23.50	0	0
	816.5	26715	5	QPSK	1	24	23.67	0	0
	816.5	26715	5	QPSK	12	0	22.61	0-1	1
	816.5	26715	5	QPSK	12	6	22.58	0-1	1
	816.5	26715	5	QPSK	12	13	22.61	0-1	1
	816.5	26715	5	QPSK	25	0	22.58	0-1	1
	816.5	26715	5	16-QAM	1	0	23.19	0-1	1
	816.5	26715	5	16-QAM	1	12	23.03	0-1	1
	816.5	26715	5	16-QAM	1	24	23.09	0-1	1
	816.5	26715	5	16-QAM	12	0	21.58	0-2	2
	816.5	26715	5	16-QAM	12	6	21.57	0-2	2
	816.5	26715	5	16-QAM	12	13	21.59	0-2	2
	816.5	26715	5	16-QAM	25	0	21.54	0-2	2
Mid	831.5	26865	5	QPSK	1	0	23.69	0	0
	831.5	26865	5	QPSK	1	12	23.54	0	0
	831.5	26865	5	QPSK	1	24	23.68	0	0
	831.5	26865	5	QPSK	12	0	22.65	0-1	1
	831.5	26865	5	QPSK	12	6	22.62	0-1	1
	831.5	26865	5	QPSK	12	13	22.61	0-1	1
	831.5	26865	5	QPSK	25	0	22.59	0-1	1
	831.5	26865	5	16-QAM	1	0	23.13	0-1	1
	831.5	26865	5	16-QAM	1	12	22.88	0-1	1
	831.5	26865	5	16-QAM	1	24	23.16	0-1	1
	831.5	26865	5	16-QAM	12	0	21.64	0-2	2
	831.5	26865	5	16-QAM	12	6	21.62	0-2	2
	831.5	26865	5	16-QAM	12	13	21.60	0-2	2
	831.5	26865	5	16-QAM	25	0	21.58	0-2	2
High	846.5	27015	5	QPSK	1	0	23.54	0	0
	846.5	27015	5	QPSK	1	12	23.26	0	0
	846.5	27015	5	QPSK	1	24	23.42	0	0
	846.5	27015	5	QPSK	12	0	22.38	0-1	1
	846.5	27015	5	QPSK	12	6	22.39	0-1	1
	846.5	27015	5	QPSK	12	13	22.32	0-1	1
	846.5	27015	5	QPSK	25	0	22.37	0-1	1
	846.5	27015	5	16-QAM	1	0	23.08	0-1	1
	846.5	27015	5	16-QAM	1	12	22.66	0-1	1
	846.5	27015	5	16-QAM	1	24	22.89	0-1	1
	846.5	27015	5	16-QAM	12	0	21.37	0-2	2
	846.5	27015	5	16-QAM	12	6	21.38	0-2	2
	846.5	27015	5	16-QAM	12	13	21.30	0-2	2
	846.5	27015	5	16-QAM	25	0	21.31	0-2	2

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Table 9-13
Maximum LTE Band 26 (Cell) Conducted Powers – 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	815.5	26705	3	QPSK	1	0	23.67	0	0
	815.5	26705	3	QPSK	1	7	23.66	0	0
	815.5	26705	3	QPSK	1	14	23.68	0	0
	815.5	26705	3	QPSK	8	0	22.60	0-1	1
	815.5	26705	3	QPSK	8	4	22.53	0-1	1
	815.5	26705	3	QPSK	8	7	22.54	0-1	1
	815.5	26705	3	QPSK	15	0	22.52	0-1	1
	815.5	26705	3	16-QAM	1	0	22.83	0-1	1
	815.5	26705	3	16-QAM	1	7	23.12	0-1	1
	815.5	26705	3	16-QAM	1	14	22.84	0-1	1
	815.5	26705	3	16-QAM	8	0	21.61	0-2	2
	815.5	26705	3	16-QAM	8	4	21.53	0-2	2
	815.5	26705	3	16-QAM	8	7	21.56	0-2	2
	815.5	26705	3	16-QAM	15	0	21.51	0-2	2
Mid	831.5	26865	3	QPSK	1	0	23.72	0	0
	831.5	26865	3	QPSK	1	7	23.80	0	0
	831.5	26865	3	QPSK	1	14	23.70	0	0
	831.5	26865	3	QPSK	8	0	22.61	0-1	1
	831.5	26865	3	QPSK	8	4	22.60	0-1	1
	831.5	26865	3	QPSK	8	7	22.56	0-1	1
	831.5	26865	3	QPSK	15	0	22.56	0-1	1
	831.5	26865	3	16-QAM	1	0	22.91	0-1	1
	831.5	26865	3	16-QAM	1	7	23.16	0-1	1
	831.5	26865	3	16-QAM	1	14	22.95	0-1	1
	831.5	26865	3	16-QAM	8	0	21.60	0-2	2
	831.5	26865	3	16-QAM	8	4	21.57	0-2	2
	831.5	26865	3	16-QAM	8	7	21.56	0-2	2
	831.5	26865	3	16-QAM	15	0	21.52	0-2	2
High	847.5	27025	3	QPSK	1	0	23.40	0	0
	847.5	27025	3	QPSK	1	7	23.66	0	0
	847.5	27025	3	QPSK	1	14	23.35	0	0
	847.5	27025	3	QPSK	8	0	22.33	0-1	1
	847.5	27025	3	QPSK	8	4	22.34	0-1	1
	847.5	27025	3	QPSK	8	7	22.32	0-1	1
	847.5	27025	3	QPSK	15	0	22.31	0-1	1
	847.5	27025	3	16-QAM	1	0	22.62	0-1	1
	847.5	27025	3	16-QAM	1	7	22.95	0-1	1
	847.5	27025	3	16-QAM	1	14	22.55	0-1	1
	847.5	27025	3	16-QAM	8	0	21.34	0-2	2
	847.5	27025	3	16-QAM	8	4	21.33	0-2	2
	847.5	27025	3	16-QAM	8	7	21.34	0-2	2
	847.5	27025	3	16-QAM	15	0	21.27	0-2	2

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Table 9-14
Maximum LTE Band 26 (Cell) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]	Deviation [dB]
Low	814.7	26697	1.4	QPSK	1	0	23.74	0	0	-0.26
	814.7	26697	1.4	QPSK	1	2	24.25	0	0	0.25
	814.7	26697	1.4	QPSK	1	5	24.04	0	0	0.04
	814.7	26697	1.4	QPSK	3	0	24.12	0	0	0.12
	814.7	26697	1.4	QPSK	3	2	24.10	0	0	0.10
	814.7	26697	1.4	QPSK	3	3	24.07	0	0	0.07
	814.7	26697	1.4	QPSK	6	0	23.05	0-1	1	0.05
	814.7	26697	1.4	16-QAM	1	0	22.74	0-1	1	-0.26
	814.7	26697	1.4	16-QAM	1	2	22.81	0-1	1	-0.19
	814.7	26697	1.4	16-QAM	1	5	22.81	0-1	1	-0.19
	814.7	26697	1.4	16-QAM	3	0	22.75	0-1	1	-0.25
	814.7	26697	1.4	16-QAM	3	2	22.73	0-1	1	-0.27
Mid	814.7	26697	1.4	16-QAM	3	3	22.69	0-1	1	-0.31
	814.7	26697	1.4	16-QAM	6	0	21.57	0-2	2	-0.43
	831.5	26865	1.4	QPSK	1	0	23.82	0	0	-0.18
	831.5	26865	1.4	QPSK	1	2	23.78	0	0	-0.22
	831.5	26865	1.4	QPSK	1	5	23.85	0	0	-0.15
	831.5	26865	1.4	QPSK	3	0	23.57	0	0	-0.43
	831.5	26865	1.4	QPSK	3	2	23.66	0	0	-0.34
	831.5	26865	1.4	QPSK	3	3	23.54	0	0	-0.46
	831.5	26865	1.4	QPSK	6	0	22.54	0-1	1	-0.46
	831.5	26865	1.4	16-QAM	1	0	22.95	0-1	1	-0.05
	831.5	26865	1.4	16-QAM	1	2	22.85	0-1	1	-0.15
	831.5	26865	1.4	16-QAM	1	5	22.93	0-1	1	-0.07
High	848.3	27033	1.4	16-QAM	3	0	22.70	0-1	1	-0.30
	848.3	27033	1.4	16-QAM	3	2	22.73	0-1	1	-0.27
	848.3	27033	1.4	16-QAM	3	3	22.67	0-1	1	-0.33
	848.3	27033	1.4	16-QAM	6	0	21.57	0-2	2	-0.43
	848.3	27033	1.4	QPSK	1	0	23.79	0	0	-0.21
	848.3	27033	1.4	QPSK	1	2	23.98	0	0	-0.02
	848.3	27033	1.4	QPSK	1	5	23.95	0	0	-0.05
	848.3	27033	1.4	QPSK	3	0	24.24	0	0	0.24
	848.3	27033	1.4	QPSK	3	2	24.28	0	0	0.28
	848.3	27033	1.4	QPSK	3	3	24.28	0	0	0.28
	848.3	27033	1.4	QPSK	6	0	23.40	0-1	1	0.40
	848.3	27033	1.4	16-QAM	1	0	22.55	0-1	1	-0.45
	848.3	27033	1.4	16-QAM	1	2	22.64	0-1	1	-0.36
	848.3	27033	1.4	16-QAM	1	5	22.89	0-1	1	-0.11
	848.3	27033	1.4	16-QAM	3	0	23.30	0-1	1	0.30
	848.3	27033	1.4	16-QAM	3	2	22.54	0-1	1	-0.46
	848.3	27033	1.4	16-QAM	3	3	22.52	0-1	1	-0.48
	848.3	27033	1.4	16-QAM	6	0	21.56	0-2	2	-0.44

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9.4.3 Maximum LTE Band 4 (AWS) Conducted Powers

Table 9-15
Maximum LTE Band 4 (AWS) Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	1732.5	20175	20	QPSK	1	0	24.18	0	0
	1732.5	20175	20	QPSK	1	50	23.50	0	0
	1732.5	20175	20	QPSK	1	99	23.63	0	0
	1732.5	20175	20	QPSK	50	0	22.79	0-1	1
	1732.5	20175	20	QPSK	50	25	22.55	0-1	1
	1732.5	20175	20	QPSK	50	50	22.50	0-1	1
	1732.5	20175	20	QPSK	100	0	22.53	0-1	1
	1732.5	20175	20	16QAM	1	0	23.10	0-1	1
	1732.5	20175	20	16QAM	1	50	22.83	0-1	1
	1732.5	20175	20	16QAM	1	99	22.97	0-1	1
	1732.5	20175	20	16QAM	50	0	21.65	0-2	2
	1732.5	20175	20	16QAM	50	25	21.50	0-2	2
	1732.5	20175	20	16QAM	50	50	21.51	0-2	2
	1732.5	20175	20	16QAM	100	0	21.57	0-2	2

Note: LTE Band 4 (AWS) 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 9-16
Maximum LTE Band 4 (AWS) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1717.5	20025	15	QPSK	1	0	24.01	0	0
	1717.5	20025	15	QPSK	1	36	23.40	0	0
	1717.5	20025	15	QPSK	1	74	23.57	0	0
	1717.5	20025	15	QPSK	36	0	22.56	0-1	1
	1717.5	20025	15	QPSK	36	18	22.43	0-1	1
	1717.5	20025	15	QPSK	36	37	22.45	0-1	1
	1717.5	20025	15	QPSK	75	0	22.46	0-1	1
	1717.5	20025	15	16QAM	1	0	22.50	0-1	1
	1717.5	20025	15	16QAM	1	36	22.91	0-1	1
	1717.5	20025	15	16QAM	1	74	22.99	0-1	1
	1717.5	20025	15	16QAM	36	0	21.61	0-2	2
	1717.5	20025	15	16QAM	36	18	21.41	0-2	2
	1717.5	20025	15	16QAM	36	37	21.38	0-2	2
	1717.5	20025	15	16QAM	75	0	21.44	0-2	2
Mid	1732.5	20175	15	QPSK	1	0	24.12	0	0
	1732.5	20175	15	QPSK	1	36	23.50	0	0
	1732.5	20175	15	QPSK	1	74	23.73	0	0
	1732.5	20175	15	QPSK	36	0	22.65	0-1	1
	1732.5	20175	15	QPSK	36	18	22.47	0-1	1
	1732.5	20175	15	QPSK	36	37	22.47	0-1	1
	1732.5	20175	15	QPSK	75	0	22.49	0-1	1
	1732.5	20175	15	16QAM	1	0	23.01	0-1	1
	1732.5	20175	15	16QAM	1	36	22.43	0-1	1
	1732.5	20175	15	16QAM	1	74	22.54	0-1	1
	1732.5	20175	15	16QAM	36	0	21.62	0-2	2
	1732.5	20175	15	16QAM	36	18	21.45	0-2	2
	1732.5	20175	15	16QAM	36	37	21.44	0-2	2
	1732.5	20175	15	16QAM	75	0	21.52	0-2	2
High	1747.5	20325	15	QPSK	1	0	24.13	0	0
	1747.5	20325	15	QPSK	1	36	23.68	0	0
	1747.5	20325	15	QPSK	1	74	23.72	0	0
	1747.5	20325	15	QPSK	36	0	22.75	0-1	1
	1747.5	20325	15	QPSK	36	18	22.55	0-1	1
	1747.5	20325	15	QPSK	36	37	22.51	0-1	1
	1747.5	20325	15	QPSK	75	0	22.57	0-1	1
	1747.5	20325	15	16QAM	1	0	23.50	0-1	1
	1747.5	20325	15	16QAM	1	36	22.96	0-1	1
	1747.5	20325	15	16QAM	1	74	23.12	0-1	1
	1747.5	20325	15	16QAM	36	0	21.72	0-2	2
	1747.5	20325	15	16QAM	36	18	21.56	0-2	2
	1747.5	20325	15	16QAM	36	37	21.52	0-2	2
	1747.5	20325	15	16QAM	75	0	21.51	0-2	2

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Table 9-17
Maximum LTE Band 4 (AWS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1715	20000	10	QPSK	1	0	23.43	0	0
	1715	20000	10	QPSK	1	25	23.31	0	0
	1715	20000	10	QPSK	1	49	23.26	0	0
	1715	20000	10	QPSK	25	0	22.32	0-1	1
	1715	20000	10	QPSK	25	12	22.27	0-1	1
	1715	20000	10	QPSK	25	25	22.27	0-1	1
	1715	20000	10	QPSK	50	0	22.23	0-1	1
	1715	20000	10	16QAM	1	0	22.73	0-1	1
	1715	20000	10	16QAM	1	25	22.47	0-1	1
	1715	20000	10	16QAM	1	49	22.58	0-1	1
	1715	20000	10	16QAM	25	0	21.36	0-2	2
	1715	20000	10	16QAM	25	12	21.27	0-2	2
	1715	20000	10	16QAM	25	25	21.31	0-2	2
	1715	20000	10	16QAM	50	0	21.28	0-2	2
Mid	1732.5	20175	10	QPSK	1	0	23.76	0	0
	1732.5	20175	10	QPSK	1	25	23.57	0	0
	1732.5	20175	10	QPSK	1	49	23.46	0	0
	1732.5	20175	10	QPSK	25	0	22.48	0-1	1
	1732.5	20175	10	QPSK	25	12	22.38	0-1	1
	1732.5	20175	10	QPSK	25	25	22.28	0-1	1
	1732.5	20175	10	QPSK	50	0	22.41	0-1	1
	1732.5	20175	10	16QAM	1	0	23.21	0-1	1
	1732.5	20175	10	16QAM	1	25	23.09	0-1	1
	1732.5	20175	10	16QAM	1	49	23.26	0-1	1
	1732.5	20175	10	16QAM	25	0	21.45	0-2	2
	1732.5	20175	10	16QAM	25	12	21.42	0-2	2
	1732.5	20175	10	16QAM	25	25	21.30	0-2	2
	1732.5	20175	10	16QAM	50	0	21.42	0-2	2
High	1750	20350	10	QPSK	1	0	24.00	0	0
	1750	20350	10	QPSK	1	25	23.60	0	0
	1750	20350	10	QPSK	1	49	23.49	0	0
	1750	20350	10	QPSK	25	0	22.50	0-1	1
	1750	20350	10	QPSK	25	12	22.41	0-1	1
	1750	20350	10	QPSK	25	25	22.42	0-1	1
	1750	20350	10	QPSK	50	0	22.44	0-1	1
	1750	20350	10	16QAM	1	0	23.06	0-1	1
	1750	20350	10	16QAM	1	25	22.38	0-1	1
	1750	20350	10	16QAM	1	49	22.83	0-1	1
	1750	20350	10	16QAM	25	0	21.56	0-2	2
	1750	20350	10	16QAM	25	12	21.44	0-2	2
	1750	20350	10	16QAM	25	25	21.49	0-2	2
	1750	20350	10	16QAM	50	0	21.40	0-2	2

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Table 9-18
Maximum LTE Band 4 (AWS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1712.5	19975	5	QPSK	1	0	23.48	0	0
	1712.5	19975	5	QPSK	1	12	23.31	0	0
	1712.5	19975	5	QPSK	1	24	23.27	0	0
	1712.5	19975	5	QPSK	12	0	22.28	0-1	1
	1712.5	19975	5	QPSK	12	6	22.30	0-1	1
	1712.5	19975	5	QPSK	12	13	22.17	0-1	1
	1712.5	19975	5	QPSK	25	0	22.32	0-1	1
	1712.5	19975	5	16-QAM	1	0	22.78	0-1	1
	1712.5	19975	5	16-QAM	1	12	23.06	0-1	1
	1712.5	19975	5	16-QAM	1	24	22.59	0-1	1
	1712.5	19975	5	16-QAM	12	0	21.35	0-2	2
	1712.5	19975	5	16-QAM	12	6	21.29	0-2	2
	1712.5	19975	5	16-QAM	12	13	21.20	0-2	2
	1712.5	19975	5	16-QAM	25	0	21.33	0-2	2
Mid	1732.5	20175	5	QPSK	1	0	23.50	0	0
	1732.5	20175	5	QPSK	1	12	23.36	0	0
	1732.5	20175	5	QPSK	1	24	23.46	0	0
	1732.5	20175	5	QPSK	12	0	22.44	0-1	1
	1732.5	20175	5	QPSK	12	6	22.45	0-1	1
	1732.5	20175	5	QPSK	12	13	22.33	0-1	1
	1732.5	20175	5	QPSK	25	0	22.41	0-1	1
	1732.5	20175	5	16-QAM	1	0	23.00	0-1	1
	1732.5	20175	5	16-QAM	1	12	23.03	0-1	1
	1732.5	20175	5	16-QAM	1	24	22.70	0-1	1
	1732.5	20175	5	16-QAM	12	0	21.33	0-2	2
	1732.5	20175	5	16-QAM	12	6	21.43	0-2	2
	1732.5	20175	5	16-QAM	12	13	21.30	0-2	2
	1732.5	20175	5	16-QAM	25	0	21.41	0-2	2
High	1752.5	20375	5	QPSK	1	0	23.85	0	0
	1752.5	20375	5	QPSK	1	12	23.73	0	0
	1752.5	20375	5	QPSK	1	24	23.51	0	0
	1752.5	20375	5	QPSK	12	0	22.60	0-1	1
	1752.5	20375	5	QPSK	12	6	22.05	0-1	1
	1752.5	20375	5	QPSK	12	13	22.09	0-1	1
	1752.5	20375	5	QPSK	25	0	22.07	0-1	1
	1752.5	20375	5	16-QAM	1	0	22.40	0-1	1
	1752.5	20375	5	16-QAM	1	12	22.63	0-1	1
	1752.5	20375	5	16-QAM	1	24	22.54	0-1	1
	1752.5	20375	5	16-QAM	12	0	21.18	0-2	2
	1752.5	20375	5	16-QAM	12	6	21.10	0-2	2
	1752.5	20375	5	16-QAM	12	13	21.08	0-2	2
	1752.5	20375	5	16-QAM	25	0	21.10	0-2	2

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Table 9-19
Maximum LTE Band 4 (AWS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1711.5	19965	3	QPSK	1	0	23.34	0	0
	1711.5	19965	3	QPSK	1	7	23.51	0	0
	1711.5	19965	3	QPSK	1	14	23.45	0	0
	1711.5	19965	3	QPSK	8	0	22.35	0-1	1
	1711.5	19965	3	QPSK	8	4	22.31	0-1	1
	1711.5	19965	3	QPSK	8	7	22.40	0-1	1
	1711.5	19965	3	QPSK	15	0	22.37	0-1	1
	1711.5	19965	3	16-QAM	1	0	22.83	0-1	1
	1711.5	19965	3	16-QAM	1	7	23.25	0-1	1
	1711.5	19965	3	16-QAM	1	14	22.73	0-1	1
	1711.5	19965	3	16-QAM	8	0	21.35	0-2	2
	1711.5	19965	3	16-QAM	8	4	21.45	0-2	2
	1711.5	19965	3	16-QAM	8	7	21.34	0-2	2
Mid	1732.5	20175	3	QPSK	1	0	23.45	0	0
	1732.5	20175	3	QPSK	1	7	23.78	0	0
	1732.5	20175	3	QPSK	1	14	23.36	0	0
	1732.5	20175	3	QPSK	8	0	22.48	0-1	1
	1732.5	20175	3	QPSK	8	4	22.45	0-1	1
	1732.5	20175	3	QPSK	8	7	22.38	0-1	1
	1732.5	20175	3	QPSK	15	0	22.40	0-1	1
	1732.5	20175	3	16-QAM	1	0	23.19	0-1	1
	1732.5	20175	3	16-QAM	1	7	22.86	0-1	1
	1732.5	20175	3	16-QAM	1	14	22.68	0-1	1
	1732.5	20175	3	16-QAM	8	0	21.43	0-2	2
	1732.5	20175	3	16-QAM	8	4	21.46	0-2	2
	1732.5	20175	3	16-QAM	8	7	21.46	0-2	2
	1732.5	20175	3	16-QAM	15	0	21.41	0-2	2
High	1753.5	20385	3	QPSK	1	0	23.78	0	0
	1753.5	20385	3	QPSK	1	7	23.67	0	0
	1753.5	20385	3	QPSK	1	14	23.58	0	0
	1753.5	20385	3	QPSK	8	0	22.04	0-1	1
	1753.5	20385	3	QPSK	8	4	22.13	0-1	1
	1753.5	20385	3	QPSK	8	7	22.09	0-1	1
	1753.5	20385	3	QPSK	15	0	22.13	0-1	1
	1753.5	20385	3	16-QAM	1	0	22.85	0-1	1
	1753.5	20385	3	16-QAM	1	7	22.64	0-1	1
	1753.5	20385	3	16-QAM	1	14	22.63	0-1	1
	1753.5	20385	3	16-QAM	8	0	21.15	0-2	2
	1753.5	20385	3	16-QAM	8	4	21.20	0-2	2
	1753.5	20385	3	16-QAM	8	7	21.19	0-2	2
	1753.5	20385	3	16-QAM	15	0	21.14	0-2	2

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Table 9-20
Maximum LTE Band 4 (AWS) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1710.7	19957	1.4	QPSK	1	0	23.40	0	0
	1710.7	19957	1.4	QPSK	1	2	23.61	0	0
	1710.7	19957	1.4	QPSK	1	5	23.51	0	0
	1710.7	19957	1.4	QPSK	3	0	23.43	0	0
	1710.7	19957	1.4	QPSK	3	2	23.51	0	0
	1710.7	19957	1.4	QPSK	3	3	23.58	0	0
	1710.7	19957	1.4	QPSK	6	0	22.58	0-1	1
	1710.7	19957	1.4	16-QAM	1	0	22.77	0-1	1
	1710.7	19957	1.4	16-QAM	1	2	22.68	0-1	1
	1710.7	19957	1.4	16-QAM	1	5	22.68	0-1	1
	1710.7	19957	1.4	16-QAM	3	0	22.61	0-1	1
	1710.7	19957	1.4	16-QAM	3	2	22.63	0-1	1
Mid	1710.7	19957	1.4	16-QAM	3	3	22.55	0-1	1
	1710.7	19957	1.4	16-QAM	6	0	21.46	0-2	2
	1732.5	20175	1.4	QPSK	1	0	23.33	0	0
	1732.5	20175	1.4	QPSK	1	2	23.45	0	0
	1732.5	20175	1.4	QPSK	1	5	23.46	0	0
	1732.5	20175	1.4	QPSK	3	0	23.40	0	0
	1732.5	20175	1.4	QPSK	3	2	23.42	0	0
	1732.5	20175	1.4	QPSK	3	3	23.38	0	0
	1732.5	20175	1.4	QPSK	6	0	22.34	0-1	1
	1732.5	20175	1.4	16-QAM	1	0	22.95	0-1	1
	1732.5	20175	1.4	16-QAM	1	2	22.64	0-1	1
	1732.5	20175	1.4	16-QAM	1	5	22.57	0-1	1
High	1732.5	20175	1.4	16-QAM	3	0	22.97	0-1	1
	1732.5	20175	1.4	16-QAM	3	2	22.67	0-1	1
	1732.5	20175	1.4	16-QAM	3	3	22.69	0-1	1
	1732.5	20175	1.4	16-QAM	6	0	21.64	0-2	2
	1754.3	20393	1.4	QPSK	1	0	23.99	0	0
	1754.3	20393	1.4	QPSK	1	2	24.00	0	0
	1754.3	20393	1.4	QPSK	1	5	24.04	0	0
	1754.3	20393	1.4	QPSK	3	0	24.23	0	0
	1754.3	20393	1.4	QPSK	3	2	24.15	0	0
	1754.3	20393	1.4	QPSK	3	3	24.09	0	0
	1754.3	20393	1.4	QPSK	6	0	22.52	0-1	1
	1754.3	20393	1.4	16-QAM	1	0	22.48	0-1	1
	1754.3	20393	1.4	16-QAM	1	2	22.52	0-1	1
	1754.3	20393	1.4	16-QAM	1	5	22.52	0-1	1
	1754.3	20393	1.4	16-QAM	3	0	22.26	0-1	1
	1754.3	20393	1.4	16-QAM	3	2	22.34	0-1	1
	1754.3	20393	1.4	16-QAM	3	3	22.44	0-1	1
	1754.3	20393	1.4	16-QAM	6	0	21.32	0-2	2

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9.4.4 Maximum LTE Band 25 (PCS) Conducted Powers

Table 9-21
Maximum LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1860	26140	20	QPSK	1	0	24.30	0	0
	1860	26140	20	QPSK	1	50	23.54	0	0
	1860	26140	20	QPSK	1	99	23.57	0	0
	1860	26140	20	QPSK	50	0	22.70	0-1	1
	1860	26140	20	QPSK	50	25	22.50	0-1	1
	1860	26140	20	QPSK	50	50	22.50	0-1	1
	1860	26140	20	QPSK	100	0	22.55	0-1	1
	1860	26140	20	16QAM	1	0	23.33	0-1	1
	1860	26140	20	16QAM	1	50	22.50	0-1	1
	1860	26140	20	16QAM	1	99	22.80	0-1	1
	1860	26140	20	16QAM	50	0	21.69	0-2	2
	1860	26140	20	16QAM	50	25	21.45	0-2	2
Mid	1860	26140	20	16QAM	50	50	21.48	0-2	2
	1860	26140	20	16QAM	100	0	21.53	0-2	2
	1882.5	26365	20	QPSK	1	0	24.06	0	0
	1882.5	26365	20	QPSK	1	50	23.55	0	0
	1882.5	26365	20	QPSK	1	99	23.65	0	0
	1882.5	26365	20	QPSK	50	0	22.68	0-1	1
	1882.5	26365	20	QPSK	50	25	22.53	0-1	1
	1882.5	26365	20	QPSK	50	50	22.50	0-1	1
	1882.5	26365	20	QPSK	100	0	22.64	0-1	1
	1882.5	26365	20	16QAM	1	0	23.40	0-1	1
	1882.5	26365	20	16QAM	1	50	22.67	0-1	1
	1882.5	26365	20	16QAM	1	99	22.77	0-1	1
High	1882.5	26365	20	16QAM	50	0	21.68	0-2	2
	1882.5	26365	20	16QAM	50	25	21.62	0-2	2
	1882.5	26365	20	16QAM	50	50	21.50	0-2	2
	1882.5	26365	20	16QAM	100	0	21.57	0-2	2
	1905	26590	20	QPSK	1	0	24.03	0	0
	1905	26590	20	QPSK	1	50	23.51	0	0
	1905	26590	20	QPSK	1	99	23.57	0	0
	1905	26590	20	QPSK	50	0	22.63	0-1	1
	1905	26590	20	QPSK	50	25	22.50	0-1	1
	1905	26590	20	QPSK	50	50	22.31	0-1	1
	1905	26590	20	QPSK	100	0	22.50	0-1	1
	1905	26590	20	16QAM	1	0	23.27	0-1	1
	1905	26590	20	16QAM	1	50	22.53	0-1	1
	1905	26590	20	16QAM	1	99	22.51	0-1	1
	1905	26590	20	16QAM	50	0	21.63	0-2	2
	1905	26590	20	16QAM	50	25	21.46	0-2	2
	1905	26590	20	16QAM	50	50	21.31	0-2	2
	1905	26590	20	16QAM	100	0	21.53	0-2	2

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Table 9-22
Maximum LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1857.5	26115	15	QPSK	1	0	23.71	0	0
	1857.5	26115	15	QPSK	1	36	23.24	0	0
	1857.5	26115	15	QPSK	1	74	23.17	0	0
	1857.5	26115	15	QPSK	36	0	22.19	0-1	1
	1857.5	26115	15	QPSK	36	18	22.11	0-1	1
	1857.5	26115	15	QPSK	36	37	22.02	0-1	1
	1857.5	26115	15	QPSK	75	0	22.17	0-1	1
	1857.5	26115	15	16QAM	1	0	22.91	0-1	1
	1857.5	26115	15	16QAM	1	36	22.32	0-1	1
	1857.5	26115	15	16QAM	1	74	22.44	0-1	1
	1857.5	26115	15	16QAM	36	0	21.30	0-2	2
	1857.5	26115	15	16QAM	36	18	21.16	0-2	2
	1857.5	26115	15	16QAM	36	37	21.06	0-2	2
Mid	1857.5	26115	15	16QAM	75	0	21.11	0-2	2
	1882.5	26365	15	QPSK	1	0	23.73	0	0
	1882.5	26365	15	QPSK	1	36	23.23	0	0
	1882.5	26365	15	QPSK	1	74	23.19	0	0
	1882.5	26365	15	QPSK	36	0	22.33	0-1	1
	1882.5	26365	15	QPSK	36	18	22.21	0-1	1
	1882.5	26365	15	QPSK	36	37	22.16	0-1	1
	1882.5	26365	15	QPSK	75	0	22.22	0-1	1
	1882.5	26365	15	16QAM	1	0	22.97	0-1	1
	1882.5	26365	15	16QAM	1	36	22.34	0-1	1
	1882.5	26365	15	16QAM	1	74	22.48	0-1	1
	1882.5	26365	15	16QAM	36	0	21.32	0-2	2
	1882.5	26365	15	16QAM	36	18	21.20	0-2	2
	1882.5	26365	15	16QAM	36	37	21.10	0-2	2
High	1882.5	26365	15	16QAM	75	0	21.19	0-2	2
	1907.5	26615	15	QPSK	1	0	23.71	0	0
	1907.5	26615	15	QPSK	1	36	23.13	0	0
	1907.5	26615	15	QPSK	1	74	23.01	0	0
	1907.5	26615	15	QPSK	36	0	22.20	0-1	1
	1907.5	26615	15	QPSK	36	18	21.98	0-1	1
	1907.5	26615	15	QPSK	36	37	21.87	0-1	1
	1907.5	26615	15	QPSK	75	0	22.02	0-1	1
	1907.5	26615	15	16QAM	1	0	22.60	0-1	1
	1907.5	26615	15	16QAM	1	36	22.02	0-1	1
	1907.5	26615	15	16QAM	1	74	21.94	0-1	1
	1907.5	26615	15	16QAM	36	0	21.14	0-2	2
	1907.5	26615	15	16QAM	36	18	20.94	0-2	2
	1907.5	26615	15	16QAM	36	37	20.82	0-2	2
	1907.5	26615	15	16QAM	75	0	21.06	0-2	2

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Table 9-23
Maximum LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1855	26090	10	QPSK	1	0	23.43	0	0
	1855	26090	10	QPSK	1	25	23.18	0	0
	1855	26090	10	QPSK	1	49	23.10	0	0
	1855	26090	10	QPSK	25	0	22.09	0-1	1
	1855	26090	10	QPSK	25	12	22.06	0-1	1
	1855	26090	10	QPSK	25	25	22.02	0-1	1
	1855	26090	10	QPSK	50	0	22.11	0-1	1
	1855	26090	10	16QAM	1	0	22.69	0-1	1
	1855	26090	10	16QAM	1	25	22.35	0-1	1
	1855	26090	10	16QAM	1	49	22.32	0-1	1
	1855	26090	10	16QAM	25	0	21.11	0-2	2
	1855	26090	10	16QAM	25	12	21.07	0-2	2
	1855	26090	10	16QAM	25	25	21.03	0-2	2
Mid	1882.5	26365	10	QPSK	1	0	23.33	0	0
	1882.5	26365	10	QPSK	1	25	23.10	0	0
	1882.5	26365	10	QPSK	1	49	23.27	0	0
	1882.5	26365	10	QPSK	25	0	22.24	0-1	1
	1882.5	26365	10	QPSK	25	12	22.18	0-1	1
	1882.5	26365	10	QPSK	25	25	22.07	0-1	1
	1882.5	26365	10	QPSK	50	0	22.18	0-1	1
	1882.5	26365	10	16QAM	1	0	22.79	0-1	1
	1882.5	26365	10	16QAM	1	25	22.37	0-1	1
	1882.5	26365	10	16QAM	1	49	22.42	0-1	1
	1882.5	26365	10	16QAM	25	0	21.22	0-2	2
	1882.5	26365	10	16QAM	25	12	21.18	0-2	2
	1882.5	26365	10	16QAM	25	25	21.04	0-2	2
	1882.5	26365	10	16QAM	50	0	21.16	0-2	2
High	1910	26640	10	QPSK	1	0	23.17	0	0
	1910	26640	10	QPSK	1	25	22.93	0	0
	1910	26640	10	QPSK	1	49	22.83	0	0
	1910	26640	10	QPSK	25	0	22.00	0-1	1
	1910	26640	10	QPSK	25	12	21.84	0-1	1
	1910	26640	10	QPSK	25	25	21.72	0-1	1
	1910	26640	10	QPSK	50	0	21.86	0-1	1
	1910	26640	10	16QAM	1	0	22.45	0-1	1
	1910	26640	10	16QAM	1	25	22.30	0-1	1
	1910	26640	10	16QAM	1	49	22.09	0-1	1
	1910	26640	10	16QAM	25	0	21.02	0-2	2
	1910	26640	10	16QAM	25	12	20.86	0-2	2
	1910	26640	10	16QAM	25	25	20.78	0-2	2
	1910	26640	10	16QAM	50	0	20.87	0-2	2

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Table 9-24
Maximum LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1852.5	26065	5	QPSK	1	0	23.05	0	0
	1852.5	26065	5	QPSK	1	12	23.17	0	0
	1852.5	26065	5	QPSK	1	24	22.91	0	0
	1852.5	26065	5	QPSK	12	0	22.06	0-1	1
	1852.5	26065	5	QPSK	12	6	22.07	0-1	1
	1852.5	26065	5	QPSK	12	13	21.92	0-1	1
	1852.5	26065	5	QPSK	25	0	22.09	0-1	1
	1852.5	26065	5	16-QAM	1	0	22.60	0-1	1
	1852.5	26065	5	16-QAM	1	12	22.79	0-1	1
	1852.5	26065	5	16-QAM	1	24	22.43	0-1	1
	1852.5	26065	5	16-QAM	12	0	21.07	0-2	2
	1852.5	26065	5	16-QAM	12	6	21.12	0-2	2
	1852.5	26065	5	16-QAM	12	13	20.96	0-2	2
	1852.5	26065	5	16-QAM	25	0	21.09	0-2	2
Mid	1882.5	26365	5	QPSK	1	0	23.31	0	0
	1882.5	26365	5	QPSK	1	12	23.82	0	0
	1882.5	26365	5	QPSK	1	24	23.18	0	0
	1882.5	26365	5	QPSK	12	0	22.13	0-1	1
	1882.5	26365	5	QPSK	12	6	22.19	0-1	1
	1882.5	26365	5	QPSK	12	13	22.08	0-1	1
	1882.5	26365	5	QPSK	25	0	22.16	0-1	1
	1882.5	26365	5	16-QAM	1	0	22.73	0-1	1
	1882.5	26365	5	16-QAM	1	12	22.57	0-1	1
	1882.5	26365	5	16-QAM	1	24	22.61	0-1	1
	1882.5	26365	5	16-QAM	12	0	21.11	0-2	2
	1882.5	26365	5	16-QAM	12	6	21.23	0-2	2
	1882.5	26365	5	16-QAM	12	13	21.07	0-2	2
	1882.5	26365	5	16-QAM	25	0	21.13	0-2	2
High	1912.5	26665	5	QPSK	1	0	23.11	0	0
	1912.5	26665	5	QPSK	1	12	22.86	0	0
	1912.5	26665	5	QPSK	1	24	22.76	0	0
	1912.5	26665	5	QPSK	12	0	21.92	0-1	1
	1912.5	26665	5	QPSK	12	6	21.88	0-1	1
	1912.5	26665	5	QPSK	12	13	21.86	0-1	1
	1912.5	26665	5	QPSK	25	0	21.88	0-1	1
	1912.5	26665	5	16-QAM	1	0	22.51	0-1	1
	1912.5	26665	5	16-QAM	1	12	22.58	0-1	1
	1912.5	26665	5	16-QAM	1	24	22.30	0-1	1
	1912.5	26665	5	16-QAM	12	0	20.92	0-2	2
	1912.5	26665	5	16-QAM	12	6	20.87	0-2	2
	1912.5	26665	5	16-QAM	12	13	20.86	0-2	2
	1912.5	26665	5	16-QAM	25	0	20.90	0-2	2

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1851.5	26055	3	QPSK	1	0	23.15	0	0
	1851.5	26055	3	QPSK	1	7	23.57	0	0
	1851.5	26055	3	QPSK	1	14	22.96	0	0
	1851.5	26055	3	QPSK	8	0	22.12	0-1	1
	1851.5	26055	3	QPSK	8	4	22.13	0-1	1
	1851.5	26055	3	QPSK	8	7	22.11	0-1	1
	1851.5	26055	3	QPSK	15	0	22.07	0-1	1
	1851.5	26055	3	16-QAM	1	0	22.67	0-1	1
	1851.5	26055	3	16-QAM	1	7	22.93	0-1	1
	1851.5	26055	3	16-QAM	1	14	22.47	0-1	1
	1851.5	26055	3	16-QAM	8	0	21.03	0-2	2
	1851.5	26055	3	16-QAM	8	4	21.01	0-2	2
	1851.5	26055	3	16-QAM	8	7	21.02	0-2	2
Mid	1851.5	26055	3	16-QAM	15	0	21.06	0-2	2
	1882.5	26365	3	QPSK	1	0	23.26	0	0
	1882.5	26365	3	QPSK	1	7	23.52	0	0
	1882.5	26365	3	QPSK	1	14	23.28	0	0
	1882.5	26365	3	QPSK	8	0	22.12	0-1	1
	1882.5	26365	3	QPSK	8	4	22.21	0-1	1
	1882.5	26365	3	QPSK	8	7	22.14	0-1	1
	1882.5	26365	3	QPSK	15	0	22.21	0-1	1
	1882.5	26365	3	16-QAM	1	0	22.43	0-1	1
	1882.5	26365	3	16-QAM	1	7	22.61	0-1	1
	1882.5	26365	3	16-QAM	1	14	22.24	0-1	1
	1882.5	26365	3	16-QAM	8	0	21.01	0-2	2
	1882.5	26365	3	16-QAM	8	4	21.09	0-2	2
High	1882.5	26365	3	16-QAM	8	7	21.03	0-2	2
	1882.5	26365	3	16-QAM	15	0	21.12	0-2	2
	1913.5	26675	3	QPSK	1	0	22.93	0	0
	1913.5	26675	3	QPSK	1	7	23.48	0	0
	1913.5	26675	3	QPSK	1	14	22.86	0	0
	1913.5	26675	3	QPSK	8	0	21.93	0-1	1
	1913.5	26675	3	QPSK	8	4	21.99	0-1	1
	1913.5	26675	3	QPSK	8	7	21.92	0-1	1
	1913.5	26675	3	QPSK	15	0	21.93	0-1	1
	1913.5	26675	3	16-QAM	1	0	22.41	0-1	1
	1913.5	26675	3	16-QAM	1	7	22.74	0-1	1
	1913.5	26675	3	16-QAM	1	14	22.31	0-1	1
	1913.5	26675	3	16-QAM	8	0	20.82	0-2	2
	1913.5	26675	3	16-QAM	8	4	20.85	0-2	2
	1913.5	26675	3	16-QAM	8	7	20.85	0-2	2
	1913.5	26675	3	16-QAM	15	0	20.93	0-2	2

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Table 9-26
Maximum LTE Band 25 (PCS) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1850.7	26047	1.4	QPSK	1	0	24.02	0	0
	1850.7	26047	1.4	QPSK	1	2	24.08	0	0
	1850.7	26047	1.4	QPSK	1	5	23.53	0	0
	1850.7	26047	1.4	QPSK	3	0	23.41	0	0
	1850.7	26047	1.4	QPSK	3	2	23.51	0	0
	1850.7	26047	1.4	QPSK	3	3	23.48	0	0
	1850.7	26047	1.4	QPSK	6	0	22.39	0-1	1
	1850.7	26047	1.4	16-QAM	1	0	23.02	0-1	1
	1850.7	26047	1.4	16-QAM	1	2	22.97	0-1	1
	1850.7	26047	1.4	16-QAM	1	5	22.75	0-1	1
	1850.7	26047	1.4	16-QAM	3	0	22.59	0-1	1
	1850.7	26047	1.4	16-QAM	3	2	22.60	0-1	1
	1850.7	26047	1.4	16-QAM	3	3	22.54	0-1	1
	1850.7	26047	1.4	16-QAM	6	0	21.42	0-2	2
Mid	1882.5	26365	1.4	QPSK	1	0	23.64	0	0
	1882.5	26365	1.4	QPSK	1	2	23.56	0	0
	1882.5	26365	1.4	QPSK	1	5	23.20	0	0
	1882.5	26365	1.4	QPSK	3	0	23.00	0	0
	1882.5	26365	1.4	QPSK	3	2	23.07	0	0
	1882.5	26365	1.4	QPSK	3	3	23.03	0	0
	1882.5	26365	1.4	QPSK	6	0	22.04	0-1	1
	1882.5	26365	1.4	16-QAM	1	0	22.48	0-1	1
	1882.5	26365	1.4	16-QAM	1	2	22.67	0-1	1
	1882.5	26365	1.4	16-QAM	1	5	22.41	0-1	1
	1882.5	26365	1.4	16-QAM	3	0	22.06	0-1	1
	1882.5	26365	1.4	16-QAM	3	2	22.08	0-1	1
	1882.5	26365	1.4	16-QAM	3	3	22.08	0-1	1
	1882.5	26365	1.4	16-QAM	6	0	21.00	0-2	2
High	1914.3	26683	1.4	QPSK	1	0	23.23	0	0
	1914.3	26683	1.4	QPSK	1	2	23.46	0	0
	1914.3	26683	1.4	QPSK	1	5	23.24	0	0
	1914.3	26683	1.4	QPSK	3	0	23.30	0	0
	1914.3	26683	1.4	QPSK	3	2	23.32	0	0
	1914.3	26683	1.4	QPSK	3	3	23.35	0	0
	1914.3	26683	1.4	QPSK	6	0	22.22	0-1	1
	1914.3	26683	1.4	16-QAM	1	0	22.47	0-1	1
	1914.3	26683	1.4	16-QAM	1	2	23.14	0-1	1
	1914.3	26683	1.4	16-QAM	1	5	22.35	0-1	1
	1914.3	26683	1.4	16-QAM	3	0	22.19	0-1	1
	1914.3	26683	1.4	16-QAM	3	2	22.25	0-1	1
	1914.3	26683	1.4	16-QAM	3	3	22.23	0-1	1
	1914.3	26683	1.4	16-QAM	6	0	21.26	0-2	2

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9.4.5 Maximum LTE Band 41 Conducted Powers

Table 9-27
LTE Band 41 Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	2506.0	39750	20	QPSK	1	0	23.69	0	0
	2506.0	39750	20	QPSK	1	50	23.60	0	0
	2506.0	39750	20	QPSK	1	99	23.50	0	0
	2506.0	39750	20	QPSK	50	0	22.53	0-1	1
	2506.0	39750	20	QPSK	50	25	22.54	0-1	1
	2506.0	39750	20	QPSK	50	50	22.50	0-1	1
	2506.0	39750	20	QPSK	100	0	22.55	0-1	1
	2506.0	39750	20	16QAM	1	0	22.77	0-1	1
	2506.0	39750	20	16QAM	1	50	22.75	0-1	1
	2506.0	39750	20	16QAM	1	99	22.50	0-1	1
	2506.0	39750	20	16QAM	50	0	21.60	0-2	2
	2506.0	39750	20	16QAM	50	25	21.55	0-2	2
	2506.0	39750	20	16QAM	50	50	21.50	0-2	2
	2506.0	39750	20	16QAM	100	0	21.50	0-2	2
Low Mid	2549.5	40185	20	QPSK	1	0	24.30	0	0
	2549.5	40185	20	QPSK	1	50	23.98	0	0
	2549.5	40185	20	QPSK	1	99	23.50	0	0
	2549.5	40185	20	QPSK	50	0	22.98	0-1	1
	2549.5	40185	20	QPSK	50	25	22.32	0-1	1
	2549.5	40185	20	QPSK	50	50	22.30	0-1	1
	2549.5	40185	20	QPSK	100	0	22.30	0-1	1
	2549.5	40185	20	16-QAM	1	0	22.88	0-1	1
	2549.5	40185	20	16-QAM	1	50	22.74	0-1	1
	2549.5	40185	20	16-QAM	1	99	22.30	0-1	1
	2549.5	40185	20	16-QAM	50	0	21.50	0-2	2
	2549.5	40185	20	16-QAM	50	25	21.38	0-2	2
	2549.5	40185	20	16-QAM	50	50	21.30	0-2	2
	2549.5	40185	20	16-QAM	100	0	21.40	0-2	2
Mid	2593.0	40620	20	QPSK	1	0	24.22	0	0
	2593.0	40620	20	QPSK	1	50	23.94	0	0
	2593.0	40620	20	QPSK	1	99	23.66	0	0
	2593.0	40620	20	QPSK	50	0	23.00	0-1	1
	2593.0	40620	20	QPSK	50	25	22.96	0-1	1
	2593.0	40620	20	QPSK	50	50	22.76	0-1	1
	2593.0	40620	20	QPSK	100	0	22.79	0-1	1
	2593.0	40620	20	16-QAM	1	0	23.16	0-1	1
	2593.0	40620	20	16-QAM	1	50	23.09	0-1	1
	2593.0	40620	20	16-QAM	1	99	22.78	0-1	1
	2593.0	40620	20	16-QAM	50	0	22.01	0-2	2
	2593.0	40620	20	16-QAM	50	25	21.93	0-2	2
	2593.0	40620	20	16-QAM	50	50	21.75	0-2	2
	2593.0	40620	20	16-QAM	100	0	21.86	0-2	2
Mid High	2636.5	41055	20	QPSK	1	0	24.07	0	0
	2636.5	41055	20	QPSK	1	50	24.38	0	0
	2636.5	41055	20	QPSK	1	99	23.55	0	0
	2636.5	41055	20	QPSK	50	0	23.19	0-1	1
	2636.5	41055	20	QPSK	50	25	23.09	0-1	1
	2636.5	41055	20	QPSK	50	50	22.84	0-1	1
	2636.5	41055	20	QPSK	100	0	22.86	0-1	1
	2636.5	41055	20	16-QAM	1	0	23.24	0-1	1
	2636.5	41055	20	16-QAM	1	50	23.32	0-1	1
	2636.5	41055	20	16-QAM	1	99	22.69	0-1	1
	2636.5	41055	20	16-QAM	50	0	22.27	0-2	2
	2636.5	41055	20	16-QAM	50	25	22.18	0-2	2
	2636.5	41055	20	16-QAM	50	50	21.90	0-2	2
	2636.5	41055	20	16-QAM	100	0	21.93	0-2	2
High	2680.0	41490	20	QPSK	1	0	24.42	0	0
	2680.0	41490	20	QPSK	1	50	23.89	0	0
	2680.0	41490	20	QPSK	1	99	23.50	0	0
	2680.0	41490	20	QPSK	50	0	23.17	0-1	1
	2680.0	41490	20	QPSK	50	25	23.00	0-1	1
	2680.0	41490	20	QPSK	50	50	22.73	0-1	1
	2680.0	41490	20	QPSK	100	0	22.70	0-1	1
	2680.0	41490	20	16-QAM	1	0	23.36	0-1	1
	2680.0	41490	20	16-QAM	1	50	23.13	0-1	1
	2680.0	41490	20	16-QAM	1	99	22.50	0-1	1
	2680.0	41490	20	16-QAM	50	0	22.14	0-2	2
	2680.0	41490	20	16-QAM	50	25	22.01	0-2	2
	2680.0	41490	20	16-QAM	50	50	21.77	0-2	2
	2680.0	41490	20	16-QAM	100	0	21.89	0-2	2

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Table 9-28
LTE Band 41 Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	2506.0	39750	15	QPSK	1	0	23.02	0	0
	2506.0	39750	15	QPSK	1	36	22.93	0	0
	2506.0	39750	15	QPSK	1	74	22.63	0	0
	2506.0	39750	15	QPSK	36	0	21.89	0-1	1
	2506.0	39750	15	QPSK	36	18	21.90	0-1	1
	2506.0	39750	15	QPSK	36	37	21.78	0-1	1
	2506.0	39750	15	QPSK	75	0	21.82	0-1	1
	2506.0	39750	15	16QAM	1	0	22.02	0-1	1
	2506.0	39750	15	16QAM	1	36	21.86	0-1	1
	2506.0	39750	15	16QAM	1	74	21.60	0-1	1
	2506.0	39750	15	16QAM	36	0	20.92	0-2	2
	2506.0	39750	15	16QAM	36	18	20.84	0-2	2
	2506.0	39750	15	16QAM	36	37	20.70	0-2	2
	2506.0	39750	15	16QAM	75	0	20.73	0-2	2
	2549.5	40185	15	QPSK	1	0	22.81	0	0
Low Mid	2549.5	40185	15	QPSK	1	36	22.78	0	0
	2549.5	40185	15	QPSK	1	74	22.50	0	0
	2549.5	40185	15	QPSK	36	0	21.79	0-1	1
	2549.5	40185	15	QPSK	36	18	21.80	0-1	1
	2549.5	40185	15	QPSK	36	37	21.53	0-1	1
	2549.5	40185	15	QPSK	75	0	21.63	0-1	1
	2549.5	40185	15	16-QAM	1	0	21.77	0-1	1
	2549.5	40185	15	16-QAM	1	36	21.70	0-1	1
	2549.5	40185	15	16-QAM	1	74	21.50	0-1	1
	2549.5	40185	15	16-QAM	36	0	20.79	0-2	2
	2549.5	40185	15	16-QAM	36	18	20.81	0-2	2
	2549.5	40185	15	16-QAM	36	37	20.62	0-2	2
	2549.5	40185	15	16-QAM	75	0	20.58	0-2	2
	2593.0	40620	15	QPSK	1	0	23.64	0	0
	2593.0	40620	15	QPSK	1	36	23.57	0	0
	2593.0	40620	15	QPSK	1	74	23.35	0	0
Mid	2593.0	40620	15	QPSK	36	0	22.64	0-1	1
	2593.0	40620	15	QPSK	36	18	22.56	0-1	1
	2593.0	40620	15	QPSK	36	37	22.57	0-1	1
	2593.0	40620	15	QPSK	75	0	22.54	0-1	1
	2593.0	40620	15	16-QAM	1	0	22.50	0-1	1
	2593.0	40620	15	16-QAM	1	36	22.46	0-1	1
	2593.0	40620	15	16-QAM	1	74	22.32	0-1	1
	2593.0	40620	15	16-QAM	36	0	21.66	0-2	2
	2593.0	40620	15	16-QAM	36	18	21.69	0-2	2
	2593.0	40620	15	16-QAM	36	37	21.58	0-2	2
	2593.0	40620	15	16-QAM	75	0	21.57	0-2	2
	2636.5	41055	15	QPSK	1	0	23.97	0	0
	2636.5	41055	15	QPSK	1	36	24.00	0	0
	2636.5	41055	15	QPSK	1	74	23.55	0	0
	2636.5	41055	15	QPSK	36	0	23.00	0-1	1
Mid High	2636.5	41055	15	QPSK	36	18	22.86	0-1	1
	2636.5	41055	15	QPSK	36	37	22.74	0-1	1
	2636.5	41055	15	QPSK	75	0	22.79	0-1	1
	2636.5	41055	15	16-QAM	1	0	22.97	0-1	1
	2636.5	41055	15	16-QAM	1	36	22.82	0-1	1
	2636.5	41055	15	16-QAM	1	74	22.46	0-1	1
	2636.5	41055	15	16-QAM	36	0	22.00	0-2	2
	2636.5	41055	15	16-QAM	36	18	21.96	0-2	2
	2636.5	41055	15	16-QAM	36	37	21.75	0-2	2
	2636.5	41055	15	16-QAM	75	0	21.78	0-2	2
	2680.0	41490	15	QPSK	1	0	23.88	0	0
	2680.0	41490	15	QPSK	1	36	23.32	0	0
	2680.0	41490	15	QPSK	1	74	22.97	0	0
	2680.0	41490	15	QPSK	36	0	22.93	0-1	1
	2680.0	41490	15	QPSK	36	18	22.89	0-1	1
High	2680.0	41490	15	QPSK	36	37	22.56	0-1	1
	2680.0	41490	15	QPSK	75	0	22.82	0-1	1
	2680.0	41490	15	16-QAM	1	0	22.87	0-1	1
	2680.0	41490	15	16-QAM	1	36	22.46	0-1	1
	2680.0	41490	15	16-QAM	1	74	22.07	0-1	1
	2680.0	41490	15	16-QAM	36	0	21.89	0-2	2
	2680.0	41490	15	16-QAM	36	18	21.88	0-2	2
	2680.0	41490	15	16-QAM	36	37	21.63	0-2	2
	2680.0	41490	15	16-QAM	75	0	21.70	0-2	2

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Table 9-29
LTE Band 41 Conducted Powers - 10 MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
2506.0	39750	10	QPSK	1	0	23.17	0	0
2506.0	39750	10	QPSK	1	25	23.25	0	0
2506.0	39750	10	QPSK	1	49	23.05	0	0
2506.0	39750	10	QPSK	25	0	21.99	0-1	1
2506.0	39750	10	QPSK	25	12	21.98	0-1	1
2506.0	39750	10	QPSK	25	25	21.89	0-1	1
2506.0	39750	10	QPSK	50	0	21.96	0-1	1
2506.0	39750	10	16QAM	1	0	21.98	0-1	1
2506.0	39750	10	16QAM	1	25	21.92	0-1	1
2506.0	39750	10	16QAM	1	49	21.75	0-1	1
2506.0	39750	10	16QAM	25	0	20.81	0-2	2
2506.0	39750	10	16QAM	25	12	20.95	0-2	2
2506.0	39750	10	16QAM	25	25	20.90	0-2	2
2506.0	39750	10	16QAM	50	0	20.97	0-2	2
2549.5	40185	10	QPSK	1	0	22.95	0	0
2549.5	40185	10	QPSK	1	25	22.86	0	0
2549.5	40185	10	QPSK	1	49	22.75	0	0
2549.5	40185	10	QPSK	25	0	21.70	0-1	1
2549.5	40185	10	QPSK	25	12	21.68	0-1	1
2549.5	40185	10	QPSK	25	25	21.67	0-1	1
2549.5	40185	10	QPSK	50	0	21.61	0-1	1
2549.5	40185	10	16-QAM	1	0	21.80	0-1	1
2549.5	40185	10	16-QAM	1	25	21.55	0-1	1
2549.5	40185	10	16-QAM	1	49	21.50	0-1	1
2549.5	40185	10	16-QAM	25	0	20.78	0-2	2
2549.5	40185	10	16-QAM	25	12	20.72	0-2	2
2549.5	40185	10	16-QAM	25	25	20.63	0-2	2
2549.5	40185	10	16-QAM	50	0	20.70	0-2	2
2593.0	40620	10	QPSK	1	0	23.83	0	0
2593.0	40620	10	QPSK	1	25	23.77	0	0
2593.0	40620	10	QPSK	1	49	23.64	0	0
2593.0	40620	10	QPSK	25	0	22.50	0-1	1
2593.0	40620	10	QPSK	25	12	22.53	0-1	1
2593.0	40620	10	QPSK	25	25	22.43	0-1	1
2593.0	40620	10	QPSK	50	0	22.52	0-1	1
2593.0	40620	10	16-QAM	1	0	22.48	0-1	1
2593.0	40620	10	16-QAM	1	25	22.40	0-1	1
2593.0	40620	10	16-QAM	1	49	22.41	0-1	1
2593.0	40620	10	16-QAM	25	0	21.56	0-2	2
2593.0	40620	10	16-QAM	25	12	21.59	0-2	2
2593.0	40620	10	16-QAM	25	25	21.47	0-2	2
2593.0	40620	10	16-QAM	50	0	21.56	0-2	2
2636.5	41055	10	QPSK	1	0	24.03	0	0
2636.5	41055	10	QPSK	1	25	23.94	0	0
2636.5	41055	10	QPSK	1	49	23.81	0	0
2636.5	41055	10	QPSK	25	0	22.91	0-1	1
2636.5	41055	10	QPSK	25	12	22.84	0-1	1
2636.5	41055	10	QPSK	25	25	22.70	0-1	1
2636.5	41055	10	QPSK	50	0	22.79	0-1	1
2636.5	41055	10	16-QAM	1	0	22.71	0-1	1
2636.5	41055	10	16-QAM	1	25	22.72	0-1	1
2636.5	41055	10	16-QAM	1	49	22.44	0-1	1
2636.5	41055	10	16-QAM	25	0	21.89	0-2	2
2636.5	41055	10	16-QAM	25	12	21.78	0-2	2
2636.5	41055	10	16-QAM	25	25	21.67	0-2	2
2636.5	41055	10	16-QAM	50	0	21.80	0-2	2
2680.0	41490	10	QPSK	1	0	23.60	0	0
2680.0	41490	10	QPSK	1	25	23.39	0	0
2680.0	41490	10	QPSK	1	49	22.92	0	0
2680.0	41490	10	QPSK	25	0	22.91	0-1	1
2680.0	41490	10	QPSK	25	12	22.80	0-1	1
2680.0	41490	10	QPSK	25	25	22.61	0-1	1
2680.0	41490	10	QPSK	50	0	22.83	0-1	1
2680.0	41490	10	16-QAM	1	0	22.52	0-1	1
2680.0	41490	10	16-QAM	1	25	22.37	0-1	1
2680.0	41490	10	16-QAM	1	49	21.92	0-1	1
2680.0	41490	10	16-QAM	25	0	21.82	0-2	2
2680.0	41490	10	16-QAM	25	12	21.73	0-2	2
2680.0	41490	10	16-QAM	25	25	21.53	0-2	2
2680.0	41490	10	16-QAM	50	0	21.73	0-2	2

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Table 9-30
LTE Band 41 Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	2506.0	39750	5	QPSK	1	0	23.97	0	0
	2506.0	39750	5	QPSK	1	12	23.83	0	0
	2506.0	39750	5	QPSK	1	24	23.87	0	0
	2506.0	39750	5	QPSK	12	0	22.72	0-1	1
	2506.0	39750	5	QPSK	12	6	22.69	0-1	1
	2506.0	39750	5	QPSK	12	13	22.68	0-1	1
	2506.0	39750	5	QPSK	25	0	22.70	0-1	1
	2506.0	39750	5	16-QAM	1	0	22.85	0-1	1
	2506.0	39750	5	16-QAM	1	12	22.67	0-1	1
	2506.0	39750	5	16-QAM	1	24	22.87	0-1	1
	2506.0	39750	5	16-QAM	12	0	21.81	0-2	2
	2506.0	39750	5	16-QAM	12	6	21.77	0-2	2
	2506.0	39750	5	16-QAM	12	13	21.78	0-2	2
	2506.0	39750	5	16-QAM	25	0	21.68	0-2	2
	2506.0	39750	5	16-QAM	25	0	21.68	0-2	2
Low Mid	2549.5	40185	5	QPSK	1	0	23.58	0	0
	2549.5	40185	5	QPSK	1	12	23.37	0	0
	2549.5	40185	5	QPSK	1	24	23.42	0	0
	2549.5	40185	5	QPSK	12	0	22.34	0-1	1
	2549.5	40185	5	QPSK	12	6	22.25	0-1	1
	2549.5	40185	5	QPSK	12	13	22.23	0-1	1
	2549.5	40185	5	QPSK	25	0	22.29	0-1	1
	2549.5	40185	5	16-QAM	1	0	22.64	0-1	1
	2549.5	40185	5	16-QAM	1	12	22.27	0-1	1
	2549.5	40185	5	16-QAM	1	24	22.47	0-1	1
	2549.5	40185	5	16-QAM	12	0	21.43	0-2	2
	2549.5	40185	5	16-QAM	12	6	21.36	0-2	2
	2549.5	40185	5	16-QAM	12	13	21.32	0-2	2
	2549.5	40185	5	16-QAM	25	0	21.23	0-2	2
	2549.5	40185	5	16-QAM	25	0	21.23	0-2	2
Mid	2593.0	40620	5	QPSK	1	0	24.03	0	0
	2593.0	40620	5	QPSK	1	12	23.88	0	0
	2593.0	40620	5	QPSK	1	24	23.87	0	0
	2593.0	40620	5	QPSK	12	0	22.82	0-1	1
	2593.0	40620	5	QPSK	12	6	22.82	0-1	1
	2593.0	40620	5	QPSK	12	13	22.73	0-1	1
	2593.0	40620	5	QPSK	25	0	22.79	0-1	1
	2593.0	40620	5	16-QAM	1	0	22.65	0-1	1
	2593.0	40620	5	16-QAM	1	12	22.43	0-1	1
	2593.0	40620	5	16-QAM	1	24	22.51	0-1	1
	2593.0	40620	5	16-QAM	12	0	21.72	0-2	2
	2593.0	40620	5	16-QAM	12	6	21.73	0-2	2
	2593.0	40620	5	16-QAM	12	13	21.64	0-2	2
	2593.0	40620	5	16-QAM	25	0	21.84	0-2	2
	2593.0	40620	5	16-QAM	25	0	21.84	0-2	2
Mid High	2636.5	41055	5	QPSK	1	0	24.18	0	0
	2636.5	41055	5	QPSK	1	12	24.01	0	0
	2636.5	41055	5	QPSK	1	24	24.04	0	0
	2636.5	41055	5	QPSK	12	0	22.89	0-1	1
	2636.5	41055	5	QPSK	12	6	22.86	0-1	1
	2636.5	41055	5	QPSK	12	13	22.84	0-1	1
	2636.5	41055	5	QPSK	25	0	22.83	0-1	1
	2636.5	41055	5	16-QAM	1	0	23.17	0-1	1
	2636.5	41055	5	16-QAM	1	12	22.91	0-1	1
	2636.5	41055	5	16-QAM	1	24	23.11	0-1	1
	2636.5	41055	5	16-QAM	12	0	22.01	0-2	2
	2636.5	41055	5	16-QAM	12	6	22.00	0-2	2
	2636.5	41055	5	16-QAM	12	13	21.91	0-2	2
	2636.5	41055	5	16-QAM	25	0	21.82	0-2	2
	2636.5	41055	5	16-QAM	25	0	21.82	0-2	2
High	2680.0	41490	5	QPSK	1	0	24.18	0	0
	2680.0	41490	5	QPSK	1	12	23.92	0	0
	2680.0	41490	5	QPSK	1	24	23.78	0	0
	2680.0	41490	5	QPSK	12	0	22.97	0-1	1
	2680.0	41490	5	QPSK	12	6	22.93	0-1	1
	2680.0	41490	5	QPSK	12	13	22.84	0-1	1
	2680.0	41490	5	QPSK	25	0	22.86	0-1	1
	2680.0	41490	5	16-QAM	1	0	23.18	0-1	1
	2680.0	41490	5	16-QAM	1	12	22.87	0-1	1
	2680.0	41490	5	16-QAM	1	24	22.87	0-1	1
	2680.0	41490	5	16-QAM	12	0	22.01	0-2	2
	2680.0	41490	5	16-QAM	12	6	21.97	0-2	2
	2680.0	41490	5	16-QAM	12	13	21.86	0-2	2
	2680.0	41490	5	16-QAM	25	0	21.78	0-2	2
	2680.0	41490	5	16-QAM	25	0	21.78	0-2	2

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9.5 Reduced Conducted Powers –

9.5.1 LTE Band 4 (AWS) Conducted Powers – Hotspot, Extremity

Table 9-31
LTE Band 4 (AWS) Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	1732.5	20175	20	QPSK	1	0	22.20	0	0
	1732.5	20175	20	QPSK	1	50	21.53	0	0
	1732.5	20175	20	QPSK	1	99	21.68	0	0
	1732.5	20175	20	QPSK	50	0	21.80	0-1	0
	1732.5	20175	20	QPSK	50	25	21.52	0-1	0
	1732.5	20175	20	QPSK	50	50	21.51	0-1	0
	1732.5	20175	20	QPSK	100	0	21.73	0-1	0
	1732.5	20175	20	16QAM	1	0	22.50	0-1	0
	1732.5	20175	20	16QAM	1	50	21.76	0-1	0
	1732.5	20175	20	16QAM	1	99	22.07	0-1	0
	1732.5	20175	20	16QAM	50	0	21.68	0-2	0
	1732.5	20175	20	16QAM	50	25	21.50	0-2	0
	1732.5	20175	20	16QAM	50	50	21.56	0-2	0
	1732.5	20175	20	16QAM	100	0	21.58	0-2	0

Note: LTE Band 4 (AWS) 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 9-32
LTE Band 4 (AWS) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1717.5	20025	15	QPSK	1	0	21.88	0	0
	1717.5	20025	15	QPSK	1	36	21.23	0	0
	1717.5	20025	15	QPSK	1	74	21.64	0	0
	1717.5	20025	15	QPSK	36	0	21.51	0-1	0
	1717.5	20025	15	QPSK	36	18	21.46	0-1	0
	1717.5	20025	15	QPSK	36	37	21.30	0-1	0
	1717.5	20025	15	QPSK	75	0	21.34	0-1	0
	1717.5	20025	15	16QAM	1	0	22.20	0-1	0
	1717.5	20025	15	16QAM	1	36	21.61	0-1	0
	1717.5	20025	15	16QAM	1	74	22.05	0-1	0
	1717.5	20025	15	16QAM	36	0	21.52	0-2	0
	1717.5	20025	15	16QAM	36	18	21.37	0-2	0
	1717.5	20025	15	16QAM	36	37	21.35	0-2	0
Mid	1732.5	20175	15	QPSK	1	0	21.82	0	0
	1732.5	20175	15	QPSK	1	36	21.56	0	0
	1732.5	20175	15	QPSK	1	74	21.70	0	0
	1732.5	20175	15	QPSK	36	0	21.74	0-1	0
	1732.5	20175	15	QPSK	36	18	21.43	0-1	0
	1732.5	20175	15	QPSK	36	37	21.39	0-1	0
	1732.5	20175	15	QPSK	75	0	21.45	0-1	0
	1732.5	20175	15	16QAM	1	0	22.06	0-1	0
	1732.5	20175	15	16QAM	1	36	21.61	0-1	0
	1732.5	20175	15	16QAM	1	74	21.80	0-1	0
	1732.5	20175	15	16QAM	36	0	21.52	0-2	0
	1732.5	20175	15	16QAM	36	18	21.38	0-2	0
	1732.5	20175	15	16QAM	36	37	21.41	0-2	0
	1732.5	20175	15	16QAM	75	0	21.42	0-2	0
High	1747.5	20325	15	QPSK	1	0	22.18	0	0
	1747.5	20325	15	QPSK	1	36	21.43	0	0
	1747.5	20325	15	QPSK	1	74	21.73	0	0
	1747.5	20325	15	QPSK	36	0	21.68	0-1	0
	1747.5	20325	15	QPSK	36	18	21.51	0-1	0
	1747.5	20325	15	QPSK	36	37	21.46	0-1	0
	1747.5	20325	15	QPSK	75	0	21.53	0-1	0
	1747.5	20325	15	16QAM	1	0	22.01	0-1	0
	1747.5	20325	15	16QAM	1	36	21.49	0-1	0
	1747.5	20325	15	16QAM	1	74	21.95	0-1	0
	1747.5	20325	15	16QAM	36	0	21.71	0-2	0
	1747.5	20325	15	16QAM	36	18	21.50	0-2	0
	1747.5	20325	15	16QAM	36	37	21.56	0-2	0
	1747.5	20325	15	16QAM	75	0	21.51	0-2	0

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Table 9-33
LTE Band 4 (AWS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1715	20000	10	QPSK	1	0	21.66	0	0
	1715	20000	10	QPSK	1	25	21.56	0	0
	1715	20000	10	QPSK	1	49	21.36	0	0
	1715	20000	10	QPSK	25	0	21.39	0-1	0
	1715	20000	10	QPSK	25	12	21.36	0-1	0
	1715	20000	10	QPSK	25	25	21.23	0-1	0
	1715	20000	10	QPSK	50	0	21.37	0-1	0
	1715	20000	10	16QAM	1	0	21.80	0-1	0
	1715	20000	10	16QAM	1	25	21.61	0-1	0
	1715	20000	10	16QAM	1	49	22.02	0-1	0
	1715	20000	10	16QAM	25	0	21.45	0-2	0
	1715	20000	10	16QAM	25	12	21.42	0-2	0
	1715	20000	10	16QAM	25	25	21.30	0-2	0
	1715	20000	10	16QAM	50	0	21.44	0-2	0
Mid	1732.5	20175	10	QPSK	1	0	21.76	0	0
	1732.5	20175	10	QPSK	1	25	21.74	0	0
	1732.5	20175	10	QPSK	1	49	21.55	0	0
	1732.5	20175	10	QPSK	25	0	21.60	0-1	0
	1732.5	20175	10	QPSK	25	12	21.46	0-1	0
	1732.5	20175	10	QPSK	25	25	21.36	0-1	0
	1732.5	20175	10	QPSK	50	0	21.39	0-1	0
	1732.5	20175	10	16QAM	1	0	22.02	0-1	0
	1732.5	20175	10	16QAM	1	25	21.64	0-1	0
	1732.5	20175	10	16QAM	1	49	21.63	0-1	0
	1732.5	20175	10	16QAM	25	0	21.47	0-2	0
	1732.5	20175	10	16QAM	25	12	21.42	0-2	0
	1732.5	20175	10	16QAM	25	25	21.41	0-2	0
	1732.5	20175	10	16QAM	50	0	21.43	0-2	0
High	1750	20350	10	QPSK	1	0	21.78	0	0
	1750	20350	10	QPSK	1	25	21.89	0	0
	1750	20350	10	QPSK	1	49	21.61	0	0
	1750	20350	10	QPSK	25	0	21.71	0-1	0
	1750	20350	10	QPSK	25	12	21.64	0-1	0
	1750	20350	10	QPSK	25	25	21.53	0-1	0
	1750	20350	10	QPSK	50	0	21.63	0-1	0
	1750	20350	10	16QAM	1	0	21.84	0-1	0
	1750	20350	10	16QAM	1	25	21.63	0-1	0
	1750	20350	10	16QAM	1	49	21.74	0-1	0
	1750	20350	10	16QAM	25	0	21.76	0-2	0
	1750	20350	10	16QAM	25	12	21.73	0-2	0
	1750	20350	10	16QAM	25	25	21.62	0-2	0
	1750	20350	10	16QAM	50	0	21.65	0-2	0

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Table 9-34
LTE Band 4 (AWS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1712.5	19975	5	QPSK	1	0	21.34	0	0
	1712.5	19975	5	QPSK	1	12	21.17	0	0
	1712.5	19975	5	QPSK	1	24	21.37	0	0
	1712.5	19975	5	QPSK	12	0	21.29	0-1	0
	1712.5	19975	5	QPSK	12	6	21.32	0-1	0
	1712.5	19975	5	QPSK	12	13	21.26	0-1	0
	1712.5	19975	5	QPSK	25	0	21.31	0-1	0
	1712.5	19975	5	16-QAM	1	0	21.74	0-1	0
	1712.5	19975	5	16-QAM	1	12	21.97	0-1	0
	1712.5	19975	5	16-QAM	1	24	21.64	0-1	0
	1712.5	19975	5	16-QAM	12	0	21.40	0-2	0
	1712.5	19975	5	16-QAM	12	6	21.35	0-2	0
	1712.5	19975	5	16-QAM	12	13	21.33	0-2	0
	1712.5	19975	5	16-QAM	25	0	21.38	0-2	0
Mid	1732.5	20175	5	QPSK	1	0	21.28	0	0
	1732.5	20175	5	QPSK	1	12	21.43	0	0
	1732.5	20175	5	QPSK	1	24	21.46	0	0
	1732.5	20175	5	QPSK	12	0	21.54	0-1	0
	1732.5	20175	5	QPSK	12	6	21.33	0-1	0
	1732.5	20175	5	QPSK	12	13	21.37	0-1	0
	1732.5	20175	5	QPSK	25	0	21.36	0-1	0
	1732.5	20175	5	16-QAM	1	0	21.96	0-1	0
	1732.5	20175	5	16-QAM	1	12	22.00	0-1	0
	1732.5	20175	5	16-QAM	1	24	21.82	0-1	0
	1732.5	20175	5	16-QAM	12	0	21.43	0-2	0
	1732.5	20175	5	16-QAM	12	6	21.38	0-2	0
	1732.5	20175	5	16-QAM	12	13	21.43	0-2	0
	1732.5	20175	5	16-QAM	25	0	21.38	0-2	0
High	1752.5	20375	5	QPSK	1	0	21.80	0	0
	1752.5	20375	5	QPSK	1	12	21.48	0	0
	1752.5	20375	5	QPSK	1	24	21.65	0	0
	1752.5	20375	5	QPSK	12	0	21.69	0-1	0
	1752.5	20375	5	QPSK	12	6	21.49	0-1	0
	1752.5	20375	5	QPSK	12	13	21.52	0-1	0
	1752.5	20375	5	QPSK	25	0	21.48	0-1	0
	1752.5	20375	5	16-QAM	1	0	21.97	0-1	0
	1752.5	20375	5	16-QAM	1	12	22.09	0-1	0
	1752.5	20375	5	16-QAM	1	24	21.94	0-1	0
	1752.5	20375	5	16-QAM	12	0	21.58	0-2	0
	1752.5	20375	5	16-QAM	12	6	21.53	0-2	0
	1752.5	20375	5	16-QAM	12	13	21.57	0-2	0
	1752.5	20375	5	16-QAM	25	0	21.47	0-2	0

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Table 9-35
LTE Band 4 (AWS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1711.5	19965	3	QPSK	1	0	21.34	0	0
	1711.5	19965	3	QPSK	1	7	21.45	0	0
	1711.5	19965	3	QPSK	1	14	21.26	0	0
	1711.5	19965	3	QPSK	8	0	21.32	0-1	0
	1711.5	19965	3	QPSK	8	4	21.32	0-1	0
	1711.5	19965	3	QPSK	8	7	21.29	0-1	0
	1711.5	19965	3	QPSK	15	0	21.28	0-1	0
	1711.5	19965	3	16-QAM	1	0	21.97	0-1	0
	1711.5	19965	3	16-QAM	1	7	22.23	0-1	0
	1711.5	19965	3	16-QAM	1	14	21.89	0-1	0
	1711.5	19965	3	16-QAM	8	0	21.41	0-2	0
	1711.5	19965	3	16-QAM	8	4	21.46	0-2	0
	1711.5	19965	3	16-QAM	8	7	21.47	0-2	0
Mid	1732.5	20175	3	QPSK	1	0	21.61	0	0
	1732.5	20175	3	QPSK	1	7	21.83	0	0
	1732.5	20175	3	QPSK	1	14	21.53	0	0
	1732.5	20175	3	QPSK	8	0	21.56	0-1	0
	1732.5	20175	3	QPSK	8	4	21.34	0-1	0
	1732.5	20175	3	QPSK	8	7	21.43	0-1	0
	1732.5	20175	3	QPSK	15	0	21.32	0-1	0
	1732.5	20175	3	16-QAM	1	0	21.91	0-1	0
	1732.5	20175	3	16-QAM	1	7	22.01	0-1	0
	1732.5	20175	3	16-QAM	1	14	22.12	0-1	0
	1732.5	20175	3	16-QAM	8	0	21.44	0-2	0
	1732.5	20175	3	16-QAM	8	4	21.39	0-2	0
	1732.5	20175	3	16-QAM	8	7	21.51	0-2	0
	1732.5	20175	3	16-QAM	15	0	21.37	0-2	0
High	1753.5	20385	3	QPSK	1	0	21.65	0	0
	1753.5	20385	3	QPSK	1	7	21.84	0	0
	1753.5	20385	3	QPSK	1	14	21.67	0	0
	1753.5	20385	3	QPSK	8	0	21.61	0-1	0
	1753.5	20385	3	QPSK	8	4	21.62	0-1	0
	1753.5	20385	3	QPSK	8	7	21.55	0-1	0
	1753.5	20385	3	QPSK	15	0	21.64	0-1	0
	1753.5	20385	3	16-QAM	1	0	21.70	0-1	0
	1753.5	20385	3	16-QAM	1	7	21.88	0-1	0
	1753.5	20385	3	16-QAM	1	14	21.60	0-1	0
	1753.5	20385	3	16-QAM	8	0	21.45	0-2	0
	1753.5	20385	3	16-QAM	8	4	21.55	0-2	0
	1753.5	20385	3	16-QAM	8	7	21.49	0-2	0
	1753.5	20385	3	16-QAM	15	0	21.59	0-2	0

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Table 9-36
LTE Band 4 (AWS) Conducted Powers - 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1710.7	19957	1.4	QPSK	1	0	21.36	0	0
	1710.7	19957	1.4	QPSK	1	2	21.25	0	0
	1710.7	19957	1.4	QPSK	1	5	21.38	0	0
	1710.7	19957	1.4	QPSK	3	0	21.23	0	0
	1710.7	19957	1.4	QPSK	3	2	21.31	0	0
	1710.7	19957	1.4	QPSK	3	3	21.24	0	0
	1710.7	19957	1.4	QPSK	6	0	21.22	0-1	0
	1710.7	19957	1.4	16-QAM	1	0	21.65	0-1	0
	1710.7	19957	1.4	16-QAM	1	2	21.56	0-1	0
	1710.7	19957	1.4	16-QAM	1	5	21.88	0-1	0
	1710.7	19957	1.4	16-QAM	3	0	21.43	0-1	0
	1710.7	19957	1.4	16-QAM	3	2	21.41	0-1	0
Mid	1710.7	19957	1.4	16-QAM	3	3	21.47	0-1	0
	1710.7	19957	1.4	16-QAM	6	0	21.60	0-2	0
	1732.5	20175	1.4	QPSK	1	0	21.61	0	0
	1732.5	20175	1.4	QPSK	1	2	21.68	0	0
	1732.5	20175	1.4	QPSK	1	5	21.55	0	0
	1732.5	20175	1.4	QPSK	3	0	21.56	0	0
	1732.5	20175	1.4	QPSK	3	2	21.35	0	0
	1732.5	20175	1.4	QPSK	3	3	21.29	0	0
	1732.5	20175	1.4	QPSK	6	0	21.26	0-1	0
	1732.5	20175	1.4	16-QAM	1	0	21.79	0-1	0
	1732.5	20175	1.4	16-QAM	1	2	21.72	0-1	0
	1732.5	20175	1.4	16-QAM	1	5	21.39	0-1	0
High	1732.5	20175	1.4	16-QAM	3	0	21.34	0-1	0
	1732.5	20175	1.4	16-QAM	3	2	21.45	0-1	0
	1732.5	20175	1.4	16-QAM	3	3	21.52	0-1	0
	1732.5	20175	1.4	16-QAM	6	0	21.41	0-2	0
	1754.3	20393	1.4	QPSK	1	0	21.85	0	0
	1754.3	20393	1.4	QPSK	1	2	22.13	0	0
	1754.3	20393	1.4	QPSK	1	5	21.91	0	0
	1754.3	20393	1.4	QPSK	3	0	22.02	0	0
	1754.3	20393	1.4	QPSK	3	2	22.08	0	0
	1754.3	20393	1.4	QPSK	3	3	22.14	0	0
	1754.3	20393	1.4	QPSK	6	0	22.08	0-1	0
	1754.3	20393	1.4	16-QAM	1	0	22.02	0-1	0
	1754.3	20393	1.4	16-QAM	1	2	22.13	0-1	0
	1754.3	20393	1.4	16-QAM	1	5	22.19	0-1	0
	1754.3	20393	1.4	16-QAM	3	0	21.81	0-1	0
	1754.3	20393	1.4	16-QAM	3	2	21.86	0-1	0
	1754.3	20393	1.4	16-QAM	3	3	21.92	0-1	0
	1754.3	20393	1.4	16-QAM	6	0	21.84	0-2	0

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9.5.2 LTE Band 25 (PCS) Conducted Powers – Hotspot, Extremity

Table 9-37

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1860	26140	20	QPSK	1	0	20.83	0	0
	1860	26140	20	QPSK	1	50	20.09	0	0
	1860	26140	20	QPSK	1	99	20.37	0	0
	1860	26140	20	QPSK	50	0	20.39	0-1	0
	1860	26140	20	QPSK	50	25	20.11	0-1	0
	1860	26140	20	QPSK	50	50	20.16	0-1	0
	1860	26140	20	QPSK	100	0	20.38	0-1	0
	1860	26140	20	16QAM	1	0	20.80	0-1	0
	1860	26140	20	16QAM	1	50	20.26	0-1	0
	1860	26140	20	16QAM	1	99	20.49	0-1	0
	1860	26140	20	16QAM	50	0	20.39	0-2	0
	1860	26140	20	16QAM	50	25	20.09	0-2	0
	1860	26140	20	16QAM	50	50	20.17	0-2	0
	1860	26140	20	16QAM	100	0	20.37	0-2	0
Mid	1882.5	26365	20	QPSK	1	0	20.99	0	0
	1882.5	26365	20	QPSK	1	50	20.45	0	0
	1882.5	26365	20	QPSK	1	99	20.30	0	0
	1882.5	26365	20	QPSK	50	0	20.50	0-1	0
	1882.5	26365	20	QPSK	50	25	20.35	0-1	0
	1882.5	26365	20	QPSK	50	50	20.23	0-1	0
	1882.5	26365	20	QPSK	100	0	20.42	0-1	0
	1882.5	26365	20	16QAM	1	0	20.97	0-1	0
	1882.5	26365	20	16QAM	1	50	20.45	0-1	0
	1882.5	26365	20	16QAM	1	99	20.51	0-1	0
	1882.5	26365	20	16QAM	50	0	20.45	0-2	0
	1882.5	26365	20	16QAM	50	25	20.27	0-2	0
	1882.5	26365	20	16QAM	50	50	20.16	0-2	0
	1882.5	26365	20	16QAM	100	0	20.41	0-2	0
High	1905	26590	20	QPSK	1	0	20.94	0	0
	1905	26590	20	QPSK	1	50	20.26	0	0
	1905	26590	20	QPSK	1	99	20.12	0	0
	1905	26590	20	QPSK	50	0	20.39	0-1	0
	1905	26590	20	QPSK	50	25	20.04	0-1	0
	1905	26590	20	QPSK	50	50	20.00	0-1	0
	1905	26590	20	QPSK	100	0	20.21	0-1	0
	1905	26590	20	16QAM	1	0	20.92	0-1	0
	1905	26590	20	16QAM	1	50	20.11	0-1	0
	1905	26590	20	16QAM	1	99	20.35	0-1	0
	1905	26590	20	16QAM	50	0	20.38	0-2	0
	1905	26590	20	16QAM	50	25	20.03	0-2	0
	1905	26590	20	16QAM	50	50	20.01	0-2	0
	1905	26590	20	16QAM	100	0	20.21	0-2	0

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Table 9-38
LTE Band 25 (PCS) Conducted Powers – 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1857.5	26115	15	QPSK	1	0	20.88	0	0
	1857.5	26115	15	QPSK	1	36	20.56	0	0
	1857.5	26115	15	QPSK	1	74	20.77	0	0
	1857.5	26115	15	QPSK	36	0	20.68	0-1	0
	1857.5	26115	15	QPSK	36	18	20.65	0-1	0
	1857.5	26115	15	QPSK	36	37	20.52	0-1	0
	1857.5	26115	15	QPSK	75	0	20.70	0-1	0
	1857.5	26115	15	16QAM	1	0	21.00	0-1	0
	1857.5	26115	15	16QAM	1	36	20.75	0-1	0
	1857.5	26115	15	16QAM	1	74	20.98	0-1	0
	1857.5	26115	15	16QAM	36	0	20.72	0-2	0
	1857.5	26115	15	16QAM	36	18	20.46	0-2	0
	1857.5	26115	15	16QAM	36	37	20.56	0-2	0
	1857.5	26115	15	16QAM	75	0	20.72	0-2	0
Mid	1882.5	26365	15	QPSK	1	0	20.87	0	0
	1882.5	26365	15	QPSK	1	36	20.23	0	0
	1882.5	26365	15	QPSK	1	74	20.37	0	0
	1882.5	26365	15	QPSK	36	0	20.74	0-1	0
	1882.5	26365	15	QPSK	36	18	20.71	0-1	0
	1882.5	26365	15	QPSK	36	37	20.49	0-1	0
	1882.5	26365	15	QPSK	75	0	20.74	0-1	0
	1882.5	26365	15	16QAM	1	0	21.00	0-1	0
	1882.5	26365	15	16QAM	1	36	20.92	0-1	0
	1882.5	26365	15	16QAM	1	74	20.95	0-1	0
	1882.5	26365	15	16QAM	36	0	20.80	0-2	0
	1882.5	26365	15	16QAM	36	18	20.62	0-2	0
	1882.5	26365	15	16QAM	36	37	20.54	0-2	0
	1882.5	26365	15	16QAM	75	0	20.75	0-2	0
High	1907.5	26615	15	QPSK	1	0	20.66	0	0
	1907.5	26615	15	QPSK	1	36	20.17	0	0
	1907.5	26615	15	QPSK	1	74	20.07	0	0
	1907.5	26615	15	QPSK	36	0	20.16	0-1	0
	1907.5	26615	15	QPSK	36	18	20.28	0-1	0
	1907.5	26615	15	QPSK	36	37	20.67	0-1	0
	1907.5	26615	15	QPSK	75	0	20.49	0-1	0
	1907.5	26615	15	16QAM	1	0	20.60	0-1	0
	1907.5	26615	15	16QAM	1	36	20.69	0-1	0
	1907.5	26615	15	16QAM	1	74	20.76	0-1	0
	1907.5	26615	15	16QAM	36	0	20.67	0-2	0
	1907.5	26615	15	16QAM	36	18	20.35	0-2	0
	1907.5	26615	15	16QAM	36	37	20.28	0-2	0
	1907.5	26615	15	16QAM	75	0	20.49	0-2	0

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

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1855	26090	10	QPSK	1	0	20.82	0	0
1855	26090	10	QPSK	1	25	20.53	0	0
1855	26090	10	QPSK	1	49	20.73	0	0
1855	26090	10	QPSK	25	0	20.55	0-1	0
1855	26090	10	QPSK	25	12	20.47	0-1	0
1855	26090	10	QPSK	25	25	20.39	0-1	0
1855	26090	10	QPSK	50	0	20.55	0-1	0
1855	26090	10	16QAM	1	0	21.00	0-1	0
1855	26090	10	16QAM	1	25	20.61	0-1	0
1855	26090	10	16QAM	1	49	20.90	0-1	0
1855	26090	10	16QAM	25	0	20.58	0-2	0
1855	26090	10	16QAM	25	12	20.55	0-2	0
1855	26090	10	16QAM	25	25	20.38	0-2	0
1855	26090	10	16QAM	50	0	20.56	0-2	0
1882.5	26365	10	QPSK	1	0	20.68	0	0
1882.5	26365	10	QPSK	1	25	20.53	0	0
1882.5	26365	10	QPSK	1	49	20.38	0	0
1882.5	26365	10	QPSK	25	0	20.43	0-1	0
1882.5	26365	10	QPSK	25	12	20.60	0-1	0
1882.5	26365	10	QPSK	25	25	20.53	0-1	0
1882.5	26365	10	QPSK	50	0	20.64	0-1	0
1882.5	26365	10	16QAM	1	0	21.00	0-1	0
1882.5	26365	10	16QAM	1	25	20.71	0-1	0
1882.5	26365	10	16QAM	1	49	20.74	0-1	0
1882.5	26365	10	16QAM	25	0	20.69	0-2	0
1882.5	26365	10	16QAM	25	12	20.64	0-2	0
1882.5	26365	10	16QAM	25	25	20.59	0-2	0
1882.5	26365	10	16QAM	50	0	20.65	0-2	0
1910	26640	10	QPSK	1	0	20.37	0	0
1910	26640	10	QPSK	1	25	20.17	0	0
1910	26640	10	QPSK	1	49	20.10	0	0
1910	26640	10	QPSK	25	0	20.13	0-1	0
1910	26640	10	QPSK	25	12	20.33	0-1	0
1910	26640	10	QPSK	25	25	20.24	0-1	0
1910	26640	10	QPSK	50	0	20.40	0-1	0
1910	26640	10	16QAM	1	0	21.00	0-1	0
1910	26640	10	16QAM	1	25	20.55	0-1	0
1910	26640	10	16QAM	1	49	20.90	0-1	0
1910	26640	10	16QAM	25	0	20.54	0-2	0
1910	26640	10	16QAM	25	12	20.37	0-2	0
1910	26640	10	16QAM	25	25	20.28	0-2	0
1910	26640	10	16QAM	50	0	20.39	0-2	0

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1852.5	26065	5	QPSK	1	0	20.85	0	0
	1852.5	26065	5	QPSK	1	12	20.63	0	0
	1852.5	26065	5	QPSK	1	24	20.61	0	0
	1852.5	26065	5	QPSK	12	0	20.63	0-1	0
	1852.5	26065	5	QPSK	12	6	20.49	0-1	0
	1852.5	26065	5	QPSK	12	13	20.51	0-1	0
	1852.5	26065	5	QPSK	25	0	20.54	0-1	0
	1852.5	26065	5	16-QAM	1	0	20.50	0-1	0
	1852.5	26065	5	16-QAM	1	12	20.70	0-1	0
	1852.5	26065	5	16-QAM	1	24	20.75	0-1	0
	1852.5	26065	5	16-QAM	12	0	20.73	0-2	0
	1852.5	26065	5	16-QAM	12	6	20.52	0-2	0
	1852.5	26065	5	16-QAM	12	13	20.53	0-2	0
	1852.5	26065	5	16-QAM	25	0	20.60	0-2	0
Mid	1882.5	26365	5	QPSK	1	0	20.47	0	0
	1882.5	26365	5	QPSK	1	12	20.50	0	0
	1882.5	26365	5	QPSK	1	24	20.37	0	0
	1882.5	26365	5	QPSK	12	0	20.31	0-1	0
	1882.5	26365	5	QPSK	12	6	20.38	0-1	0
	1882.5	26365	5	QPSK	12	13	20.24	0-1	0
	1882.5	26365	5	QPSK	25	0	20.33	0-1	0
	1882.5	26365	5	16-QAM	1	0	20.84	0-1	0
	1882.5	26365	5	16-QAM	1	12	20.67	0-1	0
	1882.5	26365	5	16-QAM	1	24	20.67	0-1	0
	1882.5	26365	5	16-QAM	12	0	20.26	0-2	0
	1882.5	26365	5	16-QAM	12	6	20.39	0-2	0
	1882.5	26365	5	16-QAM	12	13	20.21	0-2	0
	1882.5	26365	5	16-QAM	25	0	20.28	0-2	0
High	1912.5	26665	5	QPSK	1	0	20.93	0	0
	1912.5	26665	5	QPSK	1	12	20.70	0	0
	1912.5	26665	5	QPSK	1	24	20.67	0	0
	1912.5	26665	5	QPSK	12	0	20.69	0-1	0
	1912.5	26665	5	QPSK	12	6	20.66	0-1	0
	1912.5	26665	5	QPSK	12	13	20.50	0-1	0
	1912.5	26665	5	QPSK	25	0	20.67	0-1	0
	1912.5	26665	5	16-QAM	1	0	21.00	0-1	0
	1912.5	26665	5	16-QAM	1	12	20.79	0-1	0
	1912.5	26665	5	16-QAM	1	24	20.99	0-1	0
	1912.5	26665	5	16-QAM	12	0	20.69	0-2	0
	1912.5	26665	5	16-QAM	12	6	20.68	0-2	0
	1912.5	26665	5	16-QAM	12	13	20.63	0-2	0
	1912.5	26665	5	16-QAM	25	0	20.71	0-2	0

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Table 9-41
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1851.5	26055	3	QPSK	1	0	20.28	0	0
	1851.5	26055	3	QPSK	1	7	20.69	0	0
	1851.5	26055	3	QPSK	1	14	20.23	0	0
	1851.5	26055	3	QPSK	8	0	20.26	0-1	0
	1851.5	26055	3	QPSK	8	4	20.30	0-1	0
	1851.5	26055	3	QPSK	8	7	20.22	0-1	0
	1851.5	26055	3	QPSK	15	0	20.25	0-1	0
	1851.5	26055	3	16-QAM	1	0	21.00	0-1	0
	1851.5	26055	3	16-QAM	1	7	20.99	0-1	0
	1851.5	26055	3	16-QAM	1	14	20.92	0-1	0
	1851.5	26055	3	16-QAM	8	0	20.35	0-2	0
	1851.5	26055	3	16-QAM	8	4	20.38	0-2	0
	1851.5	26055	3	16-QAM	8	7	20.31	0-2	0
	1851.5	26055	3	16-QAM	15	0	20.32	0-2	0
Mid	1882.5	26365	3	QPSK	1	0	20.42	0	0
	1882.5	26365	3	QPSK	1	7	20.68	0	0
	1882.5	26365	3	QPSK	1	14	20.52	0	0
	1882.5	26365	3	QPSK	8	0	20.26	0-1	0
	1882.5	26365	3	QPSK	8	4	20.34	0-1	0
	1882.5	26365	3	QPSK	8	7	20.29	0-1	0
	1882.5	26365	3	QPSK	15	0	20.36	0-1	0
	1882.5	26365	3	16-QAM	1	0	20.61	0-1	0
	1882.5	26365	3	16-QAM	1	7	20.76	0-1	0
	1882.5	26365	3	16-QAM	1	14	20.47	0-1	0
	1882.5	26365	3	16-QAM	8	0	20.26	0-2	0
	1882.5	26365	3	16-QAM	8	4	20.33	0-2	0
	1882.5	26365	3	16-QAM	8	7	20.31	0-2	0
	1882.5	26365	3	16-QAM	15	0	20.34	0-2	0
High	1913.5	26675	3	QPSK	1	0	20.11	0	0
	1913.5	26675	3	QPSK	1	7	20.71	0	0
	1913.5	26675	3	QPSK	1	14	20.00	0	0
	1913.5	26675	3	QPSK	8	0	20.02	0-1	0
	1913.5	26675	3	QPSK	8	4	20.06	0-1	0
	1913.5	26675	3	QPSK	8	7	20.01	0-1	0
	1913.5	26675	3	QPSK	15	0	20.08	0-1	0
	1913.5	26675	3	16-QAM	1	0	20.85	0-1	0
	1913.5	26675	3	16-QAM	1	7	20.43	0-1	0
	1913.5	26675	3	16-QAM	1	14	20.69	0-1	0
	1913.5	26675	3	16-QAM	8	0	20.00	0-2	0
	1913.5	26675	3	16-QAM	8	4	20.06	0-2	0
	1913.5	26675	3	16-QAM	8	7	20.01	0-2	0
	1913.5	26675	3	16-QAM	15	0	20.03	0-2	0

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1850.7	26047	1.4	QPSK	1	0	20.31	0	0
	1850.7	26047	1.4	QPSK	1	2	20.34	0	0
	1850.7	26047	1.4	QPSK	1	5	20.26	0	0
	1850.7	26047	1.4	QPSK	3	0	20.21	0	0
	1850.7	26047	1.4	QPSK	3	2	20.57	0	0
	1850.7	26047	1.4	QPSK	3	3	20.52	0	0
	1850.7	26047	1.4	QPSK	6	0	20.52	0-1	0
	1850.7	26047	1.4	16-QAM	1	0	20.99	0-1	0
	1850.7	26047	1.4	16-QAM	1	2	20.18	0-1	0
	1850.7	26047	1.4	16-QAM	1	5	21.00	0-1	0
	1850.7	26047	1.4	16-QAM	3	0	20.65	0-1	0
	1850.7	26047	1.4	16-QAM	3	2	20.73	0-1	0
	1850.7	26047	1.4	16-QAM	3	3	20.60	0-1	0
	1850.7	26047	1.4	16-QAM	6	0	20.60	0-2	0
Mid	1882.5	26365	1.4	QPSK	1	0	20.65	0	0
	1882.5	26365	1.4	QPSK	1	2	20.89	0	0
	1882.5	26365	1.4	QPSK	1	5	20.67	0	0
	1882.5	26365	1.4	QPSK	3	0	20.59	0	0
	1882.5	26365	1.4	QPSK	3	2	20.65	0	0
	1882.5	26365	1.4	QPSK	3	3	20.61	0	0
	1882.5	26365	1.4	QPSK	6	0	20.62	0-1	0
	1882.5	26365	1.4	16-QAM	1	0	20.96	0-1	0
	1882.5	26365	1.4	16-QAM	1	2	21.00	0-1	0
	1882.5	26365	1.4	16-QAM	1	5	20.81	0-1	0
	1882.5	26365	1.4	16-QAM	3	0	20.67	0-1	0
	1882.5	26365	1.4	16-QAM	3	2	20.74	0-1	0
	1882.5	26365	1.4	16-QAM	3	3	20.79	0-1	0
	1882.5	26365	1.4	16-QAM	6	0	20.68	0-2	0
High	1914.3	26683	1.4	QPSK	1	0	20.58	0	0
	1914.3	26683	1.4	QPSK	1	2	20.37	0	0
	1914.3	26683	1.4	QPSK	1	5	20.32	0	0
	1914.3	26683	1.4	QPSK	3	0	20.25	0	0
	1914.3	26683	1.4	QPSK	3	2	20.34	0	0
	1914.3	26683	1.4	QPSK	3	3	20.30	0	0
	1914.3	26683	1.4	QPSK	6	0	20.31	0-1	0
	1914.3	26683	1.4	16-QAM	1	0	20.73	0-1	0
	1914.3	26683	1.4	16-QAM	1	2	20.97	0-1	0
	1914.3	26683	1.4	16-QAM	1	5	20.95	0-1	0
	1914.3	26683	1.4	16-QAM	3	0	20.34	0-1	0
	1914.3	26683	1.4	16-QAM	3	2	20.53	0-1	0
	1914.3	26683	1.4	16-QAM	3	3	20.37	0-1	0
	1914.3	26683	1.4	16-QAM	6	0	20.36	0-2	0

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9.6 LTE Carrier Aggregation Conducted Powers

9.6.1 LTE Carrier Aggregation Conducted Powers

Table 9-43

PCC							SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Frequency [MHz]	PCC (UL) Channel	Modulation Type	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Frequency [MHz]	SCC (DL) Channel	LTE Rel 10 Tx.Power (dBm)	LTE Rel. 8 Tx.Power (dBm)
LTE B41	20	2680	41490	QPSK	1	0	LTE B41	20	2612.8	40818	24.01	24.42

Notes:

1. The device does not support all Rel. 10 Carrier Aggregation features due to modem chipset limitation.
2. The device only supports downlink Carrier Aggregation. Uplink Carrier Aggregation is not supported. Power measurements were performed with two DL carriers for the Release 8 configuration that had the highest output power (across all bandwidths, channels and RB Configurations) for each band
3. This device supports intra-band CA with 2 carriers.
4. All control and acknowledge data is sent on uplink channels that operate identical to release 8 specifications.

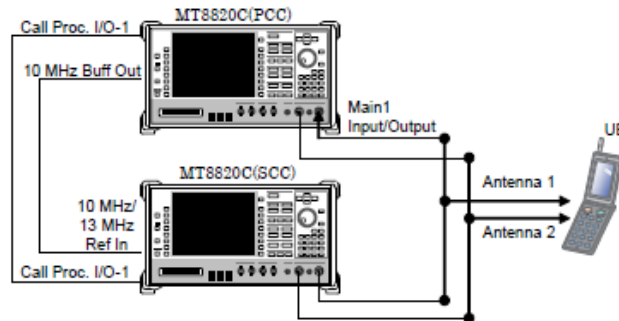


Figure 9-4
Power Measurement Setup

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9.7 Maximum WLAN Conducted Powers

Table 9-44

2.4 GHz WLAN Maximum Average RF Power – Antenna 1

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]	
		IEEE Transmission Mode	
		802.11b	802.11g
2412	1	16.78	13.82
2437	6	17.42	14.46
2462	11	16.75	14.00

Table 9-45

2.4 GHz WLAN Maximum Average RF Power – Antenna 2

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]	
		IEEE Transmission Mode	
		802.11b	802.11g
2412	1	16.85	14.28
2437	6	16.45	13.71
2462	11	16.76	14.10

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Table 9-46
5 GHz WLAN Maximum Average RF Power – Antenna 1

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	13.12	12.89	13.08
5200	40	13.31	13.01	13.00
5220	44	13.19	12.99	12.92
5240	48	13.27	12.89	12.93
5260	52	13.35	12.98	12.89
5280	56	12.67	13.00	12.82
5300	60	13.21	12.76	12.80
5320	64	13.05	12.83	12.77
5500	100	12.81	13.40	13.36
5600	120	12.77	12.75	13.38
5620	124	12.80	12.68	13.26
5720	144	13.29	12.71	12.67
5745	149	13.05	13.24	13.14
5785	157	12.96	13.23	13.24
5825	165	13.12	13.10	13.16

Table 9-47
5 GHz WLAN Maximum Average RF Power – Antenna 2

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	13.40	13.30	13.25
5200	40	12.80	13.25	13.26
5220	44	13.27	13.36	13.30
5240	48	13.28	13.31	13.43
5260	52	12.85	13.41	13.25
5280	56	13.00	13.25	13.22
5300	60	13.04	13.33	13.18
5320	64	13.05	13.28	13.38
5500	100	13.19	13.14	13.23
5600	120	13.10	12.79	13.13
5620	124	12.99	12.81	13.06
5720	144	12.75	12.79	13.19
5745	149	12.84	12.89	13.14
5785	157	12.75	13.00	13.07
5825	165	12.75	12.93	13.00

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9.8 WLAN Conducted Powers – Held to Ear

Table 9-48

2.4 GHz WLAN Held to Ear Average RF Power – Antenna 1

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	14.79	13.33	13.08
2437	6	15.00	13.28	12.50
2462	11	15.45	13.17	12.92

Table 9-49

2.4 GHz WLAN Held to Ear Average RF Power – Antenna 2

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	15.44	13.46	13.49
2437	6	14.82	13.49	12.11
2462	11	14.73	13.47	13.40

Table 9-50

2.4 GHz WLAN Held to Ear Average RF Power – MIMO

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]
		802.11n
2412	1	16.30
2437	6	15.32
2462	11	16.18

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Table 9-51
5 GHz WLAN Held to Ear Average RF Power – Antenna 1

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]
		IEEE Transmission Mode
		802.11a
5180	36	9.95
5200	40	10.03
5220	44	10.08
5240	48	10.06
5260	52	10.10
5280	56	10.13
5300	60	9.96
5320	64	9.98
5500	100	10.01
5600	120	9.74
5620	124	9.63
5720	144	9.50
5745	149	10.45
5785	157	10.06
5825	165	10.03

Table 9-52
5 GHz WLAN Held to Ear Average RF Power – Antenna 2

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]
		IEEE Transmission Mode
		802.11a
5180	36	10.49
5200	40	10.44
5220	44	10.32
5240	48	10.41
5260	52	10.48
5280	56	10.26
5300	60	10.47
5320	64	10.44
5500	100	10.36
5600	120	10.24
5620	124	10.26
5720	144	10.11
5745	149	10.06
5785	157	10.32
5825	165	10.34

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Justification for test configurations for WLAN per KDB Publication 248227 D01DR02-41929:

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

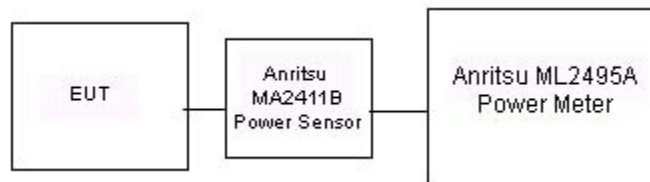


Figure 9-5
Power Measurement Setup

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10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties (Head)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (C°)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
6/22/2015	750H	24.5	700	0.849	42.571	0.889	42.201	-4.50%	0.88%
			710	0.859	42.452	0.890	42.149	-3.48%	0.72%
			720	0.868	42.345	0.891	42.097	-2.58%	0.59%
			725	0.873	42.294	0.891	42.071	-2.02%	0.53%
			740	0.886	42.137	0.893	41.994	-0.78%	0.34%
			755	0.900	41.969	0.894	41.916	0.67%	0.13%
6/29/2015	835H	21.8	820	0.885	41.634	0.899	41.578	-1.56%	0.13%
			835	0.904	41.428	0.900	41.500	0.44%	-0.17%
			850	0.919	41.212	0.916	41.500	0.33%	-0.69%
6/22/2015	1750H	22.0	1710	1.305	39.265	1.348	40.142	-3.19%	-2.18%
			1750	1.346	39.121	1.371	40.079	-1.82%	-2.39%
			1790	1.386	38.970	1.394	40.016	-0.57%	-2.61%
6/14/2015	1900H	22.0	1850	1.364	39.792	1.400	40.000	-2.57%	-0.52%
			1880	1.395	39.656	1.400	40.000	-0.36%	-0.86%
			1910	1.429	39.558	1.400	40.000	2.07%	-1.11%
6/25/2015	2450-2600H	21.9	2400	1.817	39.448	1.756	39.289	3.47%	0.40%
			2450	1.877	39.244	1.800	39.200	4.28%	0.11%
			2500	1.934	39.049	1.855	39.136	4.26%	-0.22%
			2550	1.987	38.859	1.909	39.073	4.09%	-0.55%
			2600	2.047	38.682	1.964	39.009	4.23%	-0.84%
			2650	2.101	38.480	2.018	38.945	4.11%	-1.19%
06/25/2015	5200H-5800H	21.6	2700	2.159	38.250	2.073	38.882	4.15%	-1.63%
			5260	4.606	35.720	4.717	35.917	-2.35%	-0.55%
			5280	4.611	35.693	4.737	35.894	-2.66%	-0.56%
			5300	4.619	35.613	4.758	35.871	-2.92%	-0.72%
			5500	4.835	35.320	4.963	35.643	-2.58%	-0.91%
			5745	5.055	34.999	5.214	35.363	-3.05%	-1.03%
			5800	5.134	34.874	5.270	35.300	-2.58%	-1.21%
			5825	5.156	34.889	5.296	35.271	-2.64%	-1.08%

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 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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Table 10-2
Measured Tissue Properties (Body)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (C°)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
6/18/2015	750B	22.3	700	0.925	55.732	0.959	55.726	-3.55%	0.01%
			710	0.934	55.652	0.960	55.687	-2.71%	-0.06%
			720	0.943	55.567	0.961	55.648	-1.87%	-0.15%
			725	0.947	55.518	0.961	55.629	-1.46%	-0.20%
			740	0.960	55.370	0.963	55.570	-0.31%	-0.36%
			755	0.974	55.198	0.964	55.512	1.04%	-0.57%
6/30/2015	750B	20.7	700	0.935	54.692	0.959	55.726	-2.50%	-1.86%
			710	0.942	54.560	0.960	55.687	-1.88%	-2.02%
			720	0.949	54.409	0.961	55.648	-1.25%	-2.23%
			725	0.953	54.321	0.961	55.629	-0.83%	-2.35%
			740	0.964	54.079	0.963	55.570	0.10%	-2.68%
			755	0.977	53.849	0.964	55.512	1.35%	-3.00%
6/25/2015	835B	22.2	820	0.957	53.282	0.969	55.258	-1.24%	-3.58%
			835	0.973	53.089	0.970	55.200	0.31%	-3.82%
			850	0.986	52.925	0.988	55.154	-0.20%	-4.04%
6/29/2015	835B	21.9	820	0.977	53.879	0.969	55.258	0.83%	-2.50%
			835	0.993	53.688	0.970	55.200	2.37%	-2.74%
			850	1.005	53.594	0.988	55.154	1.72%	-2.83%
6/24/2015	1750B	21.8	1710	1.430	51.251	1.463	53.537	-2.26%	-4.27%
			1750	1.483	51.234	1.488	53.432	-0.34%	-4.11%
			1790	1.516	50.974	1.514	53.326	0.13%	-4.41%
6/22/2015	1900B	21.4	1850	1.477	52.419	1.520	53.300	-2.83%	-1.65%
			1880	1.518	52.258	1.520	53.300	-0.13%	-1.95%
			1910	1.558	52.189	1.520	53.300	2.50%	-2.08%
06/09/2015	2450B	21.9	2401	1.964	51.549	1.903	52.765	3.21%	-2.30%
			2450	2.032	51.385	1.950	52.700	4.21%	-2.50%
			2499	2.094	51.188	2.019	52.638	3.71%	-2.75%
6/16/2015	2450-2600B	22.0	2550	2.169	50.795	2.092	52.573	3.68%	-3.38%
			2600	2.239	50.598	2.163	52.509	3.51%	-3.64%
			2650	2.309	50.400	2.234	52.445	3.36%	-3.90%
			2700	2.379	50.210	2.305	52.382	3.21%	-4.15%
7/2/2015	2450-2600B	21.7	2400	1.965	51.109	1.902	52.767	3.31%	-3.14%
			2450	2.035	50.882	1.950	52.700	4.36%	-3.45%
			2500	2.104	50.676	2.021	52.636	4.11%	-3.72%
			2550	2.174	50.457	2.092	52.573	3.92%	-4.02%
			2600	2.241	50.273	2.163	52.509	3.61%	-4.26%
			2650	2.312	50.053	2.234	52.445	3.49%	-4.56%
06/08/2015	5200B-5800B	21.2	2700	2.387	49.816	2.305	52.382	3.56%	-4.90%
			5260	5.392	47.859	5.369	48.933	0.43%	-2.19%
			5300	5.456	47.753	5.416	48.879	0.74%	-2.30%
			5320	5.484	47.726	5.439	48.851	0.83%	-2.30%
			5500	5.718	47.478	5.650	48.607	1.20%	-2.32%
			5700	6.005	47.115	5.883	48.336	2.07%	-2.53%
			5745	6.061	46.998	5.936	48.275	2.11%	-2.65%
			5800	6.145	46.937	6.000	48.200	2.42%	-2.62%
			5825	6.174	46.898	6.029	48.166	2.41%	-2.63%

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 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)	Dipole SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
K	750	HEAD	06/22/2015	22.3	23.5	0.200	1003	3288	1.750	8.090	8.750	8.16%
K	835	HEAD	06/29/2015	22.5	21.8	0.200	4d132	3288	1.910	9.250	9.550	3.24%
G	1750	HEAD	06/22/2015	23.1	22.0	0.100	1051	3318	3.660	36.200	36.600	1.10%
G	1900	HEAD	06/14/2015	22.5	22.0	0.100	5d141	3318	4.310	39.900	43.100	8.02%
G	2450	HEAD	06/25/2015	20.5	21.4	0.100	719	3318	5.300	52.100	53.000	1.73%
G	2600	HEAD	06/25/2015	20.5	21.4	0.100	1071	3318	5.730	57.500	57.300	-0.35%
D	5300	HEAD	06/25/2015	23.1	21.6	0.050	1057	7357	3.990	84.700	79.800	-5.79%
D	5500	HEAD	06/25/2015	23.1	21.6	0.050	1057	7357	4.030	84.300	80.600	-4.39%
D	5800	HEAD	06/25/2015	23.1	21.6	0.050	1057	7357	4.070	81.100	81.400	0.37%
K	750	BODY	06/18/2015	22.3	22.2	0.200	1003	3288	1.750	8.460	8.750	3.43%
J	750	BODY	06/30/2015	20.3	20.5	0.200	1003	3319	1.830	8.460	9.150	8.16%
G	835	BODY	06/25/2015	22.3	22.2	0.200	4d132	3318	1.920	9.140	9.600	5.03%
G	835	BODY	06/29/2015	23.3	22.0	0.200	4d132	3318	1.880	9.140	9.400	2.84%
K	1750	BODY	06/24/2015	22.5	22.0	0.100	1051	3288	3.990	37.100	39.900	7.55%
D	1900	BODY	06/22/2015	22.5	21.4	0.100	5d149	3209	4.290	40.400	42.900	6.19%
G	2450	BODY	06/09/2015	21.5	21.9	0.100	719	3318	5.370	51.800	53.700	3.67%
G	2600	BODY	06/16/2015	21.9	22.0	0.100	1071	3318	5.510	56.900	55.100	-3.16%
D	2450	BODY	07/02/2015	23.1	21.7	0.100	719	3209	5.660	51.800	56.600	9.27%
D	2600	BODY	07/02/2015	23.3	22.1	0.100	1071	3209	6.200	56.900	62.000	8.96%
E	5300	BODY	06/08/2015	22.6	21.3	0.050	1057	3589	3.890	74.200	77.800	4.85%
E	5500	BODY	06/08/2015	22.6	21.3	0.050	1057	3589	3.760	79.200	75.200	-5.05%
E	5800	BODY	06/08/2015	22.4	21.3	0.050	1057	3589	3.450	75.100	69.000	-8.12%

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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)	Dipole SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
G	835	BODY	06/29/2015	23.3	22.0	0.200	4d132	3318	1.240	5.980	6.200	3.68%
K	1750	BODY	06/24/2015	22.5	22.0	0.100	1051	3288	2.110	20.000	21.100	5.50%
D	1900	BODY	06/22/2015	22.5	21.4	0.100	5d149	3209	2.240	21.300	22.400	5.16%
E	5300	BODY	06/08/2015	22.6	21.3	0.050	1057	3589	1.090	20.900	21.800	4.31%
E	5500	BODY	06/08/2015	22.6	21.3	0.050	1057	3589	1.050	22.000	21.000	-4.55%
E	5800	BODY	06/08/2015	22.4	21.3	0.050	1057	3589	0.966	20.600	19.320	-6.21%

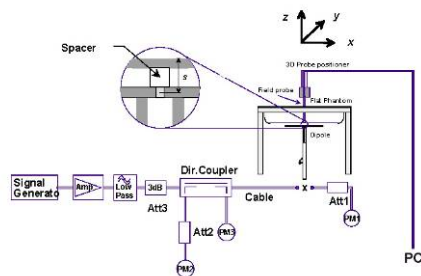


Figure 10-1
System Verification Setup Diagram



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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM850	GSM	33.5	33.14	0.11	Right	Cheek	95AB1	1:8.3	0.197	1.086	0.214	A1
836.60	190	GSM850	GSM	33.5	33.14	-0.05	Right	Tilt	95AB1	1:8.3	0.085	1.086	0.092	
836.60	190	GSM850	GSM	33.5	33.14	-0.07	Left	Cheek	95AB1	1:8.3	0.136	1.086	0.148	
836.60	190	GSM850	GSM	33.5	33.14	0.06	Left	Tilt	95AB1	1:8.3	0.074	1.086	0.080	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-2
Cell. CDMA BC10 Head SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.55	0.03	Right	Cheek	95AB5	1:1	0.240	1.109	0.266	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.55	0.14	Right	Tilt	95AB5	1:1	0.140	1.109	0.155	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.55	0.11	Left	Cheek	95AB5	1:1	0.206	1.109	0.228	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.0	24.55	0.06	Left	Tilt	95AB5	1:1	0.118	1.109	0.131	
820.10	564	CDMA BC10 (§90S)	EVDO Rev A	25.0	24.38	0.13	Right	Cheek	95AB5	1:1	0.309	1.153	0.356	A2
820.10	564	CDMA BC10 (§90S)	EVDO Rev A	25.0	24.38	0.14	Right	Tilt	95AB5	1:1	0.138	1.153	0.159	
820.10	564	CDMA BC10 (§90S)	EVDO Rev A	25.0	24.38	-0.09	Left	Cheek	95AB5	1:1	0.192	1.153	0.221	
820.10	564	CDMA BC10 (§90S)	EVDO Rev A	25.0	24.38	0.14	Left	Tilt	95AB5	1:1	0.102	1.153	0.118	
820.10	564	CDMA BC10 (§90S)	EVDO Rev A	24.5	23.98	0.03	Right	Cheek	9653A	1:1	0.039	1.127	0.044	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.5	23.98	0.04	Right	Tilt	9653A	1:1	0.019	1.127	0.021	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.5	23.98	-0.02	Left	Cheek	9653A	1:1	0.030	1.127	0.034	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.5	23.98	0.01	Left	Tilt	9653A	1:1	0.011	1.127	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

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Table 11-3
Cell. CDMA BC0 Head SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maxim um Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	RC3 / SO55	25.0	24.77	-0.01	Right	Cheek	95AB5	1:1	0.319	1.054	0.336	A3
836.52	384	Cell. CDMA	RC3 / SO55	25.0	24.77	-0.04	Right	Tilt	95AB5	1:1	0.146	1.054	0.154	
836.52	384	Cell. CDMA	RC3 / SO55	25.0	24.77	-0.04	Left	Cheek	95AB5	1:1	0.224	1.054	0.236	
836.52	384	Cell. CDMA	RC3 / SO55	25.0	24.77	0.07	Left	Tilt	95AB5	1:1	0.134	1.054	0.141	
836.52	384	Cell. CDMA	EVDO Rev A	25.0	24.48	0.15	Right	Cheek	95AB5	1:1	0.291	1.127	0.328	
836.52	384	Cell. CDMA	EVDO Rev A	25.0	24.48	0.08	Right	Tilt	95AB5	1:1	0.134	1.127	0.151	
836.52	384	Cell. CDMA	EVDO Rev A	25.0	24.48	0.01	Left	Cheek	95AB5	1:1	0.174	1.127	0.196	
836.52	384	Cell. CDMA	EVDO Rev A	25.0	24.48	0.07	Left	Tilt	95AB5	1:1	0.135	1.127	0.152	
836.52	384	Cell. CDMA	EVDO Rev. A	24.5	24.04	0.15	Right	Cheek	9653A	1:1	0.255	1.112	0.284	
836.52	384	Cell. CDMA	EVDO Rev. A	24.5	24.04	0.08	Right	Tilt	9653A	1:1	0.114	1.112	0.127	
836.52	384	Cell. CDMA	EVDO Rev. A	24.5	24.04	0.01	Left	Cheek	9653A	1:1	0.192	1.112	0.214	
836.52	384	Cell. CDMA	EVDO Rev. A	24.5	24.04	0.07	Left	Tilt	9653A	1:1	0.105	1.112	0.117	
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 11-4
UMTS 850 Head SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.08	Right	Cheek	95AB1	1:1	0.157	1.069	0.168	A4
836.60	4183	UMTS 850	RMC	23.5	23.21	0.04	Right	Tilt	95AB1	1:1	0.069	1.069	0.074	
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.03	Left	Cheek	95AB1	1:1	0.114	1.069	0.122	
836.60	4183	UMTS 850	RMC	23.5	23.21	0.11	Left	Tilt	95AB1	1:1	0.069	1.069	0.074	
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 11-5
GSM 1900 Head SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.5	30.50	0.14	Right	Cheek	95AB1	1:8.3	0.038	1.000	0.038	
1880.00	661	GSM 1900	GSM	30.5	30.50	0.04	Right	Tilt	95AB1	1:8.3	0.028	1.000	0.028	
1880.00	661	GSM 1900	GSM	30.5	30.50	0.02	Left	Cheek	95AB1	1:8.3	0.080	1.000	0.080	A5
1880.00	661	GSM 1900	GSM	30.5	30.50	0.03	Left	Tilt	95AB1	1:8.3	0.026	1.000	0.026	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Head						
Spatial Peak								1.6 W/kg (mW/g)						
Uncontrolled Exposure/General Population								averaged over 1 gram						

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Table 11-6
PCS CDMA/EVDO Head SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.58	0.04	Right	Cheek	95AB5	1:1	0.189	1.102	0.208	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.58	-0.06	Right	Tilt	95AB5	1:1	0.088	1.102	0.097	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.58	0.01	Left	Cheek	95AB5	1:1	0.301	1.102	0.332	A6
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.58	-0.01	Left	Tilt	95AB5	1:1	0.088	1.102	0.097	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.46	0.03	Right	Cheek	95AB5	1:1	0.229	1.132	0.259	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.46	0.12	Right	Tilt	95AB5	1:1	0.072	1.132	0.082	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.46	-0.03	Left	Cheek	95AB5	1:1	0.130	1.132	0.147	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.46	-0.03	Left	Tilt	95AB5	1:1	0.088	1.132	0.100	
1880.00	600	PCS CDMA	EVDO Rev. A	22.5	22.32	0.05	Right	Cheek	9653A	1:1	0.060	1.042	0.063	
1880.00	600	PCS CDMA	EVDO Rev. A	22.5	22.32	-0.03	Right	Tilt	9653A	1:1	0.059	1.042	0.061	
1880.00	600	PCS CDMA	EVDO Rev. A	22.5	22.32	0.01	Left	Cheek	9653A	1:1	0.161	1.042	0.168	
1880.00	600	PCS CDMA	EVDO Rev. A	22.5	22.32	-0.01	Left	Tilt	9653A	1:1	0.050	1.042	0.052	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-7
UMTS 1900 Head SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	-0.16	Right	Cheek	95AB1	1:1	0.070	1.062	0.074	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	0.00	Right	Tilt	95AB1	1:1	0.041	1.062	0.044	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	0.11	Left	Cheek	95AB1	1:1	0.127	1.062	0.135	A7
1880.00	9400	UMTS 1900	RMC	23.5	23.24	-0.05	Left	Tilt	95AB1	1:1	0.039	1.062	0.041	
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
LTE Band 12 Head SAR Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.00	0	Right	Cheek	QPSK	1	0	95AB3	1:1	0.116	1.143	0.133	A8
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.17	1	Right	Cheek	QPSK	25	0	95AB3	1:1	0.083	1.216	0.101	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	-0.17	0	Right	Tilt	QPSK	1	0	95AB3	1:1	0.039	1.143	0.045	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.07	1	Right	Tilt	QPSK	25	0	95AB3	1:1	0.026	1.216	0.032	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.14	0	Left	Cheek	QPSK	1	0	95AB3	1:1	0.083	1.143	0.095	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.09	1	Left	Cheek	QPSK	25	0	95AB3	1:1	0.059	1.216	0.072	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.05	0	Left	Tilt	QPSK	1	0	95AB3	1:1	0.066	1.143	0.075	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.08	1	Left	Tilt	QPSK	25	0	95AB3	1:1	0.049	1.216	0.060	
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 26 (Cell) Head SAR Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.02	0	Right	Cheek	QPSK	1	0	95AB3	1:1	0.274	1.159	0.318	A9
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.02	1	Right	Cheek	QPSK	36	18	95AB3	1:1	0.238	1.225	0.292	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.02	0	Right	Tilt	QPSK	1	0	95AB3	1:1	0.117	1.159	0.136	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.04	1	Right	Tilt	QPSK	36	18	95AB3	1:1	0.103	1.225	0.126	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.08	0	Left	Cheek	QPSK	1	0	95AB3	1:1	0.166	1.159	0.192	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.07	1	Left	Cheek	QPSK	36	18	95AB3	1:1	0.158	1.225	0.194	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.08	0	Left	Tilt	QPSK	1	0	95AB3	1:1	0.092	1.159	0.107	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.04	1	Left	Tilt	QPSK	36	18	95AB3	1:1	0.091	1.225	0.111	
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 4 (AWS) Head SAR Data

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	Scaled SAR (1g) (W/kg)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.03	0	Right	Cheek	QPSK	1	0	9653C	1:1	0.106	1.076	0.114	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	0.12	1	Right	Cheek	QPSK	50	0	9653C	1:1	0.067	1.178	0.079	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	0.11	0	Right	Tilt	QPSK	1	0	9653C	1:1	0.073	1.076	0.079	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	0.07	1	Right	Tilt	QPSK	50	0	9653C	1:1	0.057	1.178	0.067	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.14	0	Left	Cheek	QPSK	1	0	9653C	1:1	0.127	1.076	0.137	A10
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	-0.01	1	Left	Cheek	QPSK	50	0	9653C	1:1	0.090	1.178	0.106	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	0.01	0	Left	Tilt	QPSK	1	0	9653C	1:1	0.071	1.076	0.076	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	0.07	1	Left	Tilt	QPSK	50	0	9653C	1:1	0.050	1.178	0.059	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.04	0	Right	Cheek	QPSK	1	0	95A35	1:1	0.088	1.072	0.094	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.10	0	Right	Cheek	QPSK	50	0	95A35	1:1	0.067	1.175	0.079	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.05	0	Right	Tilt	QPSK	1	0	95A35	1:1	0.062	1.072	0.066	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.03	0	Right	Tilt	QPSK	50	0	95A35	1:1	0.061	1.175	0.072	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.02	0	Left	Cheek	QPSK	1	0	95A35	1:1	0.103	1.072	0.110	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.03	0	Left	Cheek	QPSK	50	0	95A35	1:1	0.083	1.175	0.098	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.03	0	Left	Tilt	QPSK	1	0	95A35	1:1	0.060	1.072	0.064	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	-0.03	0	Left	Tilt	QPSK	50	0	95A35	1:1	0.055	1.175	0.065	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

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

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.00	0	Right	Cheek	QPSK	1	0	9653C	1:1	0.079	1.047	0.083	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	0.05	1	Right	Cheek	QPSK	50	0	9653C	1:1	0.055	1.202	0.066	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.05	0	Right	Tilt	QPSK	1	0	9653C	1:1	0.105	1.047	0.110	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.07	1	Right	Tilt	QPSK	50	0	9653C	1:1	0.071	1.202	0.085	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.19	0	Left	Cheek	QPSK	1	0	9653C	1:1	0.172	1.047	0.180	A11
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.03	1	Left	Cheek	QPSK	50	0	9653C	1:1	0.119	1.202	0.143	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.06	0	Left	Tilt	QPSK	1	0	9653C	1:1	0.092	1.047	0.096	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	0.05	1	Left	Tilt	QPSK	50	0	9653C	1:1	0.075	1.202	0.090	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.07	0	Right	Cheek	QPSK	1	0	95A35	1:1	0.045	1.002	0.045	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	0.08	0	Right	Cheek	QPSK	50	0	95A35	1:1	0.043	1.122	0.048	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.05	0	Right	Tilt	QPSK	1	0	95A35	1:1	0.051	1.002	0.051	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.03	0	Right	Tilt	QPSK	50	0	95A35	1:1	0.040	1.122	0.045	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.02	0	Left	Cheek	QPSK	1	0	95A35	1:1	0.097	1.002	0.097	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.01	0	Left	Cheek	QPSK	50	0	95A35	1:1	0.092	1.122	0.103	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.11	0	Left	Tilt	QPSK	1	0	95A35	1:1	0.041	1.002	0.041	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	0.02	0	Left	Tilt	QPSK	50	0	95A35	1:1	0.035	1.122	0.039	
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 11-12
LTE Band 41 Head SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Scaled SAR (1g) (W/kg)	Plot #	
MHz	Ch.																		
2680.00	41490	High	LTE Band 41	20	24.5	24.42	0.12	0	Right	Cheek	QPSK	1	0	9653C	1:1.58	0.042	1.019	0.043	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	0.04	1	Right	Cheek	QPSK	50	0	9653C	1:1.58	0.032	1.074	0.034	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	0.11	0	Right	Tilt	QPSK	1	0	9653C	1:1.58	0.059	1.019	0.060	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	0.03	1	Right	Tilt	QPSK	50	0	9653C	1:1.58	0.035	1.074	0.038	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	0.01	0	Left	Cheek	QPSK	1	0	9653C	1:1.58	0.073	1.019	0.074	A12
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	0.02	1	Left	Cheek	QPSK	50	0	9653C	1:1.58	0.048	1.074	0.052	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	-0.05	0	Left	Tilt	QPSK	1	0	9653C	1:1.58	0.033	1.019	0.034	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	0.03	1	Left	Tilt	QPSK	50	0	9653C	1:1.58	0.022	1.074	0.024	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-13
DTS Head SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (1g) (W/kg)	Plot #
MHz	Ch.													W/kg				(W/kg)	
2462	11	802.11b	DSSS	22	15.5	15.45	0.08	Right	Cheek	1	9587C	1	100.0	0.599	0.537	1.012	1.000	0.543	A13
2462	11	802.11b	DSSS	22	15.5	15.45	0.03	Right	Tilt	1	9587C	1	100.0	0.481	0.422	1.012	1.000	0.427	
2462	11	802.11b	DSSS	22	15.5	15.45	-	Left	Cheek	1	9587C	1	100.0	0.438	-	1.012	1.000	-	
2462	11	802.11b	DSSS	22	15.5	15.45	-	Left	Tilt	1	9587C	1	100.0	0.293	-	1.012	1.000	-	
2412	1	802.11b	DSSS	22	15.5	15.44	0.02	Right	Cheek	2	9587C	1	99.7	0.463	0.435	1.014	1.004	0.443	
2412	1	802.11b	DSSS	22	15.5	15.44	0.03	Right	Tilt	2	9587C	1	99.7	0.447	0.408	1.014	1.004	0.416	
2412	1	802.11b	DSSS	22	15.5	15.44	-	Left	Cheek	2	9587C	1	99.7	0.297	-	1.014	1.004	-	
2412	1	802.11b	DSSS	22	15.5	15.44	-	Left	Tilt	2	9587C	1	99.7	0.304	-	1.014	1.004	-	
2412	1	802.11n	OFDM	20	16.5	16.30	-0.06	Right	Cheek	MMO	9587C	13	98.4	0.640	0.476	1.102	1.016	0.533	
2412	1	802.11n	OFDM	20	16.5	16.30	-0.06	Right	Tilt	MMO	9587C	13	98.4	0.537	0.395	1.102	1.016	0.442	
2412	1	802.11n	OFDM	20	16.5	16.30	-	Left	Cheek	MMO	9587C	13	98.4	0.302	-	-	1.016	-	
2412	1	802.11n	OFDM	20	16.5	16.30	-	Left	Tilt	MMO	9587C	13	98.4	0.289	-	-	1.016	-	
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 11-14
NII Head SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan (W/kg)	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
5280	56	802.11a	OFDM	20	10.5	10.13	0.16	Right	Cheek	1	9587C	6	99.3	0.359	0.243	1.089	1.008	0.267	
5280	56	802.11a	OFDM	20	10.5	10.13	-	Right	Tilt	1	9587C	6	99.3	0.221	-	1.089	1.008	-	
5280	56	802.11a	OFDM	20	10.5	10.13	-	Left	Cheek	1	9587C	6	99.3	0.188	-	1.089	1.008	-	
5280	56	802.11a	OFDM	20	10.5	10.13	-	Left	Tilt	1	9587C	6	99.3	0.159	-	1.089	1.008	-	
5260	52	802.11a	OFDM	20	10.5	10.48	0.13	Right	Cheek	2	9587C	6	98.6	0.551	0.241	1.005	1.014	0.245	
5260	52	802.11a	OFDM	20	10.5	10.48	-	Right	Tilt	2	9587C	6	98.6	0.343	-	1.005	1.014	-	
5260	52	802.11a	OFDM	20	10.5	10.48	-	Left	Cheek	2	9587C	6	98.6	0.273	-	1.005	1.014	-	
5260	52	802.11a	OFDM	20	10.5	10.48	-	Left	Tilt	2	9587C	6	98.6	0.219	-	1.005	1.014	-	
5500	100	802.11a	OFDM	20	10.5	10.01	0.17	Right	Cheek	1	9587C	6	99.3	0.695	0.335	1.119	1.008	0.378	
5500	100	802.11a	OFDM	20	10.5	10.01	-	Right	Tilt	1	9587C	6	99.3	0.362	-	1.119	1.008	-	
5500	100	802.11a	OFDM	20	10.5	10.01	-	Left	Cheek	1	9587C	6	99.3	0.506	-	1.119	1.008	-	
5500	100	802.11a	OFDM	20	10.5	10.01	-	Left	Tilt	1	9587C	6	99.3	0.394	-	1.119	1.008	-	
5500	100	802.11a	OFDM	20	10.5	10.36	0.12	Right	Cheek	2	9587C	6	98.6	0.478	0.206	1.033	1.014	0.216	
5500	100	802.11a	OFDM	20	10.5	10.36	-	Right	Tilt	2	9587C	6	98.6	0.336	-	1.033	1.014	-	
5500	100	802.11a	OFDM	20	10.5	10.36	-	Left	Cheek	2	9587C	6	98.6	0.164	-	1.033	1.014	-	
5500	100	802.11a	OFDM	20	10.5	10.36	-	Left	Tilt	2	9587C	6	98.6	0.174	-	1.033	1.014	-	
5745	149	802.11a	OFDM	20	10.5	10.45	0.16	Right	Cheek	1	9587C	6	99.3	0.645	0.391	1.012	1.008	0.399	A14
5745	149	802.11a	OFDM	20	10.5	10.45	-	Right	Tilt	1	9587C	6	99.3	0.438	-	1.012	1.008	-	
5745	149	802.11a	OFDM	20	10.5	10.45	-	Left	Cheek	1	9587C	6	99.3	0.414	-	1.012	1.008	-	
5745	149	802.11a	OFDM	20	10.5	10.45	-	Left	Tilt	1	9587C	6	99.3	0.330	-	1.012	1.008	-	
5825	165	802.11a	OFDM	20	10.5	10.34	0.13	Right	Cheek	2	9587C	6	98.6	0.559	0.263	1.038	1.014	0.277	
5825	165	802.11a	OFDM	20	10.5	10.34	-	Right	Tilt	2	9587C	6	98.6	0.520	-	1.038	1.014	-	
5825	165	802.11a	OFDM	20	10.5	10.34	-	Left	Cheek	2	9587C	6	98.6	0.462	-	1.038	1.014	-	
5825	165	802.11a	OFDM	20	10.5	10.34	-	Left	Tilt	2	9587C	6	98.6	0.500	-	1.038	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head									
Spatial Peak										1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population										averaged over 1 gram									

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11.2 Standalone Body-Worn SAR Data

Table 11-15
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	33.14	-0.02	15 mm	95AB1	1	1:8.3	back	0.271	1.086	0.294	A15
820.10	564	CDMA BC10 (S90S)	TDSO / SO32	25.0	24.64	-0.03	15 mm	95AB5	N/A	1:1	back	0.322	1.086	0.350	A17
836.52	384	Cell. CDMA	TDSO / SO32	25.0	24.73	0.04	15 mm	95AB5	N/A	1:1	back	0.424	1.064	0.451	A19
836.60	4183	UMTS 850	RMC	23.5	23.21	0.01	15 mm	95AB1	N/A	1:1	back	0.267	1.069	0.285	A21
1880.00	661	GSM 1900	GSM	30.5	30.50	-0.18	15 mm	95AB1	1	1:8.3	back	0.270	1.000	0.270	A23
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.72	0.02	15 mm	95AB5	N/A	1:1	back	0.685	1.067	0.731	A25
1880.00	9400	UMTS 1900	RMC	23.5	23.24	0.06	15 mm	95AB1	N/A	1:1	back	0.516	1.062	0.548	A27
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 11-16
LTE Body-Worn SAR Data

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	Scaled SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	-0.09	0	95AB3	QPSK	1	0	15 mm	back	1:1	0.280	1.143	0.320	A29
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	-0.07	1	95AB3	QPSK	25	0	15 mm	back	1:1	0.192	1.216	0.233	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	-0.03	0	95AB3	QPSK	1	0	15 mm	back	1:1	0.474	1.159	0.549	A31
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.01	1	95AB3	QPSK	36	18	15 mm	back	1:1	0.373	1.225	0.457	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.05	0	AC258	QPSK	1	0	15 mm	back	1:1	0.649	1.076	0.698	A33
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	-0.04	1	AC258	QPSK	50	0	15 mm	back	1:1	0.464	1.178	0.547	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.02	0	95AB1	QPSK	1	0	15 mm	back	1:1	0.659	1.047	0.690	A35
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.11	1	95AB1	QPSK	50	0	15 mm	back	1:1	0.456	1.202	0.548	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	-0.03	0	9653C	QPSK	1	0	15 mm	back	1:1.58	0.200	1.019	0.204	A37
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	-0.03	1	9653C	QPSK	50	0	15 mm	back	1:1.58	0.159	1.074	0.171	
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 11-17
DTS Body-Worn SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (1g)	Plot #
MHz	Ch.													(W/kg)	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	17.5	17.42	0.05	10 mm	1	9587C	1	back	100.0	0.165	0.162	1.019	1.000	0.165	
2412	1	802.11b	DSSS	22	17.5	16.85	-0.13	10 mm	2	9587C	1	back	99.7	0.191	0.164	1.161	1.004	0.191	A39
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 11-18
NII Body-Worn SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR(1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	52	802.11a	OFDM	20	13.5	13.35	0.10	10 mm	1	9587C	6	back	99.3	0.042	0.024	1.035	1.008	0.025	
5320	64	802.11a	OFDM	20	13.5	13.05	0.03	10 mm	2	9587C	6	back	98.6	0.048	0.021	1.109	1.014	0.023	
5720	144	802.11a	OFDM	20	13.5	13.29	0.06	10 mm	1	9587C	6	back	99.3	0.064	0.029	1.050	1.008	0.030	
5500	100	802.11a	OFDM	20	13.5	13.19	0.12	10 mm	2	9587C	6	back	98.6	0.052	0.022	1.074	1.014	0.024	
5825	165	802.11a	OFDM	20	13.5	13.12	0.05	10 mm	1	9587C	6	back	99.3	0.028	0.004	1.091	1.008	0.004	
5745	149	802.11a	OFDM	20	13.5	12.84	0.07	10 mm	2	9587C	6	back	98.6	0.096	0.035	1.164	1.014	0.042	A40
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

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11.3 Standalone Wireless Router SAR Data

Table 11-19
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	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	29.5	29.23	0.01	10 mm	95AB1	4	1.2.076	back	0.646	1.064	0.687	A16
836.60	190	GSM 850	GPRS	29.5	29.23	0.04	10 mm	95AB1	4	1.2.076	front	0.565	1.064	0.601	
836.60	190	GSM 850	GPRS	29.5	29.23	-0.02	10 mm	95AB1	4	1.2.076	bottom	0.348	1.064	0.370	
836.60	190	GSM 850	GPRS	29.5	29.23	0.02	10 mm	95AB1	4	1.2.076	right	0.353	1.064	0.376	
836.60	190	GSM 850	GPRS	29.5	29.23	-0.14	10 mm	95AB1	4	1.2.076	left	0.076	1.064	0.081	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	24.5	24.16	-0.01	10 mm	9653A	N/A	1:1	back	0.606	1.081	0.655	A18
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	24.5	24.16	0.00	10 mm	9653A	N/A	1:1	front	0.563	1.081	0.609	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	24.5	24.16	0.06	10 mm	9653A	N/A	1:1	bottom	0.336	1.081	0.363	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	24.5	24.16	0.20	10 mm	9653A	N/A	1:1	right	0.346	1.081	0.374	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	24.5	24.16	-0.03	10 mm	9653A	N/A	1:1	left	0.085	1.081	0.092	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	-0.01	10 mm	9653A	N/A	1:1	back	0.578	1.064	0.615	A20
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	0.02	10 mm	9653A	N/A	1:1	front	0.533	1.064	0.567	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	-0.06	10 mm	9653A	N/A	1:1	bottom	0.314	1.064	0.334	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	-0.05	10 mm	9653A	N/A	1:1	right	0.322	1.064	0.343	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	0.06	10 mm	9653A	N/A	1:1	left	0.067	1.064	0.071	
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.04	10 mm	95AB1	N/A	1:1	back	0.414	1.069	0.443	A22
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.04	10 mm	95AB1	N/A	1:1	front	0.409	1.069	0.437	
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.02	10 mm	95AB1	N/A	1:1	bottom	0.244	1.069	0.261	
836.60	4183	UMTS 850	RMC	23.5	23.21	-0.03	10 mm	95AB1	N/A	1:1	right	0.232	1.069	0.248	
836.60	4183	UMTS 850	RMC	23.5	23.21	0.09	10 mm	95AB1	N/A	1:1	left	0.039	1.069	0.042	
1850.20	512	GSM 1900	GPRS	30.0	29.68	-0.16	10 mm	95AB1	2	1.4.15	back	0.913	1.076	0.982	
1880.00	661	GSM 1900	GPRS	30.0	29.80	-0.19	10 mm	95AB1	2	1.4.15	back	0.927	1.047	0.971	
1909.80	810	GSM 1900	GPRS	30.0	29.82	-0.20	10 mm	95AB1	2	1.4.15	back	0.876	1.042	0.913	
1850.20	512	GSM 1900	GPRS	30.0	29.68	-0.11	10 mm	95AB1	2	1.4.15	front	0.846	1.076	0.910	
1880.00	661	GSM 1900	GPRS	30.0	29.80	-0.09	10 mm	95AB1	2	1.4.15	front	0.947	1.047	0.992	A24
1909.80	810	GSM 1900	GPRS	30.0	29.82	-0.04	10 mm	95AB1	2	1.4.15	front	0.909	1.042	0.947	
1880.00	661	GSM 1900	GPRS	30.0	29.80	0.09	10 mm	95AB1	2	1.4.15	bottom	0.668	1.047	0.699	
1880.00	661	GSM 1900	GPRS	30.0	29.80	0.09	10 mm	95AB1	2	1.4.15	right	0.108	1.047	0.113	
1880.00	661	GSM 1900	GPRS	30.0	29.80	0.01	10 mm	95AB1	2	1.4.15	left	0.042	1.047	0.044	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.5	22.36	-0.06	10 mm	9653A	N/A	1:1	back	0.985	1.033	1.018	A26
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	-0.11	10 mm	9653A	N/A	1:1	back	0.903	1.016	0.917	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.5	22.21	-0.11	10 mm	9653A	N/A	1:1	back	0.811	1.069	0.867	
1851.25	25	PCS CDMA	EVDO Rev. 0	22.5	22.36	0.07	10 mm	9653A	N/A	1:1	front	0.973	1.033	1.005	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.05	10 mm	9653A	N/A	1:1	front	0.925	1.016	0.940	
1908.75	1175	PCS CDMA	EVDO Rev. 0	22.5	22.21	0.06	10 mm	9653A	N/A	1:1	front	0.852	1.069	0.911	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.01	10 mm	9653A	N/A	1:1	bottom	0.659	1.016	0.670	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.00	10 mm	9653A	N/A	1:1	right	0.140	1.016	0.142	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.09	10 mm	9653A	0	1:1	left	0.056	1.016	0.057	
1852.40	9262	UMTS 1900	RMC	21.5	21.13	-0.12	10 mm	95AB6	N/A	1:1	back	0.914	1.089	0.995	A28
1880.00	9400	UMTS 1900	RMC	21.5	21.09	-0.11	10 mm	95AB6	N/A	1:1	back	0.836	1.099	0.919	
1907.60	9538	UMTS 1900	RMC	21.5	21.15	-0.10	10 mm	95AB6	N/A	1:1	back	0.702	1.084	0.761	
1852.40	9262	UMTS 1900	RMC	21.5	21.13	-0.07	10 mm	95AB6	N/A	1:1	front	0.872	1.089	0.950	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	-0.05	10 mm	95AB6	N/A	1:1	front	0.832	1.099	0.914	
1907.60	9538	UMTS 1900	RMC	21.5	21.15	-0.07	10 mm	95AB6	N/A	1:1	front	0.726	1.084	0.787	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	0.06	10 mm	95AB6	N/A	1:1	bottom	0.623	1.099	0.685	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	-0.10	10 mm	95AB6	N/A	1:1	right	0.098	1.099	0.108	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	0.11	10 mm	95AB6	N/A	1:1	left	0.036	1.099	0.040	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Body								
Spatial Peak							1.6 W/kg (mW/g)								
Uncontrolled Exposure/General Population							averaged over 1 gram								

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Table 11-20
LTE Band 12 Hotspot SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maxim um Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.00	0	95AB3	QPSK	1	0	10 mm	back	1:1	0.535	1.143	0.612	A30
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	-0.06	1	95AB3	QPSK	25	0	10 mm	back	1:1	0.417	1.216	0.507	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.01	0	95AB3	QPSK	1	0	10 mm	front	1:1	0.550	1.143	0.629	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.01	1	95AB3	QPSK	25	0	10 mm	front	1:1	0.429	1.216	0.522	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	-0.09	0	95AB3	QPSK	1	0	10 mm	bottom	1:1	0.262	1.143	0.299	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	-0.06	1	95AB3	QPSK	25	0	10 mm	bottom	1:1	0.203	1.216	0.247	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	-0.05	0	95AB3	QPSK	1	0	10 mm	right	1:1	0.172	1.143	0.197	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	-0.01	1	95AB3	QPSK	25	0	10 mm	right	1:1	0.147	1.216	0.179	
707.50	23095	Mid	LTE Band 12	10	24.5	23.92	0.03	0	95AB3	QPSK	1	0	10 mm	left	1:1	0.079	1.143	0.090	
707.50	23095	Mid	LTE Band 12	10	23.5	22.65	0.11	1	95AB3	QPSK	25	0	10 mm	left	1:1	0.062	1.216	0.075	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak								Body 1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-21
LTE Band 26 (Cell) Hotspot SAR Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.11	0	95AB3	QPSK	1	0	10 mm	back	1:1	0.636	1.159	0.737	A32
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	-0.02	1	95AB3	QPSK	36	18	10 mm	back	1:1	0.516	1.225	0.632	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.02	0	95AB3	QPSK	1	0	10 mm	front	1:1	0.682	1.159	0.790	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	-0.03	1	95AB3	QPSK	36	18	10 mm	front	1:1	0.566	1.225	0.693	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.03	0	95AB3	QPSK	1	0	10 mm	bottom	1:1	0.407	1.159	0.472	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	-0.02	1	95AB3	QPSK	36	18	10 mm	bottom	1:1	0.318	1.225	0.390	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	0.02	0	95AB3	QPSK	1	0	10 mm	right	1:1	0.425	1.159	0.493	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	0.02	1	95AB3	QPSK	36	18	10 mm	right	1:1	0.321	1.225	0.393	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.5	23.86	-0.02	0	95AB3	QPSK	1	0	10 mm	left	1:1	0.079	1.159	0.092	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.5	22.62	-0.13	1	95AB3	QPSK	36	18	10 mm	left	1:1	0.058	1.225	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

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Table 11-22
LTE Band 4 (AWS) Hotspot SAR Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.03	0	95A35	QPSK	1	0	10 mm	back	1:1	0.991	1.072	1.062	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	-0.05	0	95A35	QPSK	50	0	10 mm	back	1:1	0.899	1.175	1.056	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.73	-0.02	0	95A35	QPSK	100	0	10 mm	back	1:1	0.887	1.194	1.059	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.10	0	95A35	QPSK	1	0	10 mm	front	1:1	0.991	1.072	1.062	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.08	0	95A35	QPSK	50	0	10 mm	front	1:1	0.898	1.175	1.055	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.73	0.07	0	95A35	QPSK	100	0	10 mm	front	1:1	0.898	1.194	1.072	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.03	0	95A35	QPSK	1	0	10 mm	bottom	1:1	0.989	1.072	1.060	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	-0.02	0	95A35	QPSK	50	0	10 mm	bottom	1:1	0.919	1.175	1.080	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.73	-0.02	0	95A35	QPSK	100	0	10 mm	bottom	1:1	0.918	1.194	1.096	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.11	0	95A35	QPSK	1	0	10 mm	right	1:1	0.228	1.072	0.244	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.05	0	95A35	QPSK	50	0	10 mm	right	1:1	0.207	1.175	0.243	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.10	0	95A35	QPSK	1	0	10 mm	left	1:1	0.033	1.072	0.035	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.06	0	95A35	QPSK	50	0	10 mm	left	1:1	0.029	1.175	0.034	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.02	0	95A35	QPSK	1	0	10 mm	back	1:1	1.010	1.072	1.083	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											

Note: Blue entry represents variability measurement.

Table 11-23
LTE Band 25 (PCS) Hotspot SAR Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.83	-0.02	0	95A35	QPSK	1	0	10 mm	back	1:1	0.733	1.040	0.762	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.12	0	95A35	QPSK	1	0	10 mm	back	1:1	0.876	1.002	0.878	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.94	-0.02	0	95A35	QPSK	1	0	10 mm	back	1:1	0.693	1.014	0.703	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.02	0	95A35	QPSK	50	0	10 mm	back	1:1	0.698	1.122	0.783	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.42	-0.06	0	95A35	QPSK	100	0	10 mm	back	1:1	0.696	1.143	0.796	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.83	-0.10	0	95A35	QPSK	1	0	10 mm	front	1:1	1.040	1.040	1.082	A36
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.07	0	95A35	QPSK	1	0	10 mm	front	1:1	1.000	1.002	1.002	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.94	-0.03	0	95A35	QPSK	1	0	10 mm	front	1:1	0.923	1.014	0.936	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.39	-0.02	0	95A35	QPSK	50	0	10 mm	front	1:1	0.812	1.151	0.935	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.02	0	95A35	QPSK	50	0	10 mm	front	1:1	0.795	1.122	0.892	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.39	0.00	0	95A35	QPSK	50	0	10 mm	front	1:1	0.710	1.151	0.817	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.42	0.00	0	95A35	QPSK	100	0	10 mm	front	1:1	0.770	1.143	0.880	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.12	0	95A35	QPSK	1	0	10 mm	bottom	1:1	0.730	1.002	0.731	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.08	0	95A35	QPSK	50	0	10 mm	bottom	1:1	0.635	1.122	0.712	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.13	0	95A35	QPSK	1	0	10 mm	right	1:1	0.134	1.002	0.134	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.08	0	95A35	QPSK	50	0	10 mm	right	1:1	0.121	1.122	0.136	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.15	0	95A35	QPSK	1	0	10 mm	left	1:1	0.054	1.002	0.054	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	0.01	0	95A35	QPSK	50	0	10 mm	left	1:1	0.049	1.122	0.055	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.83	0.05	0	95A35	QPSK	1	0	10 mm	front	1:1	0.934	1.040	0.971	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Blue entry represents variability measurement.

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Table 11-24
LTE Band 41 Hotspot Data

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	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
2680.00	41490	High	LTE Band 41	20	24.5	24.42	-0.04	0	9653C	QPSK	1	0	10 mm	back	1:1.58	0.383	1.019	0.390	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	-0.04	1	9653C	QPSK	50	0	10 mm	back	1:1.58	0.290	1.074	0.311	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	0.15	0	9653C	QPSK	1	0	10 mm	front	1:1.58	0.451	1.019	0.460	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	-0.01	1	9653C	QPSK	50	0	10 mm	front	1:1.58	0.338	1.074	0.363	
2506.00	39750	Low	LTE Band 41	20	24.5	23.69	-0.13	0	9653C	QPSK	1	0	10 mm	bottom	1:1.58	0.905	1.205	1.091	
2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.30	-0.08	0	9653C	QPSK	1	0	10 mm	bottom	1:1.58	1.040	1.047	1.089	
2593.00	40620	Mid	LTE Band 41	20	24.5	24.22	-0.06	0	9653C	QPSK	1	0	10 mm	bottom	1:1.58	1.030	1.067	1.099	
2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.38	0.02	0	9653C	QPSK	1	50	10 mm	bottom	1:1.58	1.070	1.028	1.100	A38
2680.00	41490	High	LTE Band 41	20	24.5	24.42	-0.02	0	9653C	QPSK	1	0	10 mm	bottom	1:1.58	1.060	1.019	1.080	
2506.00	39750	Low	LTE Band 41	20	23.5	22.54	0.05	1	9653C	QPSK	50	25	10 mm	bottom	1:1.58	0.703	1.247	0.877	
2549.50	40185	Low-Mid	LTE Band 41	20	23.5	22.98	0.04	1	9653C	QPSK	50	0	10 mm	bottom	1:1.58	0.725	1.127	0.817	
2593.00	40620	Mid	LTE Band 41	20	23.5	23.00	-0.01	1	9653C	QPSK	50	0	10 mm	bottom	1:1.58	0.805	1.122	0.903	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	0.05	1	9653C	QPSK	50	0	10 mm	bottom	1:1.58	0.916	1.074	0.984	
2680.00	41490	High	LTE Band 41	20	23.5	23.17	0.02	1	9653C	QPSK	50	0	10 mm	bottom	1:1.58	0.997	1.079	1.076	
2636.50	40155	Mid-High	LTE Band 41	20	23.5	22.86	0.04	1	9653C	QPSK	100	0	10 mm	bottom	1:1.58	0.840	1.159	0.974	
2680.00	41490	High	LTE Band 41	20	24.5	24.42	-0.04	0	9653C	QPSK	1	0	10 mm	left	1:1.58	0.200	1.019	0.204	
2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.19	-0.03	1	9653C	QPSK	50	0	10 mm	left	1:1.58	0.154	1.074	0.165	
2506.00	39750	Low	LTE Band 41	20	24.5	23.69	-0.13	0	9653C	QPSK	1	0	10 mm	bottom	1:1.58	0.797	1.205	0.960	
2636.50	41055	Mid-High	LTE Band 41	20	24.5	24.38	-0.01	0	9653C	QPSK	1	50	10 mm	bottom	1:1.58	1.060	1.028	1.090	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Note: Blue entries represent variability measurement.

Table 11-25
WLAN Hotspot SAR Data

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	17.5	17.42	0.05	10 mm	1	9587C	1	back	100.0	0.185	0.162	1.019	1.000	0.165	
2437	6	802.11b	DSSS	22	17.5	17.42	-	10 mm	1	9587C	1	front	100.0	0.129	-	1.019	1.000	-	
2437	6	802.11b	DSSS	22	17.5	17.42	-	10 mm	1	9587C	1	top	100.0	0.145	-	1.019	1.000	-	
2437	6	802.11b	DSSS	22	17.5	17.42	-	10 mm	1	9587C	1	left	100.0	0.091	-	1.019	1.000	-	
2412	1	802.11b	DSSS	22	17.5	16.85	-0.13	10 mm	2	9587C	1	back	99.7	0.191	0.164	1.161	1.004	0.191	A39
2412	1	802.11b	DSSS	22	17.5	16.85	-	10 mm	2	9587C	1	front	99.7	0.102	-	1.161	1.004	-	
2412	1	802.11b	DSSS	22	17.5	16.85	-	10 mm	2	9587C	1	top	99.7	0.163	-	1.161	1.004	-	
2412	1	802.11b	DSSS	22	17.5	16.85	-	10 mm	2	9587C	1	left	99.7	0.080	-	1.161	1.004	-	
5825	165	802.11a	OFDM	20	13.5	13.12	-	10 mm	1	9587C	6	back	99.3	0.028	-	1.091	1.008	-	
5825	165	802.11a	OFDM	20	13.5	13.12	0.04	10 mm	1	9587C	6	front	99.3	0.126	0.061	1.091	1.008	0.068	
5825	165	802.11a	OFDM	20	13.5	13.12	-	10 mm	1	9587C	6	top	99.3	0.029	-	1.091	1.008	-	
5825	165	802.11a	OFDM	20	13.5	13.12	-	10 mm	1	9587C	6	left	99.3	0.052	-	1.091	1.008	-	
5745	149	802.11a	OFDM	20	13.5	12.84	-	10 mm	2	9587C	6	back	98.6	0.096	-	1.164	1.014	-	
5745	149	802.11a	OFDM	20	13.5	12.84	-0.04	10 mm	2	9587C	6	front	98.6	0.399	0.181	1.164	1.014	0.214	A41
5745	149	802.11a	OFDM	20	13.5	12.84	-	10 mm	2	9587C	6	top	98.6	0.268	-	1.164	1.014	-	
5745	149	802.11a	OFDM	20	13.5	12.84	-	10 mm	2	9587C	6	left	98.6	0.035	-	1.164	1.014	-	
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 Extremity SAR Data

Table 11-26
GPRS/UMTS/CDMA Extremity SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Scaled SAR (10g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev 0	25.0	24.60	0.00	2 mm	95AB5	1:1	back	1.320	1.096	1.447	A42
820.10	564	CDMA BC10 (§90S)	EVDO Rev 0	25.0	24.60	-0.03	1 mm	95AB5	1:1	front	1.530	1.096	1.677	
820.10	564	CDMA BC10 (§90S)	EVDO Rev 0	25.0	24.60	-0.04	3 mm	95AB5	1:1	bottom	0.527	1.096	0.578	
820.10	564	CDMA BC10 (§90S)	EVDO Rev 0	25.0	24.60	-0.01	0 mm	95AB5	1:1	right	0.335	1.096	0.367	
820.10	564	CDMA BC10 (§90S)	EVDO Rev 0	25.0	24.60	-0.04	0 mm	95AB5	1:1	left	0.185	1.096	0.203	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.5	24.16	0.02	0 mm	9653A	1:1	back	1.040	1.081	1.124	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.5	24.16	-0.06	0 mm	9653A	1:1	front	1.060	1.081	1.146	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.5	24.16	0.04	0 mm	9653A	1:1	bottom	0.520	1.081	0.562	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.0	24.75	0.02	2 mm	95AB5	1:1	back	1.280	1.059	1.356	A43
836.52	384	Cell. CDMA	EVDO Rev. 0	25.0	24.75	-0.08	1 mm	95AB5	1:1	front	1.790	1.059	1.896	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.0	24.75	-0.01	3 mm	95AB5	1:1	bottom	0.501	1.059	0.531	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.0	24.75	0.04	0 mm	95AB5	1:1	right	0.334	1.059	0.354	
836.52	384	Cell. CDMA	EVDO Rev. 0	25.0	24.75	-0.08	0 mm	95AB5	1:1	left	0.205	1.059	0.217	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	-0.04	0 mm	9653A	1:1	back	0.844	1.064	0.898	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	0.02	0 mm	9653A	1:1	front	0.817	1.064	0.869	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.5	24.23	0.02	0 mm	9653A	1:1	bottom	0.397	1.064	0.422	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.0	24.51	0.03	2 mm	95AB5	1:1	back	2.640	1.119	2.954	A44
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.55	0.05	2 mm	95AB5	1:1	back	2.810	1.109	3.116	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	25.00	0.04	2 mm	95AB5	1:1	back	2.840	1.000	2.840	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.0	24.51	0.00	1 mm	95AB5	1:1	front	2.720	1.119	3.044	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.55	-0.21	1 mm	95AB5	1:1	front	2.860	1.109	3.172	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	25.00	0.01	1 mm	95AB5	1:1	front	3.290	1.000	3.290	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.55	-0.02	3 mm	95AB5	1:1	bottom	1.500	1.109	1.664	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.55	0.15	0 mm	95AB5	1:1	right	0.445	1.109	0.494	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.55	-0.15	0 mm	95AB5	1:1	left	0.170	1.109	0.189	A45
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.04	0 mm	9653A	1:1	back	1.950	1.016	1.981	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.04	0 mm	9653A	1:1	front	1.850	1.016	1.880	
1880.00	600	PCS CDMA	EVDO Rev. 0	22.5	22.43	0.04	0 mm	9653A	1:1	bottom	0.951	1.016	0.966	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	25.00	0.01	1 mm	95AB5	1:1	front	3.190	1.000	3.190	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	-0.10	2 mm	95AB1	1:1	back	1.790	1.062	1.901	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	0.02	1 mm	95AB1	1:1	front	1.840	1.062	1.954	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	-0.16	3 mm	95AB1	1:1	bottom	1.110	1.062	1.179	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	-0.03	0 mm	95AB1	1:1	right	0.348	1.062	0.370	
1880.00	9400	UMTS 1900	RMC	23.5	23.24	0.18	0 mm	95AB1	1:1	left	0.135	1.062	0.143	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	-0.19	0 mm	95AB6	1:1	back	1.590	1.099	1.747	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	0.02	0 mm	95AB6	1:1	front	1.460	1.099	1.605	
1880.00	9400	UMTS 1900	RMC	21.5	21.09	-0.03	0 mm	95AB6	1:1	bottom	0.848	1.099	0.932	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Extremity 4.0 W/kg (mW/g) averaged over 10 grams							

Note: Blue entry represents variability measurement.

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Table 11-27
LTE Extremity SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Scaled SAR (10g) (W/kg)	Plot #
MHz	Ch.																		
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.17	0	AC258	QPSK	1	0	2 mm	back	1:1	2.330	1.076	2.507	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	-0.02	1	AC258	QPSK	50	0	2 mm	back	1:1	1.700	1.178	2.003	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.53	-0.20	1	AC258	QPSK	100	0	2 mm	back	1:1	1.660	1.250	2.075	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	0.10	0	AC258	QPSK	1	0	1 mm	front	1:1	2.840	1.076	3.056	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	0.09	1	AC258	QPSK	50	0	1 mm	front	1:1	2.060	1.178	2.427	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.53	0.18	1	AC258	QPSK	100	0	1 mm	front	1:1	2.020	1.250	2.525	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.11	0	AC258	QPSK	1	0	3 mm	bottom	1:1	1.630	1.076	1.754	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	-0.09	1	AC258	QPSK	50	0	3 mm	bottom	1:1	1.200	1.178	1.414	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.04	0	AC258	QPSK	1	0	0 mm	right	1:1	0.485	1.076	0.522	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	0.02	1	AC258	QPSK	50	0	0 mm	right	1:1	0.357	1.178	0.421	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.5	24.18	-0.06	0	AC258	QPSK	1	0	0 mm	left	1:1	0.094	1.076	0.101	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.79	-0.01	1	AC258	QPSK	50	0	0 mm	left	1:1	0.065	1.178	0.077	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.02	0	95A35	QPSK	1	0	0 mm	back	1:1	2.900	1.072	3.109	A46
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	-0.03	0	95A35	QPSK	50	0	0 mm	back	1:1	2.690	1.175	3.161	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.73	-0.02	0	95A35	QPSK	100	0	0 mm	back	1:1	2.620	1.194	3.128	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	0.02	0	95A35	QPSK	1	0	0 mm	front	1:1	2.350	1.072	2.519	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	0.02	0	95A35	QPSK	50	0	0 mm	front	1:1	2.180	1.175	2.562	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.73	0.05	0	95A35	QPSK	100	0	0 mm	front	1:1	2.140	1.194	2.555	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.07	0	95A35	QPSK	1	0	0 mm	bottom	1:1	1.820	1.072	1.951	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.80	-0.10	0	95A35	QPSK	50	0	0 mm	bottom	1:1	1.670	1.175	1.962	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	22.20	-0.20	0	95A35	QPSK	1	0	0 mm	back	1:1	2.820	1.072	3.023	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.15	0	95AB1	QPSK	1	0	2 mm	back	1:1	2.820	1.047	2.953	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.5	24.06	-0.03	0	95AB1	QPSK	1	0	2 mm	back	1:1	2.770	1.107	3.066	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.5	24.03	-0.05	0	95AB1	QPSK	1	0	2 mm	back	1:1	2.350	1.114	2.618	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.02	1	95AB1	QPSK	50	0	2 mm	back	1:1	2.000	1.202	2.404	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	22.68	-0.05	1	95AB1	QPSK	50	0	2 mm	back	1:1	1.800	1.208	2.174	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.5	22.63	-0.06	1	95AB1	QPSK	50	0	2 mm	back	1:1	1.650	1.222	2.016	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	22.64	-0.10	1	95AB1	QPSK	100	0	2 mm	back	1:1	1.760	1.219	2.145	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.14	0	95AB1	QPSK	1	0	1 mm	front	1:1	2.780	1.047	2.911	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.5	24.06	0.07	0	95AB1	QPSK	1	0	1 mm	front	1:1	2.530	1.107	2.801	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.5	24.03	-0.07	0	95AB1	QPSK	1	0	1 mm	front	1:1	2.870	1.114	3.197	A47
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.13	1	95AB1	QPSK	50	0	1 mm	front	1:1	1.990	1.202	2.392	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	22.68	-0.12	1	95AB1	QPSK	50	0	1 mm	front	1:1	1.960	1.208	2.368	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.5	22.63	0.07	1	95AB1	QPSK	50	0	1 mm	front	1:1	1.840	1.222	2.248	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	22.64	0.07	1	95AB1	QPSK	100	0	1 mm	front	1:1	1.740	1.219	2.121	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.03	0	95AB1	QPSK	1	0	3 mm	bottom	1:1	1.740	1.047	1.822	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	0.04	1	95AB1	QPSK	50	0	3 mm	bottom	1:1	1.090	1.202	1.310	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	-0.02	0	95AB1	QPSK	1	0	0 mm	right	1:1	0.495	1.047	0.518	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	-0.03	1	95AB1	QPSK	50	0	0 mm	right	1:1	0.344	1.202	0.413	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.30	0.19	0	95AB1	QPSK	1	0	0 mm	left	1:1	0.186	1.047	0.195	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	22.70	0.15	1	95AB1	QPSK	50	0	0 mm	left	1:1	0.126	1.202	0.151	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.01	0	95A35	QPSK	1	0	0 mm	back	1:1	1.670	1.002	1.673	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	0.06	0	95A35	QPSK	50	0	0 mm	back	1:1	1.480	1.122	1.661	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	0.10	0	95A35	QPSK	1	0	0 mm	front	1:1	1.660	1.002	1.663	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	0.01	0	95A35	QPSK	50	0	0 mm	front	1:1	1.450	1.122	1.627	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.99	-0.02	0	95A35	QPSK	1	0	0 mm	bottom	1:1	0.974	1.002	0.976	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.50	-0.18	0	95A35	QPSK	50	0	0 mm	bottom	1:1	0.854	1.122	0.958	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Extremity											
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 11-28
WLAN Extremity SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Scaled SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	13.5	13.35	-	0 mm	1	9587C	6	back	99.3	0.988	-	1.035	1.008	-	
5260	52	802.11a	OFDM	20	13.5	13.35	-0.06	0 mm	1	9587C	6	front	99.3	1.898	0.400	1.035	1.008	0.417	
5260	52	802.11a	OFDM	20	13.5	13.35	-	0 mm	1	9587C	6	top	99.3	0.760	-	1.035	1.008	-	
5260	52	802.11a	OFDM	20	13.5	13.35	-	0 mm	1	9587C	6	left	99.3	0.257	-	1.035	1.008	-	
5320	64	802.11a	OFDM	20	13.5	13.05	-	0 mm	2	9587C	6	back	98.6	1.140	-	1.109	1.014	-	
5320	64	802.11a	OFDM	20	13.5	13.05	0.09	0 mm	2	9587C	6	front	98.6	2.348	0.410	1.109	1.014	0.461	
5320	64	802.11a	OFDM	20	13.5	13.05	-	0 mm	2	9587C	6	top	98.6	0.612	-	1.109	1.014	-	
5320	64	802.11a	OFDM	20	13.5	13.05	-	0 mm	2	9587C	6	left	98.6	0.046	-	1.109	1.014	-	
5720	144	802.11a	OFDM	20	13.5	13.29	-	0 mm	1	9587C	6	back	99.3	2.533	-	1.050	1.008	-	
5720	144	802.11a	OFDM	20	13.5	13.29	0.08	0 mm	1	9587C	6	front	99.3	4.853	0.499	1.050	1.008	0.528	A48
5720	144	802.11a	OFDM	20	13.5	13.29	-	0 mm	1	9587C	6	top	99.3	0.728	-	1.050	1.008	-	
5720	144	802.11a	OFDM	20	13.5	13.29	-	0 mm	1	9587C	6	left	99.3	1.390	-	1.050	1.008	-	
5500	100	802.11a	OFDM	20	13.5	13.19	0.05	0 mm	2	9587C	6	back	98.6	1.649	0.149	1.074	1.014	0.162	
5500	100	802.11a	OFDM	20	13.5	13.19	-	0 mm	2	9587C	6	front	98.6	1.614	-	1.074	1.014	-	
5500	100	802.11a	OFDM	20	13.5	13.19	-	0 mm	2	9587C	6	top	98.6	1.421	-	1.074	1.014	-	
5500	100	802.11a	OFDM	20	13.5	13.19	-	0 mm	2	9587C	6	left	98.6	0.144	-	1.074	1.014	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Extremity											
Spatial Peak								4.0 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 10 grams											

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11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2003, and FCC KDB Publication 447498 D01v05.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 15 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01 v01, variability SAR tests were performed when the measured SAR results for a frequency band were greater than 0.8 W/kg for 1g SAR and 2.0 W/kg for 10g SAR. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.6 for more details).
10. Per FCC KDB Publication 648474 D04v01r01, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, hand SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR (scaled to the maximum output power, including tolerance) > 1.2 W/kg.
11. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
12. Additional SAR tests for extremity SAR were evaluated per KDB 616217 Section 6 (See Section 6.7 for more information).

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). 10g Extremity SAR measurements apply a factor of 2.5 to the procedures outlined above. 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.

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CDMA Notes:

1. Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03.
2. Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO and TDSO / SO32 FCH+SCH SAR tests were not required since the average output power was not more than 0.25 dB higher than the TDSO / SO32 FCH only powers, per FCC KDB Publication 941225 D01v03.
3. CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03 procedures for data devices. Since the average output power of Subtype 2 for Rev. A is less than the Rev. 0 power levels, EVDO Rev. A SAR is not required. SAR is not required for 1x RTT for Ev-Do hotspot devices when the maximum average output of each channel is less than 1/4 dB higher than that measured in Subtype 0/1 Physical Layer configurations for Rev. 0.
4. Head SAR was additionally evaluated using EVDO Rev. A to determine compliance for VoIP operations.
5. The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The 1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions
6. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). 10g Extremity SAR measurements apply a factor of 2.5 to the procedures outlined above. 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 D01v03. AMR and HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and 1g SAR was less than 1.2 W/kg or 10g SAR was less than 3.0 W/kg.
2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). 10g Extremity SAR measurements apply a factor of 2.5 to the procedures outlined above. 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 D05v02r03. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per KDB Publication 941225 D05Av01r01, 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.
5. TDD LTE was tested per FCC KDB 941225 D05v02r03 and using the guidance provided in April 2013 TCB workshop notes. Testing was performed using UL-DL configuration 0 with 6 UL

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subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, 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 D01r02v01 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01r02v01 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg. See Section 8.7.6 for more information. 10g Extremity SAR measurements apply a factor of 2.5 to the procedures outlined above.
4. Per KDB Publication 248227 D01v02r01, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 or by measuring MIMO SAR with both antennas transmitting simultaneously at the specified maximum output power in MIMO mode. When MIMO tests were performed, SAR was scaled using the most conservative scaling factor from the individual transmission chain conducted powers. Please see section 12 for complete analysis.
5. When the maximum reported averaged SAR is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10g SAR, 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 SAR and ≤ 3.0 W/kg for 10g SAR or all test channels were measured.
6. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
7. For SAR compliance, this device always uses power reduction when the device is in a held-to-ear RF exposure condition with WIFI operations. Per FCC Guidance, WIFI Head SAR was evaluated at reduced power levels.

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12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v05 are applicable to handsets 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 447498 D01v05 IV.C.1.iii and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific physical test configuration is ≤ 1.6 W/kg. When standalone SAR is not required to be measured, per FCC KDB 447498 D01v05 4.3.2 2), the following equations must be used to estimate the standalone 1g SAR and 10g SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated 1g SAR} = \frac{\sqrt{f(\text{GHz})}}{7.5} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

$$\text{Estimated 10g SAR} = \frac{\sqrt{f(\text{GHz})}}{18.75} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

**Table 12-1
Estimated SAR**

Mode	Frequency	Maximum Allowed Power	Separation Distance	Estimated SAR
	[MHz]	[dBm]	[mm]	[W/kg]
Bluetooth (1g)	2480	10.50	15	0.154
Bluetooth (10g)	2480	10.50	5	0.185*

Note: Held-to ear configurations are not applicable to Bluetooth operations and therefore were not considered for simultaneous transmission. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.

(*) – Per FCC KDB Publication 447498, when the test separation distance is < 5 mm, a distance of 5 mm is applied to determine estimated SAR.

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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 Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Head SAR	GSM 850	0.214	0.543	0.443	0.757	0.657
	CDMA/EVDO BC10	0.356	0.543	0.443	0.899	0.799
	Cell. CDMA/EVDO	0.336	0.543	0.443	0.879	0.779
	UMTS 850	0.168	0.543	0.443	0.711	0.611
	GSM 1900	0.080	0.543	0.443	0.623	0.523
	PCS CDMA/EVDO	0.332	0.543	0.443	0.875	0.775
	UMTS 1900	0.135	0.543	0.443	0.678	0.578
	LTE Band 12	0.133	0.543	0.443	0.676	0.576
	LTE Band 26 (Cell)	0.318	0.543	0.443	0.861	0.761
	LTE Band 4 (AWS)	0.110	0.543	0.443	0.653	0.553
	LTE Band 25 (PCS)	0.103	0.543	0.443	0.646	0.546
	LTE Band 41	0.074	0.543	0.443	0.617	0.517

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.214	0.533	0.747
	CDMA/EVDO BC10	0.356	0.533	0.889
	Cell. CDMA/EVDO	0.336	0.533	0.869
	UMTS 850	0.168	0.533	0.701
	GSM 1900	0.080	0.533	0.613
	PCS CDMA/EVDO	0.332	0.533	0.865
	UMTS 1900	0.135	0.533	0.668
	LTE Band 12	0.133	0.533	0.666
	LTE Band 26 (Cell)	0.318	0.533	0.851
	LTE Band 4 (AWS)	0.110	0.533	0.643
	LTE Band 25 (PCS)	0.103	0.533	0.636
	LTE Band 41	0.074	0.533	0.607

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	0.214	0.399	0.277	0.613	0.491	0.890
	CDMA/EVDO BC10	0.356	0.399	0.277	0.755	0.633	1.032
	Cell. CDMA/EVDO	0.336	0.399	0.277	0.735	0.613	1.012
	UMTS 850	0.168	0.399	0.277	0.567	0.445	0.844
	GSM 1900	0.080	0.399	0.277	0.479	0.357	0.756
	PCS CDMA/EVDO	0.332	0.399	0.277	0.731	0.609	1.008
	UMTS 1900	0.135	0.399	0.277	0.534	0.412	0.811
	LTE Band 12	0.133	0.399	0.277	0.532	0.410	0.809
	LTE Band 26 (Cell)	0.318	0.399	0.277	0.717	0.595	0.994
	LTE Band 4 (AWS)	0.110	0.399	0.277	0.509	0.387	0.786
	LTE Band 25 (PCS)	0.103	0.399	0.277	0.502	0.380	0.779
	LTE Band 41	0.074	0.399	0.277	0.473	0.351	0.750

Note: 1+2+3 denotes MIMO SAR Summations.

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Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2
(Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.214	0.543	0.277	1.034
	CDMA/EVDO BC10	0.356	0.543	0.277	1.176
	Cell. CDMA/EVDO	0.336	0.543	0.277	1.156
	UMTS 850	0.168	0.543	0.277	0.988
	GSM 1900	0.080	0.543	0.277	0.900
	PCS CDMA/EVDO	0.332	0.543	0.277	1.152
	UMTS 1900	0.135	0.543	0.277	0.955
	LTE Band 12	0.133	0.543	0.277	0.953
	LTE Band 26 (Cell)	0.318	0.543	0.277	1.138
	LTE Band 4 (AWS)	0.110	0.543	0.277	0.930
	LTE Band 25 (PCS)	0.103	0.543	0.277	0.923
	LTE Band 41	0.074	0.543	0.277	0.894

Table 12-6
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 2 and 5 GHz WLAN Ant 1
(Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM 850	0.214	0.443	0.399	1.056
	CDMA/EVDO BC10	0.356	0.443	0.399	1.198
	Cell. CDMA/EVDO	0.336	0.443	0.399	1.178
	UMTS 850	0.168	0.443	0.399	1.010
	GSM 1900	0.080	0.443	0.399	0.922
	PCS CDMA/EVDO	0.332	0.443	0.399	1.174
	UMTS 1900	0.135	0.443	0.399	0.977
	LTE Band 12	0.133	0.443	0.399	0.975
	LTE Band 26 (Cell)	0.318	0.443	0.399	1.160
	LTE Band 4 (AWS)	0.110	0.443	0.399	0.952
	LTE Band 25 (PCS)	0.103	0.443	0.399	0.945
	LTE Band 41	0.074	0.443	0.399	0.916

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12.4 Body-Worn Simultaneous Transmission Analysis

For SAR summations for body-worn back side at 15 mm, WLAN SAR values for 1.0 cm were used since the 1.0 cm test distance for WLAN was more conservative. “<” denotes that the 1.0 cm WLAN SAR values were used for summation purposes.

For SAR summation for body-worn back side at 15mm with 2.4/5GHz WLAN, LTE Band 4 and Band 25 values at maximum output power level were used since the SAR values at maximum power level were more conservative than SAR values at reduced power level.

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.294	<0.165	<0.191	<0.459	<0.459	<0.650
	CDMA BC10 (§90S)	0.350	<0.165	<0.191	<0.515	<0.515	<0.706
	Cell. CDMA	0.451	<0.165	<0.191	<0.616	<0.616	<0.807
	UMTS 850	0.285	<0.165	<0.191	<0.450	<0.450	<0.641
	GSM 1900	0.270	<0.165	<0.191	<0.435	<0.435	<0.626
	PCS CDMA	0.731	<0.165	<0.191	<0.896	<0.896	<1.087
	UMTS 1900	0.548	<0.165	<0.191	<0.713	<0.713	<0.904
	LTE Band 12	0.320	<0.165	<0.191	<0.485	<0.485	<0.676
	LTE Band 26 (Cell)	0.549	<0.165	<0.191	<0.714	<0.714	<0.905
	LTE Band 4 (AWS)	0.698	<0.165	<0.191	<0.863	<0.863	<1.054
	LTE Band 25 (PCS)	0.690	<0.165	<0.191	<0.855	<0.855	<1.046
	LTE Band 41	0.204	<0.165	<0.191	<0.555	<0.555	<0.746

Note: 1+2+3 denotes MIMO SAR Summations.

Table 12-8
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.294	<0.030	<0.042	<0.324	<0.324	<0.366
	CDMA BC10 (§90S)	0.350	<0.030	<0.042	<0.380	<0.380	<0.422
	Cell. CDMA	0.451	<0.030	<0.042	<0.481	<0.481	<0.523
	UMTS 850	0.285	<0.030	<0.042	<0.315	<0.315	<0.357
	GSM 1900	0.270	<0.030	<0.042	<0.300	<0.300	<0.342
	PCS CDMA	0.731	<0.030	<0.042	<0.761	<0.761	<0.803
	UMTS 1900	0.548	<0.030	<0.042	<0.578	<0.578	<0.620
	LTE Band 12	0.320	<0.030	<0.042	<0.350	<0.350	<0.392
	LTE Band 26 (Cell)	0.549	<0.030	<0.042	<0.579	<0.579	<0.621
	LTE Band 4 (AWS)	0.698	<0.030	<0.042	<0.728	<0.728	<0.770
	LTE Band 25 (PCS)	0.690	<0.030	<0.042	<0.720	<0.720	<0.762
	LTE Band 41	0.204	<0.030	<0.042	<0.420	<0.420	<0.462

Note: 1+2+3 denotes MIMO SAR Summations.

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Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2
(Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	
Body-Worn	GSM 850	0.294	<0.165	<0.042	<0.501
	CDMA BC10 (§90S)	0.350	<0.165	<0.042	<0.557
	Cell. CDMA	0.451	<0.165	<0.042	<0.658
	UMTS 850	0.285	<0.165	<0.042	<0.492
	GSM 1900	0.270	<0.165	<0.042	<0.477
	PCS CDMA	0.731	<0.165	<0.042	<0.938
	UMTS 1900	0.548	<0.165	<0.042	<0.755
	LTE Band 12	0.320	<0.165	<0.042	<0.527
	LTE Band 26 (Cell)	0.549	<0.165	<0.042	<0.756
	LTE Band 4 (AWS)	0.698	<0.165	<0.042	<0.905
	LTE Band 25 (PCS)	0.690	<0.165	<0.042	<0.897
	LTE Band 41	0.204	<0.165	<0.042	<0.597

Table 12-10
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 2 and 5 GHz WLAN Ant 1
(Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	
Body-Worn	GSM 850	0.294	<0.191	<0.030	<0.515
	CDMA BC10 (§90S)	0.350	<0.191	<0.030	<0.571
	Cell. CDMA	0.451	<0.191	<0.030	<0.672
	UMTS 850	0.285	<0.191	<0.030	<0.506
	GSM 1900	0.270	<0.191	<0.030	<0.491
	PCS CDMA	0.731	<0.191	<0.030	<0.952
	UMTS 1900	0.548	<0.191	<0.030	<0.769
	LTE Band 12	0.320	<0.191	<0.030	<0.541
	LTE Band 26 (Cell)	0.549	<0.191	<0.030	<0.770
	LTE Band 4 (AWS)	0.698	<0.191	<0.030	<0.919
	LTE Band 25 (PCS)	0.690	<0.191	<0.030	<0.911
	LTE Band 41	0.204	<0.191	<0.030	<0.611

Table 12-11
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	
Body-Worn	GSM 850	0.294	0.154	0.448
	CDMA BC10 (§90S)	0.350	0.154	0.504
	Cell. CDMA	0.451	0.154	0.605
	UMTS 850	0.285	0.154	0.439
	GSM 1900	0.270	0.154	0.424
	PCS CDMA	0.731	0.154	0.885
	UMTS 1900	0.548	0.154	0.702
	LTE Band 12	0.320	0.154	0.474
	LTE Band 26 (Cell)	0.549	0.154	0.703
	LTE Band 4 (AWS)	0.698	0.154	0.852
	LTE Band 25 (PCS)	0.690	0.154	0.844
	LTE Band 41	0.390	0.154	0.544

Note: Bluetooth SAR was not required to be measured per FCC KDB 447498. 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 12-12
Simultaneous Transmission Scenario (2.4 GHz WLAN at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.687	0.165	0.191	0.852	0.878	1.043
	EVDO BC10 (\$90S)	0.655	0.165	0.191	0.820	0.846	1.011
	Cell. EVDO	0.615	0.165	0.191	0.780	0.806	0.971
	UMTS 850	0.443	0.165	0.191	0.608	0.634	0.799
	GPRS 1900	0.992	0.165	0.191	1.157	1.183	1.348
	PCS EVDO	1.018	0.165	0.191	1.183	1.209	1.374
	UMTS 1900	0.995	0.165	0.191	1.160	1.186	1.351
	LTE Band 12	0.629	0.165	0.191	0.794	0.820	0.985
	LTE Band 26 (Cell)	0.790	0.165	0.191	0.955	0.981	1.146
	LTE Band 4 (AWS)	1.096	0.165	0.191	1.261	1.287	1.452
	LTE Band 25 (PCS)	1.082	0.165	0.191	1.247	1.273	1.438
	LTE Band 41	1.100	0.165	0.191	1.265	1.291	1.456

Note: 1+2+3 denotes MIMO SAR Summations.

Table 12-13
Simultaneous Transmission Scenario (5 GHz WLAN 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.687	0.068	0.214	0.755	0.901	0.969
	EVDO BC10 (\$90S)	0.655	0.068	0.214	0.723	0.869	0.937
	Cell. EVDO	0.615	0.068	0.214	0.683	0.829	0.897
	UMTS 850	0.443	0.068	0.214	0.511	0.657	0.725
	GPRS 1900	0.992	0.068	0.214	1.060	1.206	1.274
	PCS EVDO	1.018	0.068	0.214	1.086	1.232	1.300
	UMTS 1900	0.995	0.068	0.214	1.063	1.209	1.277
	LTE Band 12	0.629	0.068	0.214	0.697	0.843	0.911
	LTE Band 26 (Cell)	0.790	0.068	0.214	0.858	1.004	1.072
	LTE Band 4 (AWS)	1.096	0.068	0.214	1.164	1.310	1.378
	LTE Band 25 (PCS)	1.082	0.068	0.214	1.150	1.296	1.364
	LTE Band 41	1.100	0.068	0.214	1.168	1.314	1.382

Note: 1+2+3 denotes MIMO SAR Summations.

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Table 12-14
Simultaneous Transmission Scenario 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2
(Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.687	0.165	0.214	1.066
	EVDO BC10 (\$90S)	0.655	0.165	0.214	1.034
	Cell. EVDO	0.615	0.165	0.214	0.994
	UMTS 850	0.443	0.165	0.214	0.822
	GPRS 1900	0.992	0.165	0.214	1.371
	PCS EVDO	1.018	0.165	0.214	1.397
	UMTS 1900	0.995	0.165	0.214	1.374
	LTE Band 12	0.629	0.165	0.214	1.008
	LTE Band 26 (Cell)	0.790	0.165	0.214	1.169
	LTE Band 4 (AWS)	1.096	0.165	0.214	1.475
	LTE Band 25 (PCS)	1.082	0.165	0.214	1.461
	LTE Band 41	1.100	0.165	0.214	1.479

Table 12-15
Simultaneous Transmission Scenario 2.4 GHz WLAN Ant 2 and 5 GHz WLAN Ant 1
(Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.687	0.191	0.068	0.946
	EVDO BC10 (\$90S)	0.655	0.191	0.068	0.914
	Cell. EVDO	0.615	0.191	0.068	0.874
	UMTS 850	0.443	0.191	0.068	0.702
	GPRS 1900	0.992	0.191	0.068	1.251
	PCS EVDO	1.018	0.191	0.068	1.277
	UMTS 1900	0.995	0.191	0.068	1.254
	LTE Band 12	0.629	0.191	0.068	0.888
	LTE Band 26 (Cell)	0.790	0.191	0.068	1.049
	LTE Band 4 (AWS)	1.096	0.191	0.068	1.355
	LTE Band 25 (PCS)	1.082	0.191	0.068	1.341
	LTE Band 41	1.100	0.191	0.068	1.359

12.6 Extremity SAR Simultaneous Transmission Analysis

- Per FCC KDB Publication 648474 D04 Handset SAR v01r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("–").
- (*) For WLAN devices edges with antennas less than 2.5 cm from edge that were not required to be evaluated for SAR, the worst case Extremity WLAN SAR was used as it is more conservative.
- Extremity WLAN SAR values for 0.0 cm were used for all test distances since the 0.0 cm test distance was more conservative. "<" denotes that the 0.0 cm Extremity WLAN SAR values were used for summation purpose.
- Per FCC KDB Publication 648474 D04 Handset SAR v01r02, hand SAR tests were not required when wireless router mode does not apply and if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore no further analysis was required to determine that SAR limit would not be exceed for all possible simultaneous scenarios, including those involving bands/modes not required to be evaluated for hand SAR.
- Extremity WLAN SAR was not required for bottom edge; thus no additional simultaneous evaluation besides included in this section was required to determine that possible simultaneous scenarios would not exceed the SAR limit.

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Table 12-16
Simultaneous Transmission Scenario - 5 GHz WLAN (Extremity at 0.0 cm)

Simult Tx	Configuration	EVDO BC10 (§90S) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	1.124	0.528*	0.162	*1.652	*1.286	*1.814
	Front	1.146	0.528	0.461	1.674	1.607	2.135
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	0.562	-	-	0.562	0.562	0.562
	Right	0.367	-	-	0.367	0.367	0.367
	Left	0.203	0.528*	0.461*	*0.731	*0.664	*1.192
Simult Tx	Configuration	Cell. EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	0.898	0.528*	0.162	*1.426	*1.06	*1.588
	Front	0.869	0.528	0.461	1.397	1.33	1.858
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	0.422	-	-	0.422	0.422	0.422
	Right	0.354	-	-	0.354	0.354	0.354
	Left	0.217	0.528*	0.461*	*0.745	*0.678	*1.206
Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	1.981	0.528*	0.162	*2.509	*2.143	*2.671
	Front	1.880	0.528	0.461	2.408	2.341	2.869
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	0.966	-	-	0.966	0.966	0.966
	Right	0.494	-	-	0.494	0.494	0.494
	Left	0.189	0.528*	0.461*	*0.717	*0.65	*1.178
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	1.747	0.528*	0.162	*2.275	*1.909	*2.437
	Front	1.605	0.528	0.461	2.133	2.066	2.594
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	0.932	-	-	0.932	0.932	0.932
	Right	0.370	-	-	0.37	0.37	0.37
	Left	0.143	0.528*	0.461*	*0.671	*0.604	*1.132

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Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	3.161	0.528*	0.162	*3.689	*3.323	*3.851
	Front	2.562	0.528	0.461	3.09	3.023	3.551
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	1.962	-	-	1.962	1.962	1.962
	Right	0.522	-	-	0.522	0.522	0.522
	Left	0.101	0.528*	0.461*	*0.629	*0.562	*1.09
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Extremity SAR	Back	1.673	0.528*	0.162	*2.201	*1.835	*2.363
	Front	1.663	0.528	0.461	2.191	2.124	2.652
	Top	-	0.528*	0.461*	*0.528	*0.461	*0.989
	Bottom	0.976	-	-	0.976	0.976	0.976
	Right	0.518	-	-	0.518	0.518	0.518
	Left	0.195	0.528*	0.461*	*0.723	*0.656	*1.184

Note: 1+2+3 denotes MIMO SAR Summations.

Table 12-17
Simultaneous Transmission Scenario - Bluetooth (Extremity at 0.0 cm)

Simult Tx	Configuration	EVDO BC10 (\$90S) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	Cell. EVDO SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Extremity SAR	Back	1.124	0.185	1.309	Extremity SAR	Back	0.898	0.185	1.083
	Front	1.146	0.185	1.331		Front	0.869	0.185	1.054
	Top	-	0.185	0.185		Top	-	0.185	0.185
	Bottom	0.562	-	0.562		Bottom	0.422	-	0.422
	Right	0.367	-	0.367		Right	0.354	-	0.354
	Left	0.203	0.185	0.388		Left	0.217	0.185	0.402
Simult Tx	Configuration	PCS EVDO SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Extremity SAR	Back	1.981	0.185	2.166	Extremity SAR	Back	1.747	0.185	1.932
	Front	1.880	0.185	2.065		Front	1.605	0.185	1.79
	Top	-	0.185	0.185		Top	-	0.185	0.185
	Bottom	0.966	-	0.966		Bottom	0.932	-	0.932
	Right	0.494	-	0.494		Right	0.370	-	0.37
	Left	0.189	0.185	0.374		Left	0.143	0.185	0.328
Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2			1	2	1+2
Extremity SAR	Back	3.161	0.185	3.346	Extremity SAR	Back	1.673	0.185	1.858
	Front	2.562	0.185	2.747		Front	1.663	0.185	1.848
	Top	-	0.185	0.185		Top	-	0.185	0.185
	Bottom	1.962	-	1.962		Bottom	0.976	-	0.976
	Right	0.522	-	0.522		Right	0.518	-	0.518
	Left	0.101	0.185	0.286		Left	0.195	0.185	0.38

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Table 12-18
Simultaneous Transmission Scenario - 5 GHz WLAN (Back at 0.2 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Back Side	CDMA BC10 (\$90S)	1.447	<0.528*	<0.162	<1.975*	<1.609	<2.137*
Back Side	Cell. CDMA	1.356	<0.528*	<0.162	<1.884*	<1.518	<2.046*
Back Side	PCS CDMA	3.116	<0.528*	<0.162	<3.644*	<3.278	<3.806*
Back Side	UMTS 1900	1.901	<0.528*	<0.162	<2.429*	<2.063	<2.591*
Back Side	LTE Band 4 (AWS)	2.507	<0.528*	<0.162	<3.035*	<2.669	<3.197*
Back Side	LTE Band 25 (PCS)	3.066	<0.528*	<0.162	<3.594*	<3.228	<3.756*

Note: 1+2+3 denotes MIMO SAR Summations.

Table 12-19
Simultaneous Transmission Scenario - Bluetooth (Back at 0.2 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Back Side	CDMA BC10 (\$90S)	1.447	0.185	1.632
Back Side	Cell. CDMA	1.356	0.185	1.541
Back Side	PCS CDMA	3.116	0.185	3.301
Back Side	UMTS 1900	1.901	0.185	2.086
Back Side	LTE Band 4 (AWS)	2.507	0.185	2.692
Back Side	LTE Band 25 (PCS)	3.066	0.185	3.251

Table 12-20
Simultaneous Transmission Scenario - 5 GHz WLAN (Front at 0.1 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)			SPLSR		
		1	2	3	1+2	1+3	1+2+3	1+2	1+3	2+3
Front Side	CDMA BC10 (\$90S)	1.677	<0.528	<0.461	<2.205	<2.138	<2.666	N/A	N/A	N/A
Front Side	Cell. CDMA	1.896	<0.528	<0.461	<2.424	<2.357	<2.885	N/A	N/A	N/A
Front Side	PCS CDMA	3.290	<0.528	<0.461	<3.818	<3.751	See Note 1	<0.05	<0.05	0.10
Front Side	UMTS 1900	1.954	<0.528	<0.461	<2.482	<2.415	<2.943	N/A	N/A	N/A
Front Side	LTE Band 4 (AWS)	3.056	<0.528	<0.461	<3.584	<3.517	See Note 1	<0.05	<0.05	0.10
Front Side	LTE Band 25 (PCS)	3.197	<0.528	<0.461	<3.725	<3.658	See Note 1	<0.05	<0.05	0.10

Note: 1+2+3 denotes MIMO SAR Summations.

Table 12-21
Simultaneous Transmission Scenario - Bluetooth (Front at 0.1 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Front Side	CDMA BC10 (\$90S)	1.677	0.185	1.862
Front Side	Cell. CDMA	1.896	0.185	2.081
Front Side	PCS CDMA	3.290	0.185	3.475
Front Side	UMTS 1900	1.954	0.185	2.139
Front Side	LTE Band 4 (AWS)	3.056	0.185	3.241
Front Side	LTE Band 25 (PCS)	3.197	0.185	3.382

Notes

1. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was less than or equal to 0.1 per FCC KDB 447498 D01v05. See Section 12.7 for detailed SPLS ratio analysis.

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12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v05, when the sum of the standalone transmitters is more than 4 W/kg, 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 ≤ 0.10 , simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

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

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

Table 12-22
Peak SAR Locations for Extremity Front Side at 1 mm

Mode/Band	x (mm)	y (mm)
5 GHz WLAN Ant 1	-43.00	69.00
5 GHz WLAN Ant 2	-33.00	70.00
Max CDMA PCS	-2.00	-72.00
Max LTE B25 (PCS)	-33.00	-82.00
Max LTE B4	-12.50	-57.00

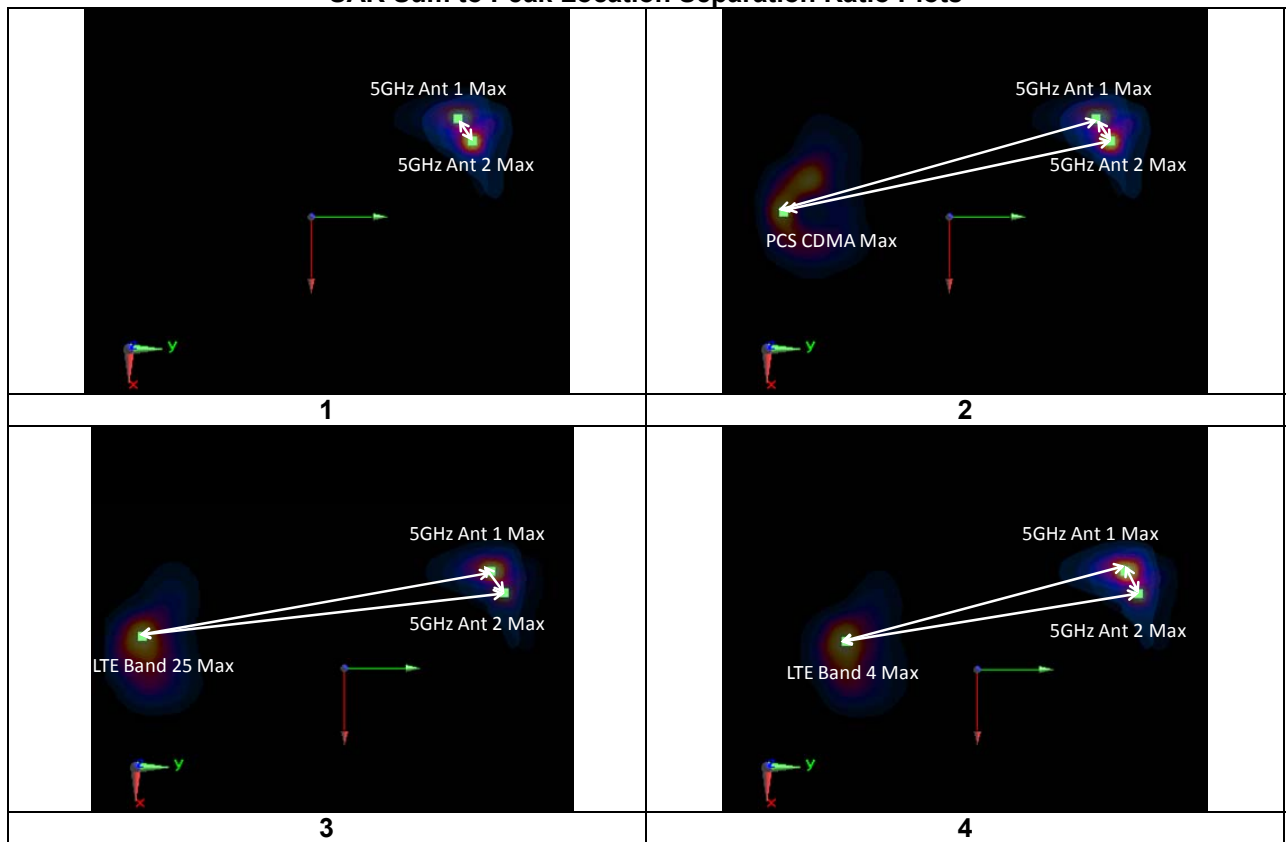
Table 12-23
SAR Sum to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone 10g SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D _{a-b}	(a+b) ^{1.5} /D _{a-b}	
5 GHz WLAN Ant 1	5 GHz WLAN Ant 2	0.528	0.461	0.989	10.05	0.10	1
Max CDMA PCS	5 GHz WLAN Ant 1	3.29	<0.528	<3.818	146.84	<0.05	2
Max CDMA PCS	5 GHz WLAN Ant 2	3.29	<0.461	<3.751	145.34	<0.05	
Max LTE B25 (PCS)	5 GHz WLAN Ant 1	3.197	<0.528	<3.725	151.33	<0.05	3
Max LTE B25 (PCS)	5 GHz WLAN Ant 2	3.197	<0.461	<3.658	152.00	<0.05	
Max LTE B4	5 GHz WLAN Ant 1	3.056	<0.528	<3.584	129.64	<0.05	4
Max LTE B4	5 GHz WLAN Ant 2	3.056	<0.461	<3.517	128.64	<0.05	

Note: The distance for 5 GHz WLAN is shown in plot 1 and also represented on the other plots to show compliance for scenarios when WLAN MIMO could be operating with the main antenna.

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Table 12-24
SAR Sum to Peak Location Separation Ratio Plots



12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v05 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 D01v01, 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.

Per FCC KDB Publication 865664 D01v01, Extremity SAR measurement variability was assessed since measured 1g SAR for some frequency band was above 0.8 W/kg and measured 10g SAR for some frequency band was above 2.0 W/kg.

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

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

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS												
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)
1750	1732.50	20175	LTE Band 4 (AWS)	QPSK, 1 RB, 0 RB Offset	back	10 mm	0.991	1.010	1.02	N/A	N/A	N/A
1900	1860.00	26140	LTE Band 25 (PCS)	QPSK, 1 RB, 0 RB Offset	front	10 mm	1.040	0.934	1.11	N/A	N/A	N/A
2450	2506.00	39750	LTE Band 41	QPSK, 1 RB, 0 RB Offset	bottom	10 mm	0.905	0.797	1.14	N/A	N/A	N/A
2600	2636.50	41055	LTE Band 41	QPSK, 1 RB, 50 RB Offset	bottom	10 mm	1.070	1.060	1.01	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT						Body						
Spatial Peak						1.6 W/kg (mW/g)						
Uncontrolled Exposure/General Population						averaged over 1 gram						

Table 13-2
Extremity SAR Measurement Variability Results

EXTREMITY VARIABILITY RESULTS												
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)
1750	1732.50	20175	LTE Band 4 (AWS)	QPSK, 1 RB, 0 RB Offset	back	0 mm	2.900	2.820	1.03	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	front	1 mm	3.290	3.190	1.03	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT						Extremity						
Spatial Peak						4.0 W/kg (mW/g)						
Uncontrolled Exposure/General Population						averaged over 10 grams						

13.2 Measurement Uncertainty

The measured 1g SAR was < 1.5 W/kg and 10g SAR was < 3.75 W/kg for all frequency bands. Therefore, per KDB Publication 865664 D01v01, the extended measurement uncertainty analysis per IEEE 1528-2003 was not required.

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14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8648D	(9kHz-4GHz) Signal Generator	3/15/2015	Annual	3/15/2016	3629U00687
Agilent	8753E	(30kHz-6GHz) Network Analyzer	12/30/2014	Annual	12/30/2015	JP38020182
Agilent	8753ES	S-Parameter Network Analyzer	3/12/2015	Annual	3/12/2016	MY40000670
Agilent	8753ES	Network Analyzer	3/20/2015	Annual	3/20/2016	MY40001472
Agilent	E4432B	ESG-D Series Signal Generator	3/16/2015	Annual	3/16/2016	US40053896
Agilent	E4438C	ESG Vector Signal Generator	3/13/2015	Annual	3/13/2016	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/13/2015	Annual	3/13/2016	MY42082659
Agilent	E5515C	Wireless Communications Test Set	2/23/2015	Biennial	2/23/2017	GB41450275
Agilent	E5515C	Wireless Communications Test Set	11/20/2014	Annual	11/20/2015	GB42361078
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/15/2015	Annual	3/15/2016	MY45470194
Agilent	N4010A	Wireless Connectivity Test Set	CBT	N/A	CBT	GB44450273
Agilent	N5182A	MXG Vector Signal Generator	10/27/2014	Annual	10/27/2015	MY47420603
Agilent	N9020A	MXA Signal Analyzer	10/27/2014	Annual	10/27/2015	US46470561
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	MA24106A	USB Power Sensor	3/3/2015	Annual	3/3/2016	1349501
Anritsu	MA24106A	USB Power Sensor	3/2/2015	Annual	3/2/2016	1349503
Anritsu	MA24106A	USB Power Sensor	3/11/2015	Annual	3/11/2016	1349509
Anritsu	MA24106A	USB Power Sensor	3/11/2015	Annual	3/11/2016	1349514
Anritsu	MA2411B	Pulse Power Sensor	11/17/2014	Annual	11/17/2015	1126066
Anritsu	MA2411B	Pulse Power Sensor	11/17/2014	Annual	11/17/2015	1207364
Anritsu	MA2481A	Power Sensor	3/10/2015	Annual	3/10/2016	2400
Anritsu	MA2481A	Power Sensor	3/11/2015	Annual	3/11/2016	5318
Anritsu	ML2495A	Power Meter	10/31/2013	Biennial	10/31/2015	941001
Anritsu	ML2495A	Power Meter	10/31/2013	Biennial	10/31/2015	1039008
Anritsu	MT8820C	Radio Communication Analyzer	3/10/2015	Annual	3/10/2016	6200901190
Anritsu	MT8820C	Radio Communication Analyzer	9/19/2014	Annual	9/19/2015	6201144418
COMTECH	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M155A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194895
Control Company	4040	Digital Thermometer	3/15/2015	Biennial	3/15/2017	150195005
Control Company	4052	Long Stem Thermometer	9/27/2013	Biennial	9/27/2015	130567447
Control Company	36934-158	Wall-Mounted Thermometer	4/29/2014	Biennial	4/29/2016	122014488
Fisher Scientific	15-077-960	Digital Thermometer	12/4/2013	Biennial	12/4/2015	130765551
Fisher Scientific	S407993	Long Stem Thermometer	11/4/2013	Biennial	11/4/2015	130671801
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/30/2014	Annual	10/30/2015	1833460
Gigatronics	8651A	Universal Power Meter	10/30/2014	Annual	10/30/2015	8650319
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R897950903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264162
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	NC-100	Torque Wrench	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/21/2015	Biennial	5/21/2017	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	NC-100	Torque Wrench	5/21/2015	Biennial	5/21/2017	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2015	Annual	6/3/2016	109892
Rohde & Schwarz	CMU200	Base Station Simulator	3/23/2015	Annual	3/23/2016	836371/0079
Rohde & Schwarz	CMW500	Radio Communication Tester	10/3/2014	Annual	10/3/2015	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	4/22/2015	Annual	4/22/2016	101699
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	22313
SPEAG	D750V3	750 MHz Dipole	1/16/2015	Annual	1/16/2016	1003
SPEAG	D835V2	835 MHz SAR Dipole	1/16/2015	Annual	1/16/2016	4d132
SPEAG	D1750V2	1750 MHz SAR Dipole	4/15/2015	Annual	4/15/2016	1051
SPEAG	D1900V2	1900 MHz SAR Dipole	4/14/2015	Annual	4/14/2016	5d141
SPEAG	D2450V2	2450 MHz SAR Dipole	8/11/2014	Annual	8/11/2015	719
SPEAG	D2600V2	2600 MHz SAR Dipole	10/20/2014	Annual	10/20/2015	1071
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/21/2015	Annual	1/21/2016	1057
SPEAG	D1900V2	1900 MHz SAR Dipole	7/23/2014	Annual	7/23/2015	5d149
SPEAG	ES3DV3	SAR Probe	9/24/2014	Annual	9/24/2015	3288
SPEAG	ES3DV3	SAR Probe	1/23/2015	Annual	1/23/2016	3318
SPEAG	EX3DV4	SAR Probe	4/23/2015	Annual	4/23/2016	7357
SPEAG	ES3DV3	SAR Probe	3/19/2015	Annual	3/19/2016	3209
SPEAG	ES3DV3	SAR Probe	3/19/2015	Annual	3/19/2016	3319
SPEAG	EX3DV4	SAR Probe	1/22/2015	Annual	1/22/2016	3589
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/18/2014	Annual	9/18/2015	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/14/2015	Annual	1/14/2016	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/13/2015	Annual	3/13/2016	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2014	Annual	9/17/2015	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/13/2015	Annual	3/13/2016	1368
VWR	36934-158	Wall-Mounted Thermometer	4/29/2014	Biennial	4/29/2016	111859323

Note:

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

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15 MEASUREMENT UNCERTAINTIES

Applicable for frequencies less than 3000 MHz:

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System									
Probe Calibration	E.2.1	6.0	N	1	1.0	1.0	6.0	6.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	1.0	1.0	1.3	1.3	∞
Boundary Effect	E.2.3	0.4	N	1	1.0	1.0	0.4	0.4	∞
Linearity	E.2.4	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	E.2.5	5.1	N	1	1.0	1.0	5.1	5.1	∞
Readout Electronics	E.2.6	1.0	N	1	1.0	1.0	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	E.6.3	2.9	R	1.73	1.0	1.0	1.7	1.7	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1.0	1.0	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	6.0	N	1	1.0	1.0	6.0	6.0	287
Device Holder Uncertainty	E.4.1	3.32	R	1.73	1.0	1.0	1.9	1.9	∞
Output Power Variation - SAR drift measurement	E.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)							RSS	12.1	11.7
Expanded Uncertainty (95% CONFIDENCE LEVEL)							k=2	24.2	23.5

The above measurement uncertainties are according to IEEE Std. 1528-2003

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Applicable for frequencies up to 6 GHz:

a	b	c	d	e = f(d,k)	f	g	h = c x i/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System									
Probe Calibration	E.2.1	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	1.0	1.0	1.3	1.3	∞
Boundary Effect	E.2.3	0.4	N	1	1.0	1.0	0.4	0.4	∞
Linearity	E.2.4	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	E.2.5	5.1	N	1	1.0	1.0	5.1	5.1	∞
Readout Electronics	E.2.6	1.0	N	1	1.0	1.0	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	E.6.3	2.9	R	1.73	1.0	1.0	1.7	1.7	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1.0	1.0	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	6.0	N	1	1.0	1.0	6.0	6.0	287
Device Holder Uncertainty	E.4.1	3.32	R	1.73	1.0	1.0	1.9	1.9	∞
Output Power Variation - SAR drift measurement	6.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)							RSS	12.4	12.0
Expanded Uncertainty (95% CONFIDENCE LEVEL)							k=2	24.7	24.0

The above measurement uncertainties are according to IEEE Std. 1528-2003

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16 CONCLUSION

16.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Industry 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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FCC ID: A3LSMG928P		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1506151230.A3L	Test Dates: 06/08/15 – 07/02/2015	DUT Type: Portable Handset		Page 114 of 114

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

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

$f = 836.6 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 41.405$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

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

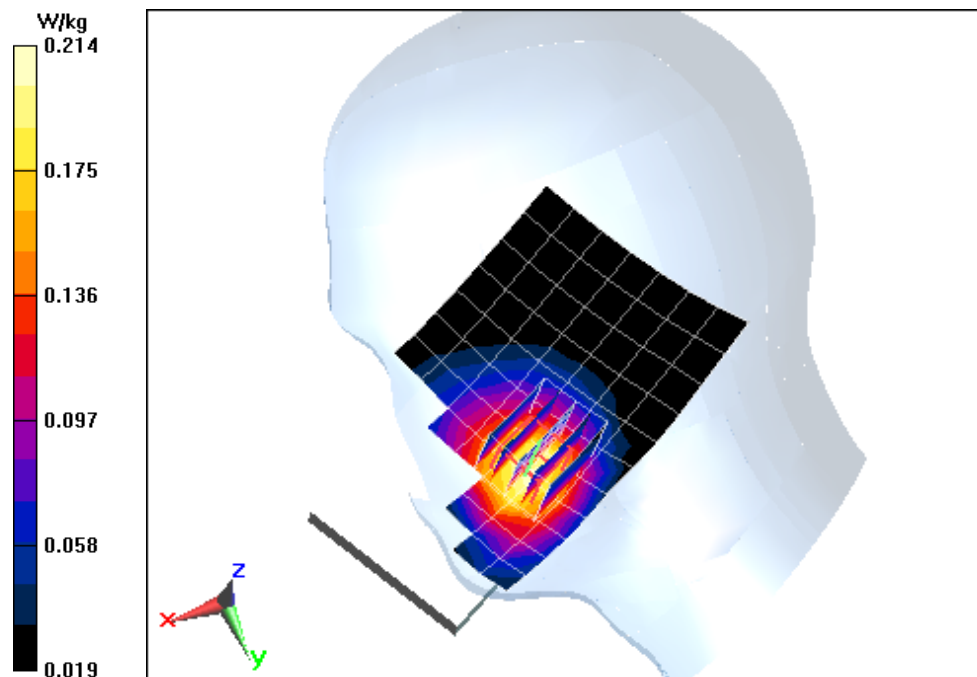
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 15.19 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.258 W/kg

SAR(1 g) = 0.197 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

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

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

$f = 820.1 \text{ MHz}$; $\sigma = 0.885 \text{ S/m}$; $\epsilon_r = 41.633$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

Mode: BC10 Cell. EVDO Rev. A, Right Head, Cheek, Mid.ch

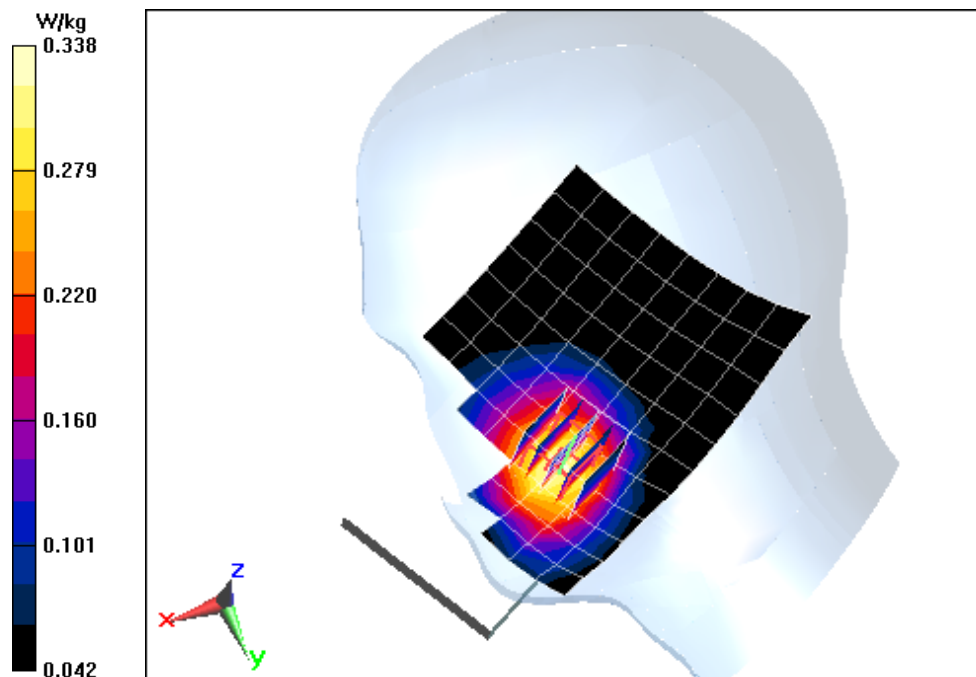
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 19.39 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.396 W/kg

SAR(1 g) = 0.309 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

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

$f = 836.52 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 41.406$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

Mode: BC0 Cell. CDMA, Right Head, Cheek, Mid.ch

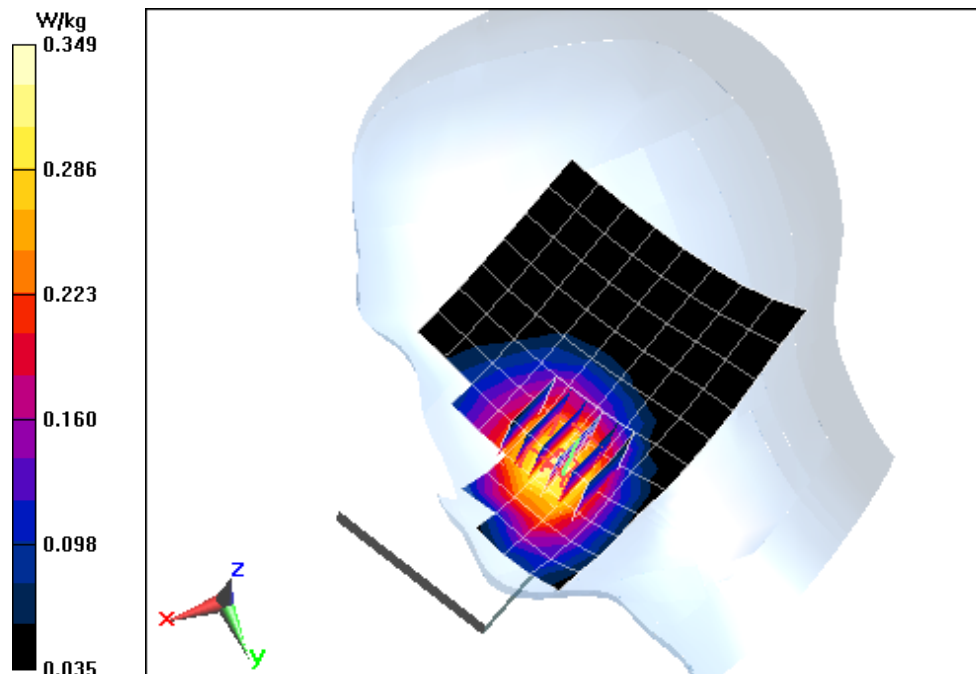
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 19.25 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.400 W/kg

SAR(1 g) = 0.319 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 41.405$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

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

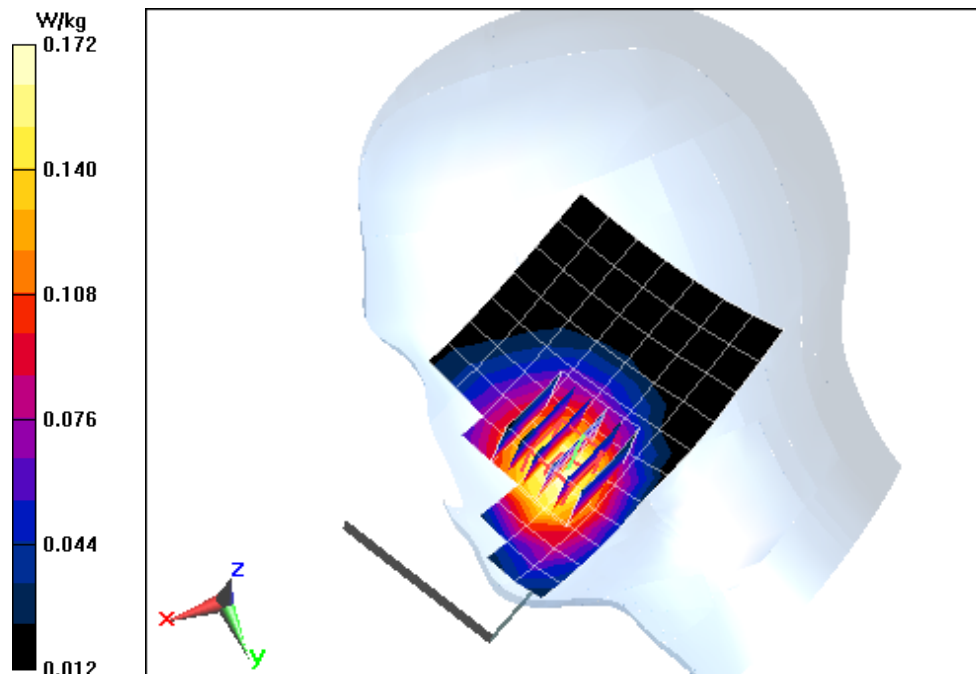
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.53 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.199 W/kg

SAR(1 g) = 0.157 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

Communication System: UID 0, GSM1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 Head, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.395 \text{ S/m}$; $\epsilon_r = 39.656$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.05, 5.05, 5.05); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

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

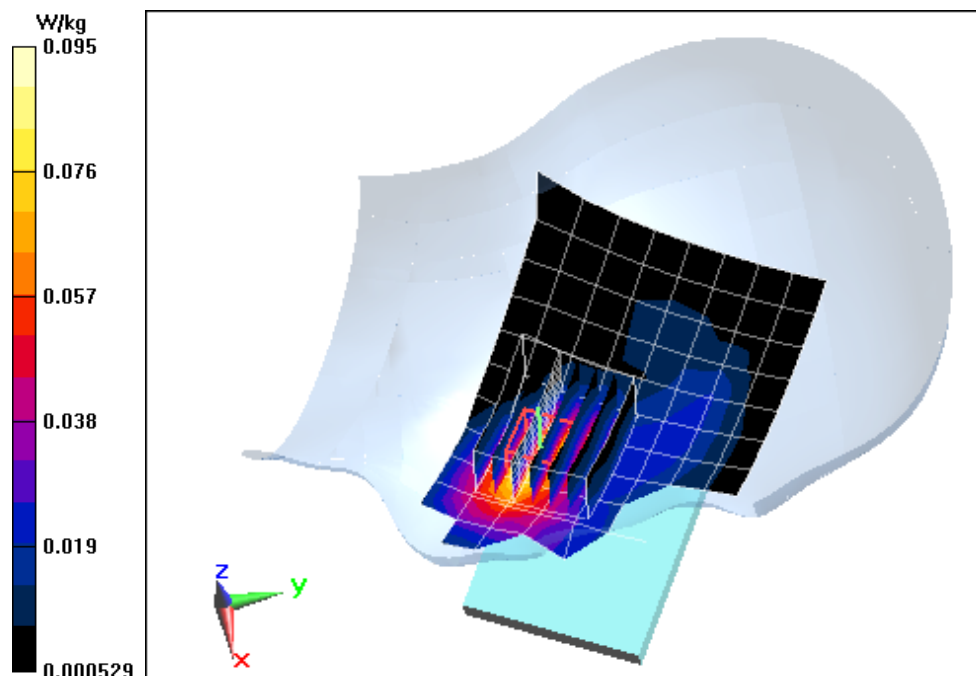
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x8x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.884 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.128 W/kg

SAR(1 g) = 0.080 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

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

Medium: 1900 Head, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.395 \text{ S/m}$; $\epsilon_r = 39.656$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.05, 5.05, 5.05); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

Mode: PCS CDMA, Left Head, Cheek, Mid.ch

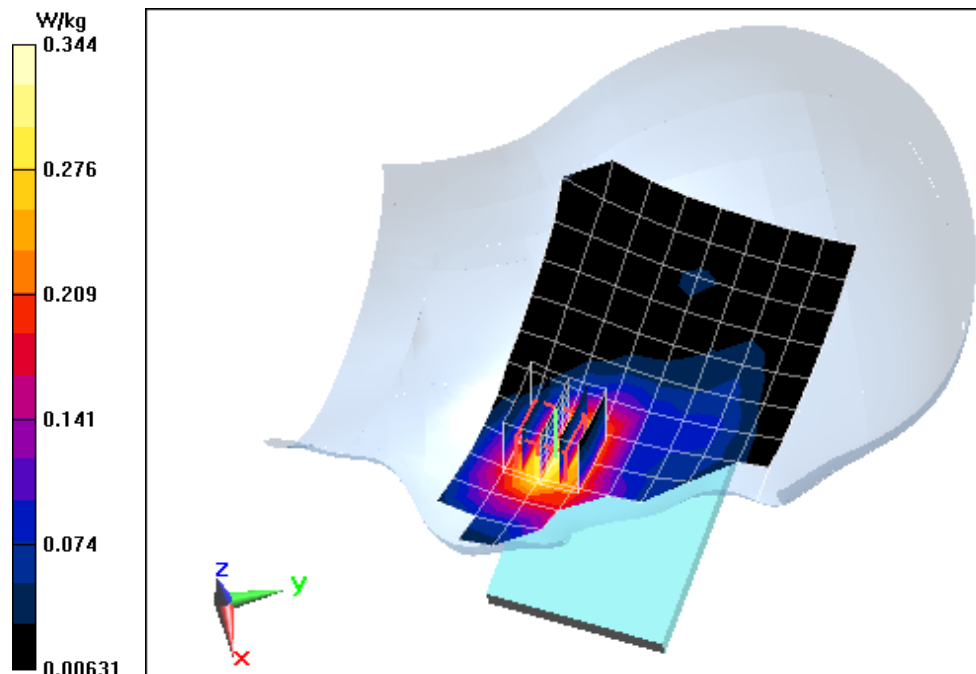
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 15.34 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.459 W/kg

SAR(1 g) = 0.301 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 1900 Head, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.395 \text{ S/m}$; $\epsilon_r = 39.656$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.05, 5.05, 5.05); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

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

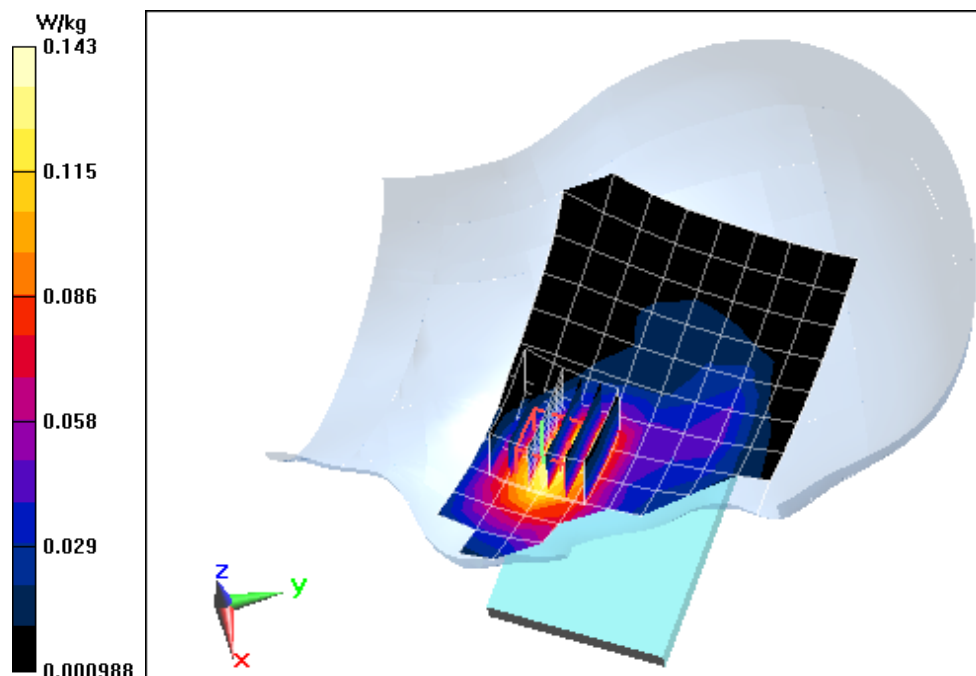
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 9.878 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.197 W/kg

SAR(1 g) = 0.127 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

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

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

$f = 707.5 \text{ MHz}$; $\sigma = 0.856 \text{ S/m}$; $\epsilon_r = 42.482$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-22-2015; Ambient Temp: 22.3°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3288; ConvF(6.81, 6.81, 6.81); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

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

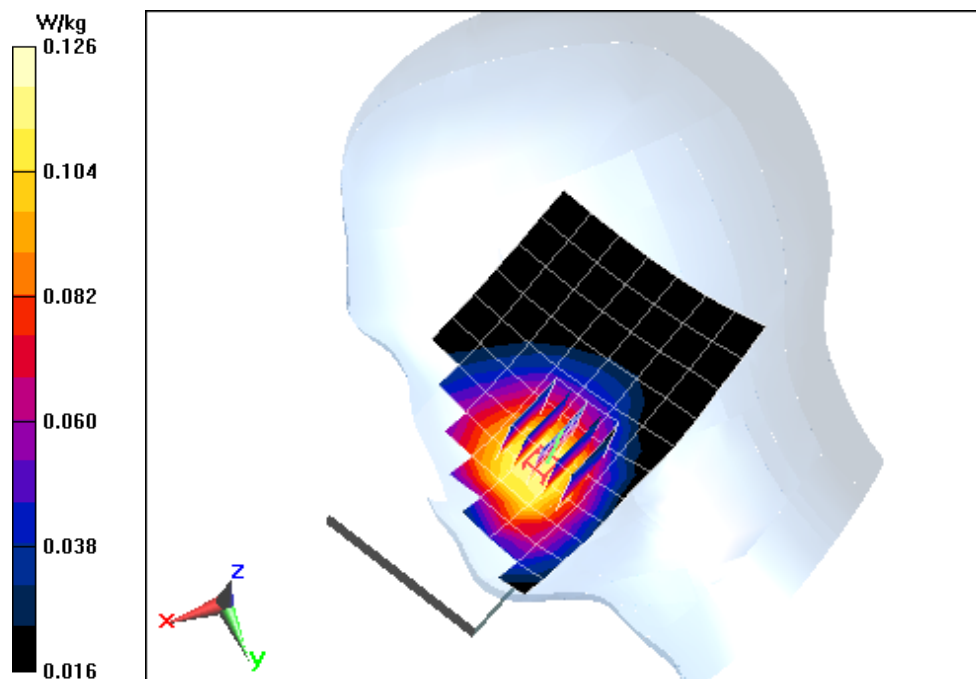
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.15 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.143 W/kg

SAR(1 g) = 0.116 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

Communication System: UID 0, LTE Band 26; Frequency: 836.5 MHz; Duty Cycle: 1:1

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

$f = 836.5 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 41.406$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

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

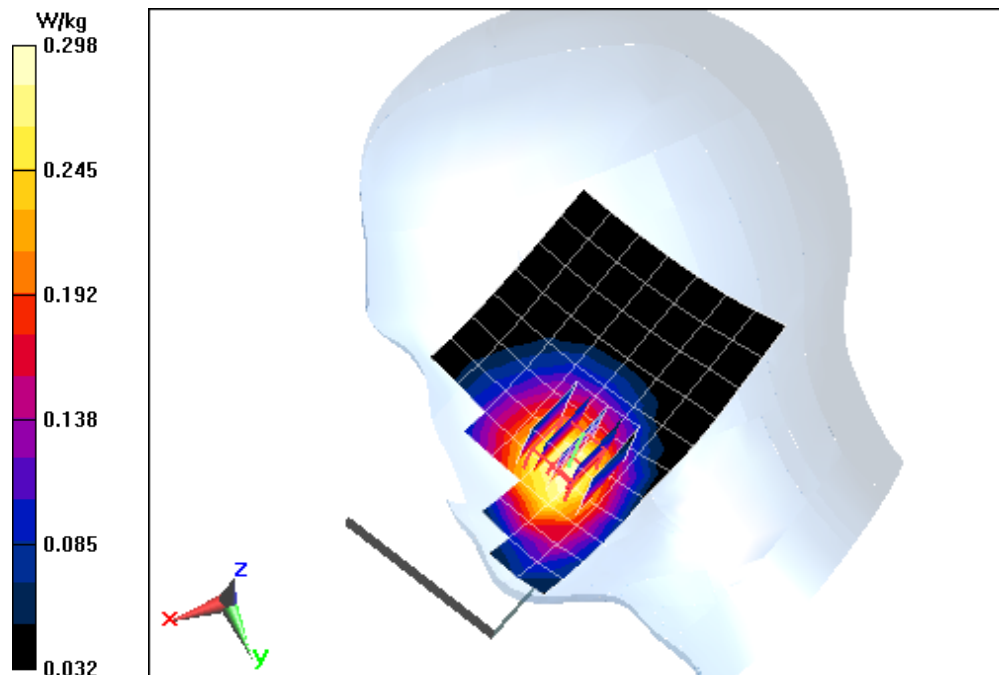
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 18.86 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.349 W/kg

SAR(1 g) = 0.274 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653C

Communication System: UID 0, LTE RF Band 4 (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

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

$f = 1732.5 \text{ MHz}$; $\sigma = 1.328 \text{ S/m}$; $\epsilon_r = 39.184$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-22-2015; Ambient Temp: 23.1°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.27, 5.27, 5.27); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

**Mode: LTE Band 4 (AWS), Left Head, Cheek, Mid.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

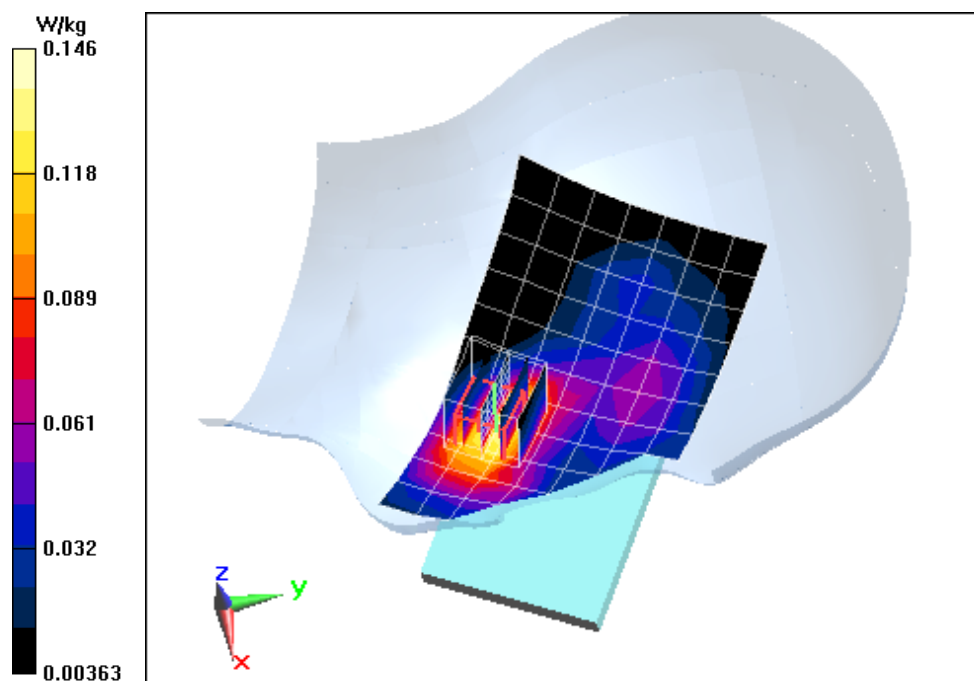
Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.82 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.189 W/kg

SAR(1 g) = 0.127 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653C

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

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

$f = 1860 \text{ MHz}$; $\sigma = 1.374 \text{ S/m}$; $\epsilon_r = 39.747$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-14-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.05, 5.05, 5.05); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

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

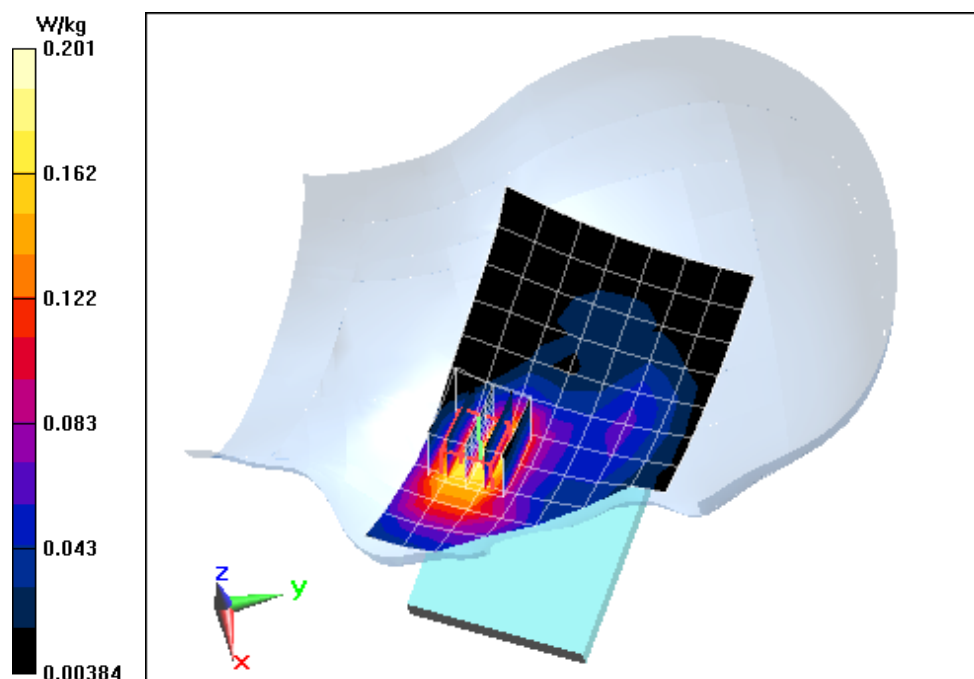
Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 11.49 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.261 W/kg

SAR(1 g) = 0.172 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653C

Communication System: UID 0, LTE Band 41 (0); Frequency: 2680 MHz; Duty Cycle: 1:1.58

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

$f = 2680 \text{ MHz}$; $\sigma = 2.136 \text{ S/m}$; $\epsilon_r = 38.342$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 06-25-2015; Ambient Temp: 20.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(4.34, 4.34, 4.34); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

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

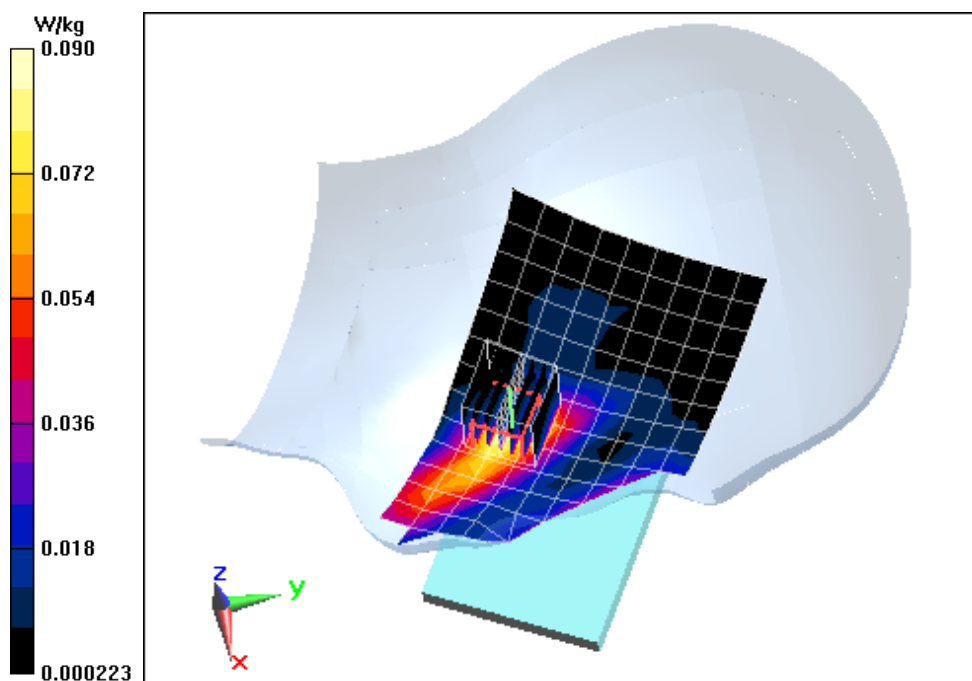
Area Scan (10x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 6.800 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR(1 g) = 0.073 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2400 Head, Medium parameters used (interpolated):

$f = 2462 \text{ MHz}$; $\sigma = 1.891 \text{ S/m}$; $\epsilon_r = 39.197$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-25-2015; Ambient Temp: 20.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(4.5, 4.5, 4.5); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

Mode: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Cheek, Antenna 1, Ch 11, 1 Mbps

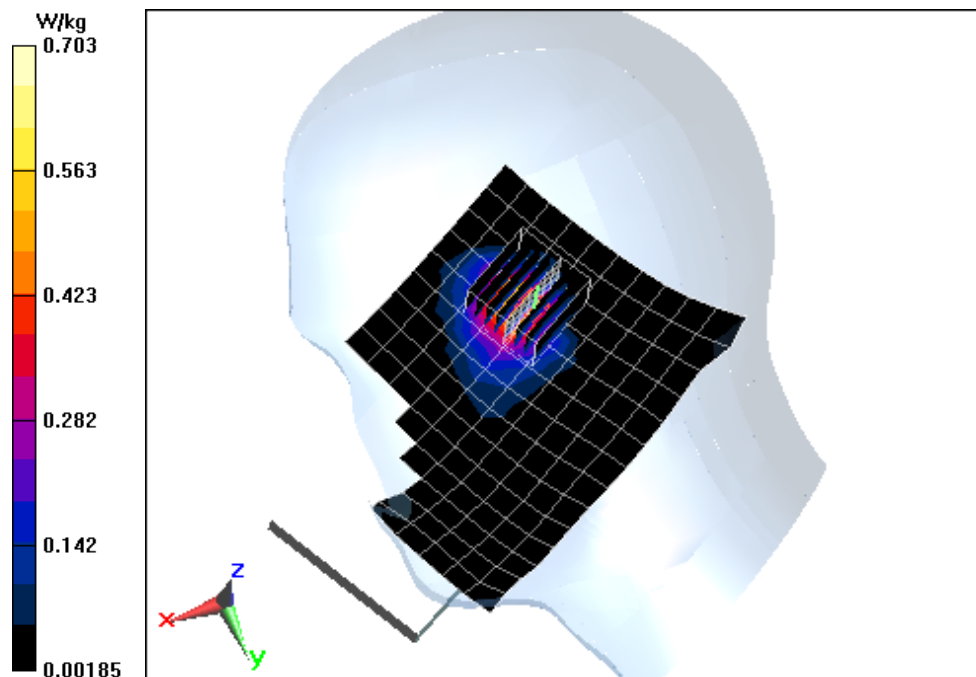
Area Scan (11x18x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.69 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.537 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, 802.11a 5.2-5.8 GHz Band (0); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 5.055 \text{ S/m}$; $\epsilon_r = 34.999$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 06-25-2015; Ambient Temp: 23.1°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(4.41, 4.41, 4.41); Calibrated: 4/23/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Right Head, Cheek, Antenna 1, Ch 149, 6 Mbps

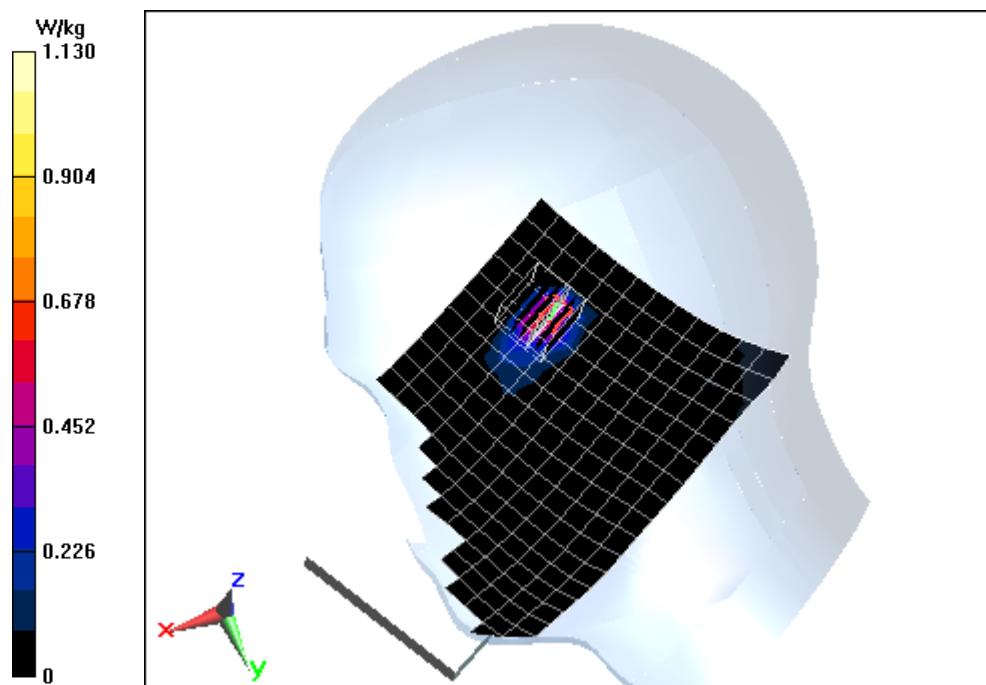
Area Scan (13x21x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm: Graded Ratio: 1.4

Reference Value = 6.844 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 0.391 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

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

$f = 836.6 \text{ MHz}$; $\sigma = 0.974 \text{ S/m}$; $\epsilon_r = 53.072$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158

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

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

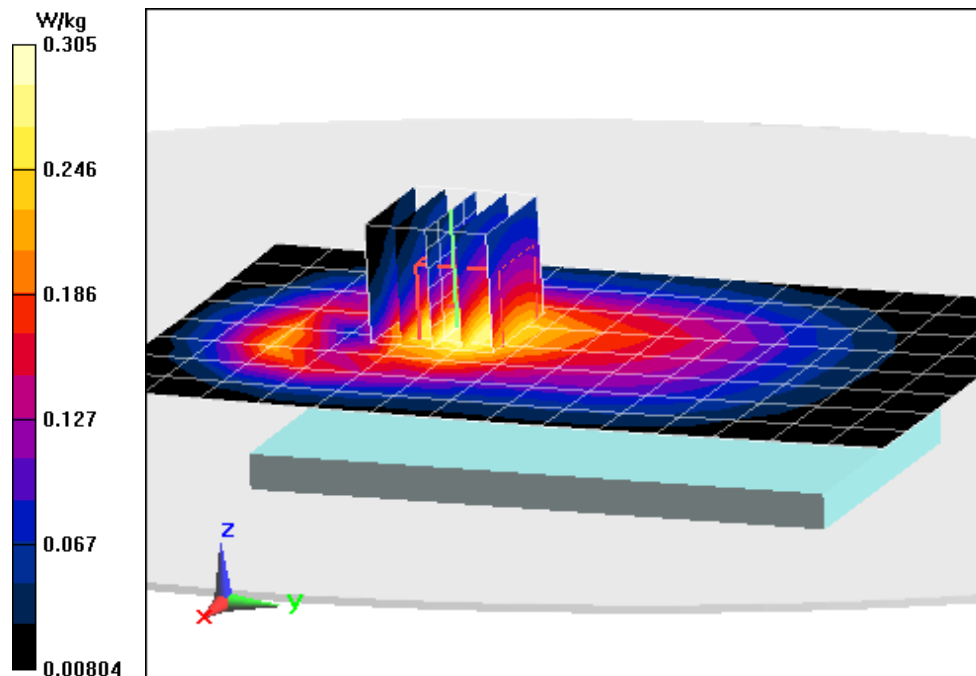
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 17.52 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.365 W/kg

SAR(1 g) = 0.271 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

Communication System: UID 0, GSM GPRS; 4 Tx slots (0); Frequency: 836.6 MHz; Duty Cycle: 1:2.076

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

$f = 836.6 \text{ MHz}$; $\sigma = 0.974 \text{ S/m}$; $\epsilon_r = 53.072$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158

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

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

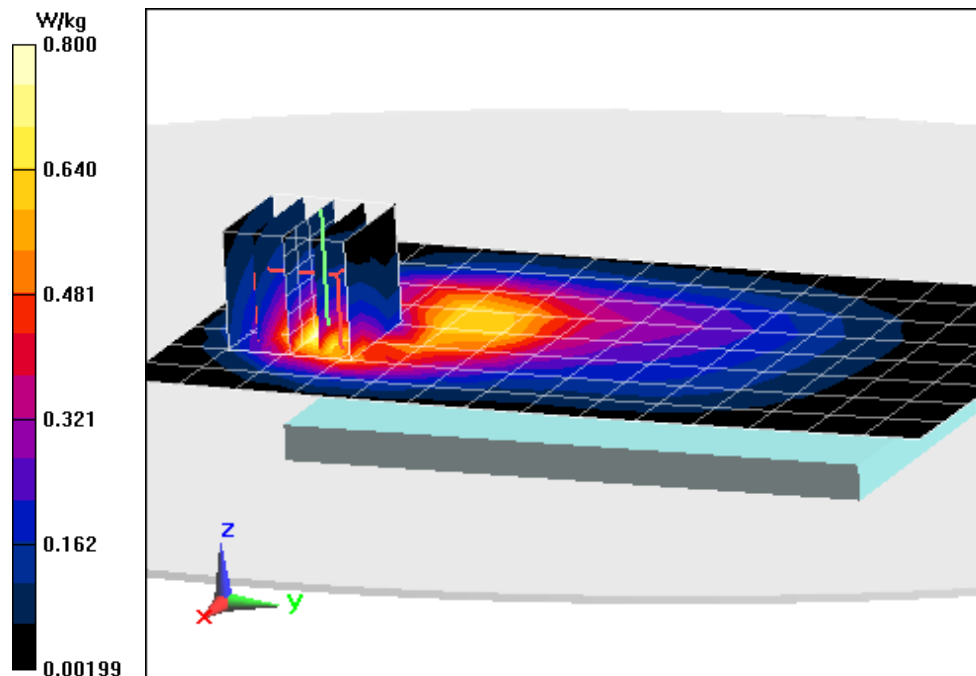
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 27.41 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.646 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

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

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

$f = 820.1 \text{ MHz}$; $\sigma = 0.957 \text{ S/m}$; $\epsilon_r = 53.281$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158

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

Mode: BC10 Cell. CDMA, Body SAR, Back side, Mid.ch

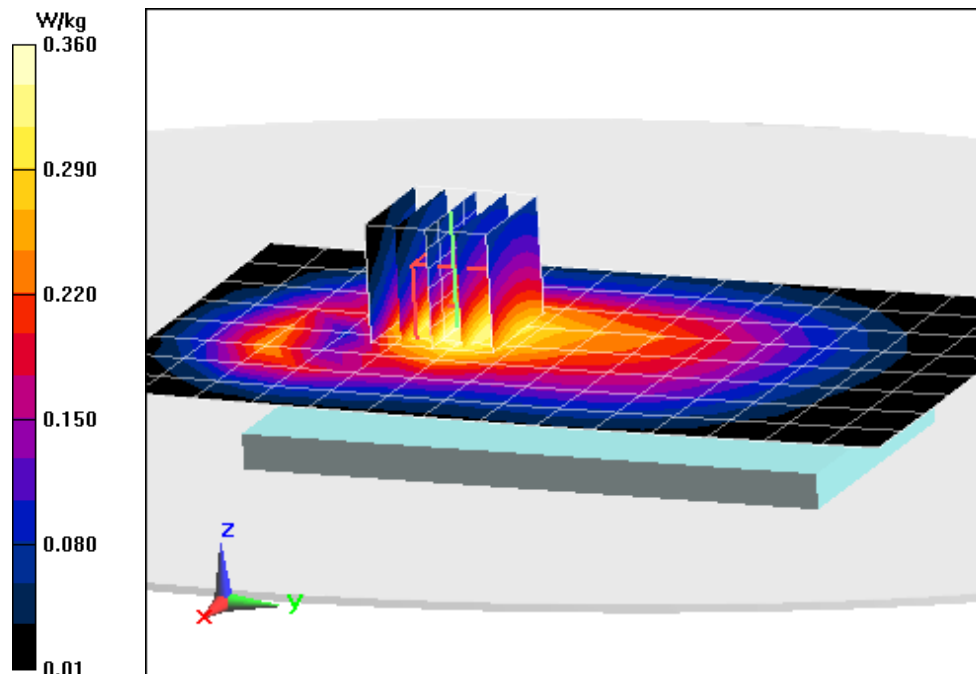
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 19.09 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.428 W/kg

SAR(1 g) = 0.322 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653A

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

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

$f = 820.1 \text{ MHz}$; $\sigma = 0.977 \text{ S/m}$; $\epsilon_r = 53.878$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

Mode: BC10 Cell. EVDO Rev. 0, Body SAR, Back side, Mid.ch

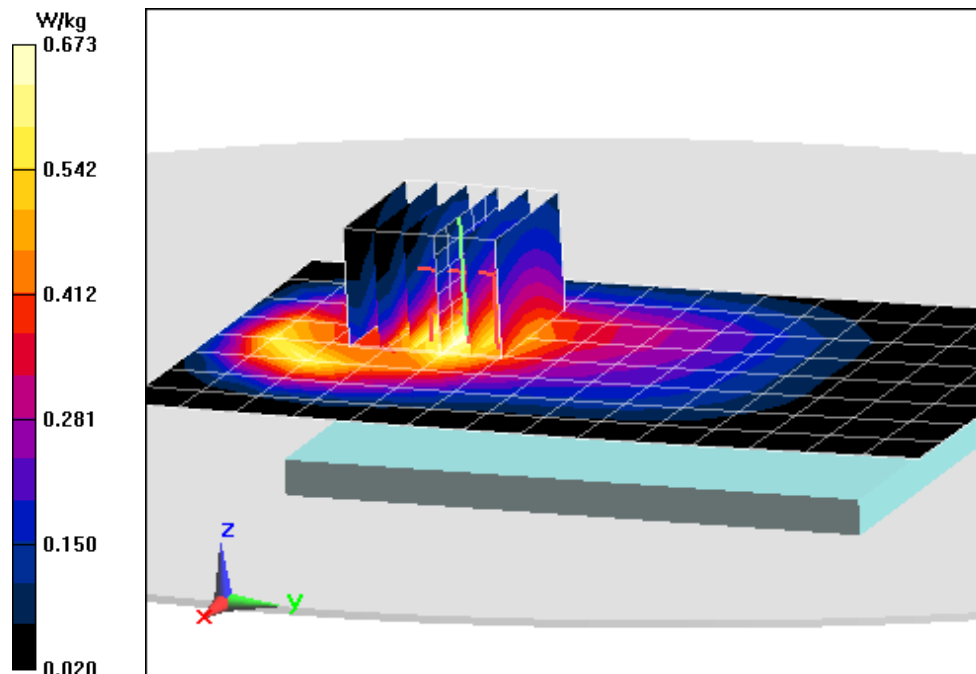
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 25.94 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.861 W/kg

SAR(1 g) = 0.606 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

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

$f = 836.52 \text{ MHz}$; $\sigma = 0.974 \text{ S/m}$; $\epsilon_r = 53.072$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158

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

Mode: BC0 Cell. CDMA, Body SAR, Back side, Mid.ch

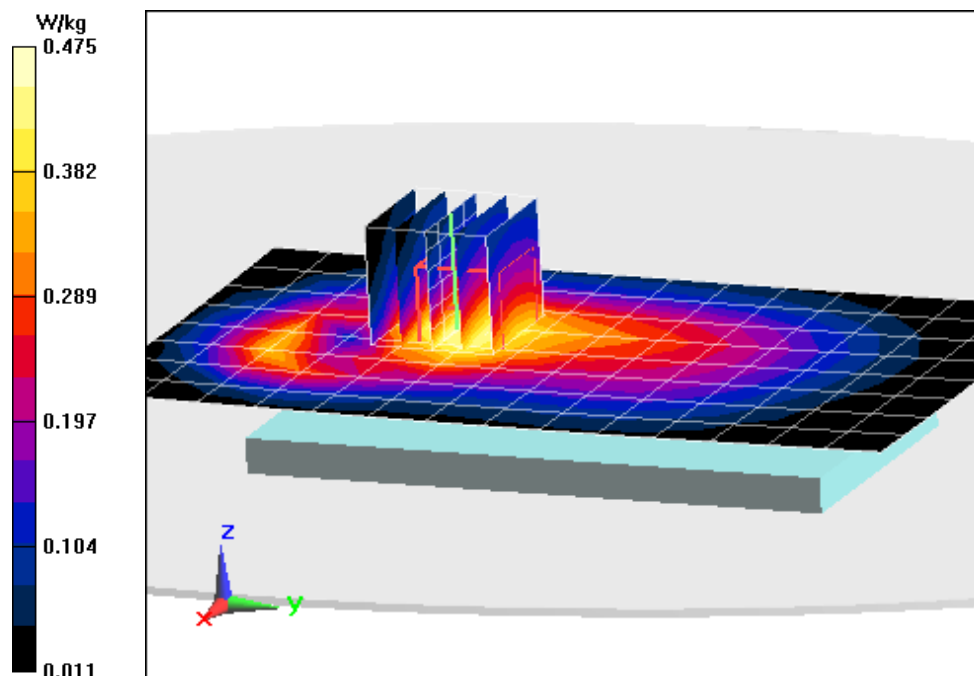
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.72 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.562 W/kg

SAR(1 g) = 0.424 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653A

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

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

$f = 836.52 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

Mode: BC0 Cell. EVDO Rev. 0, Body SAR, Back side, Mid.ch

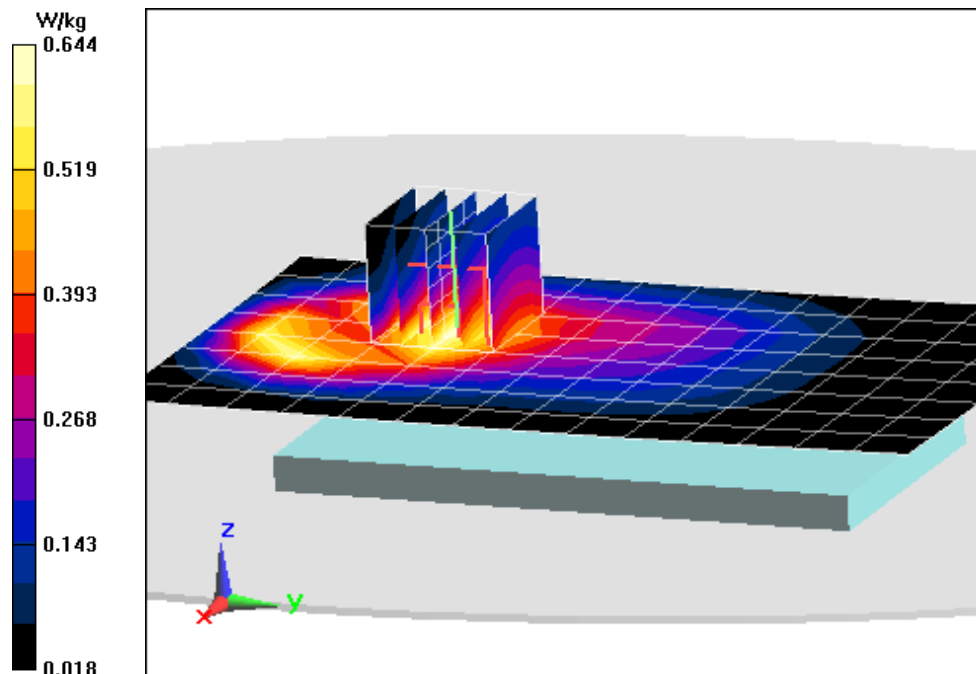
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 25.06 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.813 W/kg

SAR(1 g) = 0.578 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

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

$f = 836.6 \text{ MHz}$; $\sigma = 0.974 \text{ S/m}$; $\epsilon_r = 53.072$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158

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

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

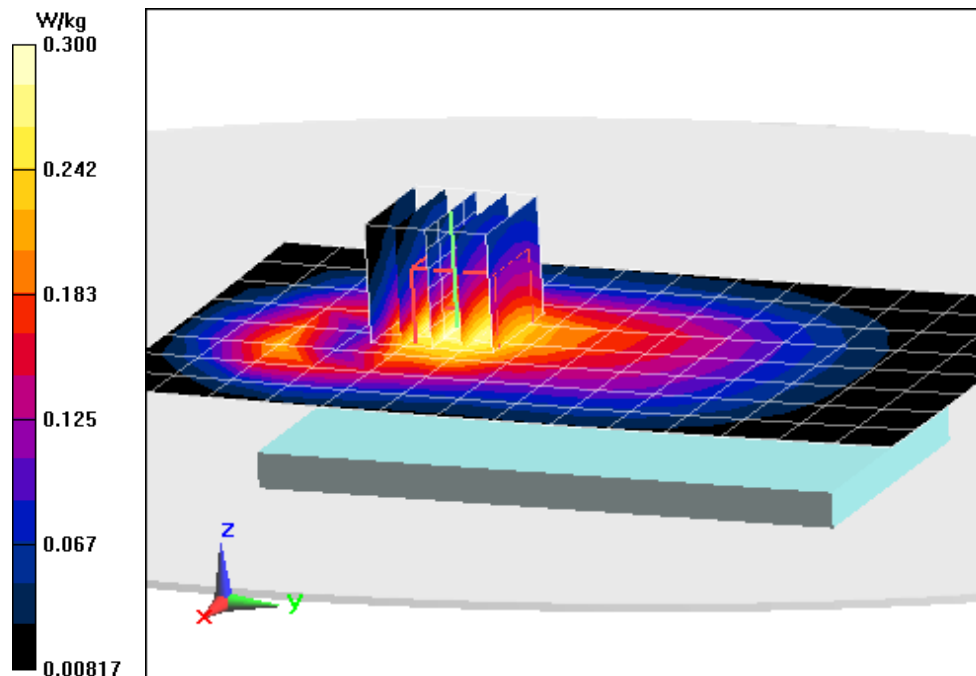
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 16.68 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.358 W/kg

SAR(1 g) = 0.267 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

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

$f = 836.6 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

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

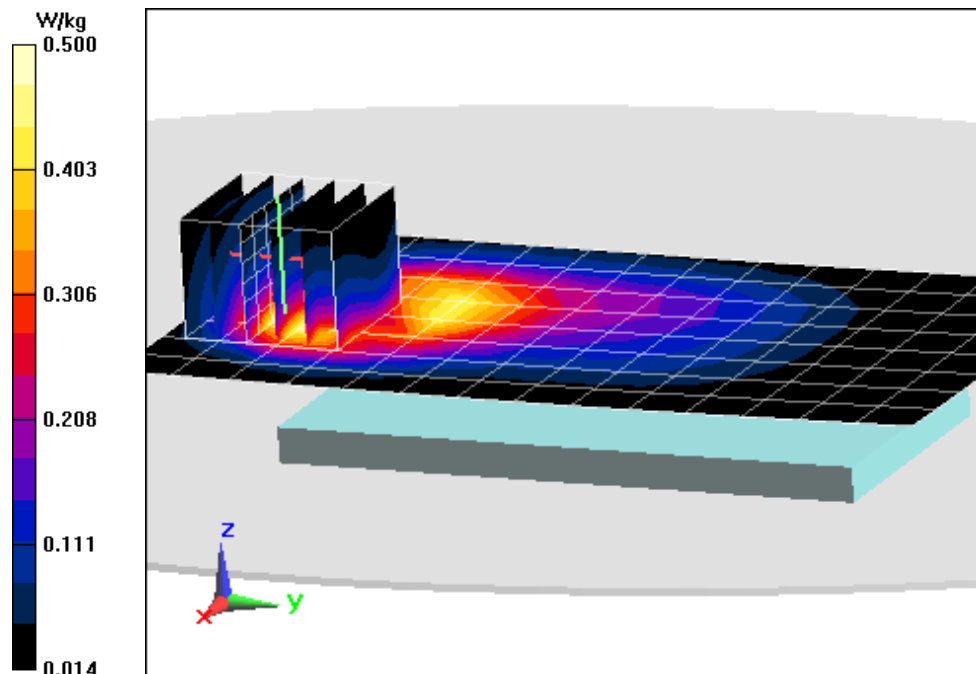
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 20.61 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.710 W/kg

SAR(1 g) = 0.414 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 1900 Body, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.518 \text{ S/m}$; $\epsilon_r = 52.258$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

Mode: GSM 1900, Body SAR, Back side, Mid.Ch

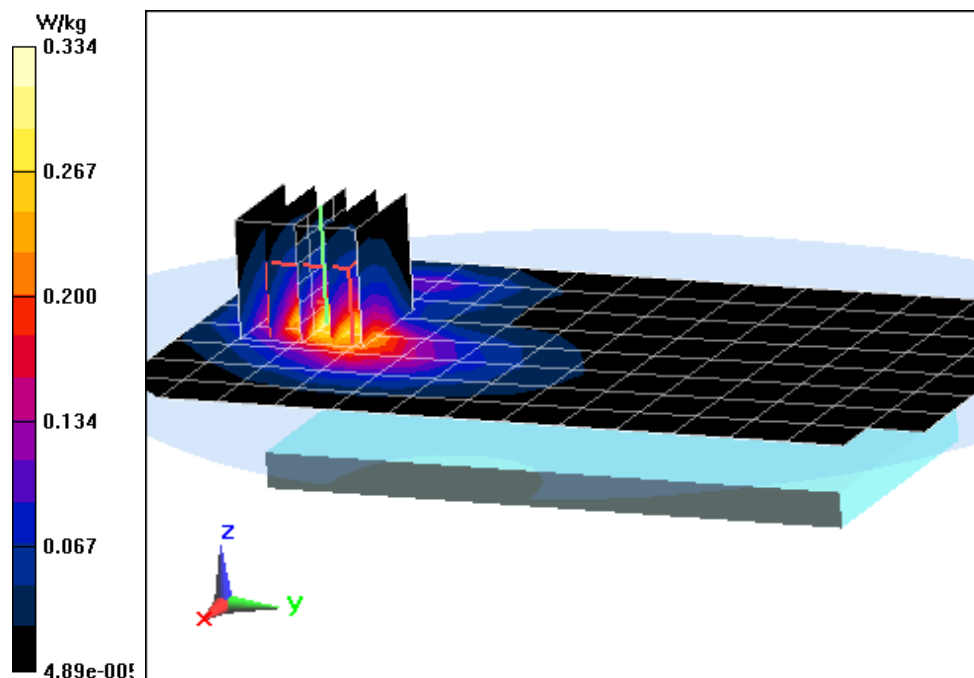
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.96 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.442 W/kg

SAR(1 g) = 0.270 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 1900 Body, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.518 \text{ S/m}$; $\epsilon_r = 52.258$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

Mode: GPRS 1900, Body SAR, Front side, Mid.ch, 2 Tx Slots

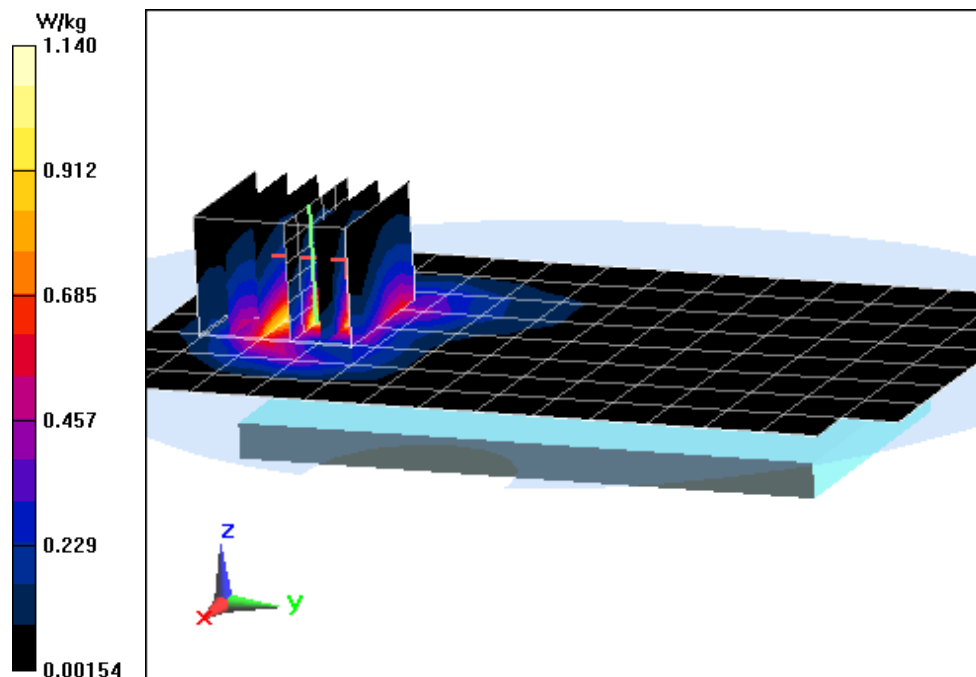
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 25.00 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 0.947 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

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

Medium: 1900 Body, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.518 \text{ S/m}$; $\epsilon_r = 52.258$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

Mode: PCS CDMA, Body SAR, Back side, Mid.ch

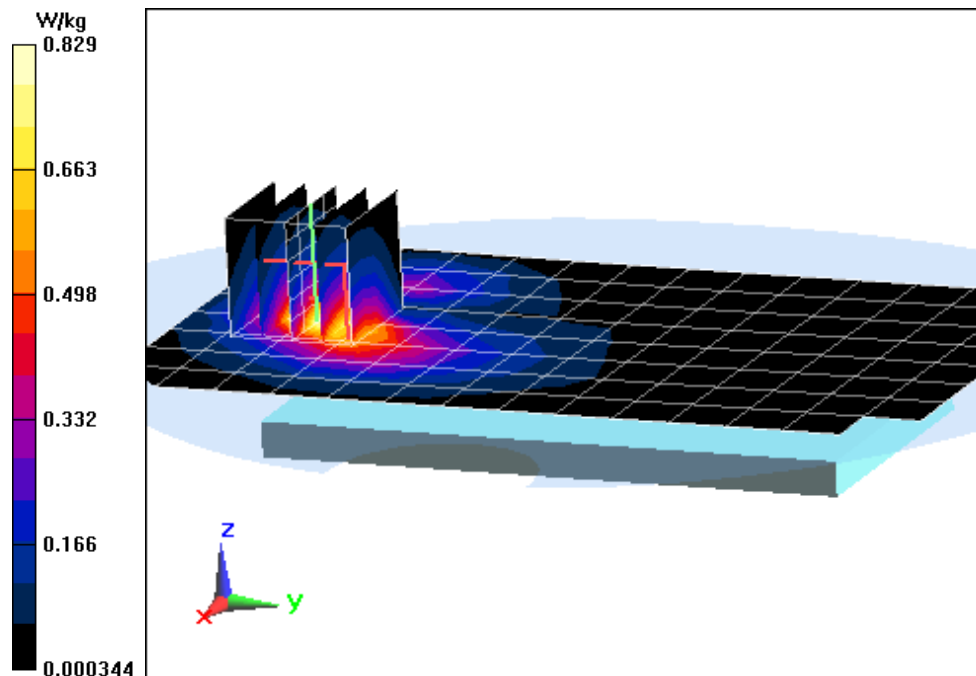
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.50 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.685 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653A

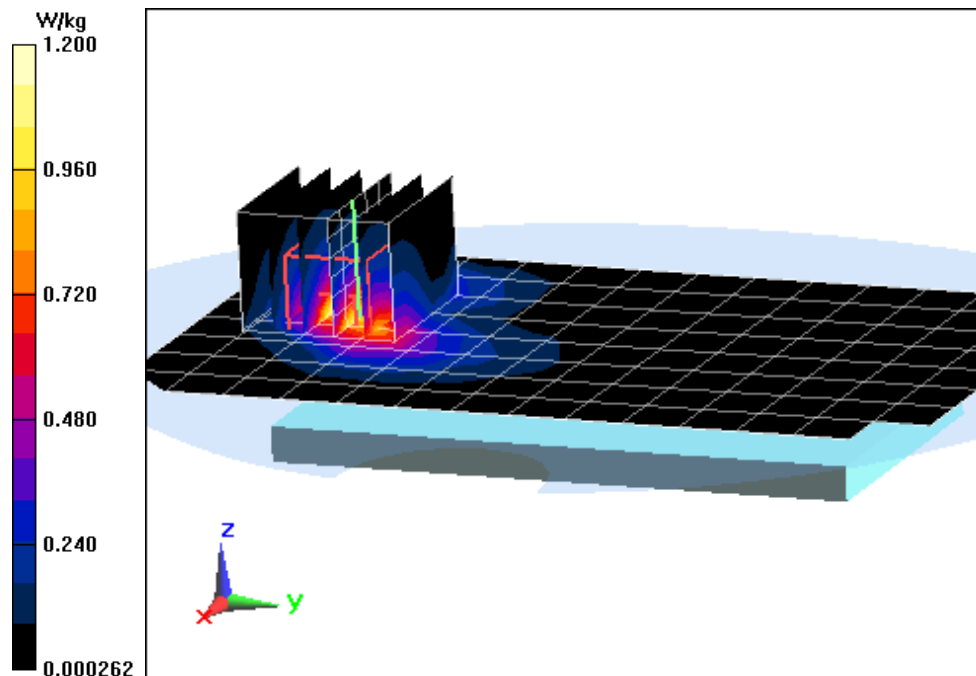
Communication System: UID 0, CDMA; Frequency: 1851.25 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used (interpolated):
 $f = 1851.25 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 52.412$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 3/13/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO Rev. 0, Body SAR, Back side, 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 = 26.53 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.985 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 1900 Body, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.518 \text{ S/m}$; $\epsilon_r = 52.258$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

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

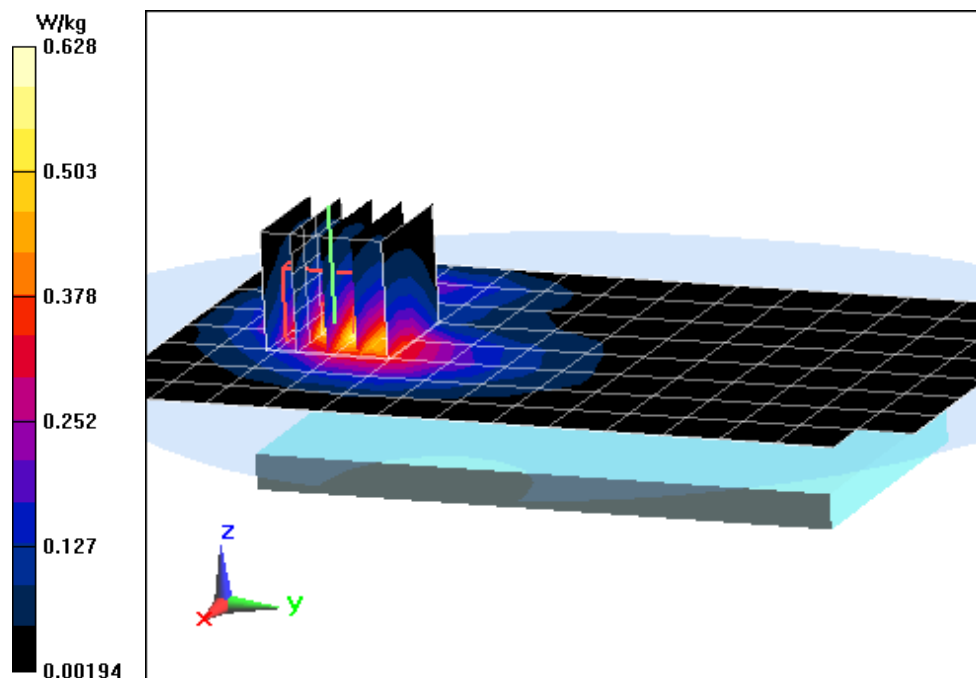
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 18.77 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.516 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB6

Communication System: UID 0, UMTS (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1852.4 \text{ MHz}$; $\sigma = 1.48 \text{ S/m}$; $\epsilon_r = 52.406$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

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

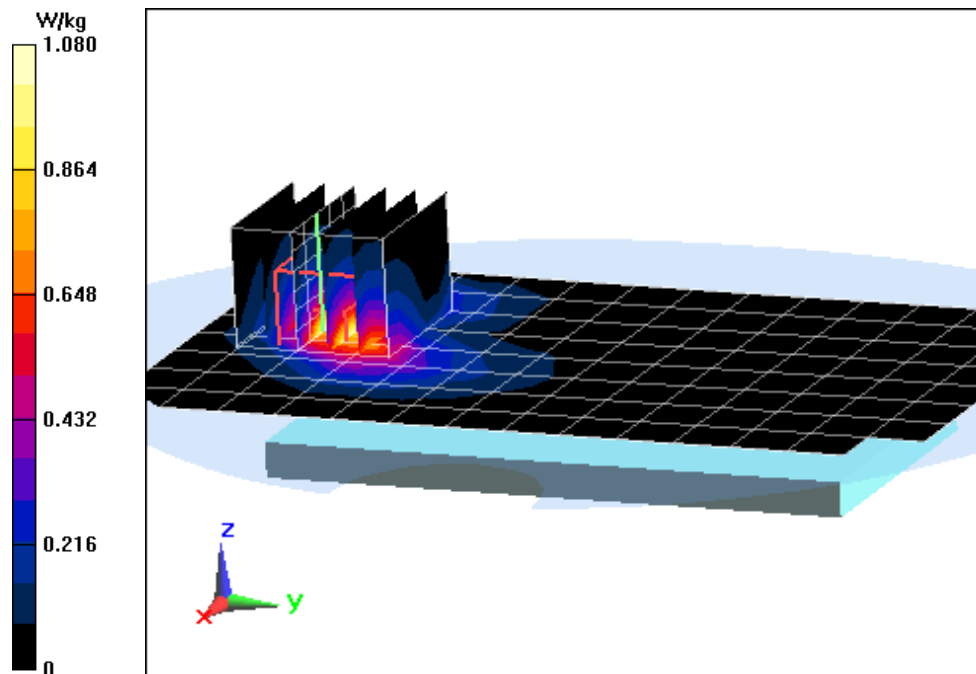
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 25.70 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.914 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body, Medium parameters used (interpolated):
 $f = 707.5 \text{ MHz}$; $\sigma = 0.932 \text{ S/m}$; $\epsilon_r = 55.672$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-18-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(6.38, 6.38, 6.38); Calibrated: 9/24/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2014
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

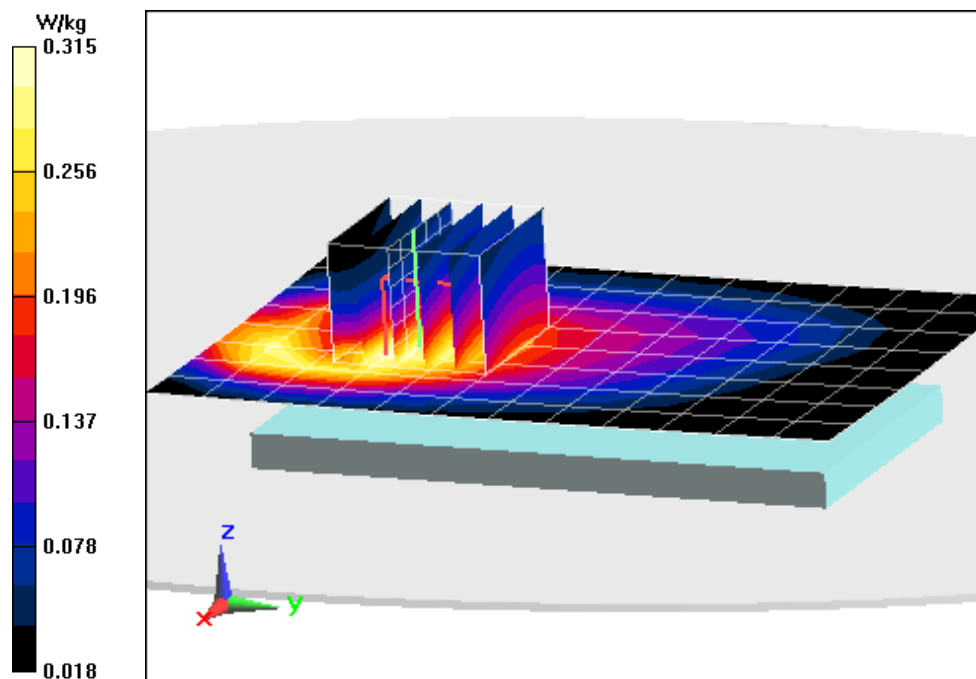
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 16.87 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.394 W/kg

SAR(1 g) = 0.280 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

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

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

$f = 707.5 \text{ MHz}$; $\sigma = 0.94 \text{ S/m}$; $\epsilon_r = 54.593$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-30-2015; Ambient Temp: 20.3°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3319; ConvF(6.1, 6.1, 6.1); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/13/2015

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1226

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

**Mode: LTE Band 12, Body SAR, Front side, Mid.ch, 10 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

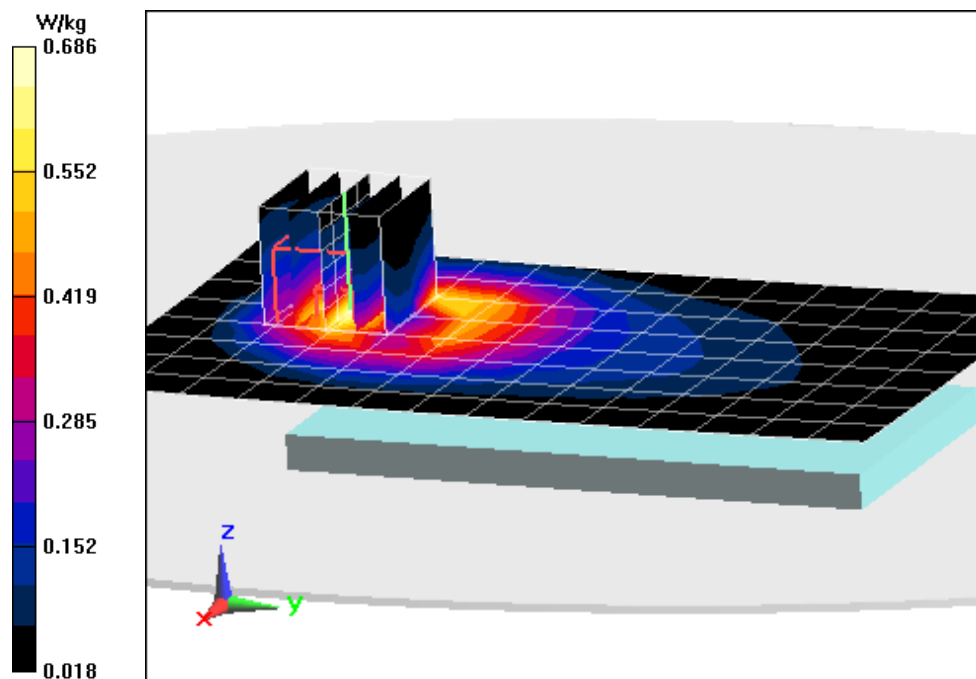
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 25.97 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.965 W/kg

SAR(1 g) = 0.550 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

Communication System: UID 0, LTE Band 26 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

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

$f = 836.5 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.679$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

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

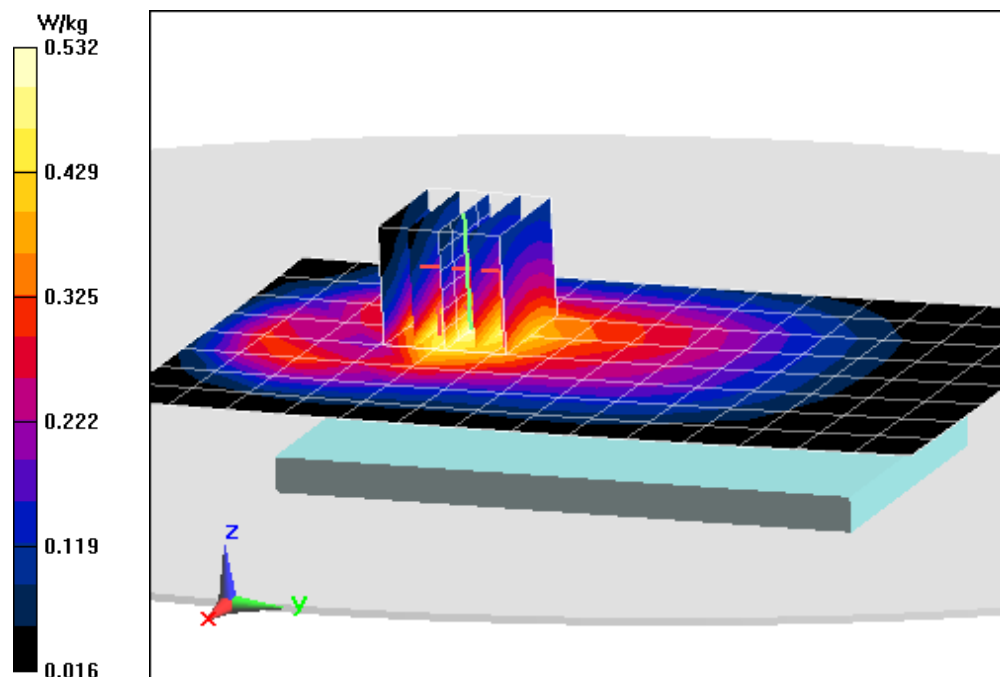
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.80 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.643 W/kg

SAR(1 g) = 0.474 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB3

Communication System: UID 0, LTE Band 26 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

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

$f = 836.5 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.679$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

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

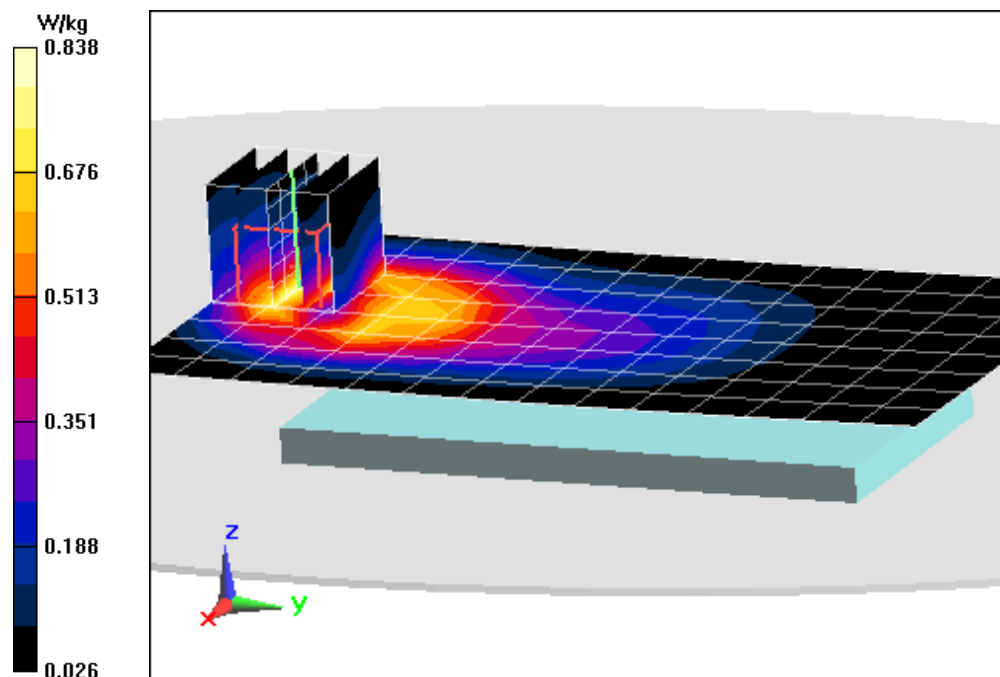
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 28.32 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.682 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: AC258

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body, Medium parameters used (interpolated):
 $f = 1732.5 \text{ MHz}$; $\sigma = 1.46 \text{ S/m}$; $\epsilon_r = 51.241$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-24-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3288; ConvF(5.03, 5.03, 5.03); Calibrated: 9/24/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2014
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Mode: LTE Band 4 (AWS), Body SAR, Back side, Mid.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

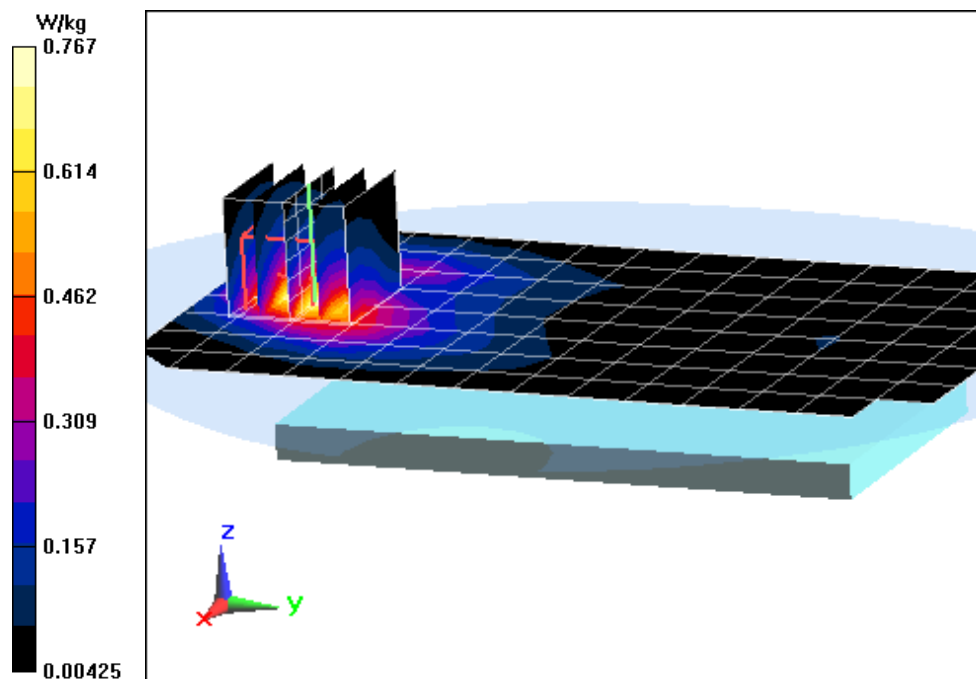
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.34 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.649 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95A35

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1

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

$f = 1732.5 \text{ MHz}$; $\sigma = 1.46 \text{ S/m}$; $\epsilon_r = 51.241$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3288; ConvF(5.03, 5.03, 5.03); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

**Mode: LTE Band 4 (AWS), Body SAR, Back side, Mid.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

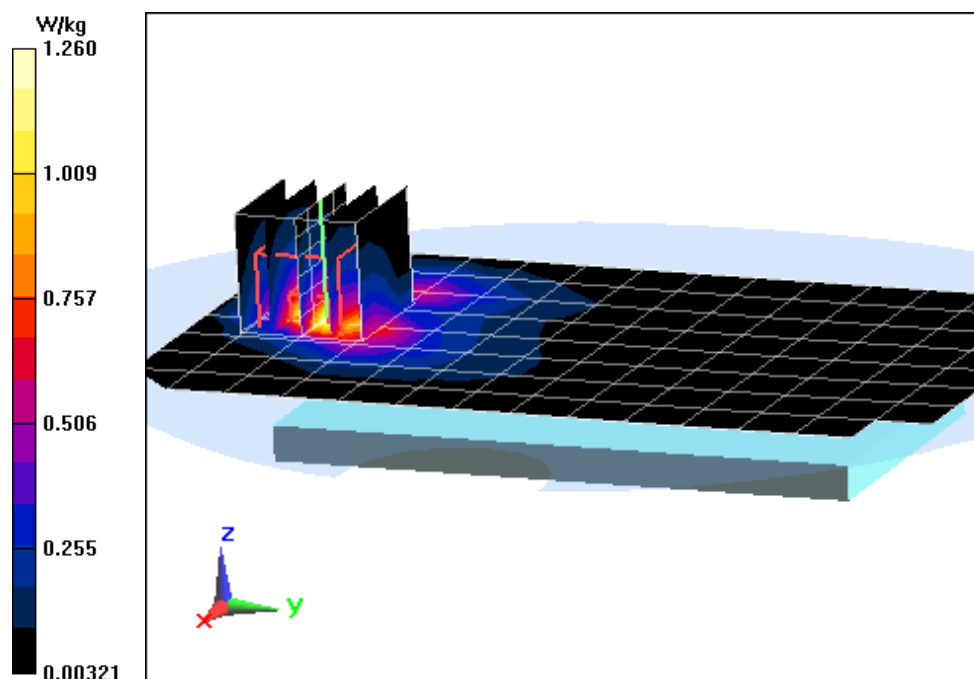
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 28.91 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 1.01 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

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

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.491 \text{ S/m}$; $\epsilon_r = 52.365$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

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

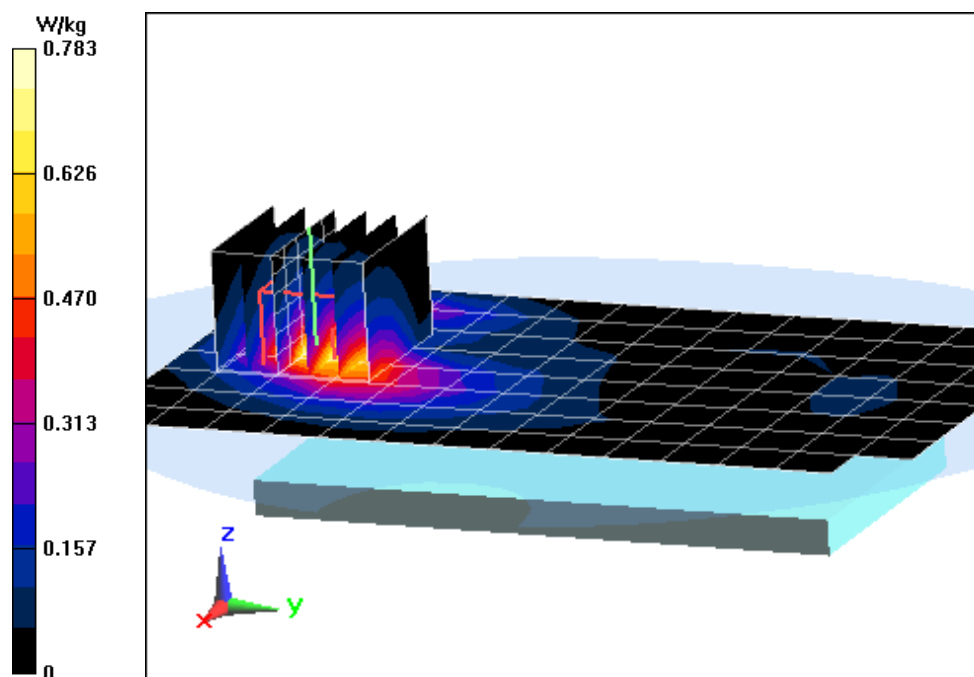
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 21.05 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.659 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95A35

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

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1860 \text{ MHz}$; $\sigma = 1.491 \text{ S/m}$; $\epsilon_r = 52.365$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

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

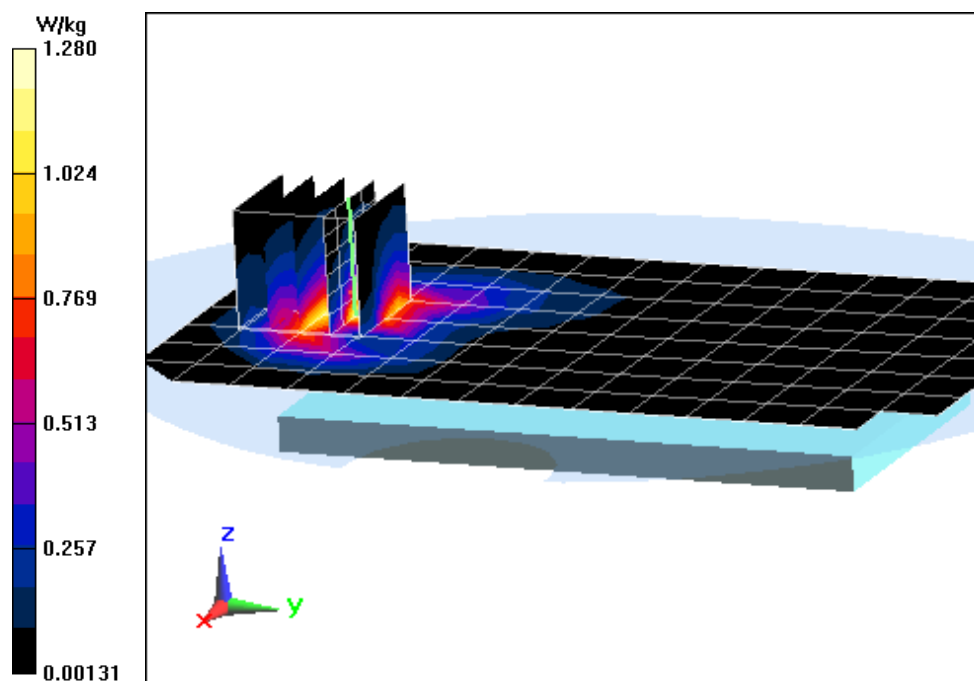
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 26.91 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 1.04 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653C

Communication System: UID 0, LTE Band 41 (0); Frequency: 2680 MHz; Duty Cycle: 1:1.58

Medium: 2600 Body, Medium parameters used (extrapolated):

$f = 2680 \text{ MHz}$; $\sigma = 2.351 \text{ S/m}$; $\epsilon_r = 50.281$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-16-2015; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(4.17, 4.17, 4.17); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

**Mode: LTE Band 41, Body SAR, Back side, High.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

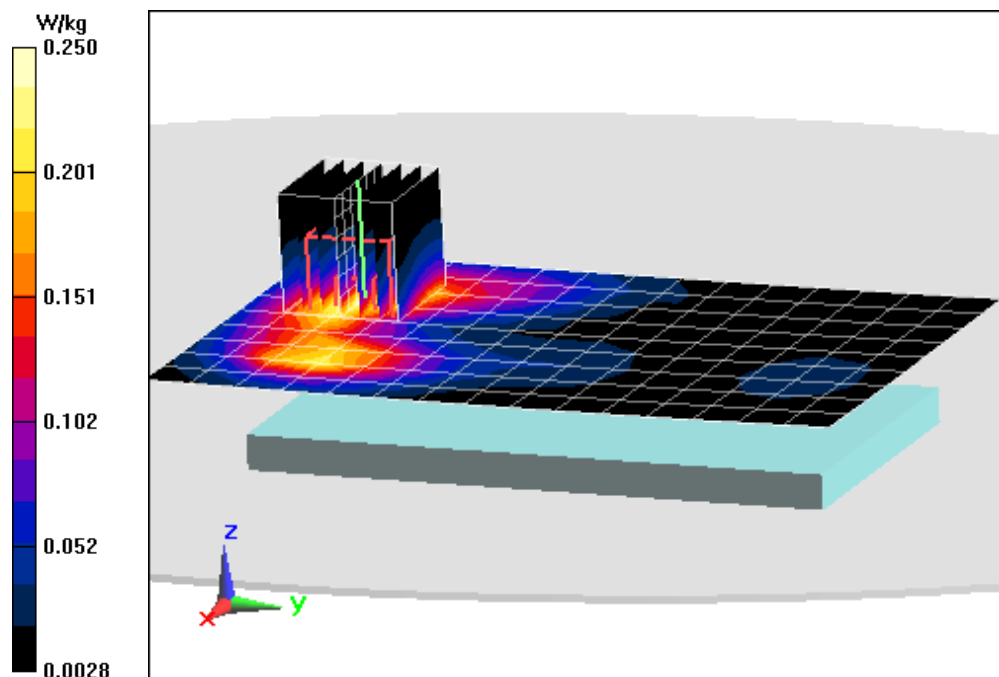
Area Scan (10x16x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 9.639 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.407 W/kg

SAR(1 g) = 0.200 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9653C

Communication System: UID 0, LTE Band 41 (0); Frequency: 2636.5 MHz; Duty Cycle: 1:1.58

Medium: 2600 Body, Medium parameters used (interpolated):

$f = 2636.5 \text{ MHz}$; $\sigma = 2.293 \text{ S/m}$; $\epsilon_r = 50.112$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-02-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(3.92, 3.92, 3.92); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

**Mode: LTE Band 41, Body SAR, Bottom Edge, Mid-High.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 50 RB Offset**

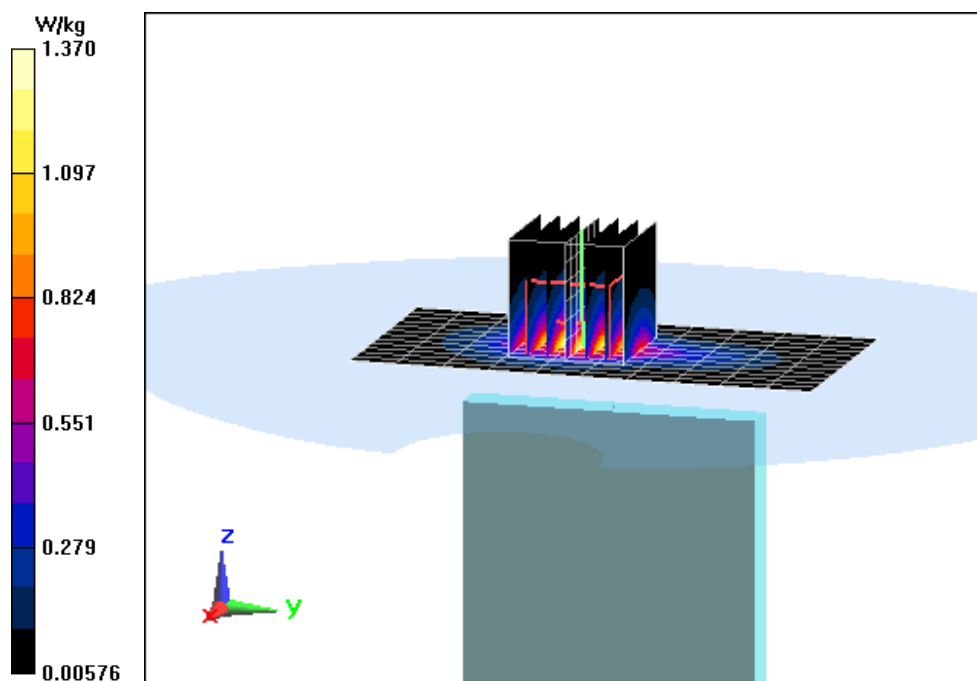
Area Scan (13x11x1): Measurement grid: $dx=5\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 22.99 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.22 W/kg

SAR(1 g) = 1.07 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 Body, Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.979 \text{ S/m}$; $\epsilon_r = 51.512$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-09-2015; Ambient Temp: 21.5°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3318; ConvF(4.37, 4.37, 4.37); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 1, Antenna2, 1 Mbps, Back Side

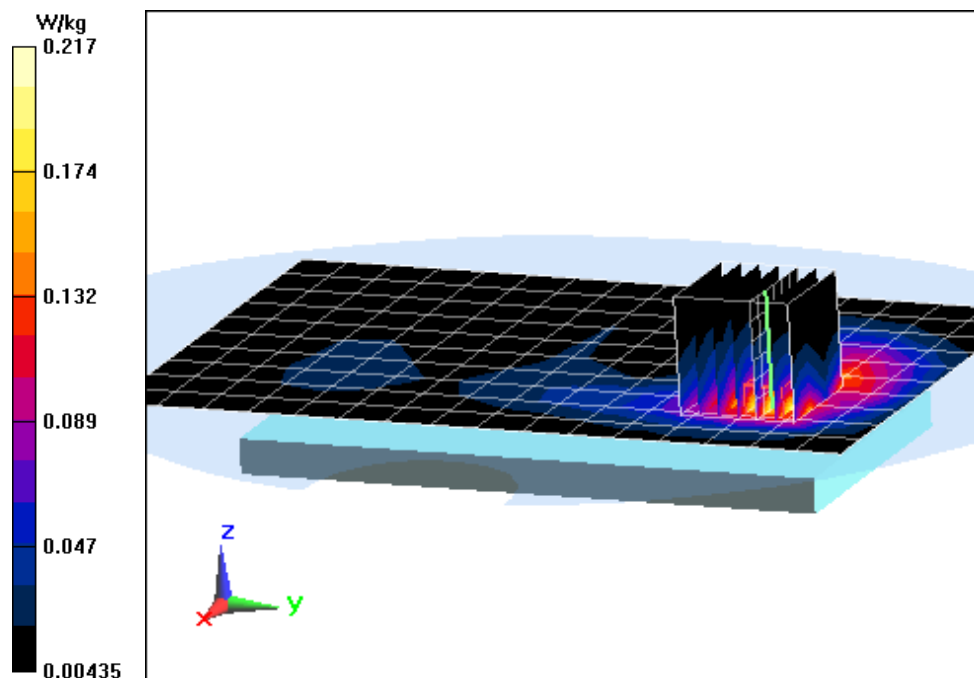
Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 9.375 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.164 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 6.061 \text{ S/m}$; $\epsilon_r = 46.998$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.79, 3.79, 3.79); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

**Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Body SAR,
Ch 149, Antenna 2, 6 Mbps, Back Side**

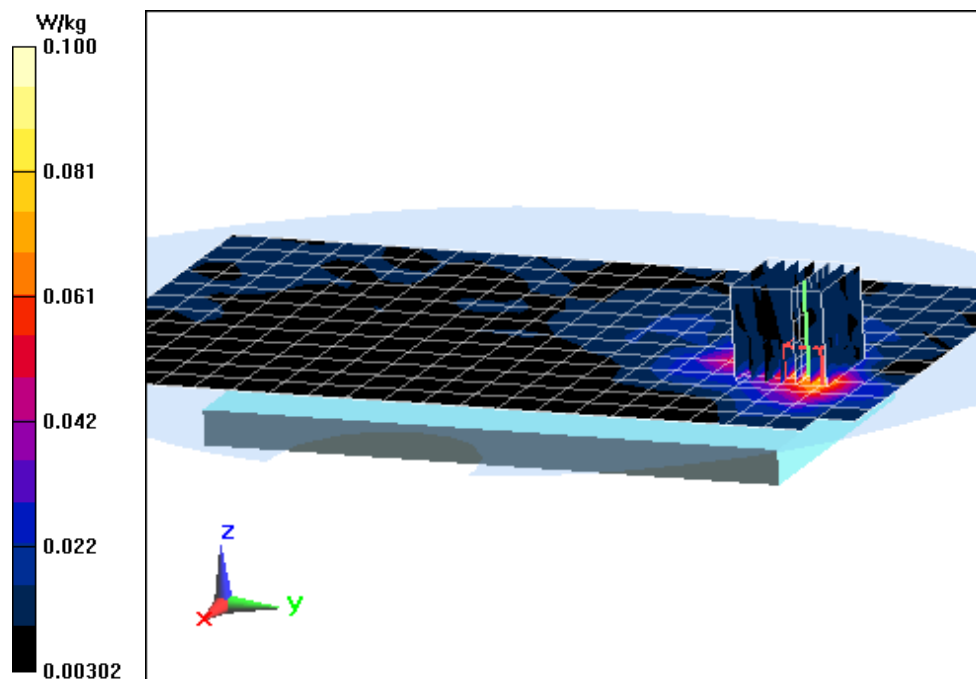
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 1.812 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.035 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 6.061 \text{ S/m}$; $\epsilon_r = 46.998$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.79, 3.79, 3.79); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

**Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Body SAR,
Ch 149, Antenna 2, 6 Mbps, Front Side**

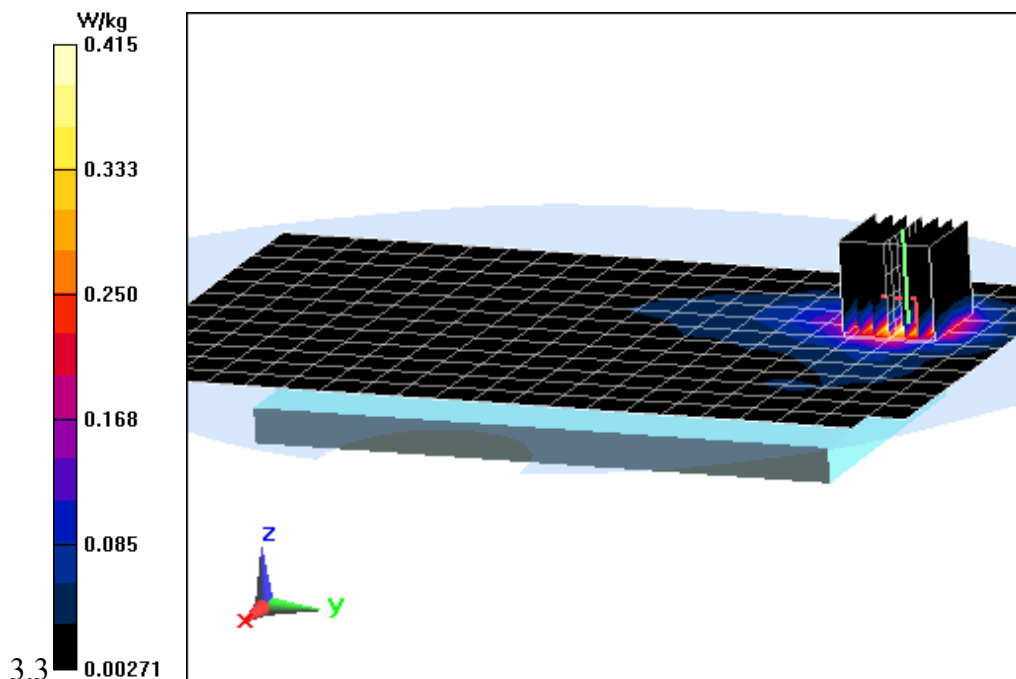
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 5.499 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.709 W/kg

SAR(1 g) = 0.181 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

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

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

$f = 820.1 \text{ MHz}$; $\sigma = 0.977 \text{ S/m}$; $\epsilon_r = 53.878$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.1 cm

Test Date: 06-29-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

Mode: BC10 Cell. EVDO Rev. 0, Body SAR, Front side, Mid.ch

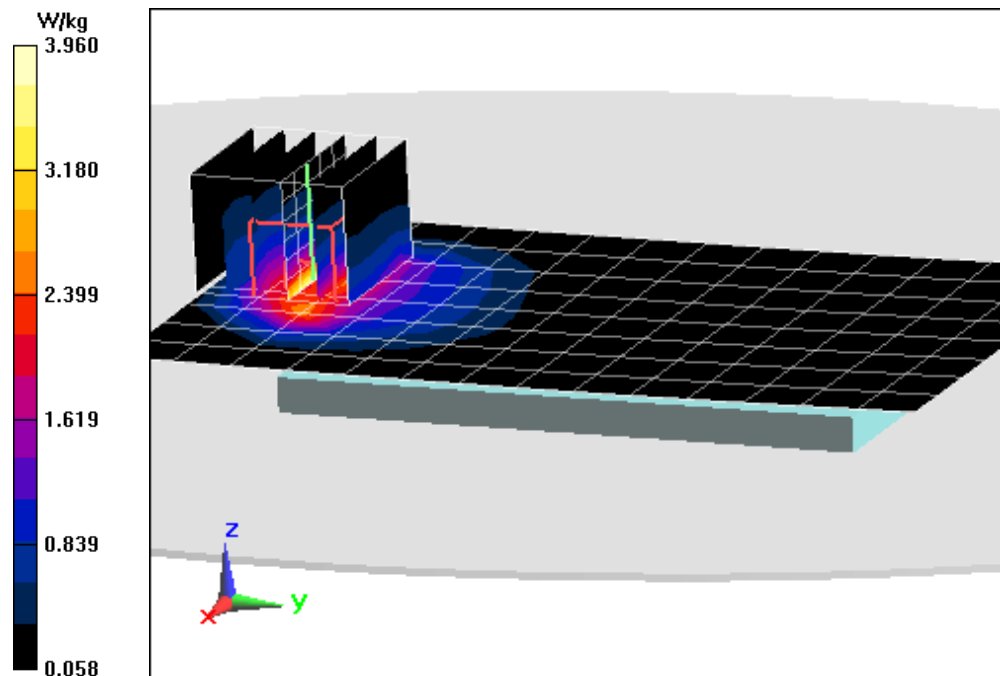
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 60.04 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 5.84 W/kg

SAR(10 g) = 1.53 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

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

$f = 836.52 \text{ MHz}$; $\sigma = 0.994 \text{ S/m}$; $\epsilon_r = 53.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.1 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

Mode: BC0 Cell. EVDO Rev. 0, Body SAR, Front side, Mid.ch

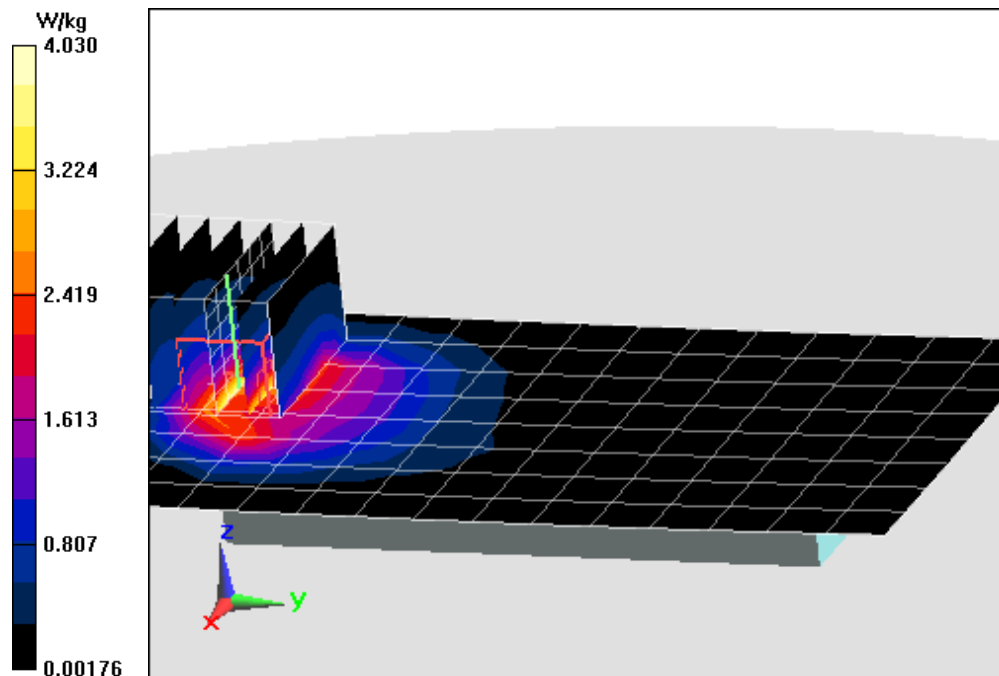
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x8x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.24 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 6.73 W/kg

SAR(10 g) = 1.79 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB5

Communication System: UID 0, CDMA (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1908.75 \text{ MHz}$; $\sigma = 1.556 \text{ S/m}$; $\epsilon_r = 52.192$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.1 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

Mode: PCS CDMA, EVDO Rev.0, Body SAR, Front side, High.ch

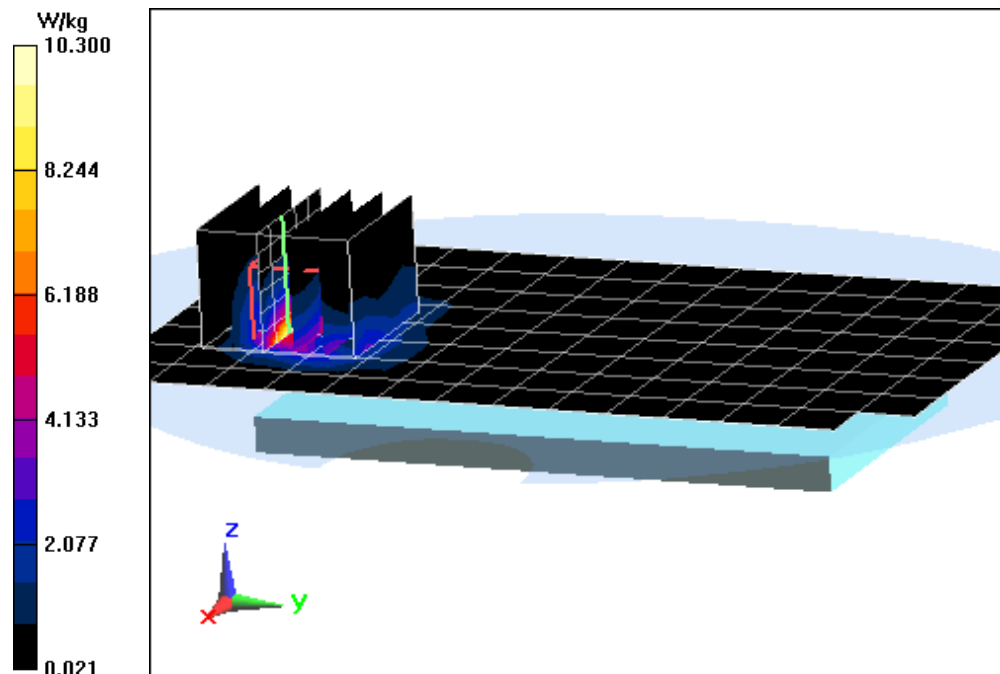
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 77.46 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 15.9 W/kg

SAR(10 g) = 3.29 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB6

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

Medium: 1900 Body, Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.518 \text{ S/m}$; $\epsilon_r = 52.258$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.1 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

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

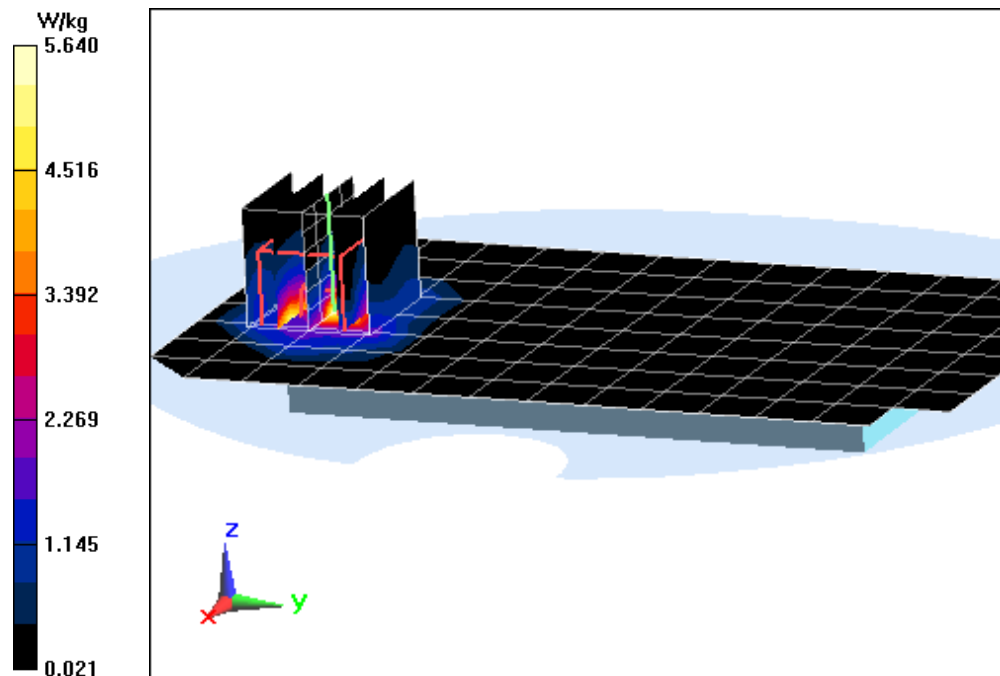
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 58.48 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 9.15 W/kg

SAR(10 g) = 1.84 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95A35

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1

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

$f = 1732.5 \text{ MHz}$; $\sigma = 1.46 \text{ S/m}$; $\epsilon_r = 51.241$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-24-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3288; ConvF(5.03, 5.03, 5.03); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

**Mode: LTE Band 4 (AWS), Extremity SAR, Back side, Mid.ch, 20 MHz Bandwidth,
QPSK, 1 RB, 0 RB Offset**

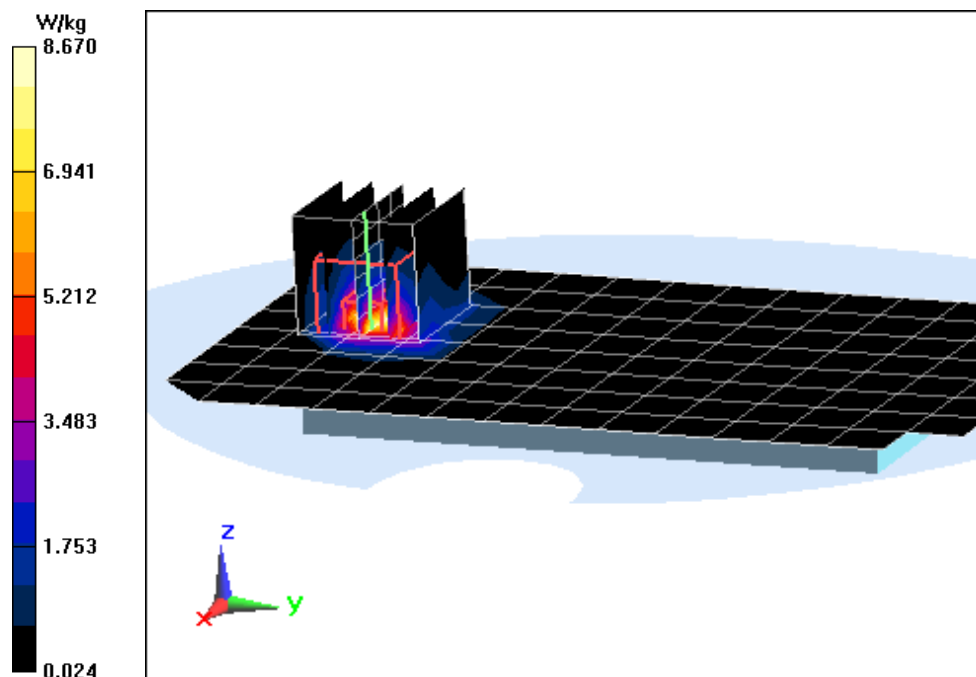
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 68.66 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 14.3 W/kg

SAR(10 g) = 2.9 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 95AB1

Communication System: UID 0, LTE Band 25 (PCS) (0); Frequency: 1905 MHz; Duty Cycle: 1:1

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1905 \text{ MHz}$; $\sigma = 1.551 \text{ S/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.1 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

**Mode: LTE Band 25 (PCS), Extremity SAR, Front side, High.ch, 20 MHz Bandwidth
QPSK, 1 RB, 0 RB Offset**

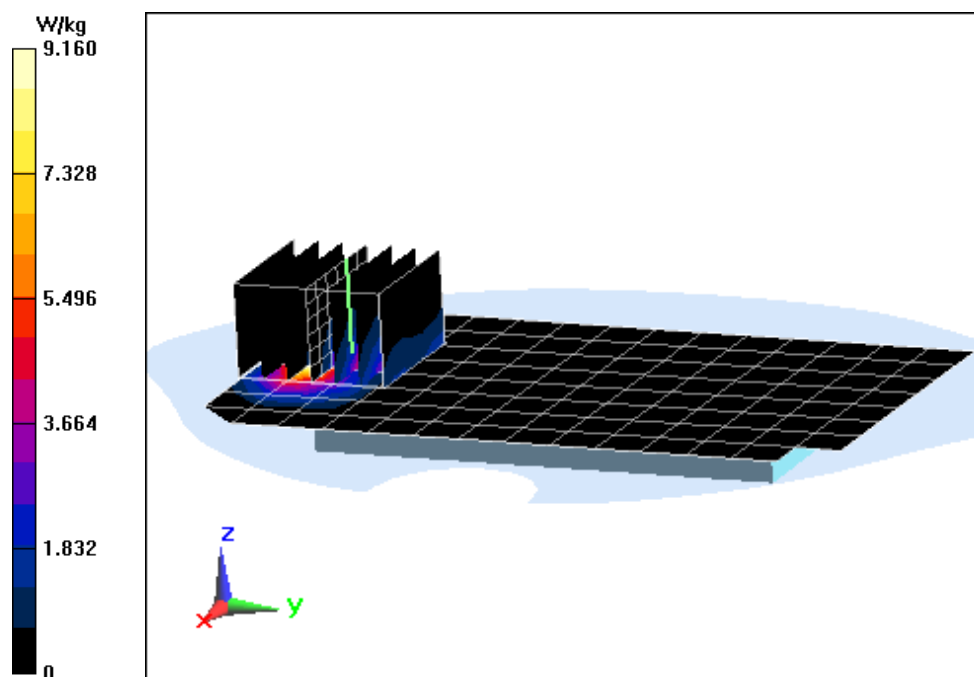
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.81 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 13.4 W/kg

SAR(10 g) = 2.87 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG928P; Type: Portable Handset; Serial: 9587C

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5720 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used (interpolated):

$f = 5720 \text{ MHz}$; $\sigma = 6.03 \text{ S/m}$; $\epsilon_r = 47.063$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.79, 3.79, 3.79); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

**Mode: IEEE 802.11a, U-NII-2C GHz, 20 MHz Bandwidth, Extremity SAR,
Ch 144, Antenna 1, 6 Mbps, Front Side**

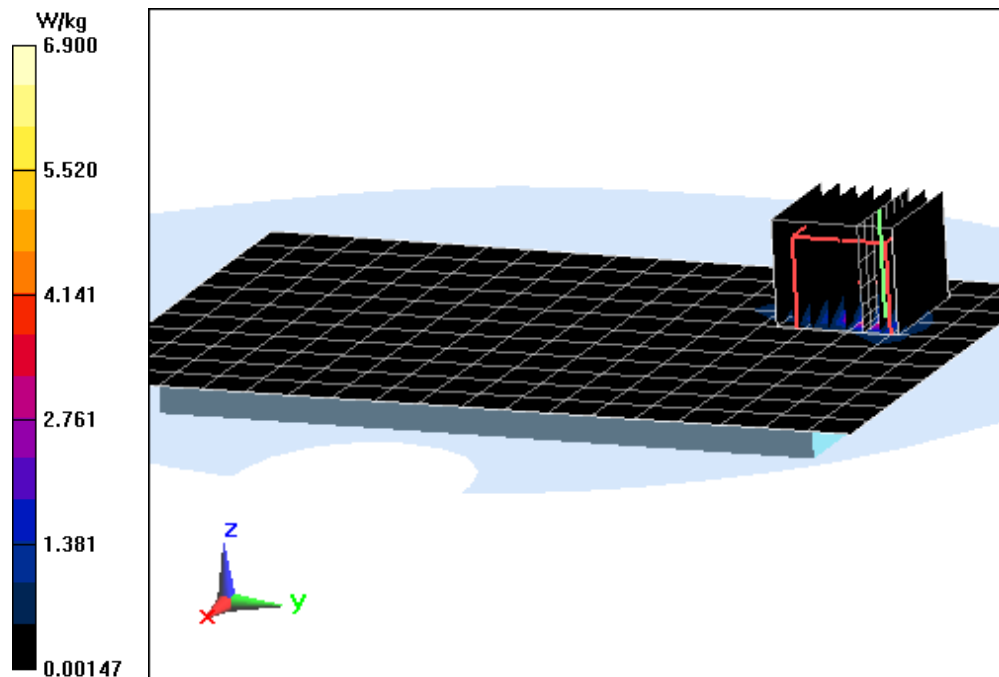
Area Scan 2 (12x19x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 18.96 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(10 g) = 0.499 W/kg



APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 750 Head Medium parameters used (interpolated):

$f = 750 \text{ MHz}$; $\sigma = 0.895 \text{ S/m}$; $\epsilon_r = 42.025$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-22-2015; Ambient Temp: 22.3°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3288; ConvF(6.81, 6.81, 6.81); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

750 MHz System Verification

Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

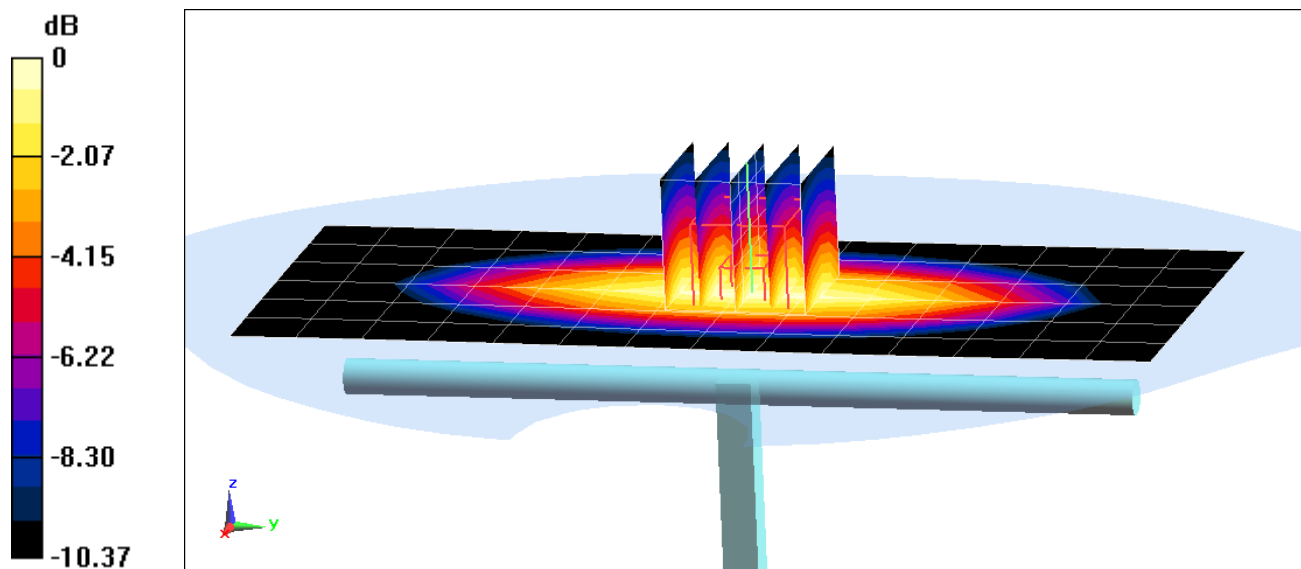
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.60 W/kg

SAR(1 g) = 1.75 W/kg

Deviation(1 g) = 8.16%



0 dB = 2.05 W/kg = 3.12 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Head, Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.904 \text{ S/m}$; $\epsilon_r = 41.428$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Space: 1.5 cm

Test Date: 06-29-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3288; ConvF(6.51, 6.51, 6.51); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

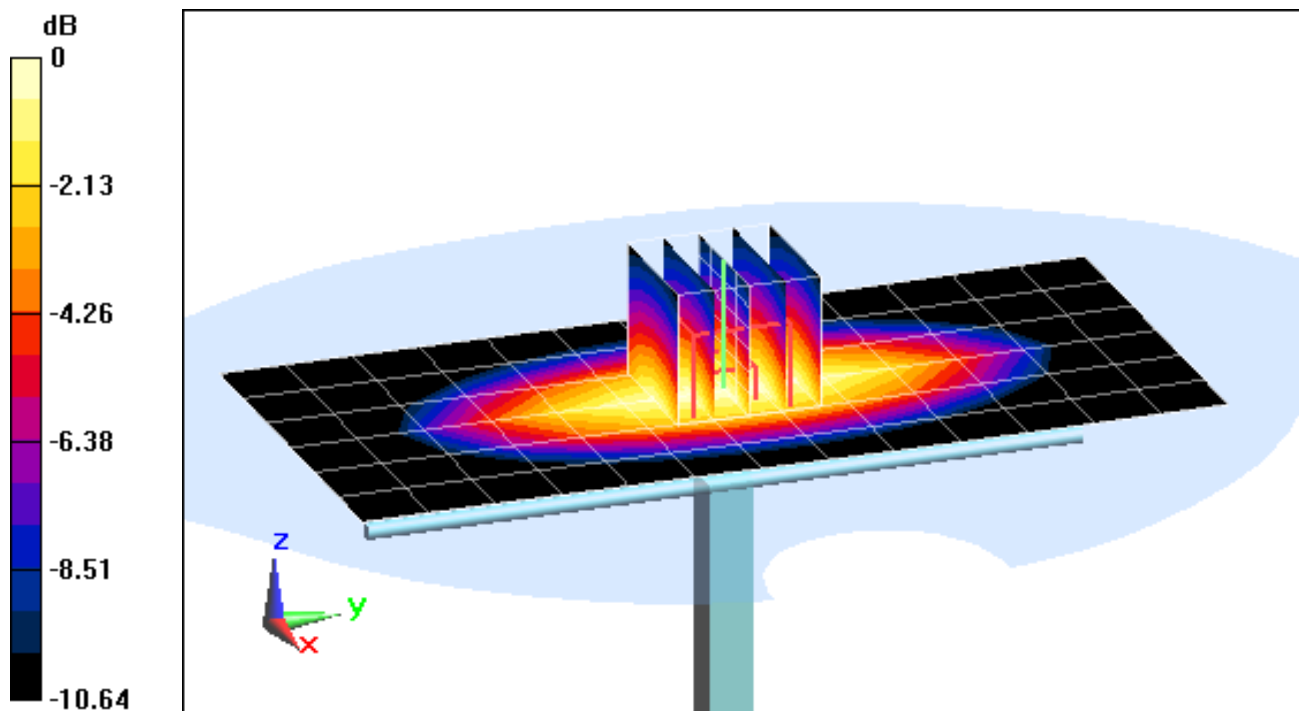
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.84 W/kg

SAR(1 g) = 1.91 W/kg

Deviation(1 g) = 3.24%



0 dB = 2.23 W/kg = 3.48 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head, Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.346 \text{ S/m}$; $\epsilon_r = 39.121$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 23.1°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.27, 5.27, 5.27); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

1750 MHz System Verification

Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

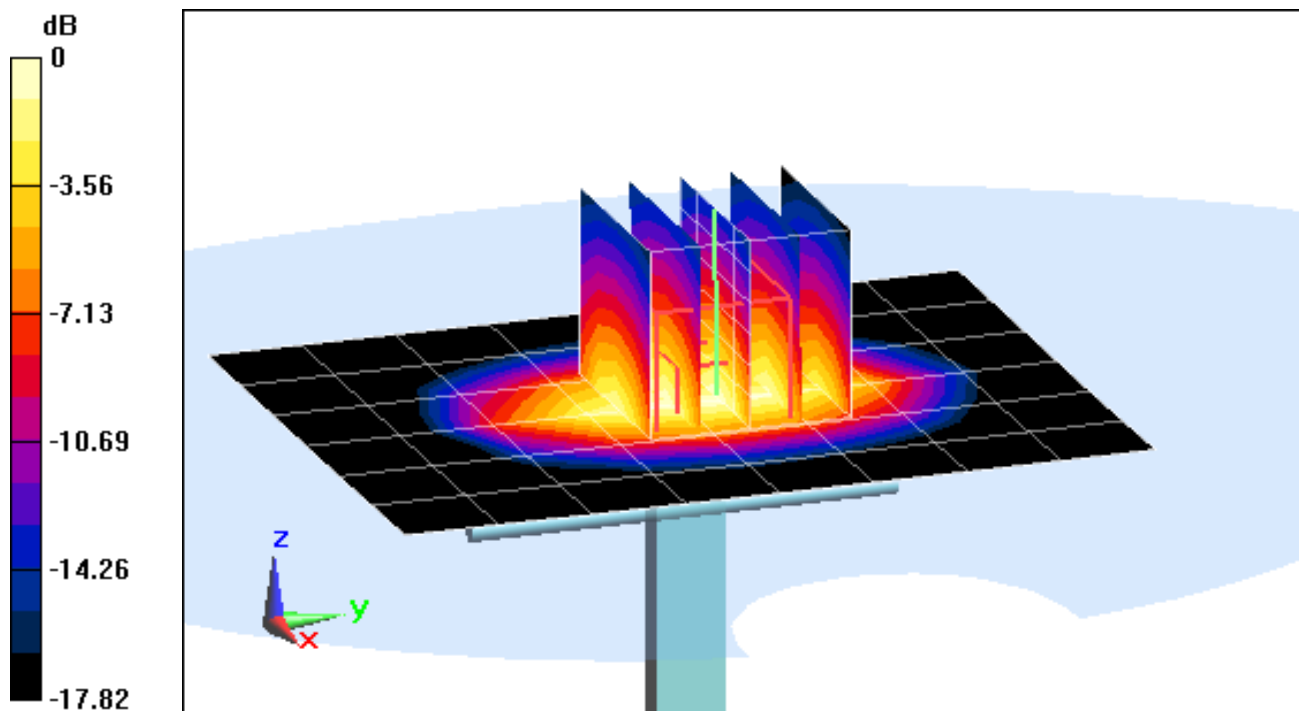
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 6.68 W/kg

SAR(1 g) = 3.66 W/kg

Deviation(1 g) = 1.10%



0 dB = 4.62 W/kg = 6.65 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.418 \text{ S/m}$; $\epsilon_r = 39.591$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(5.05, 5.05, 5.05); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

1900 MHz System Verification

Area Scan (7x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

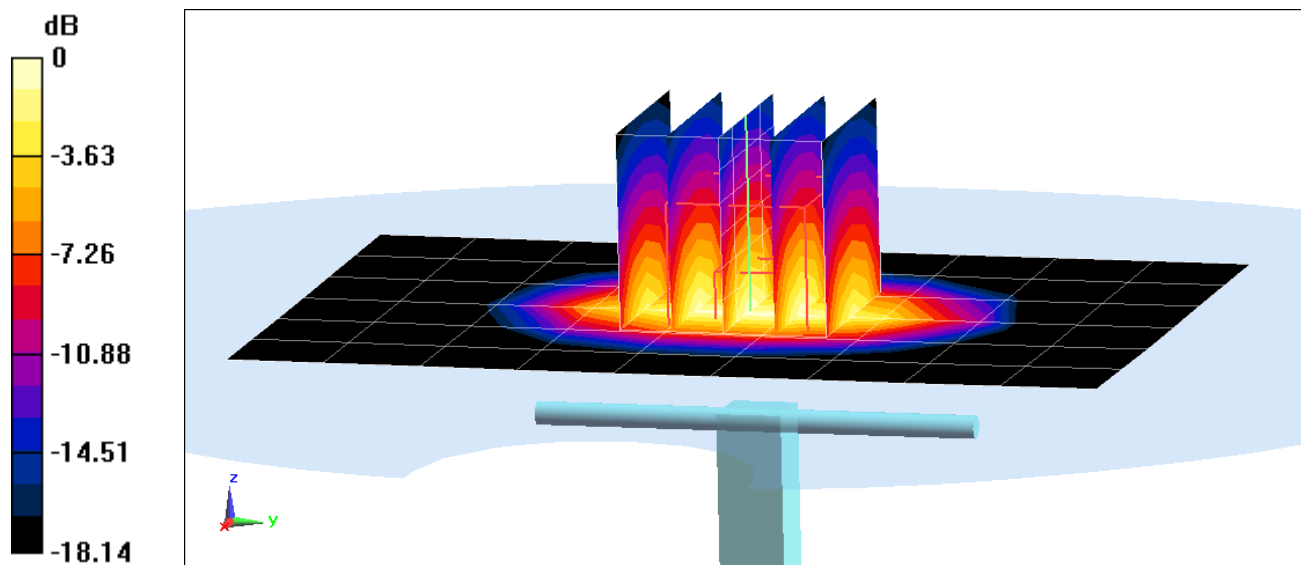
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.98 W/kg

SAR(1 g) = 4.31 W/kg

Deviation(1 g) = 8.02%



0 dB = 5.53 W/kg = 7.43 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2400 Head Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.877 \text{ S/m}$; $\epsilon_r = 39.244$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 20.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(4.5, 4.5, 4.5); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

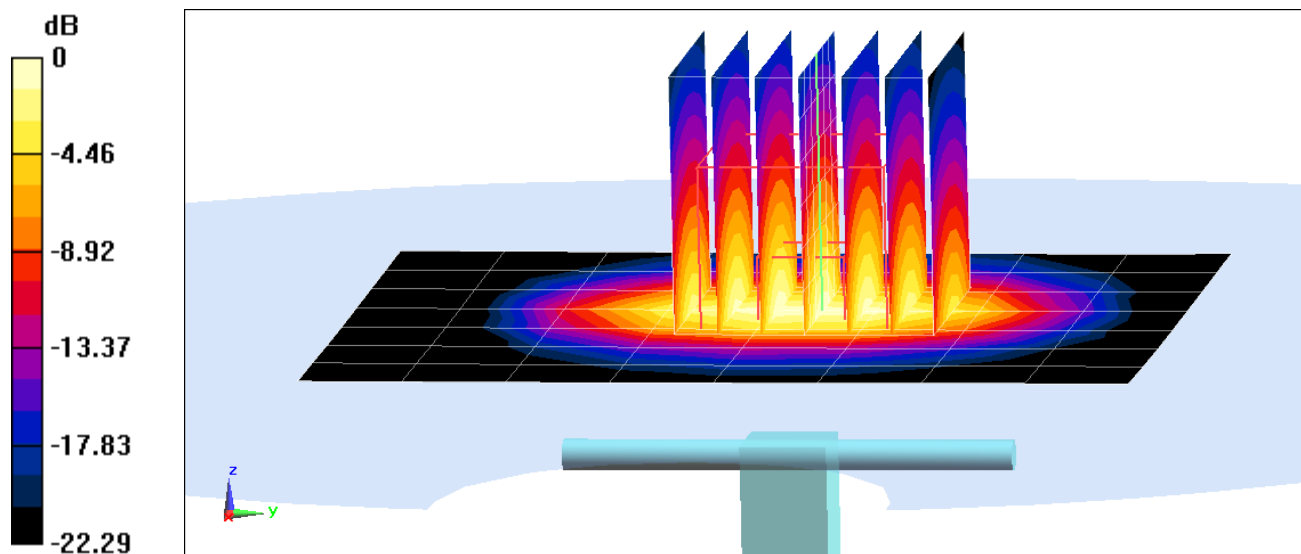
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 10.9 W/kg

SAR(1 g) = 5.30 W/kg

Deviation(1 g) = 1.73%



0 dB = 6.91 W/kg = 8.39 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Head, Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.047 \text{ S/m}$; $\epsilon_r = 38.682$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 20.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(4.34, 4.34, 4.34); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2600 MHz System Verification

Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

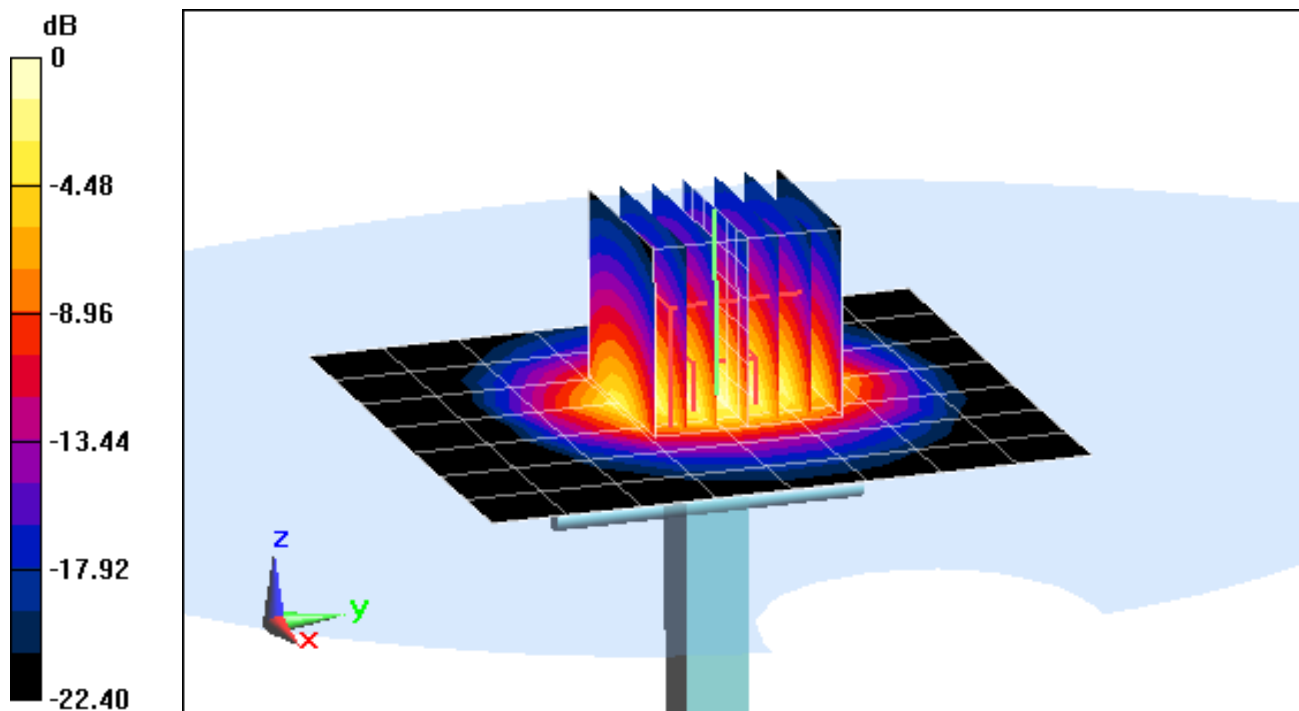
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 11.9 W/kg

SAR(1 g) = 5.73 W/kg

Deviation(1 g) = -0.35%



0 dB = 7.54 W/kg = 8.77 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head, Medium parameters used:

$f = 5300 \text{ MHz}$; $\sigma = 4.619 \text{ S/m}$; $\epsilon_r = 35.613$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 23.1°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(4.93, 4.93, 4.93); Calibrated: 4/23/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

5300 MHz System Verification

Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

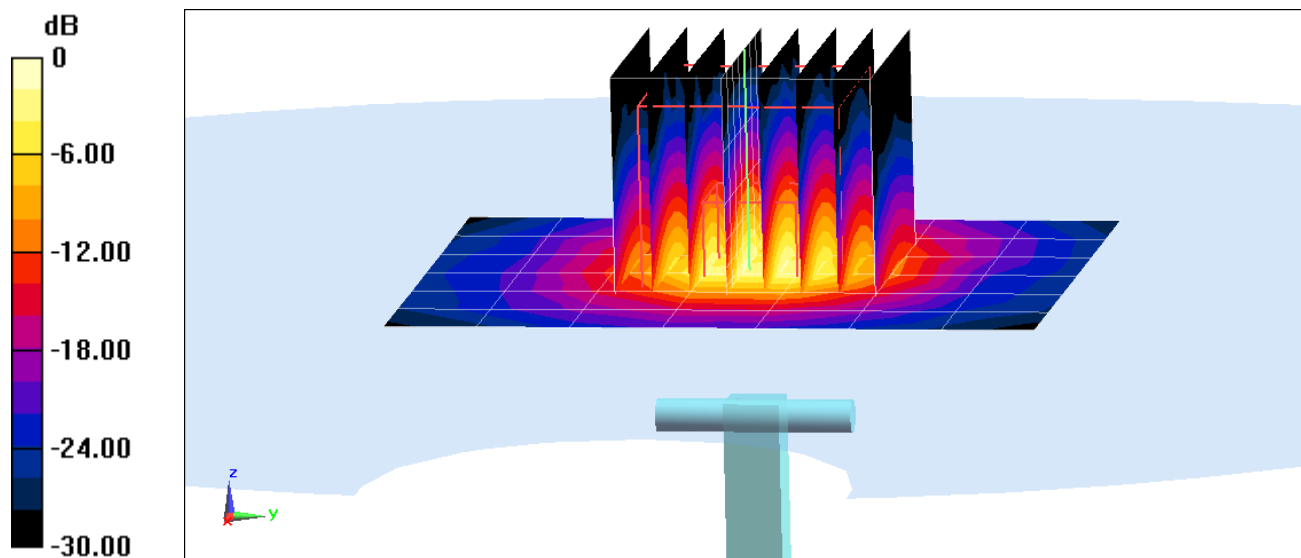
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 3.99 W/kg

Deviation(1 g) = -5.79%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head, Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 4.835 \text{ S/m}$; $\epsilon_r = 35.32$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 23.1°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(4.7, 4.7, 4.7); Calibrated: 4/23/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

5500 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

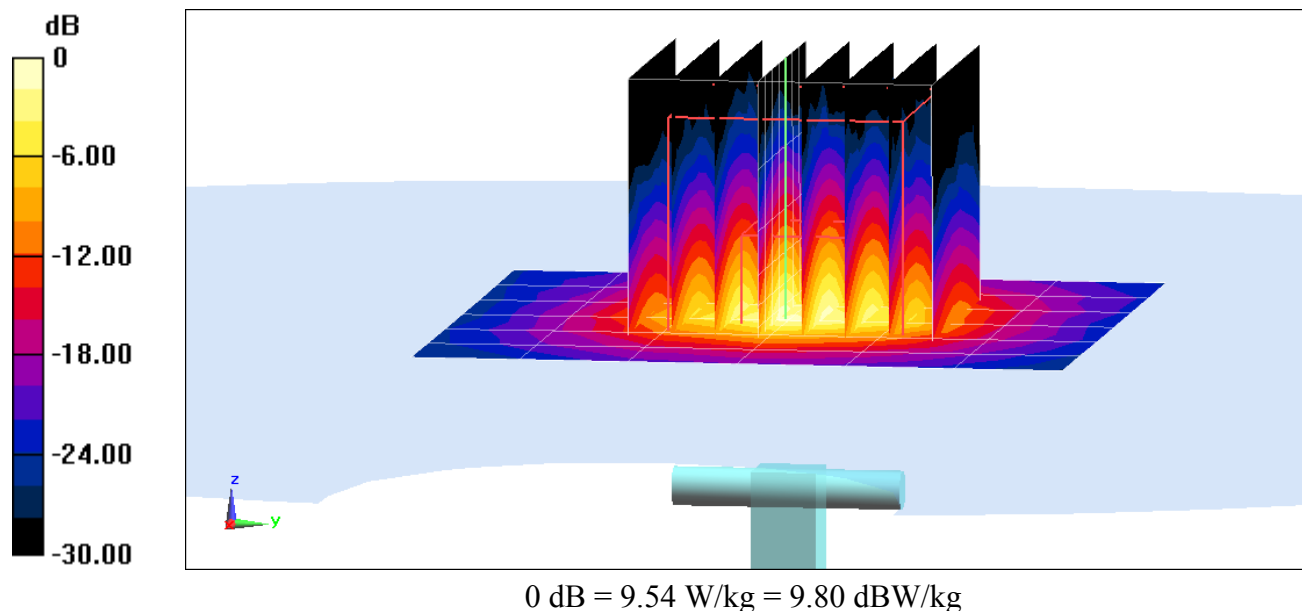
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 4.03 W/kg

Deviation(1 g) = -4.39%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head, Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 5.134 \text{ S/m}$; $\epsilon_r = 34.874$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2015; Ambient Temp: 23.1°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(4.41, 4.41, 4.41); Calibrated: 4/23/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

5800 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

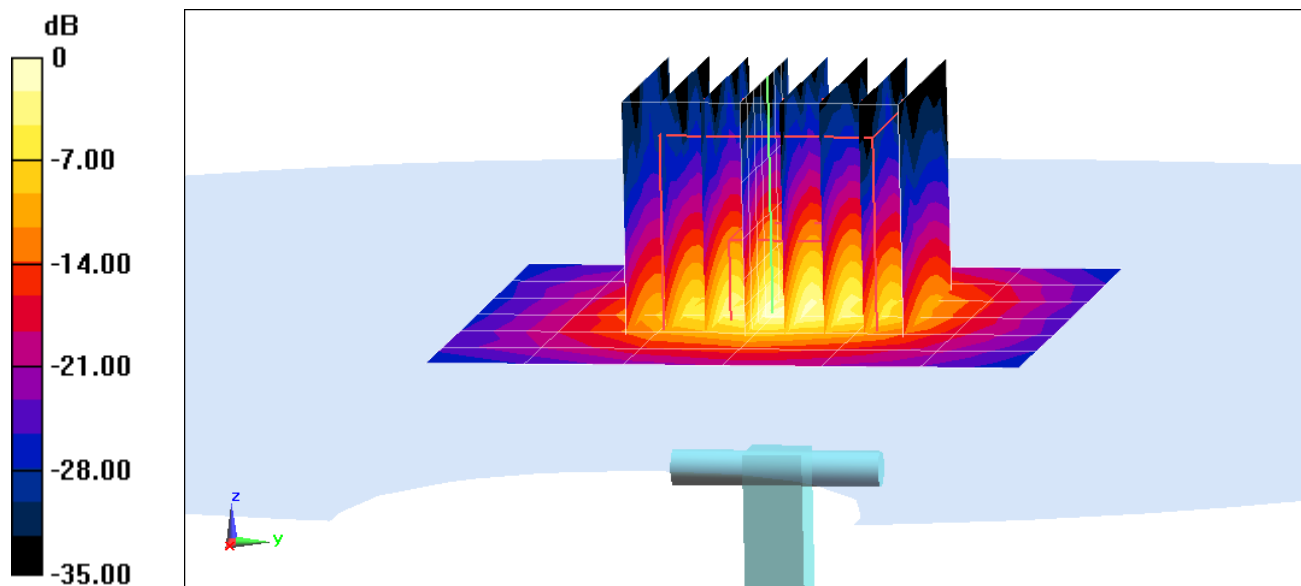
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 4.07 W/kg

Deviation(1 g) = 0.37%



0 dB = 9.79 W/kg = 9.91 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

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

$f = 750 \text{ MHz}$; $\sigma = 0.969 \text{ S/m}$; $\epsilon_r = 55.255$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-18-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(6.38, 6.38, 6.38); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229

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

750 MHz System Verification

Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

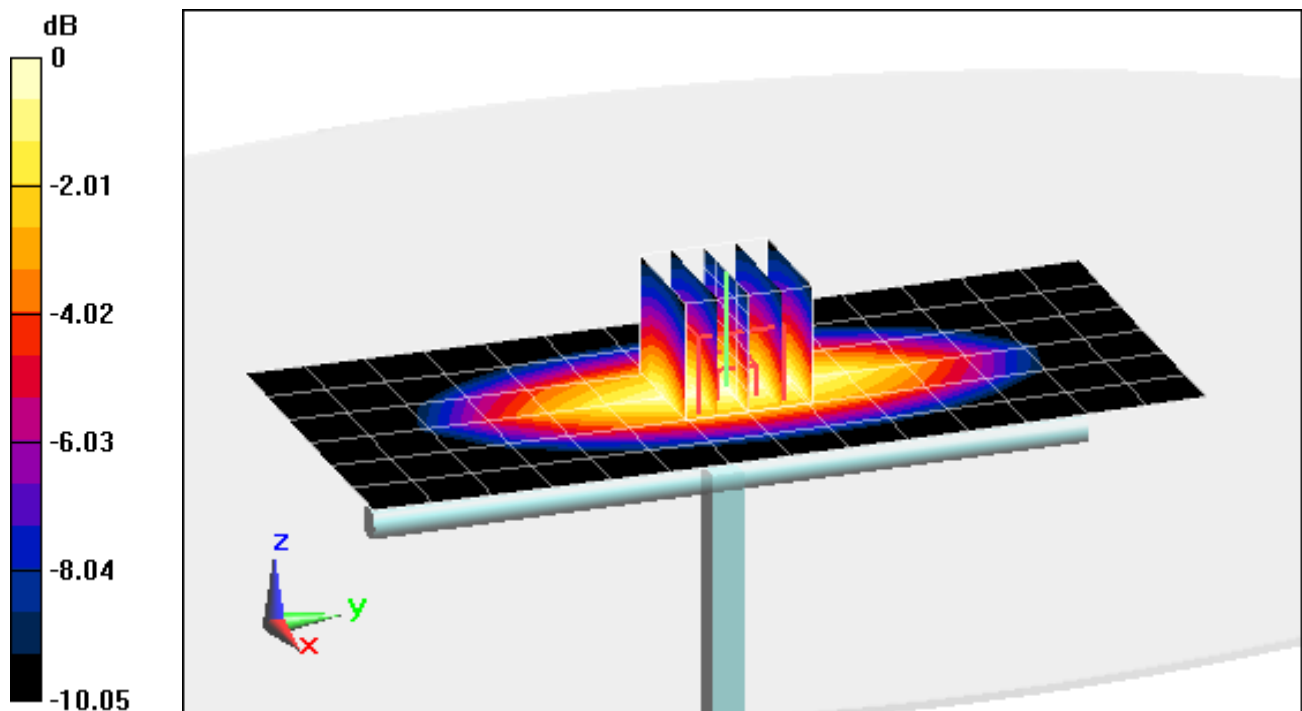
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.55 W/kg

SAR = 1.75 W/kg

Deviation = 3.43%



0 dB = 2.04 W/kg = 3.10 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

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

$f = 750 \text{ MHz}$; $\sigma = 0.973 \text{ S/m}$; $\epsilon_r = 53.926$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-30-2015; Ambient Temp: 20.3°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3319; ConvF(6.1, 6.1, 6.1); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/13/2015

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1226

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

750 MHz System Verification

Area Scan (7x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

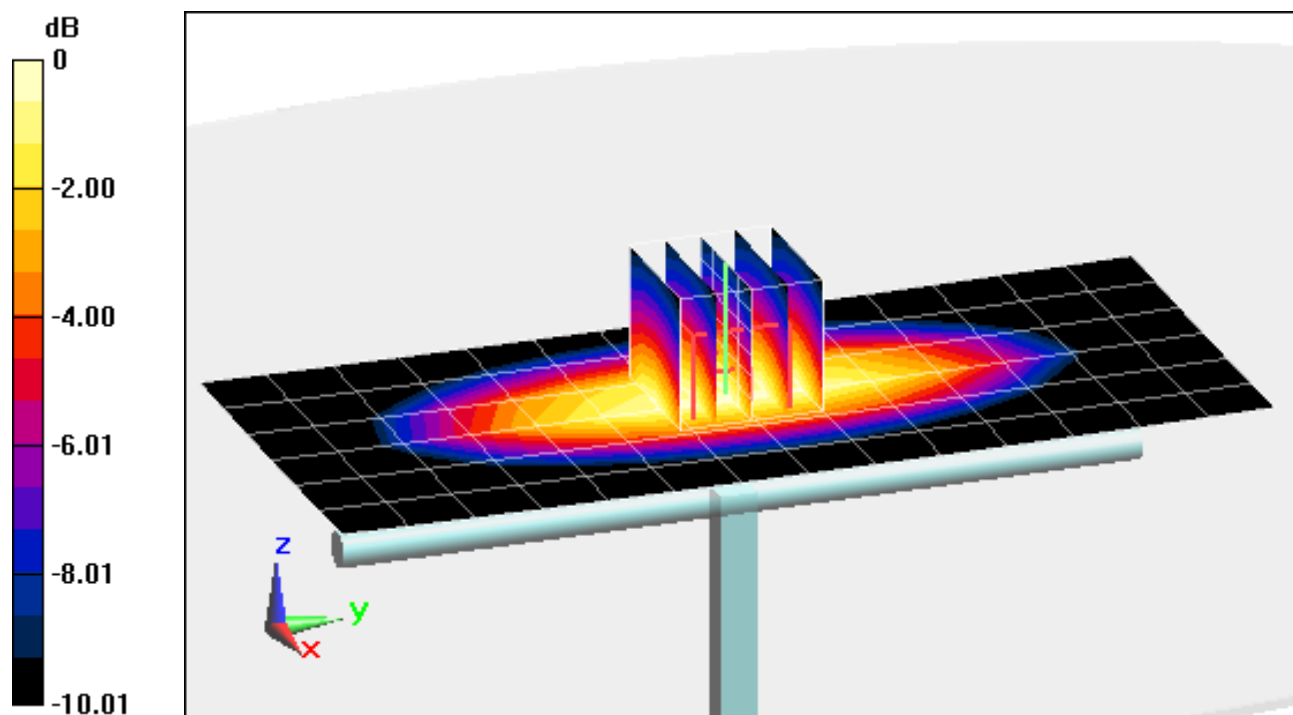
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.65 W/kg

SAR = 1.83 W/kg

Deviation = 8.16%



0 dB = 2.13 W/kg = 3.28 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body, Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.973 \text{ S/m}$; $\epsilon_r = 53.089$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

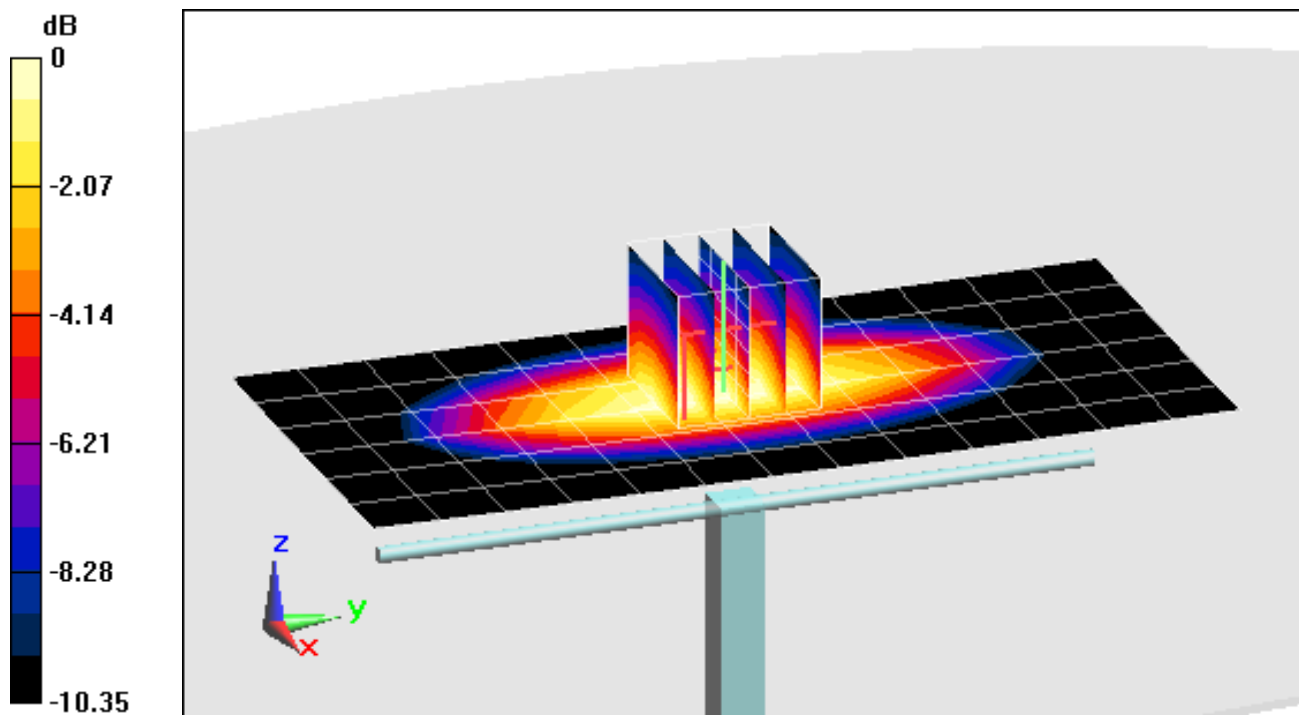
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.80 W/kg

SAR(1 g) = 1.92 W/kg

Deviation(1 g) = 5.03%



0 dB = 2.23 W/kg = 3.48 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body, Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.993 \text{ S/m}$; $\epsilon_r = 53.688$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-29-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(6.23, 6.23, 6.23); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

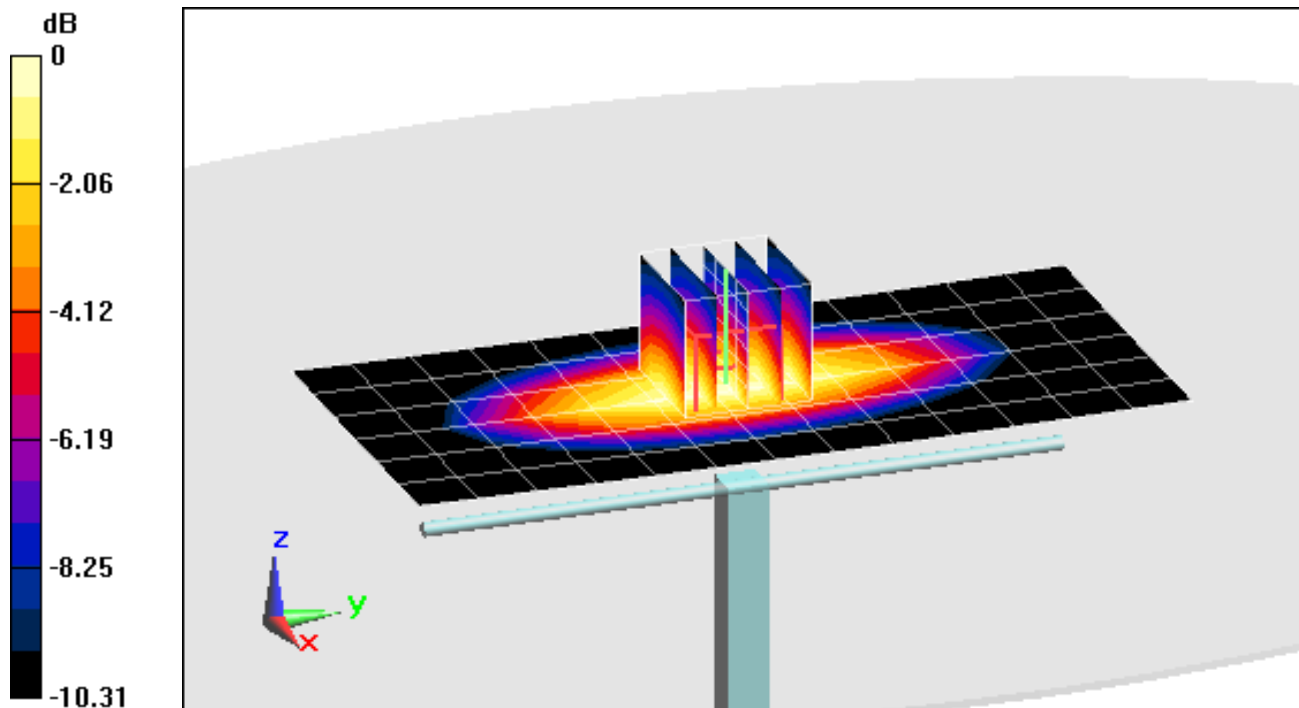
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 23.0 dBm (200 mW)

Peak SAR (extrapolated) = 2.78 W/kg

SAR(1 g) = 1.88 W/kg; SAR(10 g) = 1.24 W/kg

Deviation(1 g) = 2.84%; Deviation(10 g) = 3.68%



0 dB = 2.20 W/kg = 3.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body, Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.483 \text{ S/m}$; $\epsilon_r = 51.234$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2015; Ambient Temp: 22.5°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3288; ConvF(5.03, 5.03, 5.03); Calibrated: 9/24/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 9/18/2014

Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

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

1750 MHz System Verification

Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

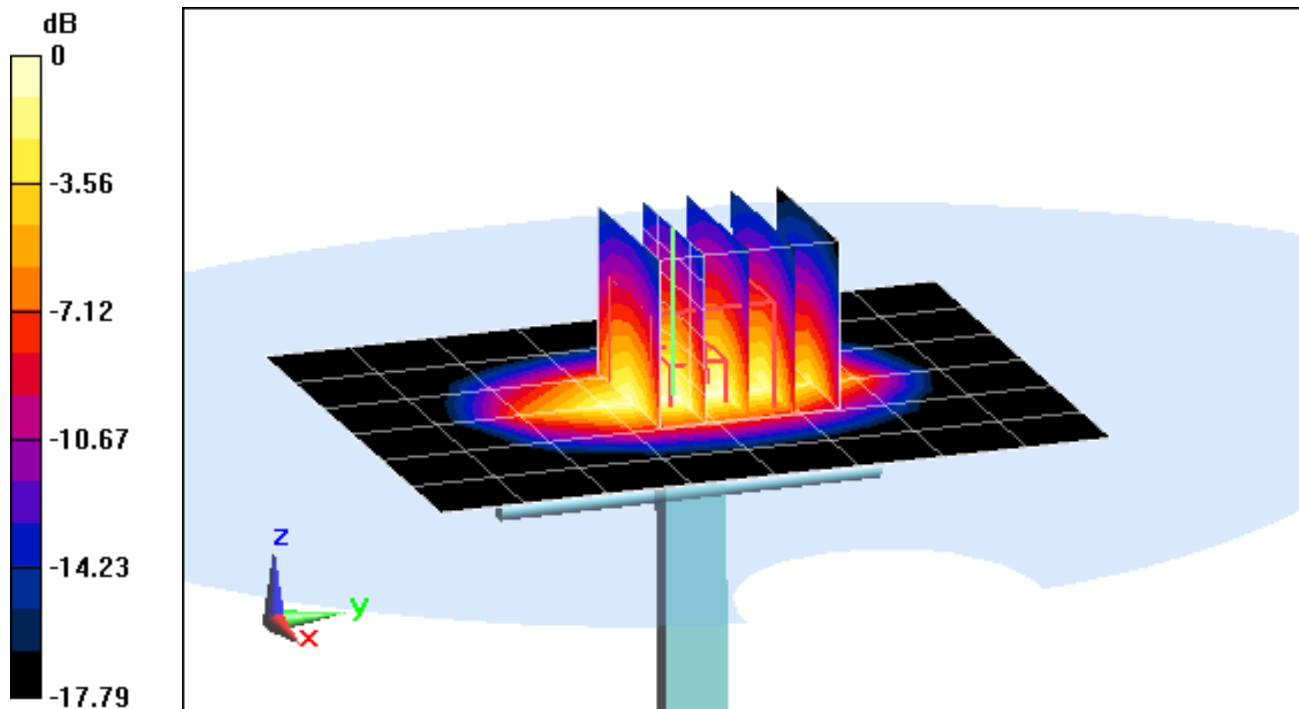
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.08 W/kg

SAR(1 g) = 3.99 W/kg; SAR(10 g) = 2.11 W/kg

Deviation(1 g) = 7.55%; Deviation (10 g) = 5.50%



0 dB = 4.99 W/kg = 6.98 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body, Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.545 \text{ S/m}$; $\epsilon_r = 52.212$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-22-2015; Ambient Temp: 22.5°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3209; ConvF(4.57, 4.57, 4.57); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646

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

1900 MHz System Verification

Area Scan (7x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

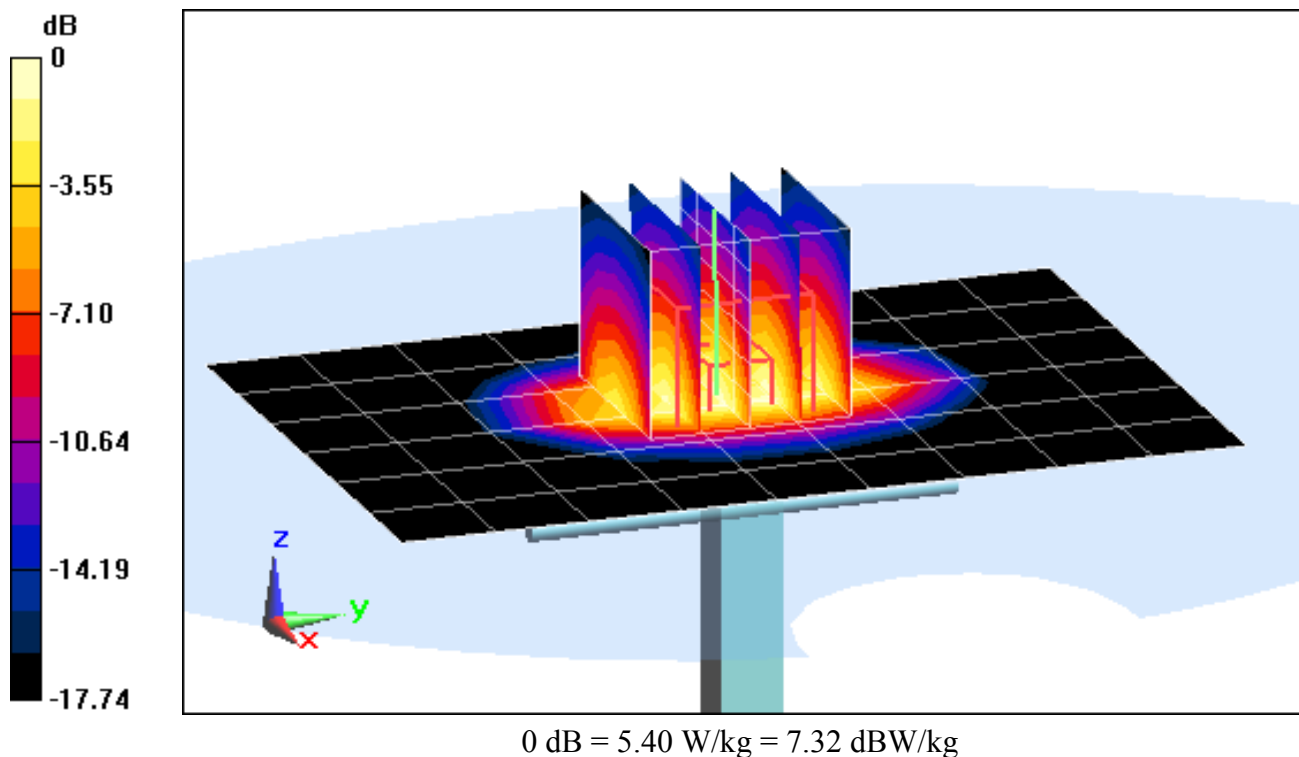
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.53 W/kg

SAR(1 g) = 4.29 W/kg; SAR(10 g) = 2.24 W/kg

Deviation(1 g) = 6.19%; Deviation(10 g) = 5.16%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body, Medium parameters used:

$f = 2450$ MHz; $\sigma = 2.032$ S/m; $\epsilon_r = 51.385$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-09-2015; Ambient Temp: 21.5°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3318; ConvF(4.37, 4.37, 4.37); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: SAM Front; Type: SAM; Serial: 1686

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

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

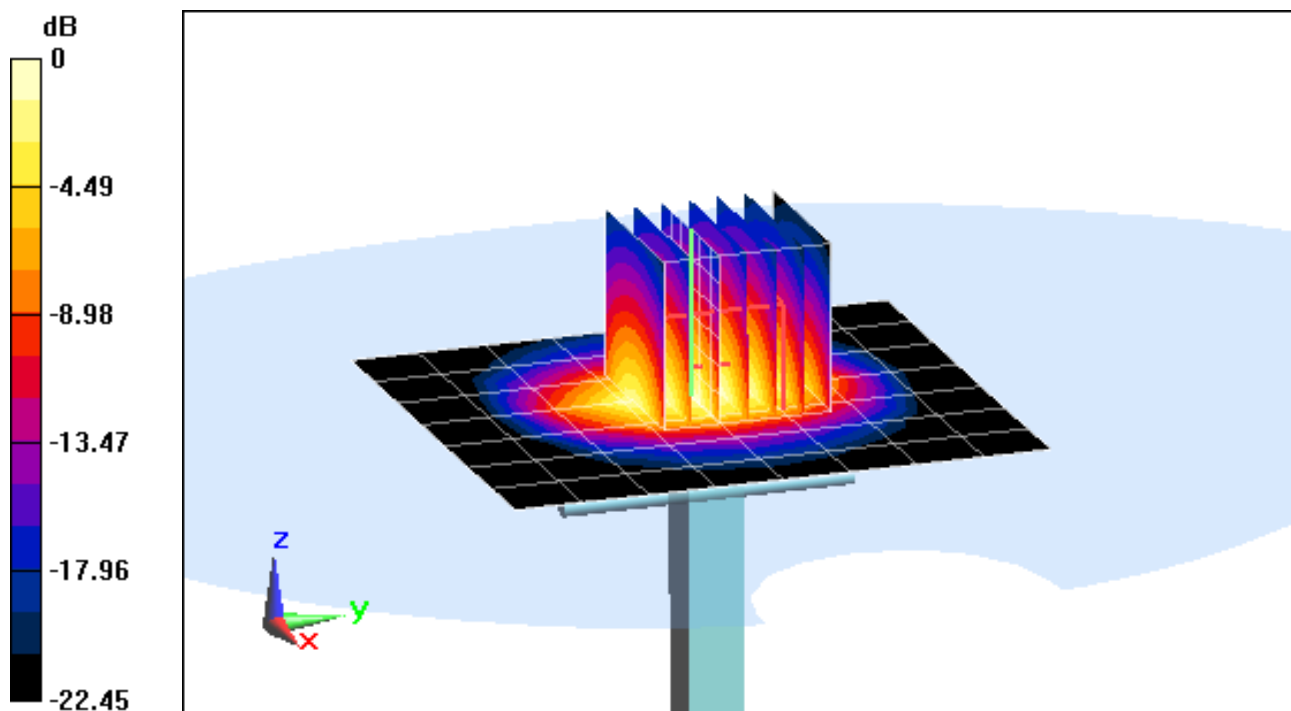
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 11.2 W/kg

SAR(1 g) = 5.37 W/kg

Deviation = 3.67%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Body, Medium parameters used:

$f = 2600$ MHz; $\sigma = 2.239$ S/m; $\epsilon_r = 50.598$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-16-2015; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3318; ConvF(4.17, 4.17, 4.17); Calibrated: 1/23/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 1/14/2015

Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2027

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

2600 MHz System Verification

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

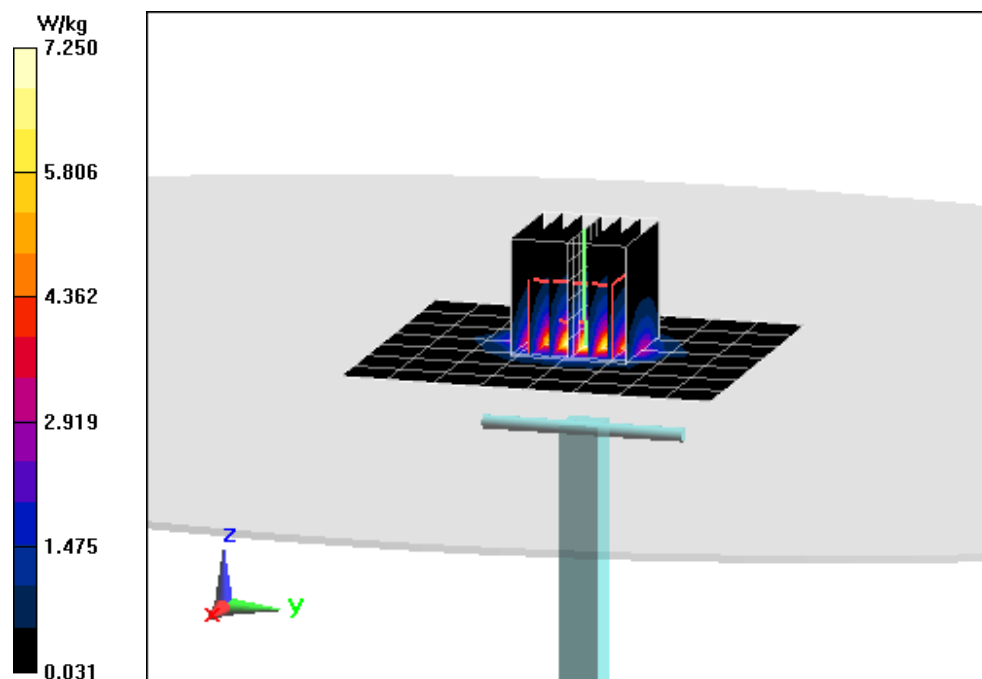
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 12.4 W/kg

SAR(1 g) = 5.51 W/kg

Deviation = -3.16%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2400 Body, Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 2.035 \text{ S/m}$; $\epsilon_r = 50.882$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 07-02-2015; Ambient Temp: 23.1°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3209; ConvF(4.12, 4.12, 4.12); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

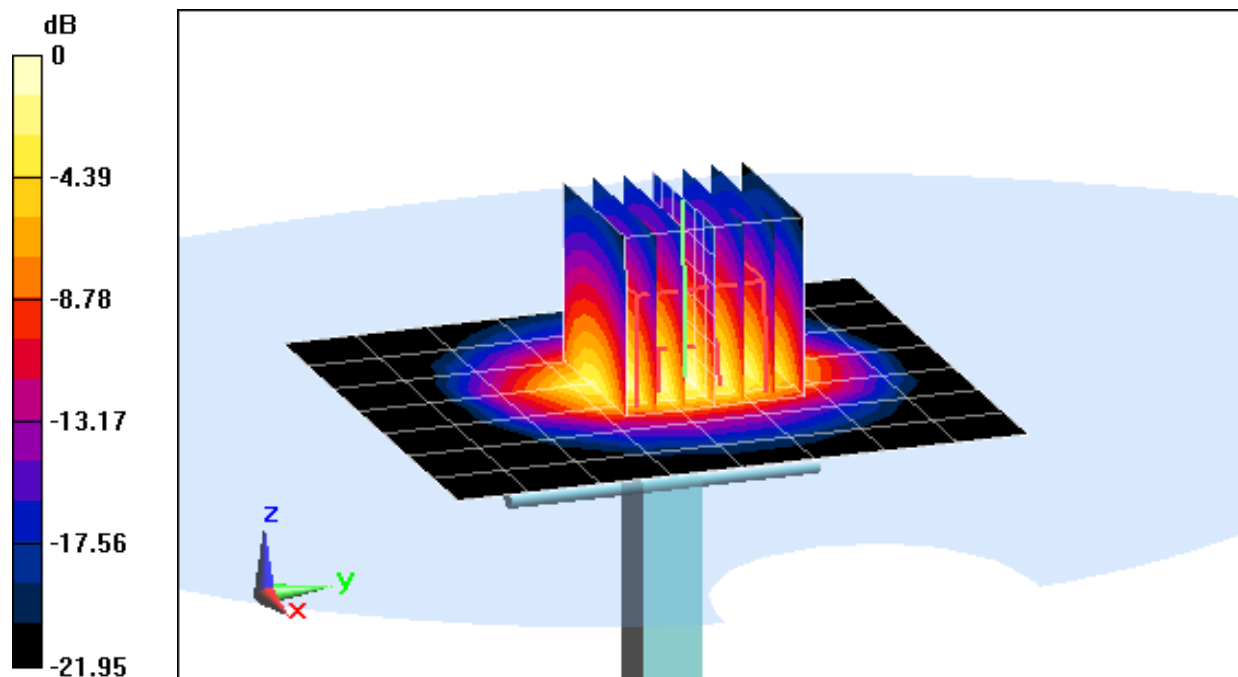
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 12.0 W/kg

SAR(1 g) = 5.66 W/kg

Deviation = 9.27%



0 dB = 7.48 W/kg = 8.74 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2600 Body, Medium parameters used:

$f = 2600 \text{ MHz}$; $\sigma = 2.241 \text{ S/m}$; $\epsilon_r = 50.273$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 07-02-2015; Ambient Temp: 23.3°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(3.92, 3.92, 3.92); Calibrated: 3/19/2015;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/13/2015

Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687

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

2600 MHz System Verification

Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

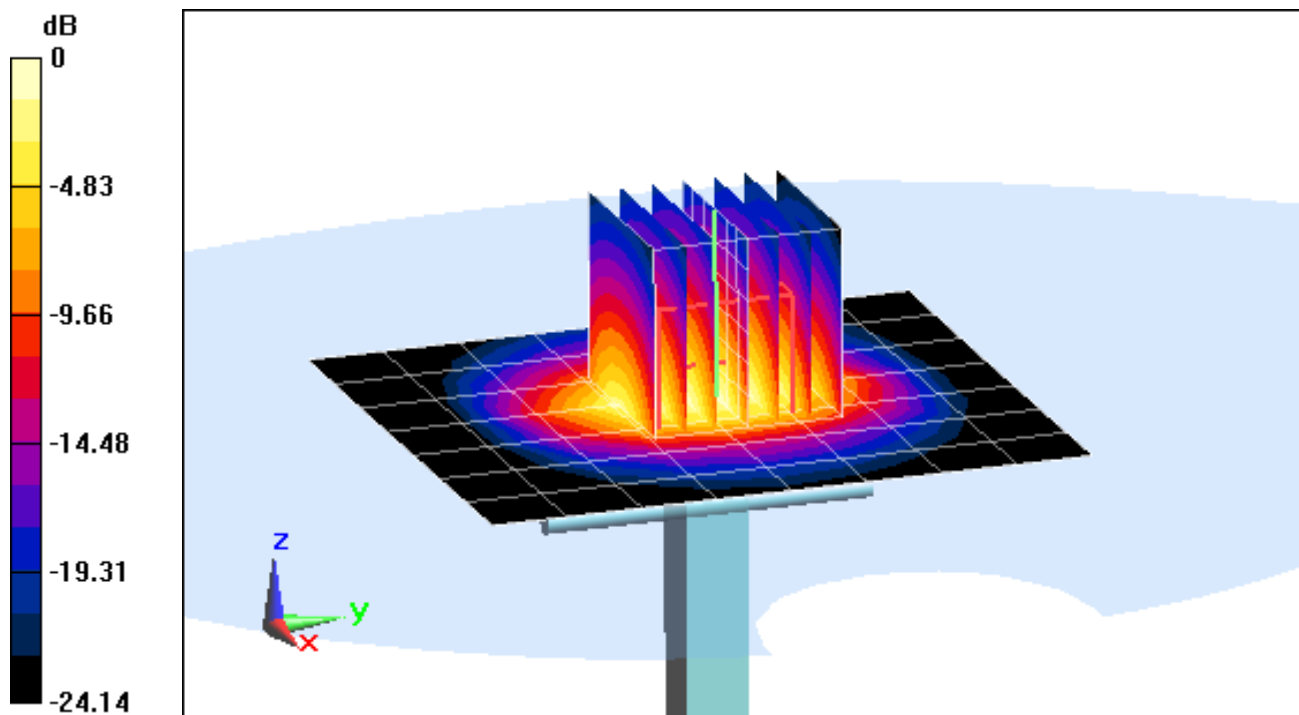
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 14.1 W/kg

SAR(1 g) = 6.20 W/kg

Deviation = 8.96%



0 dB = 8.22 W/kg = 9.15 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5300 \text{ MHz}$; $\sigma = 5.456 \text{ S/m}$; $\epsilon_r = 47.753$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.79, 3.79, 3.79); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

5300 MHz System Verification

Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

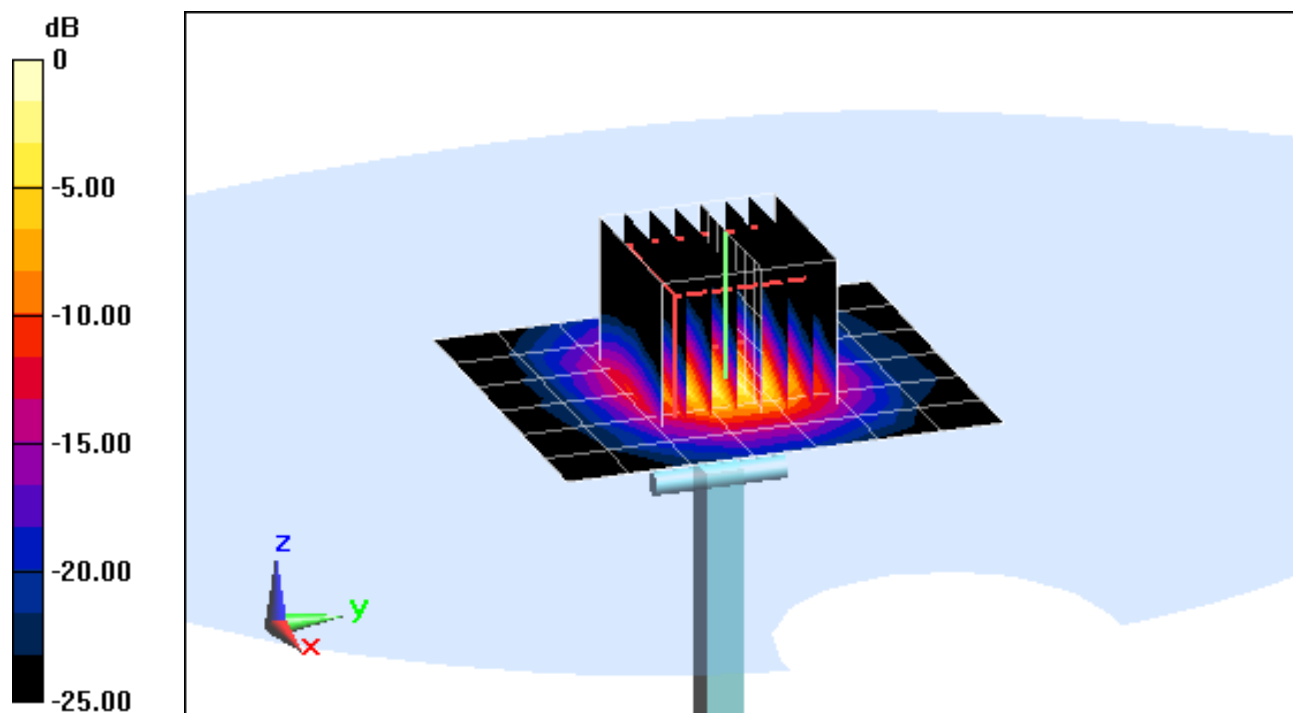
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 16.3 W/kg

SAR(1 g) = 3.89 W/kg; SAR(10 g) = 1.09 W/kg

Deviation(1 g) = 4.85%; Deviation(10 g) = 4.31%



0 dB = 9.37 W/kg = 9.72 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 5.718 \text{ S/m}$; $\epsilon_r = 47.478$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.6°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.65, 3.65, 3.65); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

5500 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

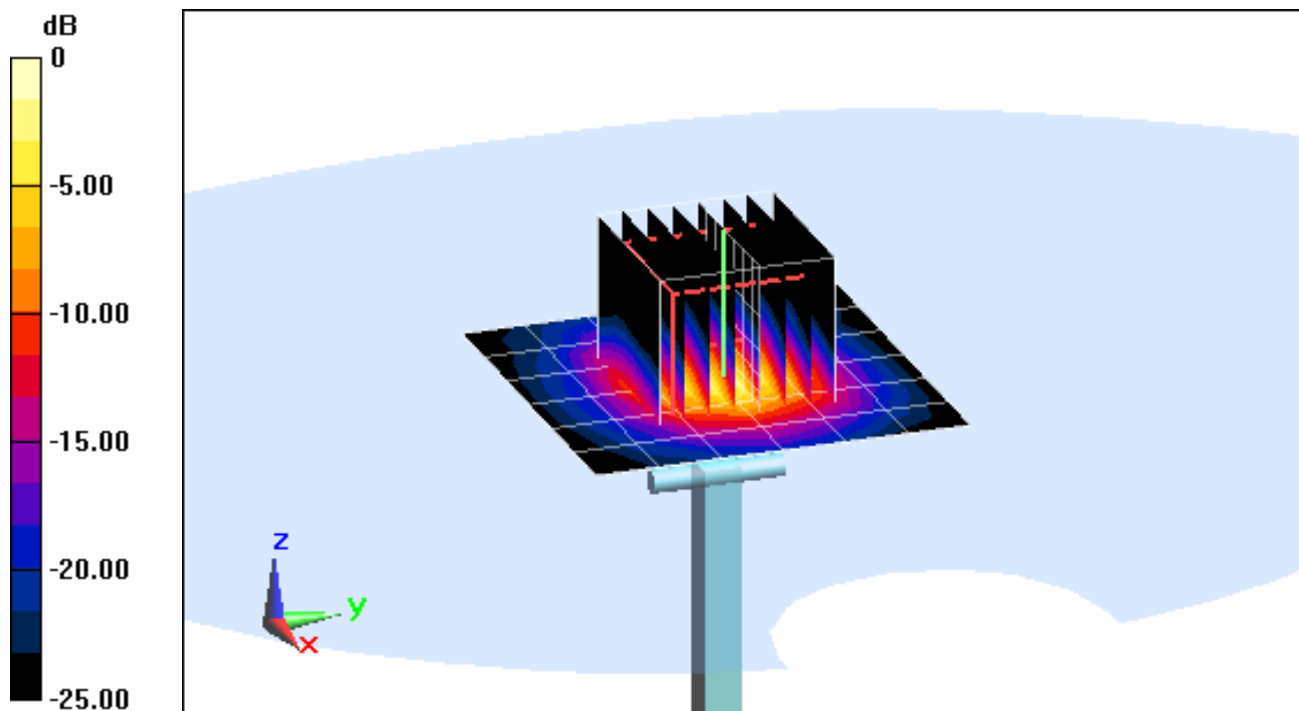
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 16.5 W/kg

SAR(1 g) = 3.76 W/kg; SAR(10 g) = 1.05 W/kg

Deviation(1 g) = -5.05%; Deviation(10 g) = -4.55%



0 dB = 9.00 W/kg = 9.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 6.145 \text{ S/m}$; $\epsilon_r = 46.937$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-08-2015; Ambient Temp: 22.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(3.79, 3.79, 3.79); Calibrated: 1/22/2015;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2014

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

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

5800 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

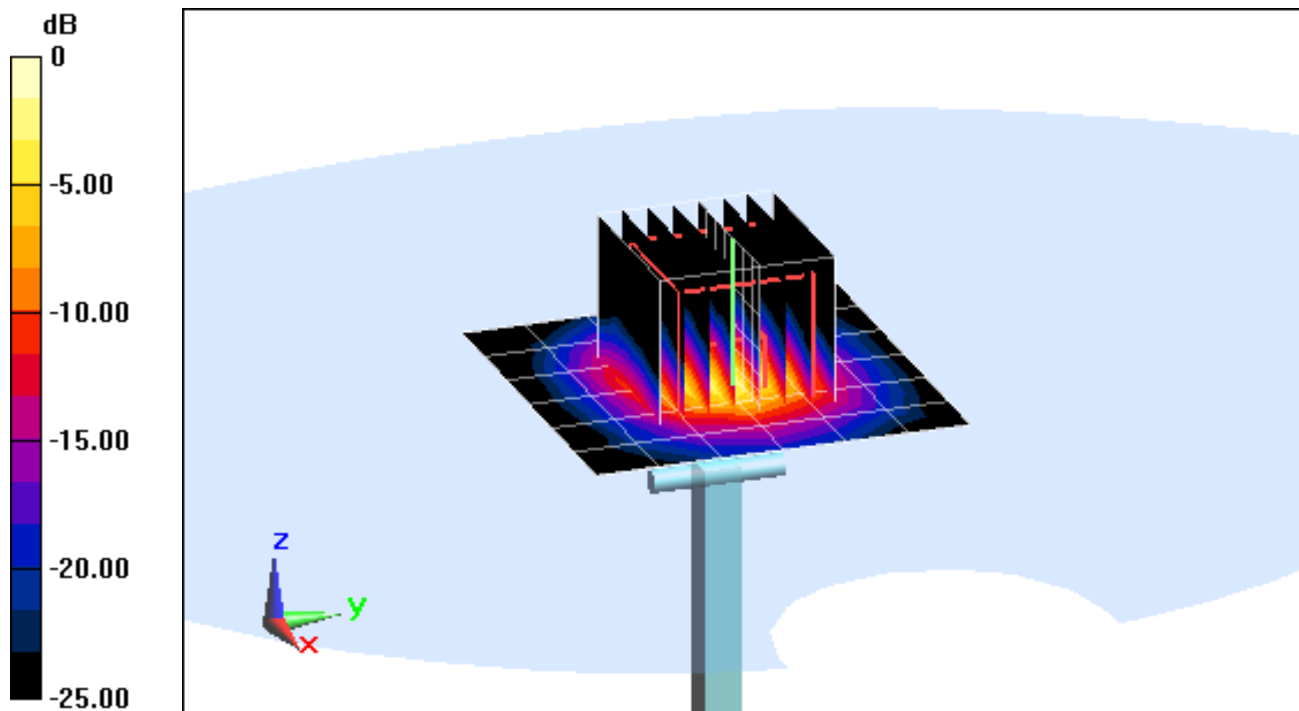
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 17.0 dBm (50 mW)

Peak SAR (extrapolated) = 16.1 W/kg

SAR(1 g) = 3.45 W/kg; SAR (10g) = 0.966 W/kg

Deviation(1 g) = -8.12%; Deviation (10 g) = -6.21%



0 dB = 8.51 W/kg = 9.30 dBW/kg