SAR EVALUATION REPORT

Applicant Name:
Samsung Electronics, Co. Ltd.
129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si
Gyeonggi-do 443-742, Korea

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FCC ID: **A3LSMT365M**

APPLICANT: **SAMSUNG ELECTRONICS, CO. LTD.**

DUT Type: Portable Tablet
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model(s): SM-T365M

Equipment Class	Band & Mode	Tx Frequency	SAR	
			1 gm Head (W/kg)	1 gm Body (W/kg)
PCB	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	< 0.1	0.68
PCB	UMTS 850	826.40 - 846.60 MHz	< 0.1	0.61
PCB	UMTS 1750	1712.4 - 1752.5 MHz	<0.1	0.58
PCB	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.55
PCB	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.74
PCB	LTE Band 17	706.5 - 713.5 MHz	< 0.1	0.40
PCE	LTE Band 5 (Cell)	834-839 MHz	<0.1	0.62
PCB	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	< 0.1	0.59
PCB	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	< 0.1	0.68
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.67	0.80
DTS	5.8 GHz WLAN	5745 - 5825 MHz	0.19	0.37
NII	5.2 GHz WLAN	5180 - 5240 MHz	0.19	0.37
NII	5.3 GHz WLAN	5260 - 5320 MHz	0.14	0.30
NII	5.5 GHz WLAN	5500 - 5700 MHz	0.29	0.89
DSS/DTS	Bluetooth	2402 - 2480 MHz	N/A	
Simultaneous SAR per KDB 690783 D01v01r02:			0.75	1.58

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

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

Randy Ortanez
President

The SAR Tick is an initiative of the Mobile Manufacturers Forum (MMF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MMF. Further details can be obtained by emailing: sartick@mmfai.info.

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.5 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 5 (Cell)	Voice/Data	834-839 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
2.4 GHz WLAN	Data	2412 - 2462 MHz
5.8 GHz WLAN	Data	5745 - 5825 MHz
5.2 GHz WLAN	Data	5180 - 5240 MHz
5.3 GHz WLAN	Data	5260 - 5320 MHz
5.5 GHz WLAN	Data	5500 - 5700 MHz
Bluetooth	Data	2402 - 2480 MHz
Ant+	Data	2402-2480 MHz
NFC	Data	13.56 MHz

1.2 Power Reduction for SAR

This device uses a sensor for SAR compliance. The sensor is activated when used in close proximity to the user's body. The sensor triggers power reduction for data modes and is only applicable for tablet operations.

Since the device is a full tablet size, the Body SAR was evaluated per FCC KDB Publication 616217 D04v01 for full sized tablets.

1.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v05.

Maximum Power:

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.0**	**33.0**	**31.0**	**29.5**	**28.0**	**27.5**	**26.5**	**25.5**	**24.5**
	Nominal	**32.5**	**32.5**	**30.5**	**29.0**	**27.5**	**27.0**	**26.0**	**25.0**	**24.0**
GSM/GPRS/EDGE 1900	Maximum	**30.0**	**30.0**	**29.0**	**27.0**	**26.0**	**26.5**	**25.5**	**24.5**	**23.5**
	Nominal	**29.5**	**29.5**	**28.5**	**26.5**	**25.5**	**26.0**	**25.0**	**24.0**	**23.0**

Mode / Band		Modulated Average (dBm)			
		3GPP RMC Rel 99	*3GPP HSDPA Rel 5*	*3GPP HSUPA Rel 6*	*3GPP DC-HSDPA Rel 8*
UMTS Band 5 (850 MHz)	Maximum	**23.0**	**23.0**	**23.0**	**23.0**
	Nominal	**22.5**	**22.5**	**22.5**	**22.5**
UMTS Band 4 (1750 MHz)	Maximum	**23.0**	**23.0**	**23.0**	**23.0**
	Nominal	**22.5**	**22.5**	**22.5**	**22.5**
UMTS Band 2 (1900 MHz)	Maximum	**23.0**	**23.0**	**23.0**	**23.0**
	Nominal	**22.5**	**22.5**	**22.5**	**22.5**

Mode / Band		Modulated Average (dBm)
LTE Band 17	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 5 (Cell)	Maximum	**23.5**
	Nominal	**23.0**
LTE Band 4 (AWS)	Maximum	**23.5**
	Nominal	**23.0**
LTE Band 2 (PCS)	Maximum	**22.5**
	Nominal	**22.0**

Mode / Band		Modulated Average (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	**13.5**
	Nominal	**13.0**
IEEE 802.11g (2.4 GHz)	Maximum	**12.5**
	Nominal	**12.0**
IEEE 802.11n (2.4 GHz)	Maximum	**11.5**
	Nominal	**11.0**
IEEE 802.11a/n/ac (5 GHz)	Maximum	**10.5**
	Nominal	**10.0**
Bluetooth	Maximum	**8.0**
	Nominal	**7.5**
Bluetooth LE	Maximum	**0.5**
	Nominal	**0.0**

Reduced Power – Body at 0 mm:

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**28.0**	**28.0**	**26.0**	**24.5**	**23.0**	**22.5**	**21.5**	**20.5**	**19.5**
	Nominal	**27.5**	**27.5**	**25.5**	**24.0**	**22.5**	**22.0**	**21.0**	**20.0**	**19.0**
GSM/GPRS/EDGE 1900	Maximum	**20.0**	**20.0**	**19.0**	**17.0**	**16.0**	**16.5**	**15.5**	**14.5**	**13.5**
	Nominal	**19.5**	**19.5**	**18.5**	**16.5**	**15.5**	**16.0**	**15.0**	**14.0**	**13.0**

Mode / Band		Modulated Average (dBm)			
		3GPP RMC Rel 99	*3GPP HSDPA Rel 5*	*3GPP HSUPA Rel 6*	*3GPP DC-HSDPA Rel 8*
UMTS Band 5 (850 MHz)	Maximum	**18.0**	**18.0**	**18.0**	**18.0**
	Nominal	**17.5**	**17.5**	**17.5**	**17.5**
UMTS Band 4 (1750 MHz)	Maximum	**13.0**	**12.5**	**12.5**	**12.5**
	Nominal	**12.5**	**12.0**	**12.0**	**12.0**
UMTS Band 2 (1900 MHz)	Maximum	**12.5**	**12.5**	**12.5**	**12.5**
	Nominal	**12.0**	**12.0**	**12.0**	**12.0**

Mode / Band		Modulated Average (dBm)
LTE Band 17	Maximum	**18.0**
	Nominal	**17.5**
LTE Band 5 (Cell)	Maximum	**12.5**
	Nominal	**17.5**
LTE Band 4 (AWS)	Maximum	**12.5**
	Nominal	**12.0**
LTE Band 2 (PCS)	Maximum	**12.5**
	Nominal	**12.0**

1.4 Sides for SAR Testing

Mode	Back	Top	Bottom	Right	Left
GPRS 850	Yes	No	Yes	No	Yes
UMTS 850	Yes	No	Yes	No	Yes
UMTS 1750	Yes	No	Yes	No	Yes
GPRS 1900	Yes	No	Yes	No	Yes
UMTS 1900	Yes	No	Yes	No	Yes
LTE Band 17	Yes	No	Yes	No	Yes
LTE Band 4 (AWS)	Yes	No	Yes	No	Yes
LTE Band 2 (PCS)	Yes	No	Yes	No	Yes
LTE Band 5 (Cell)	Yes	No	Yes	No	Yes
2.4 GHz WLAN	Yes	Yes	No	Yes	No
5 GHz WLAN	Yes	Yes	No	Yes	No

Notes:
1. Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the device filing.
2. Per FCC KDB 616217 D04v01r01, Particular DUT edges were not required to be evaluated for SAR based on the SAR exclusion threshold in KDB 447498 D01v05r01.

1.5 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the battery of the device for this model. Therefore, all SAR tests were performed with the device operates with the special battery that incorporates the NFC antenna. (Model: EB-BT365BBE)

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.

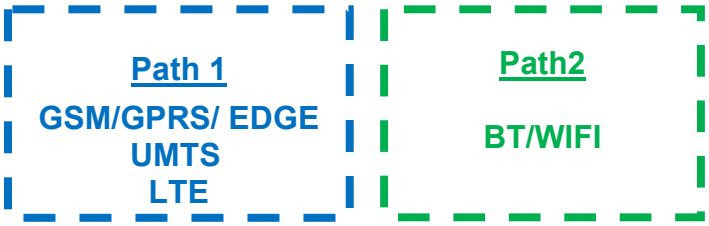

Figure 1-1
Simultaneous Transmission Paths

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.

Table 1-1
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body
1	GSM voice + 2.4 GHz WI-FI	Yes	Yes
2	GSM voice + 5 GHz WI-FI	Yes	Yes
3	GSM voice + 2.4 GHz Bluetooth	N/A	Yes
4	UMTS + 2.4 GHz WI-FI	Yes	Yes
5	UMTS + 5 GHz WI-FI	Yes	Yes
6	UMTS + 2.4 GHz Bluetooth	N/A	Yes
7	LTE + 2.4 GHz WI-FI	Yes	Yes
8	LTE + 2.4 GHz Bluetooth	N/A	Yes
9	LTE + 5 GHz WI-FI	N/A	Yes
10	GPRS/EDGE + 5 GHz WI-FI	N/A	Yes

1. Bluetooth, 2.4 GHz,and 5 GHz share the same antenna path and cannot transmit simultaneously.
2. GSM/GPRS/EDGE, UMTS and LTE share the same antenna path and cannot transmit simultaneously.
3. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
4. 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 scenario.

1.7 SAR Test Exclusions Applied

(A) Bluetooth

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

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

Based on the maximum conducted power of Bluetooth LE (rounded to the nearest mW) and the antenna to user separation distance, Bluetooth SAR was not required; [(6/5)* √2.441] = 1.9< 3.0. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation

(B) Licensed Transmitter(s)

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

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 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 D05v02.

1.8 Guidance Applied

- FCC KDB Publication 941225 D01v03, D05v02r03 (2G/3G/4G)
- FCC KDB Publication 248227 D01v01r02 (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 616217 D04v01 (Tablet SAR Consideration)
- October 2013 TBC Workshop Notes (GPRS Considerations)

1.9 Device Serial Numbers

Several samples were used with identical hardware 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.

Mode	Head Maximum Power S/N	Body Maximum Power S/N	Body Reduced Power S/N
GSM/GPRS/EDGE 850	M3	M3	R1
UMTS 850	M4	M4	R2
UMTS 1750	M3	M3	R2
GSM/GPRS/EDGE 1900	M3	M3	R2
UMTS 1900	M4	M4	R2
LTE Band 17	M1	M1	R2
LTE Band 5 (Cell)	M1	M1	R2
LTE Band 4 (AWS)	M2	M2	R40
LTE Band 2 (PCS)	M2	M2	R1201
2.4 GHz WLAN	M4	M4	-
5 GHz WLAN	M4	M4	-

2 LTE INFORMATION

LTE Information			
FCC ID	**A3LSMT365M**		
Form Factor	Portable Tablet		
Frequency Range of each LTE transmission band	LTE Band 17 (706.5 - 713.5 MHz)		
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)		
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)		
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)		
Channel Bandwidths	LTE Band 17: 5 MHz, 10 MHz		
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
Channel Numbers and Frequencies (MHz)	Low	Mid	High
LTE Band 17: 5 MHz	706.5 (23755)	710 (23790)	713.5 (23825)
LTE Band 17: 10 MHz	709 (23780)	710 (23790)	711 (23800)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	1732.5 (20175)	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	1732.5 (20175)	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	1732.5 (20175)	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715 (20000)	1732.5 (20175)	1750 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	1732.5 (20175)	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720 (20050)	1732.5 (20175)	1745 (20300)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)	1880 (18900)	1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)	1880 (18900)	1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)	1880 (18900)	1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855 (18650)	1880 (18900)	1905 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)	1880 (18900)	1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	1860 (18700)	1880 (18900)	1900 (19100)
LTE Band 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)
UE Category	14		
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		

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]

4 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:

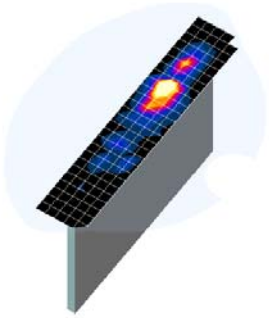

Figure 4-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 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.

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

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

*Also compliant to IEEE 1528-2013 Table 6

5 SAR TESTING PROCEDURES

5.1 SAR Testing for Tablet per FCC KDB Publication 616217 D04v01

Due to its size this device can be used in full sized tablet exposure conditions. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v05 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

5.2 Additional Test Positions due to Sensor Considerations

This device uses a sensor to reduce data powers in tablet-device 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 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. Since the sensor activation distance for the back side of the device is 12 mm, a conservative distance of 11 mm was tested for SAR on the back side at maximum power. Since the sensor activation distance for the bottom edge of the device is 10 mm, a conservative distance of 9 mm was tested for SAR on the bottom edge at maximum power. Sensor triggering distance summary data is included in Appendix G. The sensor does not trigger power reduction from the front of the device.

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

5.3 Device Holder

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

5.4 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 5-1), 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.

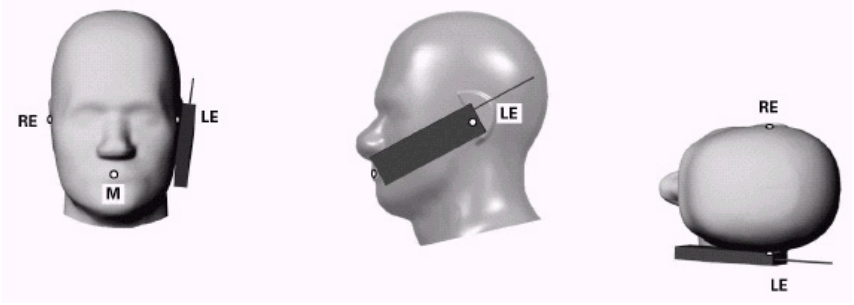

Figure 5-1 Front, Side and Top View of Cheek Position

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

5.5 Positioning for Ear / 15º Tilt

With the test device aligned in the "Cheek Position":

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 5-2).

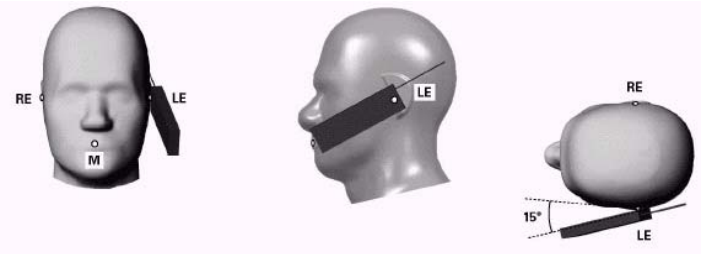

Figure 5-2 Front, Side and Top View of Ear/15º Tilt Position

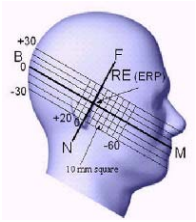

Figure 5-3
Side view w/ relevant markings

6 RF EXPOSURE LIMITS

6.1 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.

6.2 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 6-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

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

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

7 FCC MEASUREMENT PROCEDURES

7.1 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.

7.2 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01 "SAR Measurement Procedures for 3G Devices" v02, October 2007.

The device was 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 were 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 was 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 deviated by more than 5%, the SAR test and drift measurements were repeated.

7.3 SAR Measurement Conditions for UMTS

7.3.1 Output Power Verification

Maximum output power is measured on the High, Middle and Low channels for each applicable transmission band according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1s".

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 (release 5), 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.

7.3.2 Head SAR Measurements

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all "1s". SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than 0.25 dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4 kbps SRB (signaling radio bearer) using the exposure configuration that resulted in the highest SAR for that RF channel in the 12.2 kbps RMC mode.

7.3.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all "1s".

7.3.4 Procedures Used to Establish RF Signal for SAR HSDPA Data Devices

The following procedures are applicable to HSDPA data devices operating under 3GPP Release 5. Body exposure conditions are typically applicable to these devices, including handsets and data modems operating in various electronic devices. HSDPA operates in conjunction with UMTS and requires an active DPCCH. The default test configuration is to measure SAR in UMTS without HSDPA, with an established radio link between the DUT and a communication test set with 12.2 kbps RMC mode configured in Test Loop Mode 1; and tested with HSDPA with FRC and a 12.2 kbps RMC using the highest SAR configuration in UMTS. SAR is selectively confirmed for other physical channel configurations according to output power, exposure conditions and device operating capabilities. Maximum output power is verified according to 3GPP TS 23.121 (Release 5) and SAR must be measured according to these maximum output conditions.

Sub-Test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 8$ ($A_{hs} = 30/15$) with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 7$ ($A_{hs} = 24/15$) with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Figure 7-1
Table C.10.1.4 of TS 234.121-1

7.3.5 SAR Measurement Conditions for HSUPA Data Devices

SAR for body exposure configurations are measured according to the 'Body SAR Measurements' procedures in the 'WCDMA Handsets' section of the KDB 941225 D01 FCC 3G document. In addition, Body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher of that measured without HSPA in 12.2 kbps RMC mode or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. 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 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurements should be used to test for head exposure.

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and EDCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of the FCC 3G document.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}[1]	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM[2] (dB)	MPR (dB)	AG[4] Index	E-TFCI
1	11/15[3]	15/15[3]	64	11/15[3]	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15[4]	15/15[4]	64	15/15[4]	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

7.3.6 SAR Measurement Conditions for DC-HSDPA

SAR test exclusion for DC-HSDPA devices is determined by power measurements according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to qualify for SAR test exclusion. DC-HSDPA uplink maximum output power measurements using the four Rel. 5 HSDPA subtests in Table C.10.1.4 of TS 234.121-1 is required.

When the maximum average output power of each RF channel with DC-HSDPA active is ≤ ¼ dB higher than that measured using 12.2 kbps RMC, or the maximum reported SAR for 12.2 kbps RMC is ≤ 75% of the SAR limit, SAR evaluation for DC-HSDPA is not required.

7.4 SAR Measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05v02 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was 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).

7.4.1 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.

7.4.2 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.

7.4.3 A-MPR

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

7.4.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r01:

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

i. The required channel and offset combination with the highest maximum output power is required for SAR.
ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.

b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

7.5 SAR Testing with 802.11 Transmitters

Normal network operating configurations are not suitable for measuring the SAR of 802.11 a/b/g/n/ac transmitters. 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 D01v01r02 for more details.

7.5.1 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. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

7.5.2 Frequency Channel Configurations [24]

For 2.4 GHz, the highest average RF output power channel between the low, mid and high channel at the lowest data rate was selected for SAR evaluation in 802.11b mode. 802.11g/n modes and higher data rates for 802.11b were additionally evaluated for SAR if the output power of the respective mode was 0.25 dB or higher than the powers of the SAR configurations tested in the 802.11b mode.

For 5 GHz, the highest average RF output power channel across the default test channels at the lowest data rate was selected for SAR evaluation in 802.11a. When the adjacent channels are higher in power then the default channels, these “required channels” were considered instead of the default channels for SAR testing. 802.11n modes and higher data rates for 802.11a/n were evaluated only if the respective mode was higher than 0.25 dB or more than the 802.11a mode.

If the maximum extrapolated peak SAR of the zoom scan for the highest output channel was less than 1.6 W/kg and if the 1g averaged SAR was less than 0.8 W/kg, SAR testing was not required for the other test channels in the band.

8 RF CONDUCTED POWERS

8.1 GSM Conducted Powers

Table 8-1
Maximum GSM/GPRS/EDGE Average RF Conducted Powers

		Maximum Burst-Averaged Output Power								
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	33.00	33.00	30.50	**28.91**	27.67	27.50	26.49	25.47	24.42
	190	32.66	32.69	30.44	**28.73**	27.67	27.48	26.44	25.33	24.31
	251	32.51	32.53	30.25	**28.65**	27.36	27.38	26.41	25.22	24.21
GSM 1900	512	29.77	29.80	28.40	26.22	**25.20**	26.44	25.31	24.11	23.00
	661	29.85	29.90	28.65	26.44	**25.42**	26.49	25.41	24.25	23.12
	810	30.00	29.99	28.70	26.50	**25.38**	26.49	25.49	24.31	23.20
		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	23.97	23.97	24.48	**24.65**	24.66	18.47	20.47	21.21	21.41
	190	23.63	23.66	24.42	**24.47**	24.66	18.45	20.42	21.07	21.30
	251	23.48	23.50	24.23	**24.39**	24.35	18.35	20.39	20.96	21.20
GSM 1900	512	20.74	20.77	22.38	21.96	**22.19**	17.41	19.29	19.85	19.99
	661	20.82	20.87	22.63	22.18	**22.41**	17.46	19.39	19.99	20.11
	810	20.97	20.96	22.68	22.24	**22.37**	17.46	19.47	20.05	20.19
GSM 850	**Frame Avg.Targets:**	23.47	23.47	24.48	**24.74**	24.49	17.97	19.98	20.74	20.99
GSM 1900		20.47	20.47	22.48	22.24	**22.49**	16.97	18.98	19.74	19.99

Table 8-2
Reduced GSM/ GPRS/ EDGE Average RF Conducted Powers

		Maximum Burst-Averaged Output Power								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	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	27.65	27.33	25.12	**23.68**	22.22	21.40	21.00	20.01	19.07
	190	27.50	27.47	25.19	**23.62**	21.99	21.30	20.98	19.93	18.96
	251	27.13	27.08	24.90	**23.24**	21.85	21.21	20.76	19.80	18.66
GSM 1900	512	18.52	18.60	17.63	15.69	**14.60**	15.04	14.16	13.22	12.35
	661	18.62	18.70	17.80	15.77	**14.75**	15.21	14.23	13.35	12.44
	810	18.73	18.71	17.85	15.77	**14.90**	15.33	14.43	13.45	12.61
		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	18.62	18.30	19.10	**19.42**	19.21	12.37	14.98	15.75	16.06
	190	18.47	18.44	19.17	**19.36**	18.98	12.27	14.96	15.67	15.95
	251	18.10	18.05	18.88	**18.98**	18.84	12.18	14.74	15.54	15.65
GSM 1900	512	9.49	9.57	11.61	11.43	**11.59**	6.01	8.14	8.96	9.34
	661	9.59	9.67	11.78	11.51	**11.74**	6.18	8.21	9.09	9.43
	810	9.70	9.68	11.83	11.51	**11.89**	6.30	8.41	9.19	9.60
GSM 850	Frame Avg.Targets:	18.47	18.47	19.48	**19.74**	19.49	12.97	14.98	15.74	15.99
GSM 1900		10.47	10.47	12.48	12.24	**12.49**	6.97	8.98	9.74	9.99

Notes:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. 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 body 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. 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.
4. 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 8-1
Power Measurement Setup

8.2 UMTS Conducted Powers

Maximum Power:

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1862	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	22.63	22.66	22.68	22.83	22.84	22.81	22.59	22.65	22.80	-
99		12.2 kbps AMR	22.65	22.69	22.67	22.73	22.82	22.90	22.59	22.64	22.78	-
6	HSDPA	Subtest 1	22.35	22.48	22.61	21.77	22.00	22.04	22.65	22.62	22.78	0
6		Subtest 2	22.48	22.43	22.65	22.16	22.07	22.32	22.67	22.67	22.72	0
6		Subtest 3	21.41	21.37	21.59	21.15	21.53	21.47	21.69	21.63	21.70	0.5
6		Subtest 4	21.43	21.42	21.50	21.19	21.44	21.48	21.52	21.55	21.61	0.5
6	HSUPA	Subtest 1	22.09	22.11	22.04	21.78	22.01	22.02	22.15	22.02	22.12	0
6		Subtest 2	20.36	20.25	20.35	20.42	20.66	20.49	20.44	20.39	20.37	2
6		Subtest 3	20.13	20.26	20.23	20.78	20.74	20.56	20.56	20.42	20.54	1
6		Subtest 4	20.41	20.38	20.50	20.62	20.53	20.54	20.43	20.46	20.55	2
6		Subtest 5	22.18	22.06	22.08	21.91	21.98	21.99	22.07	21.93	22.20	0
8	DC-HSDPA	Subtest 1	22.44	22.48	22.59	22.39	22.36	22.49	22.70	22.77	22.96	0
8		Subtest 2	22.59	22.53	22.73	22.43	22.47	22.62	22.74	22.80	22.95	0
8		Subtest 3	21.77	21.62	21.84	21.94	21.89	21.92	21.97	22.02	22.19	0.5
8		Subtest 4	21.75	21.51	21.85	21.86	21.85	21.79	21.89	21.98	22.18	0.5

Reduced Power - Body at 0mm:

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1862	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	17.50	17.52	17.50	12.47	12.90	12.58	12.50	12.04	11.93	-
99		12.2 kbps AMR	17.54	17.55	17.53	12.49	12.91	12.59	12.00	12.04	11.94	-
6	HSDPA	Subtest 1	17.37	17.31	17.17	11.11	11.78	11.62	12.49	12.10	12.01	0
6		Subtest 2	17.43	17.45	17.34	11.15	11.95	11.00	12.43	12.20	12.13	0
6		Subtest 3	16.33	16.40	16.28	10.81	11.59	10.68	11.65	11.21	11.16	0.5
6		Subtest 4	16.42	16.38	16.22	10.72	11.44	10.77	11.62	11.39	11.09	0.5
6	HSUPA	Subtest 1	17.17	17.22	17.08	10.81	10.72	10.69	10.95	10.72	10.93	0
6		Subtest 2	15.39	15.54	15.36	10.99	11.06	10.87	9.99	9.72	9.87	2
6		Subtest 3	16.47	15.55	16.49	11.01	11.00	10.99	10.01	10.12	10.07	1
6		Subtest 4	15.33	15.28	15.42	10.80	10.85	10.76	9.76	10.01	9.98	2
6		Subtest 5	16.89	16.98	16.92	11.09	11.22	11.16	10.88	10.89	10.69	0
8	DC-HSDPA	Subtest 1	17.42	17.39	17.60	11.61	11.83	12.30	12.27	11.99	11.77	0
8		Subtest 2	17.43	17.33	17.44	11.68	11.70	12.20	12.36	12.03	11.79	0
8		Subtest 3	16.34	16.42	16.30	11.15	11.19	11.65	11.27	10.99	10.95	0.5
8		Subtest 4	16.42	16.41	16.33	11.13	11.18	11.66	11.30	10.98	10.95	0.5

UMTS SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v02. 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 SAR was less than 1.2 W/kg.

DC-HSDPA considerations

- 3GPP Specification 34.121-1 Release 8 Ver 8.10.0 was used for DC-HSDPA guidance
- H-Set 12 (QPSK) was confirmed to be used during DC-HSDPA measurements
- Measured maximum output powers for DC-HSDPA were not greater than 1/4 dB higher than the WCDMA 12.2 kbps RMC maximum output, as a result, SAR is not required for DC-HSDPA
- The DUT supports UE category 24 for HSDPA

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

Figure 8-2
Power Measurement Setup

8.3 LTE Conducted Powers

8.3.1 LTE Band 17 Maximum Power

Table 8-3
LTE Band 17 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	710.0	23790	10	QPSK	1	0	22.87	0	0
	710.0	23790	10	QPSK	1	25	**22.96**	0	0
	710.0	23790	10	QPSK	1	49	22.68	0	0
	710.0	23790	10	QPSK	25	0	**21.97**	0-1	1
	710.0	23790	10	QPSK	25	12	21.83	0-1	1
	710.0	23790	10	QPSK	25	25	21.72	0-1	1
	710.0	23790	10	QPSK	50	0	21.84	0-1	1
	710.0	23790	10	16QAM	1	0	21.82	0-1	1
	710.0	23790	10	16QAM	1	25	21.77	0-1	1
	710.0	23790	10	16QAM	1	49	21.71	0-1	1
	710.0	23790	10	16QAM	25	0	20.61	0-2	2
	710.0	23790	10	16QAM	25	12	20.74	0-2	2
	710.0	23790	10	16QAM	25	25	20.73	0-2	2
	710.0	23790	10	16QAM	50	0	20.78	0-2	2

Note: LTE Band 17 (AWS) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 8-4
LTE Band 17 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]
Mid	710.0	23790	5	QPSK	1	0	22.94	0	0
	710.0	23790	5	QPSK	1	12	22.91	0	0
	710.0	23790	5	QPSK	1	24	22.54	0	0
	710.0	23790	5	QPSK	12	0	21.85	0-1	1
	710.0	23790	5	QPSK	12	6	21.88	0-1	1
	710.0	23790	5	QPSK	12	13	21.84	0-1	1
	710.0	23790	5	QPSK	25	0	21.72	0-1	1
	710.0	23790	5	16-QAM	1	0	21.84	0-1	1
	710.0	23790	5	16-QAM	1	12	21.88	0-1	1
	710.0	23790	5	16-QAM	1	24	21.65	0-1	1
	710.0	23790	5	16-QAM	12	0	20.74	0-2	2
	710.0	23790	5	16-QAM	12	6	20.82	0-2	2
	710.0	23790	5	16-QAM	12	13	20.55	0-2	2
	710.0	23790	5	16-QAM	25	0	20.59	0-2	2

Note: LTE Band 17 (AWS) at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing

8.3.2 LTE Band 17 Reduced Power - Body at 0mm

Table 8-5
LTE Band 17 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	710.0	23790	10	QPSK	1	0	17.24	0	0
	710.0	23790	10	QPSK	1	25	17.27	0	0
	710.0	23790	10	QPSK	1	49	**17.42**	0	0
	710.0	23790	10	QPSK	25	0	16.17	0-1	1
	710.0	23790	10	QPSK	25	12	**16.19**	0-1	1
	710.0	23790	10	QPSK	25	25	16.01	0-1	1
	710.0	23790	10	QPSK	50	0	16.10	0-1	1
	710.0	23790	10	16QAM	1	0	16.34	0-1	1
	710.0	23790	10	16QAM	1	25	16.09	0-1	1
	710.0	23790	10	16QAM	1	49	16.10	0-1	1
	710.0	23790	10	16QAM	25	0	15.05	0-2	2
	710.0	23790	10	16QAM	25	12	15.07	0-2	2
	710.0	23790	10	16QAM	25	25	15.00	0-2	2
	710.0	23790	10	16QAM	50	0	15.08	0-2	2

Note: LTE Band 17 (AWS) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 8-6
LTE Band 17 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]
Mid	710.0	23790	5	QPSK	1	0	17.32	0	0
	710.0	23790	5	QPSK	1	12	17.19	0	0
	710.0	23790	5	QPSK	1	24	17.60	0	0
	710.0	23790	5	QPSK	12	0	16.11	0-1	1
	710.0	23790	5	QPSK	12	6	16.38	0-1	1
	710.0	23790	5	QPSK	12	13	16.05	0-1	1
	710.0	23790	5	QPSK	25	0	16.00	0-1	1
	710.0	23790	5	16-QAM	1	0	16.23	0-1	1
	710.0	23790	5	16-QAM	1	12	16.02	0-1	1
	710.0	23790	5	16-QAM	1	24	16.10	0-1	1
	710.0	23790	5	16-QAM	12	0	15.17	0-2	2
	710.0	23790	5	16-QAM	12	6	15.21	0-2	2
	710.0	23790	5	16-QAM	12	13	15.06	0-2	2
	710.0	23790	5	16-QAM	25	0	15.09	0-2	2

Note: LTE Band 17 (AWS) at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

8.3.3 LTE Band 5 (Cell) Maximum Power

Table 8-7
LTE Band 5 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	836.5	20525	10	QPSK	1	0	**23.40**	0	0
	836.5	20525	10	QPSK	1	25	23.31	0	0
	836.5	20525	10	QPSK	1	49	23.37	0	0
	836.5	20525	10	QPSK	25	0	22.27	0-1	1
	836.5	20525	10	QPSK	25	12	**22.32**	0-1	1
	836.5	20525	10	QPSK	25	25	22.27	0-1	1
	836.5	20525	10	QPSK	50	0	22.29	0-1	1
	836.5	20525	10	16QAM	1	0	22.34	0-1	1
	836.5	20525	10	16QAM	1	25	22.25	0-1	1
	836.5	20525	10	16QAM	1	49	22.29	0-1	1
	836.5	20525	10	16QAM	25	0	21.30	0-2	2
	836.5	20525	10	16QAM	25	12	21.27	0-2	2
	836.5	20525	10	16QAM	25	25	21.31	0-2	2
	836.5	20525	10	16QAM	50	0	21.31	0-2	2

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

Table 8-8
LTE Band 5 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	826.5	20425	5	QPSK	1	0	23.31	0	0
	826.5	20425	5	QPSK	1	12	23.31	0	0
	826.5	20425	5	QPSK	1	24	23.42	0	0
	826.5	20425	5	QPSK	12	0	22.20	0-1	1
	826.5	20425	5	QPSK	12	6	22.23	0-1	1
	826.5	20425	5	QPSK	12	13	22.36	0-1	1
	826.5	20425	5	QPSK	25	0	22.14	0-1	1
	826.5	20425	5	16-QAM	1	0	22.19	0-1	1
	826.5	20425	5	16-QAM	1	12	22.40	0-1	1
	826.5	20425	5	16-QAM	1	24	22.37	0-1	1
	826.5	20425	5	16-QAM	12	0	21.23	0-2	2
	826.5	20425	5	16-QAM	12	6	21.24	0-2	2
	826.5	20425	5	16-QAM	12	13	21.24	0-2	2
	826.5	20425	5	16-QAM	25	0	21.47	0-2	2
Mid	836.5	20525	5	QPSK	1	0	23.42	0	0
	836.5	20525	5	QPSK	1	12	23.35	0	0
	836.5	20525	5	QPSK	1	24	23.22	0	0
	836.5	20525	5	QPSK	12	0	22.33	0-1	1
	836.5	20525	5	QPSK	12	6	22.18	0-1	1
	836.5	20525	5	QPSK	12	13	22.38	0-1	1
	836.5	20525	5	QPSK	25	0	22.31	0-1	1
	836.5	20525	5	16-QAM	1	0	22.20	0-1	1
	836.5	20525	5	16-QAM	1	12	22.34	0-1	1
	836.5	20525	5	16-QAM	1	24	22.21	0-1	1
	836.5	20525	5	16-QAM	12	0	21.39	0-2	2
	836.5	20525	5	16-QAM	12	6	21.20	0-2	2
	836.5	20525	5	16-QAM	12	13	21.24	0-2	2
	836.5	20525	5	16-QAM	25	0	21.31	0-2	2
High	846.5	20625	5	QPSK	1	0	23.36	0	0
	846.5	20625	5	QPSK	1	12	23.47	0	0
	846.5	20625	5	QPSK	1	24	23.17	0	0
	846.5	20625	5	QPSK	12	0	22.28	0-1	1
	846.5	20625	5	QPSK	12	6	22.17	0-1	1
	846.5	20625	5	QPSK	12	13	22.46	0-1	1
	846.5	20625	5	QPSK	25	0	22.17	0-1	1
	846.5	20625	5	16-QAM	1	0	22.01	0-1	1
	846.5	20625	5	16-QAM	1	12	22.30	0-1	1
	846.5	20625	5	16-QAM	1	24	22.39	0-1	1
	846.5	20625	5	16-QAM	12	0	21.23	0-2	2
	846.5	20625	5	16-QAM	12	6	21.06	0-2	2
	846.5	20625	5	16-QAM	12	13	21.27	0-2	2
	846.5	20625	5	16-QAM	25	0	21.42	0-2	2

Table 8-9
LTE Band 4 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	23.40	0	0
	1715	20000	10	QPSK	1	25	23.49	0	0
	1715	20000	10	QPSK	1	49	23.41	0	0
	1715	20000	10	QPSK	25	0	22.33	0-1	1
	1715	20000	10	QPSK	25	12	22.19	0-1	1
	1715	20000	10	QPSK	25	25	22.24	0-1	1
	1715	20000	10	QPSK	50	0	22.01	0-1	1
	1715	20000	10	16QAM	1	0	22.19	0-1	1
	1715	20000	10	16QAM	1	25	22.26	0-1	1
	1715	20000	10	16QAM	1	49	22.34	0-1	1
	1715	20000	10	16QAM	25	0	21.18	0-2	2
	1715	20000	10	16QAM	25	12	21.02	0-2	2
	1715	20000	10	16QAM	25	25	21.39	0-2	2
	1715	20000	10	16QAM	50	0	21.01	0-2	2
Mid	1732.5	20175	10	QPSK	1	0	23.29	0	0
	1732.5	20175	10	QPSK	1	25	23.17	0	0
	1732.5	20175	10	QPSK	1	49	23.32	0	0
	1732.5	20175	10	QPSK	25	0	22.14	0-1	1
	1732.5	20175	10	QPSK	25	12	22.27	0-1	1
	1732.5	20175	10	QPSK	25	25	22.39	0-1	1
	1732.5	20175	10	QPSK	50	0	22.08	0-1	1
	1732.5	20175	10	16QAM	1	0	22.41	0-1	1
	1732.5	20175	10	16QAM	1	25	22.46	0-1	1
	1732.5	20175	10	16QAM	1	49	22.38	0-1	1
	1732.5	20175	10	16QAM	25	0	21.38	0-2	2
	1732.5	20175	10	16QAM	25	12	21.33	0-2	2
	1732.5	20175	10	16QAM	25	25	21.44	0-2	2
	1732.5	20175	10	16QAM	50	0	21.21	0-2	2
High	1750	20350	10	QPSK	1	0	23.43	0	0
	1750	20350	10	QPSK	1	25	23.34	0	0
	1750	20350	10	QPSK	1	49	23.45	0	0
	1750	20350	10	QPSK	25	0	22.17	0-1	1
	1750	20350	10	QPSK	25	12	22.22	0-1	1
	1750	20350	10	QPSK	25	25	22.19	0-1	1
	1750	20350	10	QPSK	50	0	22.12	0-1	1
	1750	20350	10	16QAM	1	0	22.29	0-1	1
	1750	20350	10	16QAM	1	25	22.33	0-1	1
	1750	20350	10	16QAM	1	49	22.43	0-1	1
	1750	20350	10	16QAM	25	0	21.22	0-2	2
	1750	20350	10	16QAM	25	12	21.19	0-2	2
	1750	20350	10	16QAM	25	25	21.36	0-2	2
	1750	20350	10	16QAM	50	0	21.07	0-2	2

Table 8-10
LTE Band 5 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	825.5	20415	3	QPSK	1	0	23.44	0	0
	825.5	20415	3	QPSK	1	7	23.31	0	0
	825.5	20415	3	QPSK	1	14	23.22	0	0
	825.5	20415	3	QPSK	8	0	22.38	0-1	1
	825.5	20415	3	QPSK	8	4	22.22	0-1	1
	825.5	20415	3	QPSK	8	7	22.23	0-1	1
	825.5	20415	3	QPSK	15	0	22.11	0-1	1
	825.5	20415	3	16-QAM	1	0	22.00	0-1	1
	825.5	20415	3	16-QAM	1	7	22.45	0-1	1
	825.5	20415	3	16-QAM	1	14	22.20	0-1	1
	825.5	20415	3	16-QAM	8	0	21.17	0-2	2
	825.5	20415	3	16-QAM	8	4	21.11	0-2	2
	825.5	20415	3	16-QAM	8	7	21.27	0-2	2
	825.5	20415	3	16-QAM	15	0	21.42	0-2	2
Mid	836.5	20525	3	QPSK	1	0	23.45	0	0
	836.5	20525	3	QPSK	1	7	23.19	0	0
	836.5	20525	3	QPSK	1	14	23.35	0	0
	836.5	20525	3	QPSK	8	0	22.30	0-1	1
	836.5	20525	3	QPSK	8	4	22.27	0-1	1
	836.5	20525	3	QPSK	8	7	22.21	0-1	1
	836.5	20525	3	QPSK	15	0	22.18	0-1	1
	836.5	20525	3	16-QAM	1	0	22.27	0-1	1
	836.5	20525	3	16-QAM	1	7	22.25	0-1	1
	836.5	20525	3	16-QAM	1	14	22.33	0-1	1
	836.5	20525	3	16-QAM	8	0	21.49	0-2	2
	836.5	20525	3	16-QAM	8	4	21.27	0-2	2
	836.5	20525	3	16-QAM	8	7	21.08	0-2	2
	836.5	20525	3	16-QAM	15	0	21.48	0-2	2
High	847.5	20635	3	QPSK	1	0	23.50	0	0
	847.5	20635	3	QPSK	1	7	23.30	0	0
	847.5	20635	3	QPSK	1	14	23.11	0	0
	847.5	20635	3	QPSK	8	0	22.45	0-1	1
	847.5	20635	3	QPSK	8	4	22.28	0-1	1
	847.5	20635	3	QPSK	8	7	22.27	0-1	1
	847.5	20635	3	QPSK	15	0	22.09	0-1	1
	847.5	20635	3	16-QAM	1	0	22.09	0-1	1
	847.5	20635	3	16-QAM	1	7	22.28	0-1	1
	847.5	20635	3	16-QAM	1	14	22.29	0-1	1
	847.5	20635	3	16-QAM	8	0	21.10	0-2	2
	847.5	20635	3	16-QAM	8	4	21.13	0-2	2
	847.5	20635	3	16-QAM	8	7	21.07	0-2	2
	847.5	20635	3	16-QAM	15	0	21.32	0-2	2

Table 8-11
LTE Band 5 (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]
Low	824.7	20407	1.4	QPSK	1	0	23.45	0	0
	824.7	20407	1.4	QPSK	1	2	23.37	0	0
	824.7	20407	1.4	QPSK	1	5	23.24	0	0
	824.7	20407	1.4	QPSK	3	0	23.38	0	0
	824.7	20407	1.4	QPSK	3	2	23.40	0	0
	824.7	20407	1.4	QPSK	3	3	23.18	0	0
	824.7	20407	1.4	QPSK	6	0	22.18	0-1	1
	824.7	20407	1.4	16-QAM	1	0	22.07	0-1	1
	824.7	20407	1.4	16-QAM	1	2	22.32	0-1	1
	824.7	20407	1.4	16-QAM	1	5	22.32	0-1	1
	824.7	20407	1.4	16-QAM	3	0	22.07	0-1	1
	824.7	20407	1.4	16-QAM	3	2	22.11	0-1	1
	824.7	20407	1.4	16-QAM	3	3	22.27	0-1	1
	824.7	20407	1.4	16-QAM	6	0	21.36	0-2	2
Mid	836.5	20525	1.4	QPSK	1	0	23.46	0	0
	836.5	20525	1.4	QPSK	1	2	23.09	0	0
	836.5	20525	1.4	QPSK	1	5	23.15	0	0
	836.5	20525	1.4	QPSK	3	0	23.46	0	0
	836.5	20525	1.4	QPSK	3	2	23.43	0	0
	836.5	20525	1.4	QPSK	3	3	23.31	0	0
	836.5	20525	1.4	QPSK	6	0	22.38	0-1	1
	836.5	20525	1.4	16-QAM	1	0	22.24	0-1	1
	836.5	20525	1.4	16-QAM	1	2	22.12	0-1	1
	836.5	20525	1.4	16-QAM	1	5	22.37	0-1	1
	836.5	20525	1.4	16-QAM	3	0	22.32	0-1	1
	836.5	20525	1.4	16-QAM	3	2	22.07	0-1	1
	836.5	20525	1.4	16-QAM	3	3	22.16	0-1	1
	836.5	20525	1.4	16-QAM	6	0	21.29	0-2	2
High	848.3	20643	1.4	QPSK	1	0	23.37	0	0
	848.3	20643	1.4	QPSK	1	2	23.46	0	0
	848.3	20643	1.4	QPSK	1	5	23.22	0	0
	848.3	20643	1.4	QPSK	3	0	23.34	0	0
	848.3	20643	1.4	QPSK	3	2	23.10	0	0
	848.3	20643	1.4	QPSK	3	3	23.37	0	0
	848.3	20643	1.4	QPSK	6	0	22.13	0-1	1
	848.3	20643	1.4	16-QAM	1	0	22.19	0-1	1
	848.3	20643	1.4	16-QAM	1	2	22.09	0-1	1
	848.3	20643	1.4	16-QAM	1	5	22.30	0-1	1
	848.3	20643	1.4	16-QAM	3	0	22.26	0-1	1
	848.3	20643	1.4	16-QAM	3	2	21.95	0-1	1
	848.3	20643	1.4	16-QAM	3	3	22.10	0-1	1
	848.3	20643	1.4	16-QAM	6	0	21.42	0-2	2

8.3.4 LTE Band 5 (Cell) Reduced Power - Body at 0mm

Table 8-12
LTE Band 5 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	836.5	20525	10	QPSK	1	0	17.63	0	0
	836.5	20525	10	QPSK	1	25	17.61	0	0
	836.5	20525	10	QPSK	1	49	**17.64**	0	0
	836.5	20525	10	QPSK	25	0	16.41	0-1	1
	836.5	20525	10	QPSK	25	12	**16.44**	0-1	1
	836.5	20525	10	QPSK	25	25	16.41	0-1	1
	836.5	20525	10	QPSK	50	0	16.43	0-1	1
	836.5	20525	10	16QAM	1	0	16.53	0-1	1
	836.5	20525	10	16QAM	1	25	16.43	0-1	1
	836.5	20525	10	16QAM	1	49	16.52	0-1	1
	836.5	20525	10	16QAM	25	0	15.46	0-2	2
	836.5	20525	10	16QAM	25	12	15.47	0-2	2
	836.5	20525	10	16QAM	25	25	15.49	0-2	2
	836.5	20525	10	16QAM	50	0	15.42	0-2	2

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

Table 8-13
LTE Band 5 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	826.5	20425	5	QPSK	1	0	17.85	0	0
	826.5	20425	5	QPSK	1	12	17.83	0	0
	826.5	20425	5	QPSK	1	24	17.73	0	0
	826.5	20425	5	QPSK	12	0	16.12	0-1	1
	826.5	20425	5	QPSK	12	6	16.51	0-1	1
	826.5	20425	5	QPSK	12	13	16.49	0-1	1
	826.5	20425	5	QPSK	25	0	16.43	0-1	1
	826.5	20425	5	16-QAM	1	0	16.56	0-1	1
	826.5	20425	5	16-QAM	1	12	16.59	0-1	1
	826.5	20425	5	16-QAM	1	24	16.53	0-1	1
	826.5	20425	5	16-QAM	12	0	15.46	0-2	2
	826.5	20425	5	16-QAM	12	6	15.56	0-2	2
	826.5	20425	5	16-QAM	12	13	15.55	0-2	2
	826.5	20425	5	16-QAM	25	0	15.45	0-2	2
Mid	836.5	20525	5	QPSK	1	0	17.65	0	0
	836.5	20525	5	QPSK	1	12	17.71	0	0
	836.5	20525	5	QPSK	1	24	17.84	0	0
	836.5	20525	5	QPSK	12	0	16.31	0-1	1
	836.5	20525	5	QPSK	12	6	16.57	0-1	1
	836.5	20525	5	QPSK	12	13	16.58	0-1	1
	836.5	20525	5	QPSK	25	0	16.24	0-1	1
	836.5	20525	5	16-QAM	1	0	16.67	0-1	1
	836.5	20525	5	16-QAM	1	12	16.51	0-1	1
	836.5	20525	5	16-QAM	1	24	16.62	0-1	1
	836.5	20525	5	16-QAM	12	0	15.26	0-2	2
	836.5	20525	5	16-QAM	12	6	15.43	0-2	2
	836.5	20525	5	16-QAM	12	13	15.68	0-2	2
	836.5	20525	5	16-QAM	25	0	15.35	0-2	2
High	846.5	20625	5	QPSK	1	0	17.54	0	0
	846.5	20625	5	QPSK	1	12	17.79	0	0
	846.5	20625	5	QPSK	1	24	17.82	0	0
	846.5	20625	5	QPSK	12	0	16.48	0-1	1
	846.5	20625	5	QPSK	12	6	16.64	0-1	1
	846.5	20625	5	QPSK	12	13	16.67	0-1	1
	846.5	20625	5	QPSK	25	0	16.38	0-1	1
	846.5	20625	5	16-QAM	1	0	16.82	0-1	1
	846.5	20625	5	16-QAM	1	12	16.53	0-1	1
	846.5	20625	5	16-QAM	1	24	16.67	0-1	1
	846.5	20625	5	16-QAM	12	0	15.27	0-2	2
	846.5	20625	5	16-QAM	12	6	15.36	0-2	2
	846.5	20625	5	16-QAM	12	13	15.78	0-2	2
	846.5	20625	5	16-QAM	25	0	15.29	0-2	2

Table 8-14
LTE Band 5 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	825.5	20415	3	QPSK	1	0	17.88	0	0
	825.5	20415	3	QPSK	1	7	17.96	0	0
	825.5	20415	3	QPSK	1	14	17.61	0	0
	825.5	20415	3	QPSK	8	0	16.16	0-1	1
	825.5	20415	3	QPSK	8	4	16.66	0-1	1
	825.5	20415	3	QPSK	8	7	16.36	0-1	1
	825.5	20415	3	QPSK	15	0	16.55	0-1	1
	825.5	20415	3	16-QAM	1	0	16.46	0-1	1
	825.5	20415	3	16-QAM	1	7	16.64	0-1	1
	825.5	20415	3	16-QAM	1	14	16.62	0-1	1
	825.5	20415	3	16-QAM	8	0	15.52	0-2	2
	825.5	20415	3	16-QAM	8	4	15.73	0-2	2
	825.5	20415	3	16-QAM	8	7	15.59	0-2	2
	825.5	20415	3	16-QAM	15	0	15.53	0-2	2
Mid	836.5	20525	3	QPSK	1	0	17.81	0	0
	836.5	20525	3	QPSK	1	7	17.64	0	0
	836.5	20525	3	QPSK	1	14	17.73	0	0
	836.5	20525	3	QPSK	8	0	16.34	0-1	1
	836.5	20525	3	QPSK	8	4	16.53	0-1	1
	836.5	20525	3	QPSK	8	7	16.75	0-1	1
	836.5	20525	3	QPSK	15	0	16.43	0-1	1
	836.5	20525	3	16-QAM	1	0	16.48	0-1	1
	836.5	20525	3	16-QAM	1	7	16.41	0-1	1
	836.5	20525	3	16-QAM	1	14	16.53	0-1	1
	836.5	20525	3	16-QAM	8	0	15.19	0-2	2
	836.5	20525	3	16-QAM	8	4	15.41	0-2	2
	836.5	20525	3	16-QAM	8	7	15.85	0-2	2
	836.5	20525	3	16-QAM	15	0	15.16	0-2	2
High	847.5	20635	3	QPSK	1	0	17.45	0	0
	847.5	20635	3	QPSK	1	7	17.71	0	0
	847.5	20635	3	QPSK	1	14	17.85	0	0
	847.5	20635	3	QPSK	8	0	16.29	0-1	1
	847.5	20635	3	QPSK	8	4	16.71	0-1	1
	847.5	20635	3	QPSK	8	7	16.87	0-1	1
	847.5	20635	3	QPSK	15	0	16.45	0-1	1
	847.5	20635	3	16-QAM	1	0	16.99	0-1	1
	847.5	20635	3	16-QAM	1	7	16.50	0-1	1
	847.5	20635	3	16-QAM	1	14	16.50	0-1	1
	847.5	20635	3	16-QAM	8	0	15.09	0-2	2
	847.5	20635	3	16-QAM	8	4	15.38	0-2	2
	847.5	20635	3	16-QAM	8	7	15.61	0-2	2
	847.5	20635	3	16-QAM	15	0	15.15	0-2	2

Table 8-15
LTE Band 5 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	824.7	20407	1.4	QPSK	1	0	17.69	0	0
	824.7	20407	1.4	QPSK	1	2	17.86	0	0
	824.7	20407	1.4	QPSK	1	5	17.60	0	0
	824.7	20407	1.4	QPSK	3	0	17.07	0	0
	824.7	20407	1.4	QPSK	3	2	17.46	0	0
	824.7	20407	1.4	QPSK	3	3	17.44	0	0
	824.7	20407	1.4	QPSK	6	0	16.36	0-1	1
	824.7	20407	1.4	16-QAM	1	0	16.28	0-1	1
	824.7	20407	1.4	16-QAM	1	2	16.83	0-1	1
	824.7	20407	1.4	16-QAM	1	5	16.56	0-1	1
	824.7	20407	1.4	16-QAM	3	0	16.60	0-1	1
	824.7	20407	1.4	16-QAM	3	2	16.80	0-1	1
	824.7	20407	1.4	16-QAM	3	3	16.61	0-1	1
	824.7	20407	1.4	16-QAM	6	0	15.61	0-2	2
Mid	836.5	20525	1.4	QPSK	1	0	17.74	0	0
	836.5	20525	1.4	QPSK	1	2	17.53	0	0
	836.5	20525	1.4	QPSK	1	5	17.72	0	0
	836.5	20525	1.4	QPSK	3	0	17.62	0	0
	836.5	20525	1.4	QPSK	3	2	17.66	0	0
	836.5	20525	1.4	QPSK	3	3	17.64	0	0
	836.5	20525	1.4	QPSK	6	0	16.63	0-1	1
	836.5	20525	1.4	16-QAM	1	0	16.65	0-1	1
	836.5	20525	1.4	16-QAM	1	2	16.27	0-1	1
	836.5	20525	1.4	16-QAM	1	5	16.71	0-1	1
	836.5	20525	1.4	16-QAM	3	0	16.24	0-1	1
	836.5	20525	1.4	16-QAM	3	2	16.25	0-1	1
	836.5	20525	1.4	16-QAM	3	3	16.58	0-1	1
	836.5	20525	1.4	16-QAM	6	0	15.34	0-2	2
High	848.3	20643	1.4	QPSK	1	0	17.53	0	0
	848.3	20643	1.4	QPSK	1	2	17.85	0	0
	848.3	20643	1.4	QPSK	1	5	17.78	0	0
	848.3	20643	1.4	QPSK	3	0	17.27	0	0
	848.3	20643	1.4	QPSK	3	2	17.62	0	0
	848.3	20643	1.4	QPSK	3	3	17.87	0	0
	848.3	20643	1.4	QPSK	6	0	16.56	0-1	1
	848.3	20643	1.4	16-QAM	1	0	16.66	0-1	1
	848.3	20643	1.4	16-QAM	1	2	16.61	0-1	1
	848.3	20643	1.4	16-QAM	1	5	16.30	0-1	1
	848.3	20643	1.4	16-QAM	3	0	16.11	0-1	1
	848.3	20643	1.4	16-QAM	3	2	16.24	0-1	1
	848.3	20643	1.4	16-QAM	3	3	16.58	0-1	1
	848.3	20643	1.4	16-QAM	6	0	15.55	0-2	2

8.3.5 LTE band 4 (AWS) Maximum Power

Table 8-16
LTE Band 4 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	**22.76**	0	0
	1732.5	20175	20	QPSK	1	50	22.75	0	0
	1732.5	20175	20	QPSK	1	99	22.63	0	0
	1732.5	20175	20	QPSK	50	0	**21.76**	0-1	1
	1732.5	20175	20	QPSK	50	25	21.73	0-1	1
	1732.5	20175	20	QPSK	50	50	21.64	0-1	1
	1732.5	20175	20	QPSK	100	0	21.68	0-1	1
	1732.5	20175	20	16QAM	1	0	21.72	0-1	1
	1732.5	20175	20	16QAM	1	50	21.79	0-1	1
	1732.5	20175	20	16QAM	1	99	21.59	0-1	1
	1732.5	20175	20	16QAM	50	0	20.76	0-2	2
	1732.5	20175	20	16QAM	50	25	20.76	0-2	2
	1732.5	20175	20	16QAM	50	50	20.67	0-2	2
	1732.5	20175	20	16QAM	100	0	20.77	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

Table 8-17
LTE Band 4 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	22.63	0	0
	1717.5	20025	15	QPSK	1	36	22.57	0	0
	1717.5	20025	15	QPSK	1	74	22.58	0	0
	1717.5	20025	15	QPSK	36	0	21.80	0-1	1
	1717.5	20025	15	QPSK	36	18	21.60	0-1	1
	1717.5	20025	15	QPSK	36	37	21.53	0-1	1
	1717.5	20025	15	QPSK	75	0	21.57	0-1	1
	1717.5	20025	15	16QAM	1	0	21.52	0-1	1
	1717.5	20025	15	16QAM	1	36	21.63	0-1	1
	1717.5	20025	15	16QAM	1	74	21.60	0-1	1
	1717.5	20025	15	16QAM	36	0	20.51	0-2	2
	1717.5	20025	15	16QAM	36	18	20.50	0-2	2
	1717.5	20025	15	16QAM	36	37	20.55	0-2	2
	1717.5	20025	15	16QAM	75	0	20.52	0-2	2
Mid	1732.5	20175	15	QPSK	1	0	22.55	0	0
	1732.5	20175	15	QPSK	1	36	22.76	0	0
	1732.5	20175	15	QPSK	1	74	22.64	0	0
	1732.5	20175	15	QPSK	36	0	21.76	0-1	1
	1732.5	20175	15	QPSK	36	18	21.50	0-1	1
	1732.5	20175	15	QPSK	36	37	21.52	0-1	1
	1732.5	20175	15	QPSK	75	0	21.52	0-1	1
	1732.5	20175	15	16QAM	1	0	21.60	0-1	1
	1732.5	20175	15	16QAM	1	36	21.71	0-1	1
	1732.5	20175	15	16QAM	1	74	21.61	0-1	1
	1732.5	20175	15	16QAM	36	0	20.54	0-2	2
	1732.5	20175	15	16QAM	36	18	20.63	0-2	2
	1732.5	20175	15	16QAM	36	37	20.58	0-2	2
	1732.5	20175	15	16QAM	75	0	20.52	0-2	2
High	1747.5	20325	15	QPSK	1	0	22.99	0	0
	1747.5	20325	15	QPSK	1	36	22.69	0	0
	1747.5	20325	15	QPSK	1	74	22.66	0	0
	1747.5	20325	15	QPSK	36	0	21.54	0-1	1
	1747.5	20325	15	QPSK	36	18	21.61	0-1	1
	1747.5	20325	15	QPSK	36	37	21.59	0-1	1
	1747.5	20325	15	QPSK	75	0	21.64	0-1	1
	1747.5	20325	15	16QAM	1	0	21.73	0-1	1
	1747.5	20325	15	16QAM	1	36	21.76	0-1	1
	1747.5	20325	15	16QAM	1	74	21.68	0-1	1
	1747.5	20325	15	16QAM	36	0	20.60	0-2	2
	1747.5	20325	15	16QAM	36	18	20.59	0-2	2
	1747.5	20325	15	16QAM	36	37	20.62	0-2	2
	1747.5	20325	15	16QAM	75	0	20.58	0-2	2

Table 8-18
LTE Band 4 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	22.66	0	0
	1715	20000	10	QPSK	1	25	22.77	0	0
	1715	20000	10	QPSK	1	49	22.81	0	0
	1715	20000	10	QPSK	25	0	21.87	0-1	1
	1715	20000	10	QPSK	25	12	21.55	0-1	1
	1715	20000	10	QPSK	25	25	21.78	0-1	1
	1715	20000	10	QPSK	50	0	21.72	0-1	1
	1715	20000	10	16QAM	1	0	21.66	0-1	1
	1715	20000	10	16QAM	1	25	21.64	0-1	1
	1715	20000	10	16QAM	1	49	21.60	0-1	1
	1715	20000	10	16QAM	25	0	20.55	0-2	2
	1715	20000	10	16QAM	25	12	20.70	0-2	2
	1715	20000	10	16QAM	25	25	20.69	0-2	2
	1715	20000	10	16QAM	50	0	20.52	0-2	2
Mid	1732.5	20175	10	QPSK	1	0	22.69	0	0
	1732.5	20175	10	QPSK	1	25	22.98	0	0
	1732.5	20175	10	QPSK	1	49	22.81	0	0
	1732.5	20175	10	QPSK	25	0	21.71	0-1	1
	1732.5	20175	10	QPSK	25	12	21.52	0-1	1
	1732.5	20175	10	QPSK	25	25	21.63	0-1	1
	1732.5	20175	10	QPSK	50	0	21.74	0-1	1
	1732.5	20175	10	16QAM	1	0	21.86	0-1	1
	1732.5	20175	10	16QAM	1	25	21.89	0-1	1
	1732.5	20175	10	16QAM	1	49	21.52	0-1	1
	1732.5	20175	10	16QAM	25	0	20.60	0-2	2
	1732.5	20175	10	16QAM	25	12	20.64	0-2	2
	1732.5	20175	10	16QAM	25	25	20.71	0-2	2
	1732.5	20175	10	16QAM	50	0	20.82	0-2	2
High	1750	20350	10	QPSK	1	0	23.03	0	0
	1750	20350	10	QPSK	1	25	22.60	0	0
	1750	20350	10	QPSK	1	49	22.67	0	0
	1750	20350	10	QPSK	25	0	21.74	0-1	1
	1750	20350	10	QPSK	25	12	21.75	0-1	1
	1750	20350	10	QPSK	25	25	21.53	0-1	1
	1750	20350	10	QPSK	50	0	21.71	0-1	1
	1750	20350	10	16QAM	1	0	21.73	0-1	1
	1750	20350	10	16QAM	1	25	21.71	0-1	1
	1750	20350	10	16QAM	1	49	21.69	0-1	1
	1750	20350	10	16QAM	25	0	20.59	0-2	2
	1750	20350	10	16QAM	25	12	20.63	0-2	2
	1750	20350	10	16QAM	25	25	20.65	0-2	2
	1750	20350	10	16QAM	50	0	20.50	0-2	2

Table 8-19
LTE Band 4 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	22.58	0	0
	1712.5	19975	5	QPSK	1	12	22.68	0	0
	1712.5	19975	5	QPSK	1	24	22.72	0	0
	1712.5	19975	5	QPSK	12	0	21.80	0-1	1
	1712.5	19975	5	QPSK	12	6	21.61	0-1	1
	1712.5	19975	5	QPSK	12	13	21.78	0-1	1
	1712.5	19975	5	QPSK	25	0	21.68	0-1	1
	1712.5	19975	5	16-QAM	1	0	21.67	0-1	1
	1712.5	19975	5	16-QAM	1	12	21.55	0-1	1
	1712.5	19975	5	16-QAM	1	24	21.63	0-1	1
	1712.5	19975	5	16-QAM	12	0	20.60	0-2	2
	1712.5	19975	5	16-QAM	12	6	20.64	0-2	2
	1712.5	19975	5	16-QAM	12	13	20.78	0-2	2
	1712.5	19975	5	16-QAM	25	0	20.61	0-2	2
Mid	1732.5	20175	5	QPSK	1	0	22.64	0	0
	1732.5	20175	5	QPSK	1	12	22.96	0	0
	1732.5	20175	5	QPSK	1	24	22.81	0	0
	1732.5	20175	5	QPSK	12	0	21.65	0-1	1
	1732.5	20175	5	QPSK	12	6	21.53	0-1	1
	1732.5	20175	5	QPSK	12	13	21.61	0-1	1
	1732.5	20175	5	QPSK	25	0	21.64	0-1	1
	1732.5	20175	5	16-QAM	1	0	21.83	0-1	1
	1732.5	20175	5	16-QAM	1	12	21.94	0-1	1
	1732.5	20175	5	16-QAM	1	24	21.51	0-1	1
	1732.5	20175	5	16-QAM	12	0	20.68	0-2	2
	1732.5	20175	5	16-QAM	12	6	20.58	0-2	2
	1732.5	20175	5	16-QAM	12	13	20.63	0-2	2
	1732.5	20175	5	16-QAM	25	0	20.88	0-2	2
High	1752.5	20375	5	QPSK	1	0	22.97	0	0
	1752.5	20375	5	QPSK	1	12	22.63	0	0
	1752.5	20375	5	QPSK	1	24	22.66	0	0
	1752.5	20375	5	QPSK	12	0	21.66	0-1	1
	1752.5	20375	5	QPSK	12	6	21.65	0-1	1
	1752.5	20375	5	QPSK	12	13	21.63	0-1	1
	1752.5	20375	5	QPSK	25	0	21.69	0-1	1
	1752.5	20375	5	16-QAM	1	0	21.70	0-1	1
	1752.5	20375	5	16-QAM	1	12	21.79	0-1	1
	1752.5	20375	5	16-QAM	1	24	21.67	0-1	1
	1752.5	20375	5	16-QAM	12	0	20.61	0-2	2
	1752.5	20375	5	16-QAM	12	6	20.64	0-2	2
	1752.5	20375	5	16-QAM	12	13	20.58	0-2	2
	1752.5	20375	5	16-QAM	25	0	20.53	0-2	2

Table 8-20
LTE Band 4 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	22.65	0	0
	1711.5	19965	3	QPSK	1	7	22.65	0	0
	1711.5	19965	3	QPSK	1	14	22.71	0	0
	1711.5	19965	3	QPSK	8	0	21.88	0-1	1
	1711.5	19965	3	QPSK	8	4	21.69	0-1	1
	1711.5	19965	3	QPSK	8	7	21.76	0-1	1
	1711.5	19965	3	QPSK	15	0	21.58	0-1	1
	1711.5	19965	3	16-QAM	1	0	21.58	0-1	1
	1711.5	19965	3	16-QAM	1	7	21.52	0-1	1
	1711.5	19965	3	16-QAM	1	14	21.64	0-1	1
	1711.5	19965	3	16-QAM	8	0	20.63	0-2	2
	1711.5	19965	3	16-QAM	8	4	20.54	0-2	2
	1711.5	19965	3	16-QAM	8	7	20.68	0-2	2
	1711.5	19965	3	16-QAM	15	0	20.54	0-2	2
Mid	1732.5	20175	3	QPSK	1	0	22.61	0	0
	1732.5	20175	3	QPSK	1	7	22.97	0	0
	1732.5	20175	3	QPSK	1	14	22.76	0	0
	1732.5	20175	3	QPSK	8	0	21.57	0-1	1
	1732.5	20175	3	QPSK	8	4	21.55	0-1	1
	1732.5	20175	3	QPSK	8	7	21.66	0-1	1
	1732.5	20175	3	QPSK	15	0	21.54	0-1	1
	1732.5	20175	3	16-QAM	1	0	21.77	0-1	1
	1732.5	20175	3	16-QAM	1	7	21.98	0-1	1
	1732.5	20175	3	16-QAM	1	14	21.53	0-1	1
	1732.5	20175	3	16-QAM	8	0	20.59	0-2	2
	1732.5	20175	3	16-QAM	8	4	20.67	0-2	2
	1732.5	20175	3	16-QAM	8	7	20.69	0-2	2
	1732.5	20175	3	16-QAM	15	0	20.81	0-2	2
High	1753.5	20385	3	QPSK	1	0	22.87	0	0
	1753.5	20385	3	QPSK	1	7	22.59	0	0
	1753.5	20385	3	QPSK	1	14	22.68	0	0
	1753.5	20385	3	QPSK	8	0	21.73	0-1	1
	1753.5	20385	3	QPSK	8	4	21.68	0-1	1
	1753.5	20385	3	QPSK	8	7	21.60	0-1	1
	1753.5	20385	3	QPSK	15	0	21.62	0-1	1
	1753.5	20385	3	16-QAM	1	0	21.79	0-1	1
	1753.5	20385	3	16-QAM	1	7	21.85	0-1	1
	1753.5	20385	3	16-QAM	1	14	21.67	0-1	1
	1753.5	20385	3	16-QAM	8	0	20.60	0-2	2
	1753.5	20385	3	16-QAM	8	4	20.57	0-2	2
	1753.5	20385	3	16-QAM	8	7	20.65	0-2	2
	1753.5	20385	3	16-QAM	15	0	20.53	0-2	2

Table 8-21
LTE Band 4 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	22.59	0	0
	1710.7	19957	1.4	QPSK	1	2	22.73	0	0
	1710.7	19957	1.4	QPSK	1	5	22.71	0	0
	1710.7	19957	1.4	QPSK	3	0	22.88	0	0
	1710.7	19957	1.4	QPSK	3	2	22.78	0	0
	1710.7	19957	1.4	QPSK	3	3	22.84	0	0
	1710.7	19957	1.4	QPSK	6	0	21.55	0-1	1
	1710.7	19957	1.4	16-QAM	1	0	21.59	0-1	1
	1710.7	19957	1.4	16-QAM	1	2	21.58	0-1	1
	1710.7	19957	1.4	16-QAM	1	5	21.67	0-1	1
	1710.7	19957	1.4	16-QAM	3	0	21.66	0-1	1
	1710.7	19957	1.4	16-QAM	3	2	21.63	0-1	1
	1710.7	19957	1.4	16-QAM	3	3	21.75	0-1	1
	1710.7	19957	1.4	16-QAM	6	0	20.57	0-2	2
Mid	1732.5	20175	1.4	QPSK	1	0	22.58	0	0
	1732.5	20175	1.4	QPSK	1	2	23.05	0	0
	1732.5	20175	1.4	QPSK	1	5	22.85	0	0
	1732.5	20175	1.4	QPSK	3	0	22.55	0	0
	1732.5	20175	1.4	QPSK	3	2	22.53	0	0
	1732.5	20175	1.4	QPSK	3	3	22.65	0	0
	1732.5	20175	1.4	QPSK	6	0	21.62	0-1	1
	1732.5	20175	1.4	16-QAM	1	0	21.79	0-1	1
	1732.5	20175	1.4	16-QAM	1	2	21.92	0-1	1
	1732.5	20175	1.4	16-QAM	1	5	21.55	0-1	1
	1732.5	20175	1.4	16-QAM	3	0	21.54	0-1	1
	1732.5	20175	1.4	16-QAM	3	2	21.71	0-1	1
	1732.5	20175	1.4	16-QAM	3	3	21.63	0-1	1
	1732.5	20175	1.4	16-QAM	6	0	20.79	0-2	2
High	1754.3	20393	1.4	QPSK	1	0	22.82	0	0
	1754.3	20393	1.4	QPSK	1	2	22.68	0	0
	1754.3	20393	1.4	QPSK	1	5	22.73	0	0
	1754.3	20393	1.4	QPSK	3	0	22.76	0	0
	1754.3	20393	1.4	QPSK	3	2	22.76	0	0
	1754.3	20393	1.4	QPSK	3	3	22.63	0	0
	1754.3	20393	1.4	QPSK	6	0	21.59	0-1	1
	1754.3	20393	1.4	16-QAM	1	0	21.82	0-1	1
	1754.3	20393	1.4	16-QAM	1	2	21.84	0-1	1
	1754.3	20393	1.4	16-QAM	1	5	21.64	0-1	1
	1754.3	20393	1.4	16-QAM	3	0	21.65	0-1	1
	1754.3	20393	1.4	16-QAM	3	2	21.53	0-1	1
	1754.3	20393	1.4	16-QAM	3	3	21.58	0-1	1
	1754.3	20393	1.4	16-QAM	6	0	20.52	0-2	2

8.3.1 LTE Band 4 (Cell) Reduced Power - Body at 0mm

Table 8-22
LTE Band 4 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	11.64	0	0
	1732.5	20175	20	QPSK	1	50	**11.89**	0	0
	1732.5	20175	20	QPSK	1	99	11.71	0	0
	1732.5	20175	20	QPSK	50	0	**10.77**	0-1	1
	1732.5	20175	20	QPSK	50	25	10.75	0-1	1
	1732.5	20175	20	QPSK	50	50	10.76	0-1	1
	1732.5	20175	20	QPSK	100	0	10.58	0-1	1
	1732.5	20175	20	16QAM	1	0	10.68	0-1	1
	1732.5	20175	20	16QAM	1	50	11.50	0-1	1
	1732.5	20175	20	16QAM	1	99	10.58	0-1	1
	1732.5	20175	20	16QAM	50	0	9.96	0-2	2
	1732.5	20175	20	16QAM	50	25	9.90	0-2	2
	1732.5	20175	20	16QAM	50	50	9.76	0-2	2
	1732.5	20175	20	16QAM	100	0	9.84	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

Table 8-23
LTE Band 4 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	11.76	0	0
	1717.5	20025	15	QPSK	1	36	11.93	0	0
	1717.5	20025	15	QPSK	1	74	11.88	0	0
	1717.5	20025	15	QPSK	36	0	10.82	0-1	1
	1717.5	20025	15	QPSK	36	18	10.99	0-1	1
	1717.5	20025	15	QPSK	36	37	10.80	0-1	1
	1717.5	20025	15	QPSK	75	0	10.62	0-1	1
	1717.5	20025	15	16QAM	1	0	10.72	0-1	1
	1717.5	20025	15	16QAM	1	36	11.15	0-1	1
	1717.5	20025	15	16QAM	1	74	10.64	0-1	1
	1717.5	20025	15	16QAM	36	0	10.05	0-2	2
	1717.5	20025	15	16QAM	36	18	9.94	0-2	2
	1717.5	20025	15	16QAM	36	37	9.99	0-2	2
	1717.5	20025	15	16QAM	75	0	9.89	0-2	2
Mid	1732.5	20175	15	QPSK	1	0	11.75	0	0
	1732.5	20175	15	QPSK	1	36	11.93	0	0
	1732.5	20175	15	QPSK	1	74	11.67	0	0
	1732.5	20175	15	QPSK	36	0	10.81	0-1	1
	1732.5	20175	15	QPSK	36	18	10.79	0-1	1
	1732.5	20175	15	QPSK	36	37	10.80	0-1	1
	1732.5	20175	15	QPSK	75	0	10.81	0-1	1
	1732.5	20175	15	16QAM	1	0	10.75	0-1	1
	1732.5	20175	15	16QAM	1	36	10.87	0-1	1
	1732.5	20175	15	16QAM	1	74	10.58	0-1	1
	1732.5	20175	15	16QAM	36	0	10.03	0-2	2
	1732.5	20175	15	16QAM	36	18	9.94	0-2	2
	1732.5	20175	15	16QAM	36	37	9.83	0-2	2
	1732.5	20175	15	16QAM	75	0	9.82	0-2	2
High	1747.5	20325	15	QPSK	1	0	11.80	0	0
	1747.5	20325	15	QPSK	1	36	11.94	0	0
	1747.5	20325	15	QPSK	1	74	11.64	0	0
	1747.5	20325	15	QPSK	36	0	10.82	0-1	1
	1747.5	20325	15	QPSK	36	18	11.04	0-1	1
	1747.5	20325	15	QPSK	36	37	10.95	0-1	1
	1747.5	20325	15	QPSK	75	0	10.65	0-1	1
	1747.5	20325	15	16QAM	1	0	10.74	0-1	1
	1747.5	20325	15	16QAM	1	36	11.49	0-1	1
	1747.5	20325	15	16QAM	1	74	10.77	0-1	1
	1747.5	20325	15	16QAM	36	0	9.97	0-2	2
	1747.5	20325	15	16QAM	36	18	9.96	0-2	2
	1747.5	20325	15	16QAM	36	37	9.84	0-2	2
	1747.5	20325	15	16QAM	75	0	9.90	0-2	2

Table 8-24
LTE Band 4 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	11.69	0	0
	1715	20000	10	QPSK	1	25	11.86	0	0
	1715	20000	10	QPSK	1	49	11.70	0	0
	1715	20000	10	QPSK	25	0	10.74	0-1	1
	1715	20000	10	QPSK	25	12	10.72	0-1	1
	1715	20000	10	QPSK	25	25	10.73	0-1	1
	1715	20000	10	QPSK	50	0	10.55	0-1	1
	1715	20000	10	16QAM	1	0	10.65	0-1	1
	1715	20000	10	16QAM	1	25	11.40	0-1	1
	1715	20000	10	16QAM	1	49	10.57	0-1	1
	1715	20000	10	16QAM	25	0	9.93	0-2	2
	1715	20000	10	16QAM	25	12	9.87	0-2	2
	1715	20000	10	16QAM	25	25	9.75	0-2	2
	1715	20000	10	16QAM	50	0	9.82	0-2	2
Mid	1732.5	20175	10	QPSK	1	0	11.68	0	0
	1732.5	20175	10	QPSK	1	25	11.86	0	0
	1732.5	20175	10	QPSK	1	49	11.60	0	0
	1732.5	20175	10	QPSK	25	0	10.74	0-1	1
	1732.5	20175	10	QPSK	25	12	10.72	0-1	1
	1732.5	20175	10	QPSK	25	25	10.73	0-1	1
	1732.5	20175	10	QPSK	50	0	10.74	0-1	1
	1732.5	20175	10	16QAM	1	0	10.65	0-1	1
	1732.5	20175	10	16QAM	1	25	11.46	0-1	1
	1732.5	20175	10	16QAM	1	49	10.51	0-1	1
	1732.5	20175	10	16QAM	25	0	9.96	0-2	2
	1732.5	20175	10	16QAM	25	12	9.87	0-2	2
	1732.5	20175	10	16QAM	25	25	9.73	0-2	2
	1732.5	20175	10	16QAM	50	0	9.75	0-2	2
High	1750	20350	10	QPSK	1	0	11.73	0	0
	1750	20350	10	QPSK	1	25	11.87	0	0
	1750	20350	10	QPSK	1	49	11.72	0	0
	1750	20350	10	QPSK	25	0	10.76	0-1	1
	1750	20350	10	QPSK	25	12	10.97	0-1	1
	1750	20350	10	QPSK	25	25	10.88	0-1	1
	1750	20350	10	QPSK	50	0	10.57	0-1	1
	1750	20350	10	16QAM	1	0	10.67	0-1	1
	1750	20350	10	16QAM	1	25	11.42	0-1	1
	1750	20350	10	16QAM	1	49	10.59	0-1	1
	1750	20350	10	16QAM	25	0	9.90	0-2	2
	1750	20350	10	16QAM	25	12	9.89	0-2	2
	1750	20350	10	16QAM	25	25	9.77	0-2	2
	1750	20350	10	16QAM	50	0	9.99	0-2	2

Table 8-25
LTE Band 4 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	11.73	0	0
	1712.5	19975	5	QPSK	1	12	11.90	0	0
	1712.5	19975	5	QPSK	1	24	11.85	0	0
	1712.5	19975	5	QPSK	12	0	10.80	0-1	1
	1712.5	19975	5	QPSK	12	6	10.96	0-1	1
	1712.5	19975	5	QPSK	12	13	10.77	0-1	1
	1712.5	19975	5	QPSK	25	0	10.59	0-1	1
	1712.5	19975	5	16-QAM	1	0	10.65	0-1	1
	1712.5	19975	5	16-QAM	1	12	11.25	0-1	1
	1712.5	19975	5	16-QAM	1	24	10.61	0-1	1
	1712.5	19975	5	16-QAM	12	0	10.02	0-2	2
	1712.5	19975	5	16-QAM	12	6	9.91	0-2	2
	1712.5	19975	5	16-QAM	12	13	9.96	0-2	2
	1712.5	19975	5	16-QAM	25	0	9.86	0-2	2
Mid	1732.5	20175	5	QPSK	1	0	11.72	0	0
	1732.5	20175	5	QPSK	1	12	11.97	0	0
	1732.5	20175	5	QPSK	1	24	11.66	0	0
	1732.5	20175	5	QPSK	12	0	10.78	0-1	1
	1732.5	20175	5	QPSK	12	6	10.76	0-1	1
	1732.5	20175	5	QPSK	12	13	10.77	0-1	1
	1732.5	20175	5	QPSK	25	0	10.99	0-1	1
	1732.5	20175	5	16-QAM	1	0	10.72	0-1	1
	1732.5	20175	5	16-QAM	1	12	10.84	0-1	1
	1732.5	20175	5	16-QAM	1	24	10.55	0-1	1
	1732.5	20175	5	16-QAM	12	0	10.03	0-2	2
	1732.5	20175	5	16-QAM	12	6	9.91	0-2	2
	1732.5	20175	5	16-QAM	12	13	9.84	0-2	2
	1732.5	20175	5	16-QAM	25	0	9.79	0-2	2
High	1752.5	20375	5	QPSK	1	0	11.77	0	0
	1752.5	20375	5	QPSK	1	12	11.91	0	0
	1752.5	20375	5	QPSK	1	24	11.61	0	0
	1752.5	20375	5	QPSK	12	0	10.79	0-1	1
	1752.5	20375	5	QPSK	12	6	11.01	0-1	1
	1752.5	20375	5	QPSK	12	13	10.92	0-1	1
	1752.5	20375	5	QPSK	25	0	10.62	0-1	1
	1752.5	20375	5	16-QAM	1	0	10.71	0-1	1
	1752.5	20375	5	16-QAM	1	12	11.46	0-1	1
	1752.5	20375	5	16-QAM	1	24	10.75	0-1	1
	1752.5	20375	5	16-QAM	12	0	9.94	0-2	2
	1752.5	20375	5	16-QAM	12	6	9.93	0-2	2
	1752.5	20375	5	16-QAM	12	13	9.72	0-2	2
	1752.5	20375	5	16-QAM	25	0	9.87	0-2	2

Table 8-26
LTE Band 4 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	11.78	0	0
	1711.5	19965	3	QPSK	1	7	11.92	0	0
	1711.5	19965	3	QPSK	1	14	11.77	0	0
	1711.5	19965	3	QPSK	8	0	10.81	0-1	1
	1711.5	19965	3	QPSK	8	4	11.02	0-1	1
	1711.5	19965	3	QPSK	8	7	10.93	0-1	1
	1711.5	19965	3	QPSK	15	0	10.62	0-1	1
	1711.5	19965	3	16-QAM	1	0	10.72	0-1	1
	1711.5	19965	3	16-QAM	1	7	11.31	0-1	1
	1711.5	19965	3	16-QAM	1	14	10.69	0-1	1
	1711.5	19965	3	16-QAM	8	0	10.00	0-2	2
	1711.5	19965	3	16-QAM	8	4	9.94	0-2	2
	1711.5	19965	3	16-QAM	8	7	9.82	0-2	2
	1711.5	19965	3	16-QAM	15	0	10.04	0-2	2
Mid	1732.5	20175	3	QPSK	1	0	11.61	0	0
	1732.5	20175	3	QPSK	1	7	11.86	0	0
	1732.5	20175	3	QPSK	1	14	11.68	0	0
	1732.5	20175	3	QPSK	8	0	10.79	0-1	1
	1732.5	20175	3	QPSK	8	4	10.72	0-1	1
	1732.5	20175	3	QPSK	8	7	10.81	0-1	1
	1732.5	20175	3	QPSK	15	0	10.55	0-1	1
	1732.5	20175	3	16-QAM	1	0	10.65	0-1	1
	1732.5	20175	3	16-QAM	1	7	11.40	0-1	1
	1732.5	20175	3	16-QAM	1	14	10.55	0-1	1
	1732.5	20175	3	16-QAM	8	0	9.90	0-2	2
	1732.5	20175	3	16-QAM	8	4	9.87	0-2	2
	1732.5	20175	3	16-QAM	8	7	9.73	0-2	2
	1732.5	20175	3	16-QAM	15	0	9.81	0-2	2
High	1753.5	20385	3	QPSK	1	0	11.57	0	0
	1753.5	20385	3	QPSK	1	7	11.82	0	0
	1753.5	20385	3	QPSK	1	14	11.64	0	0
	1753.5	20385	3	QPSK	8	0	10.70	0-1	1
	1753.5	20385	3	QPSK	8	4	10.68	0-1	1
	1753.5	20385	3	QPSK	8	7	10.69	0-1	1
	1753.5	20385	3	QPSK	15	0	10.66	0-1	1
	1753.5	20385	3	16-QAM	1	0	10.61	0-1	1
	1753.5	20385	3	16-QAM	1	7	11.43	0-1	1
	1753.5	20385	3	16-QAM	1	14	10.87	0-1	1
	1753.5	20385	3	16-QAM	8	0	9.89	0-2	2
	1753.5	20385	3	16-QAM	8	4	9.83	0-2	2
	1753.5	20385	3	16-QAM	8	7	9.98	0-2	2
	1753.5	20385	3	16-QAM	15	0	9.84	0-2	2

Table 8-27
LTE Band 4 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	11.67	0	0
	1710.7	19957	1.4	QPSK	1	2	11.84	0	0
	1710.7	19957	1.4	QPSK	1	5	11.79	0	0
	1710.7	19957	1.4	QPSK	3	0	11.68	0	0
	1710.7	19957	1.4	QPSK	3	2	11.90	0	0
	1710.7	19957	1.4	QPSK	3	3	11.87	0	0
	1710.7	19957	1.4	QPSK	6	0	10.53	0-1	1
	1710.7	19957	1.4	16-QAM	1	0	10.59	0-1	1
	1710.7	19957	1.4	16-QAM	1	2	11.19	0-1	1
	1710.7	19957	1.4	16-QAM	1	5	10.55	0-1	1
	1710.7	19957	1.4	16-QAM	3	0	10.96	0-1	1
	1710.7	19957	1.4	16-QAM	3	2	10.87	0-1	1
	1710.7	19957	1.4	16-QAM	3	3	10.58	0-1	1
	1710.7	19957	1.4	16-QAM	6	0	9.80	0-2	2
Mid	1732.5	20175	1.4	QPSK	1	0	11.66	0	0
	1732.5	20175	1.4	QPSK	1	2	11.91	0	0
	1732.5	20175	1.4	QPSK	1	5	11.60	0	0
	1732.5	20175	1.4	QPSK	3	0	11.79	0	0
	1732.5	20175	1.4	QPSK	3	2	11.54	0	0
	1732.5	20175	1.4	QPSK	3	3	11.56	0	0
	1732.5	20175	1.4	QPSK	6	0	10.93	0-1	1
	1732.5	20175	1.4	16-QAM	1	0	10.66	0-1	1
	1732.5	20175	1.4	16-QAM	1	2	10.78	0-1	1
	1732.5	20175	1.4	16-QAM	1	5	10.52	0-1	1
	1732.5	20175	1.4	16-QAM	3	0	10.98	0-1	1
	1732.5	20175	1.4	16-QAM	3	2	10.82	0-1	1
	1732.5	20175	1.4	16-QAM	3	3	10.73	0-1	1
	1732.5	20175	1.4	16-QAM	6	0	9.73	0-2	2
High	1754.3	20393	1.4	QPSK	1	0	11.71	0	0
	1754.3	20393	1.4	QPSK	1	2	11.85	0	0
	1754.3	20393	1.4	QPSK	1	5	11.55	0	0
	1754.3	20393	1.4	QPSK	3	0	11.73	0	0
	1754.3	20393	1.4	QPSK	3	2	11.97	0	0
	1754.3	20393	1.4	QPSK	3	3	11.84	0	0
	1754.3	20393	1.4	QPSK	6	0	10.56	0-1	1
	1754.3	20393	1.4	16-QAM	1	0	10.65	0-1	1
	1754.3	20393	1.4	16-QAM	1	2	11.40	0-1	1
	1754.3	20393	1.4	16-QAM	1	5	10.69	0-1	1
	1754.3	20393	1.4	16-QAM	3	0	10.86	0-1	1
	1754.3	20393	1.4	16-QAM	3	2	10.79	0-1	1
	1754.3	20393	1.4	16-QAM	3	3	10.64	0-1	1
	1754.3	20393	1.4	16-QAM	6	0	9.81	0-2	2

8.3.2 LTE Band 2 (PCS) Maximum Power

Table 8-28
LTE Band 2 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	18700	20	QPSK	1	0	22.35	0	0
	1860	18700	20	QPSK	1	50	**22.48**	0	0
	1860	18700	20	QPSK	1	99	22.42	0	0
	1860	18700	20	QPSK	50	0	21.43	0-1	1
	1860	18700	20	QPSK	50	25	**21.45**	0-1	1
	1860	18700	20	QPSK	50	50	21.37	0-1	1
	1860	18700	20	QPSK	100	0	21.42	0-1	1
	1860	18700	20	16QAM	1	0	21.46	0-1	1
	1860	18700	20	16QAM	1	50	21.46	0-1	1
	1860	18700	20	16QAM	1	99	21.49	0-1	1
	1860	18700	20	16QAM	50	0	20.39	0-2	2
	1860	18700	20	16QAM	50	25	20.48	0-2	2
	1860	18700	20	16QAM	50	50	20.36	0-2	2
	1860	18700	20	16QAM	100	0	20.45	0-2	2
Mid	1880.0	18900	20	QPSK	1	0	22.46	0	0
	1880.0	18900	20	QPSK	1	50	22.46	0	0
	1880.0	18900	20	QPSK	1	99	22.42	0	0
	1880.0	18900	20	QPSK	50	0	21.37	0-1	1
	1880.0	18900	20	QPSK	50	25	21.38	0-1	1
	1880.0	18900	20	QPSK	50	50	21.30	0-1	1
	1880.0	18900	20	QPSK	100	0	21.35	0-1	1
	1880.0	18900	20	16QAM	1	0	21.32	0-1	1
	1880.0	18900	20	16QAM	1	50	21.21	0-1	1
	1880.0	18900	20	16QAM	1	99	21.49	0-1	1
	1880.0	18900	20	16QAM	50	0	20.43	0-2	2
	1880.0	18900	20	16QAM	50	25	20.44	0-2	2
	1880.0	18900	20	16QAM	50	50	20.37	0-2	2
	1880.0	18900	20	16QAM	100	0	20.46	0-2	2
High	1900	19100	20	QPSK	1	0	22.42	0	0
	1900	19100	20	QPSK	1	50	22.46	0	0
	1900	19100	20	QPSK	1	99	22.45	0	0
	1900	19100	20	QPSK	50	0	21.42	0-1	1
	1900	19100	20	QPSK	50	25	21.44	0-1	1
	1900	19100	20	QPSK	50	50	21.44	0-1	1
	1900	19100	20	QPSK	100	0	21.39	0-1	1
	1900	19100	20	16QAM	1	0	21.43	0-1	1
	1900	19100	20	16QAM	1	50	21.38	0-1	1
	1900	19100	20	16QAM	1	99	21.40	0-1	1
	1900	19100	20	16QAM	50	0	20.35	0-2	2
	1900	19100	20	16QAM	50	25	20.49	0-2	2
	1900	19100	20	16QAM	50	50	20.44	0-2	2
	1900	19100	20	16QAM	100	0	20.45	0-2	2

Table 8-29
LTE Band 2 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	18675	15	QPSK	1	0	22.23	0	0
	1857.5	18675	15	QPSK	1	36	22.47	0	0
	1857.5	18675	15	QPSK	1	74	22.23	0	0
	1857.5	18675	15	QPSK	36	0	21.44	0-1	1
	1857.5	18675	15	QPSK	36	18	21.35	0-1	1
	1857.5	18675	15	QPSK	36	37	21.18	0-1	1
	1857.5	18675	15	QPSK	75	0	21.39	0-1	1
	1857.5	18675	15	16QAM	1	0	21.45	0-1	1
	1857.5	18675	15	16QAM	1	36	21.41	0-1	1
	1857.5	18675	15	16QAM	1	74	21.39	0-1	1
	1857.5	18675	15	16QAM	36	0	20.22	0-2	2
	1857.5	18675	15	16QAM	36	18	20.35	0-2	2
	1857.5	18675	15	16QAM	36	37	20.16	0-2	2
	1857.5	18675	15	16QAM	75	0	20.37	0-2	2
Mid	1880.0	18900	15	QPSK	1	0	22.40	0	0
	1880.0	18900	15	QPSK	1	36	22.32	0	0
	1880.0	18900	15	QPSK	1	74	22.25	0	0
	1880.0	18900	15	QPSK	36	0	21.45	0-1	1
	1880.0	18900	15	QPSK	36	18	21.39	0-1	1
	1880.0	18900	15	QPSK	36	37	21.26	0-1	1
	1880.0	18900	15	QPSK	75	0	21.15	0-1	1
	1880.0	18900	15	16QAM	1	0	21.24	0-1	1
	1880.0	18900	15	16QAM	1	36	21.21	0-1	1
	1880.0	18900	15	16QAM	1	74	21.31	0-1	1
	1880.0	18900	15	16QAM	36	0	20.25	0-2	2
	1880.0	18900	15	16QAM	36	18	20.41	0-2	2
	1880.0	18900	15	16QAM	36	37	20.43	0-2	2
	1880.0	18900	15	16QAM	75	0	20.34	0-2	2
High	1902.5	19125	15	QPSK	1	0	22.34	0	0
	1902.5	19125	15	QPSK	1	36	22.36	0	0
	1902.5	19125	15	QPSK	1	74	22.45	0	0
	1902.5	19125	15	QPSK	36	0	21.44	0-1	1
	1902.5	19125	15	QPSK	36	18	21.31	0-1	1
	1902.5	19125	15	QPSK	36	37	21.46	0-1	1
	1902.5	19125	15	QPSK	75	0	21.32	0-1	1
	1902.5	19125	15	16QAM	1	0	21.42	0-1	1
	1902.5	19125	15	16QAM	1	36	21.44	0-1	1
	1902.5	19125	15	16QAM	1	74	21.23	0-1	1
	1902.5	19125	15	16QAM	36	0	20.29	0-2	2
	1902.5	19125	15	16QAM	36	18	20.46	0-2	2
	1902.5	19125	15	16QAM	36	37	20.34	0-2	2
	1902.5	19125	15	16QAM	75	0	20.42	0-2	2

Table 8-30
LTE Band 2 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	18650	10	QPSK	1	0	22.30	0	0
	1855	18650	10	QPSK	1	25	22.49	0	0
	1855	18650	10	QPSK	1	49	22.26	0	0
	1855	18650	10	QPSK	25	0	21.26	0-1	1
	1855	18650	10	QPSK	25	12	21.28	0-1	1
	1855	18650	10	QPSK	25	25	21.20	0-1	1
	1855	18650	10	QPSK	50	0	21.36	0-1	1
	1855	18650	10	16QAM	1	0	21.35	0-1	1
	1855	18650	10	16QAM	1	25	21.27	0-1	1
	1855	18650	10	16QAM	1	49	21.48	0-1	1
	1855	18650	10	16QAM	25	0	20.24	0-2	2
	1855	18650	10	16QAM	25	12	20.32	0-2	2
	1855	18650	10	16QAM	25	25	20.05	0-2	2
	1855	18650	10	16QAM	50	0	20.39	0-2	2
Mid	1880.0	18900	10	QPSK	1	0	22.26	0	0
	1880.0	18900	10	QPSK	1	25	22.14	0	0
	1880.0	18900	10	QPSK	1	49	22.11	0	0
	1880.0	18900	10	QPSK	25	0	21.40	0-1	1
	1880.0	18900	10	QPSK	25	12	21.45	0-1	1
	1880.0	18900	10	QPSK	25	25	21.35	0-1	1
	1880.0	18900	10	QPSK	50	0	20.98	0-1	1
	1880.0	18900	10	16QAM	1	0	21.04	0-1	1
	1880.0	18900	10	16QAM	1	25	21.05	0-1	1
	1880.0	18900	10	16QAM	1	49	21.38	0-1	1
	1880.0	18900	10	16QAM	25	0	20.28	0-2	2
	1880.0	18900	10	16QAM	25	12	20.21	0-2	2
	1880.0	18900	10	16QAM	25	25	20.45	0-2	2
	1880.0	18900	10	16QAM	50	0	20.18	0-2	2
High	1905	19150	10	QPSK	1	0	22.43	0	0
	1905	19150	10	QPSK	1	25	22.32	0	0
	1905	19150	10	QPSK	1	49	22.35	0	0
	1905	19150	10	QPSK	25	0	21.27	0-1	1
	1905	19150	10	QPSK	25	12	21.20	0-1	1
	1905	19150	10	QPSK	25	25	21.49	0-1	1
	1905	19150	10	QPSK	50	0	21.23	0-1	1
	1905	19150	10	16QAM	1	0	21.26	0-1	1
	1905	19150	10	16QAM	1	25	21.30	0-1	1
	1905	19150	10	16QAM	1	49	21.16	0-1	1
	1905	19150	10	16QAM	25	0	20.27	0-2	2
	1905	19150	10	16QAM	25	12	20.27	0-2	2
	1905	19150	10	16QAM	25	25	20.16	0-2	2
	1905	19150	10	16QAM	50	0	20.46	0-2	2

Table 8-31
LTE Band 2 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	18625	5	QPSK	1	0	22.24	0	0
	1852.5	18625	5	QPSK	1	12	22.37	0	0
	1852.5	18625	5	QPSK	1	24	22.25	0	0
	1852.5	18625	5	QPSK	12	0	21.08	0-1	1
	1852.5	18625	5	QPSK	12	6	21.19	0-1	1
	1852.5	18625	5	QPSK	12	13	21.26	0-1	1
	1852.5	18625	5	QPSK	25	0	21.44	0-1	1
	1852.5	18625	5	16-QAM	1	0	21.16	0-1	1
	1852.5	18625	5	16-QAM	1	12	21.07	0-1	1
	1852.5	18625	5	16-QAM	1	24	21.45	0-1	1
	1852.5	18625	5	16-QAM	12	0	20.28	0-2	2
	1852.5	18625	5	16-QAM	12	6	20.39	0-2	2
	1852.5	18625	5	16-QAM	12	13	19.86	0-2	2
	1852.5	18625	5	16-QAM	25	0	20.31	0-2	2
Mid	1880.0	18900	5	QPSK	1	0	22.18	0	0
	1880.0	18900	5	QPSK	1	12	22.09	0	0
	1880.0	18900	5	QPSK	1	24	22.10	0	0
	1880.0	18900	5	QPSK	12	0	21.32	0-1	1
	1880.0	18900	5	QPSK	12	6	21.25	0-1	1
	1880.0	18900	5	QPSK	12	13	21.41	0-1	1
	1880.0	18900	5	QPSK	25	0	21.07	0-1	1
	1880.0	18900	5	16-QAM	1	0	20.99	0-1	1
	1880.0	18900	5	16-QAM	1	12	21.13	0-1	1
	1880.0	18900	5	16-QAM	1	24	21.26	0-1	1
	1880.0	18900	5	16-QAM	12	0	20.11	0-2	2
	1880.0	18900	5	16-QAM	12	6	20.12	0-2	2
	1880.0	18900	5	16-QAM	12	13	20.45	0-2	2
	1880.0	18900	5	16-QAM	25	0	20.10	0-2	2
High	1907.5	19175	5	QPSK	1	0	22.24	0	0
	1907.5	19175	5	QPSK	1	12	22.13	0	0
	1907.5	19175	5	QPSK	1	24	22.23	0	0
	1907.5	19175	5	QPSK	12	0	21.28	0-1	1
	1907.5	19175	5	QPSK	12	6	21.15	0-1	1
	1907.5	19175	5	QPSK	12	13	21.49	0-1	1
	1907.5	19175	5	QPSK	25	0	21.08	0-1	1
	1907.5	19175	5	16-QAM	1	0	21.09	0-1	1
	1907.5	19175	5	16-QAM	1	12	21.11	0-1	1
	1907.5	19175	5	16-QAM	1	24	21.18	0-1	1
	1907.5	19175	5	16-QAM	12	0	20.23	0-2	2
	1907.5	19175	5	16-QAM	12	6	20.12	0-2	2
	1907.5	19175	5	16-QAM	12	13	20.13	0-2	2
	1907.5	19175	5	16-QAM	25	0	20.34	0-2	2

Table 8-32
LTE Band 2 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	18615	3	QPSK	1	0	22.27	0	0
	1851.5	18615	3	QPSK	1	7	22.29	0	0
	1851.5	18615	3	QPSK	1	14	22.29	0	0
	1851.5	18615	3	QPSK	8	0	21.18	0-1	1
	1851.5	18615	3	QPSK	8	4	21.27	0-1	1
	1851.5	18615	3	QPSK	8	7	21.21	0-1	1
	1851.5	18615	3	QPSK	15	0	21.39	0-1	1
	1851.5	18615	3	16-QAM	1	0	21.20	0-1	1
	1851.5	18615	3	16-QAM	1	7	21.03	0-1	1
	1851.5	18615	3	16-QAM	1	14	21.40	0-1	1
	1851.5	18615	3	16-QAM	8	0	20.36	0-2	2
	1851.5	18615	3	16-QAM	8	4	20.29	0-2	2
	1851.5	18615	3	16-QAM	8	7	19.85	0-2	2
	1851.5	18615	3	16-QAM	15	0	20.25	0-2	2
Mid	1880.0	18900	3	QPSK	1	0	22.12	0	0
	1880.0	18900	3	QPSK	1	7	22.03	0	0
	1880.0	18900	3	QPSK	1	14	22.15	0	0
	1880.0	18900	3	QPSK	8	0	21.32	0-1	1
	1880.0	18900	3	QPSK	8	4	21.35	0-1	1
	1880.0	18900	3	QPSK	8	7	21.32	0-1	1
	1880.0	18900	3	QPSK	15	0	21.07	0-1	1
	1880.0	18900	3	16-QAM	1	0	21.06	0-1	1
	1880.0	18900	3	16-QAM	1	7	21.22	0-1	1
	1880.0	18900	3	16-QAM	1	14	21.27	0-1	1
	1880.0	18900	3	16-QAM	8	0	20.15	0-2	2
	1880.0	18900	3	16-QAM	8	4	20.02	0-2	2
	1880.0	18900	3	16-QAM	8	7	20.49	0-2	2
	1880.0	18900	3	16-QAM	15	0	20.20	0-2	2
High	1908.5	19185	3	QPSK	1	0	22.22	0	0
	1908.5	19185	3	QPSK	1	7	22.12	0	0
	1908.5	19185	3	QPSK	1	14	22.19	0	0
	1908.5	19185	3	QPSK	8	0	21.35	0-1	1
	1908.5	19185	3	QPSK	8	4	21.10	0-1	1
	1908.5	19185	3	QPSK	8	7	21.42	0-1	1
	1908.5	19185	3	QPSK	15	0	21.02	0-1	1
	1908.5	19185	3	16-QAM	1	0	21.15	0-1	1
	1908.5	19185	3	16-QAM	1	7	21.10	0-1	1
	1908.5	19185	3	16-QAM	1	14	21.11	0-1	1
	1908.5	19185	3	16-QAM	8	0	20.33	0-2	2
	1908.5	19185	3	16-QAM	8	4	20.15	0-2	2
	1908.5	19185	3	16-QAM	8	7	20.17	0-2	2
	1908.5	19185	3	16-QAM	15	0	20.42	0-2	2

Table 8-33
LTE Band 2 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	18607	1.4	QPSK	1	0	22.17	0	0
	1850.7	18607	1.4	QPSK	1	2	22.13	0	0
	1850.7	18607	1.4	QPSK	1	5	22.47	0	0
	1850.7	18607	1.4	QPSK	3	0	22.38	0	0
	1850.7	18607	1.4	QPSK	3	2	22.18	0	0
	1850.7	18607	1.4	QPSK	3	3	22.35	0	0
	1850.7	18607	1.4	QPSK	6	0	21.48	0-1	1
	1850.7	18607	1.4	16-QAM	1	0	21.40	0-1	1
	1850.7	18607	1.4	16-QAM	1	2	21.15	0-1	1
	1850.7	18607	1.4	16-QAM	1	5	21.43	0-1	1
	1850.7	18607	1.4	16-QAM	3	0	21.42	0-1	1
	1850.7	18607	1.4	16-QAM	3	2	21.45	0-1	1
	1850.7	18607	1.4	16-QAM	3	3	20.95	0-1	1
	1850.7	18607	1.4	16-QAM	6	0	20.26	0-2	2
Mid	1880.0	18900	1.4	QPSK	1	0	21.94	0	0
	1880.0	18900	1.4	QPSK	1	2	21.90	0	0
	1880.0	18900	1.4	QPSK	1	5	22.27	0	0
	1880.0	18900	1.4	QPSK	3	0	22.39	0	0
	1880.0	18900	1.4	QPSK	3	2	22.24	0	0
	1880.0	18900	1.4	QPSK	3	3	21.50	0	0
	1880.0	18900	1.4	QPSK	6	0	20.99	0-1	1
	1880.0	18900	1.4	16-QAM	1	0	21.15	0-1	1
	1880.0	18900	1.4	16-QAM	1	2	21.19	0-1	1
	1880.0	18900	1.4	16-QAM	1	5	21.15	0-1	1
	1880.0	18900	1.4	16-QAM	3	0	21.21	0-1	1
	1880.0	18900	1.4	16-QAM	3	2	20.95	0-1	1
	1880.0	18900	1.4	16-QAM	3	3	21.47	0-1	1
	1880.0	18900	1.4	16-QAM	6	0	20.08	0-2	2
High	1909.3	19193	1.4	QPSK	1	0	22.39	0	0
	1909.3	19193	1.4	QPSK	1	2	22.20	0	0
	1909.3	19193	1.4	QPSK	1	5	22.39	0	0
	1909.3	19193	1.4	QPSK	3	0	22.26	0	0
	1909.3	19193	1.4	QPSK	3	2	22.11	0	0
	1909.3	19193	1.4	QPSK	3	3	21.58	0	0
	1909.3	19193	1.4	QPSK	6	0	21.21	0-1	1
	1909.3	19193	1.4	16-QAM	1	0	21.13	0-1	1
	1909.3	19193	1.4	16-QAM	1	2	21.24	0-1	1
	1909.3	19193	1.4	16-QAM	1	5	21.07	0-1	1
	1909.3	19193	1.4	16-QAM	3	0	20.52	0-1	1
	1909.3	19193	1.4	16-QAM	3	2	21.11	0-1	1
	1909.3	19193	1.4	16-QAM	3	3	21.20	0-1	1
	1909.3	19193	1.4	16-QAM	6	0	20.47	0-2	2

8.3.3 LTE Band 2 (PCS) Reduced Power

Table 8-34
LTE Band 2 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	18700	20	QPSK	1	0	11.88	0	0
	1860	18700	20	QPSK	1	50	11.63	0	0
	1860	18700	20	QPSK	1	99	11.61	0	0
	1860	18700	20	QPSK	50	0	10.63	0-1	1
	1860	18700	20	QPSK	50	25	10.63	0-1	1
	1860	18700	20	QPSK	50	50	10.63	0-1	1
	1860	18700	20	QPSK	100	0	10.63	0-1	1
	1860	18700	20	16QAM	1	0	10.63	0-1	1
	1860	18700	20	16QAM	1	50	11.38	0-1	1
	1860	18700	20	16QAM	1	99	10.75	0-1	1
	1860	18700	20	16QAM	50	0	10.15	0-2	2
	1860	18700	20	16QAM	50	25	10.16	0-2	2
	1860	18700	20	16QAM	50	50	9.83	0-2	2
	1860	18700	20	16QAM	100	0	10.00	0-2	2
Mid	1880.0	18900	20	QPSK	1	0	11.69	0	0
	1880.0	18900	20	QPSK	1	50	11.89	0	0
	1880.0	18900	20	QPSK	1	99	11.63	0	0
	1880.0	18900	20	QPSK	50	0	10.73	0-1	1
	1880.0	18900	20	QPSK	50	25	10.66	0-1	1
	1880.0	18900	20	QPSK	50	50	10.65	0-1	1
	1880.0	18900	20	QPSK	100	0	10.60	0-1	1
	1880.0	18900	20	16QAM	1	0	10.56	0-1	1
	1880.0	18900	20	16QAM	1	50	11.07	0-1	1
	1880.0	18900	20	16QAM	1	99	10.84	0-1	1
	1880.0	18900	20	16QAM	50	0	9.69	0-2	2
	1880.0	18900	20	16QAM	50	25	9.66	0-2	2
	1880.0	18900	20	16QAM	50	50	9.61	0-2	2
	1880.0	18900	20	16QAM	100	0	9.57	0-2	2
High	1900	19100	20	QPSK	1	0	11.98	0	0
	1900	19100	20	QPSK	1	50	**12.15**	0	0
	1900	19100	20	QPSK	1	99	11.94	0	0
	1900	19100	20	QPSK	50	0	10.75	0-1	1
	1900	19100	20	QPSK	50	25	**10.89**	0-1	1
	1900	19100	20	QPSK	50	50	10.72	0-1	1
	1900	19100	20	QPSK	100	0	10.74	0-1	1
	1900	19100	20	16QAM	1	0	10.81	0-1	1
	1900	19100	20	16QAM	1	50	10.80	0-1	1
	1900	19100	20	16QAM	1	99	10.57	0-1	1
	1900	19100	20	16QAM	50	0	9.98	0-2	2
	1900	19100	20	16QAM	50	25	10.06	0-2	2
	1900	19100	20	16QAM	50	50	9.51	0-2	2
	1900	19100	20	16QAM	100	0	9.75	0-2	2

Table 8-35
LTE Band 2 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	18675	15	QPSK	1	0	11.81	0	0
	1857.5	18675	15	QPSK	1	36	11.57	0	0
	1857.5	18675	15	QPSK	1	74	11.64	0	0
	1857.5	18675	15	QPSK	36	0	10.56	0-1	1
	1857.5	18675	15	QPSK	36	18	10.59	0-1	1
	1857.5	18675	15	QPSK	36	37	10.56	0-1	1
	1857.5	18675	15	QPSK	75	0	10.56	0-1	1
	1857.5	18675	15	16QAM	1	0	10.56	0-1	1
	1857.5	18675	15	16QAM	1	36	11.26	0-1	1
	1857.5	18675	15	16QAM	1	74	10.68	0-1	1
	1857.5	18675	15	16QAM	36	0	10.08	0-2	2
	1857.5	18675	15	16QAM	36	18	10.09	0-2	2
	1857.5	18675	15	16QAM	36	37	9.76	0-2	2
	1857.5	18675	15	16QAM	75	0	9.93	0-2	2
Mid	1880.0	18900	15	QPSK	1	0	11.63	0	0
	1880.0	18900	15	QPSK	1	36	11.82	0	0
	1880.0	18900	15	QPSK	1	74	11.56	0	0
	1880.0	18900	15	QPSK	36	0	10.66	0-1	1
	1880.0	18900	15	QPSK	36	18	10.59	0-1	1
	1880.0	18900	15	QPSK	36	37	10.58	0-1	1
	1880.0	18900	15	QPSK	75	0	10.53	0-1	1
	1880.0	18900	15	16QAM	1	0	10.57	0-1	1
	1880.0	18900	15	16QAM	1	36	10.88	0-1	1
	1880.0	18900	15	16QAM	1	74	10.77	0-1	1
	1880.0	18900	15	16QAM	36	0	9.62	0-2	2
	1880.0	18900	15	16QAM	36	18	9.59	0-2	2
	1880.0	18900	15	16QAM	36	37	9.54	0-2	2
	1880.0	18900	15	16QAM	75	0	9.57	0-2	2
High	1902.5	19125	15	QPSK	1	0	11.91	0	0
	1902.5	19125	15	QPSK	1	36	12.00	0	0
	1902.5	19125	15	QPSK	1	74	11.87	0	0
	1902.5	19125	15	QPSK	36	0	10.68	0-1	1
	1902.5	19125	15	QPSK	36	18	10.85	0-1	1
	1902.5	19125	15	QPSK	36	37	10.65	0-1	1
	1902.5	19125	15	QPSK	75	0	10.67	0-1	1
	1902.5	19125	15	16QAM	1	0	10.74	0-1	1
	1902.5	19125	15	16QAM	1	36	10.73	0-1	1
	1902.5	19125	15	16QAM	1	74	10.50	0-1	1
	1902.5	19125	15	16QAM	36	0	9.91	0-2	2
	1902.5	19125	15	16QAM	36	18	9.99	0-2	2
	1902.5	19125	15	16QAM	36	37	9.87	0-2	2
	1902.5	19125	15	16QAM	75	0	9.68	0-2	2

Table 8-36
LTE Band 2 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	18650	10	QPSK	1	0	11.77	0	0
	1855	18650	10	QPSK	1	25	11.52	0	0
	1855	18650	10	QPSK	1	49	11.55	0	0
	1855	18650	10	QPSK	25	0	10.52	0-1	1
	1855	18650	10	QPSK	25	12	10.52	0-1	1
	1855	18650	10	QPSK	25	25	10.52	0-1	1
	1855	18650	10	QPSK	50	0	10.53	0-1	1
	1855	18650	10	16QAM	1	0	10.60	0-1	1
	1855	18650	10	16QAM	1	25	11.29	0-1	1
	1855	18650	10	16QAM	1	49	10.54	0-1	1
	1855	18650	10	16QAM	25	0	10.14	0-2	2
	1855	18650	10	16QAM	25	12	10.09	0-2	2
	1855	18650	10	16QAM	25	25	9.80	0-2	2
	1855	18650	10	16QAM	50	0	9.89	0-2	2
Mid	1880.0	18900	10	QPSK	1	0	11.58	0	0
	1880.0	18900	10	QPSK	1	25	11.77	0	0
	1880.0	18900	10	QPSK	1	49	11.52	0	0
	1880.0	18900	10	QPSK	25	0	10.62	0-1	1
	1880.0	18900	10	QPSK	25	12	10.55	0-1	1
	1880.0	18900	10	QPSK	25	25	10.54	0-1	1
	1880.0	18900	10	QPSK	50	0	10.58	0-1	1
	1880.0	18900	10	16QAM	1	0	10.51	0-1	1
	1880.0	18900	10	16QAM	1	25	10.96	0-1	1
	1880.0	18900	10	16QAM	1	49	10.73	0-1	1
	1880.0	18900	10	16QAM	25	0	9.58	0-2	2
	1880.0	18900	10	16QAM	25	12	9.55	0-2	2
	1880.0	18900	10	16QAM	25	25	9.74	0-2	2
	1880.0	18900	10	16QAM	50	0	9.83	0-2	2
High	1905	19150	10	QPSK	1	0	11.87	0	0
	1905	19150	10	QPSK	1	25	12.04	0	0
	1905	19150	10	QPSK	1	49	11.94	0	0
	1905	19150	10	QPSK	25	0	10.69	0-1	1
	1905	19150	10	QPSK	25	12	10.78	0-1	1
	1905	19150	10	QPSK	25	25	10.61	0-1	1
	1905	19150	10	QPSK	50	0	10.63	0-1	1
	1905	19150	10	16QAM	1	0	10.81	0-1	1
	1905	19150	10	16QAM	1	25	10.69	0-1	1
	1905	19150	10	16QAM	1	49	10.57	0-1	1
	1905	19150	10	16QAM	25	0	9.82	0-2	2
	1905	19150	10	16QAM	25	12	9.95	0-2	2
	1905	19150	10	16QAM	25	25	10.05	0-2	2
	1905	19150	10	16QAM	50	0	9.64	0-2	2

Table 8-37
LTE Band 2 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	18625	5	QPSK	1	0	11.84	0	0
	1852.5	18625	5	QPSK	1	12	11.60	0	0
	1852.5	18625	5	QPSK	1	24	11.67	0	0
	1852.5	18625	5	QPSK	12	0	10.59	0-1	1
	1852.5	18625	5	QPSK	12	6	10.62	0-1	1
	1852.5	18625	5	QPSK	12	13	10.59	0-1	1
	1852.5	18625	5	QPSK	25	0	10.59	0-1	1
	1852.5	18625	5	16-QAM	1	0	10.59	0-1	1
	1852.5	18625	5	16-QAM	1	12	11.29	0-1	1
	1852.5	18625	5	16-QAM	1	24	10.71	0-1	1
	1852.5	18625	5	16-QAM	12	0	10.11	0-2	2
	1852.5	18625	5	16-QAM	12	6	10.12	0-2	2
	1852.5	18625	5	16-QAM	12	13	9.79	0-2	2
	1852.5	18625	5	16-QAM	25	0	9.96	0-2	2
Mid	1880.0	18900	5	QPSK	1	0	11.67	0	0
	1880.0	18900	5	QPSK	1	12	11.89	0	0
	1880.0	18900	5	QPSK	1	24	11.54	0	0
	1880.0	18900	5	QPSK	12	0	10.69	0-1	1
	1880.0	18900	5	QPSK	12	6	10.62	0-1	1
	1880.0	18900	5	QPSK	12	13	10.61	0-1	1
	1880.0	18900	5	QPSK	25	0	10.56	0-1	1
	1880.0	18900	5	16-QAM	1	0	10.63	0-1	1
	1880.0	18900	5	16-QAM	1	12	10.91	0-1	1
	1880.0	18900	5	16-QAM	1	24	10.82	0-1	1
	1880.0	18900	5	16-QAM	12	0	9.65	0-2	2
	1880.0	18900	5	16-QAM	12	6	9.62	0-2	2
	1880.0	18900	5	16-QAM	12	13	9.57	0-2	2
	1880.0	18900	5	16-QAM	25	0	9.60	0-2	2
High	1907.5	19175	5	QPSK	1	0	11.94	0	0
	1907.5	19175	5	QPSK	1	12	12.03	0	0
	1907.5	19175	5	QPSK	1	24	11.90	0	0
	1907.5	19175	5	QPSK	12	0	10.71	0-1	1
	1907.5	19175	5	QPSK	12	6	10.84	0-1	1
	1907.5	19175	5	QPSK	12	13	10.68	0-1	1
	1907.5	19175	5	QPSK	25	0	10.76	0-1	1
	1907.5	19175	5	16-QAM	1	0	10.77	0-1	1
	1907.5	19175	5	16-QAM	1	12	10.76	0-1	1
	1907.5	19175	5	16-QAM	1	24	10.53	0-1	1
	1907.5	19175	5	16-QAM	12	0	9.99	0-2	2
	1907.5	19175	5	16-QAM	12	6	10.02	0-2	2
	1907.5	19175	5	16-QAM	12	13	9.87	0-2	2
	1907.5	19175	5	16-QAM	25	0	9.88	0-2	2

Table 8-38
LTE Band 2 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	18615	3	QPSK	1	0	11.83	0	0
	1851.5	18615	3	QPSK	1	7	11.58	0	0
	1851.5	18615	3	QPSK	1	14	11.56	0	0
	1851.5	18615	3	QPSK	8	0	10.58	0-1	1
	1851.5	18615	3	QPSK	8	4	10.58	0-1	1
	1851.5	18615	3	QPSK	8	7	10.58	0-1	1
	1851.5	18615	3	QPSK	15	0	10.59	0-1	1
	1851.5	18615	3	16-QAM	1	0	10.66	0-1	1
	1851.5	18615	3	16-QAM	1	7	11.33	0-1	1
	1851.5	18615	3	16-QAM	1	14	10.70	0-1	1
	1851.5	18615	3	16-QAM	8	0	10.10	0-2	2
	1851.5	18615	3	16-QAM	8	4	10.11	0-2	2
	1851.5	18615	3	16-QAM	8	7	9.78	0-2	2
	1851.5	18615	3	16-QAM	15	0	9.95	0-2	2
Mid	1880.0	18900	3	QPSK	1	0	11.64	0	0
	1880.0	18900	3	QPSK	1	7	11.83	0	0
	1880.0	18900	3	QPSK	1	14	11.58	0	0
	1880.0	18900	3	QPSK	8	0	10.68	0-1	1
	1880.0	18900	3	QPSK	8	4	10.61	0-1	1
	1880.0	18900	3	QPSK	8	7	10.60	0-1	1
	1880.0	18900	3	QPSK	15	0	10.64	0-1	1
	1880.0	18900	3	16-QAM	1	0	10.51	0-1	1
	1880.0	18900	3	16-QAM	1	7	11.02	0-1	1
	1880.0	18900	3	16-QAM	1	14	10.79	0-1	1
	1880.0	18900	3	16-QAM	8	0	9.64	0-2	2
	1880.0	18900	3	16-QAM	8	4	9.61	0-2	2
	1880.0	18900	3	16-QAM	8	7	9.56	0-2	2
	1880.0	18900	3	16-QAM	15	0	9.52	0-2	2
High	1908.5	19185	3	QPSK	1	0	11.93	0	0
	1908.5	19185	3	QPSK	1	7	12.10	0	0
	1908.5	19185	3	QPSK	1	14	12.00	0	0
	1908.5	19185	3	QPSK	8	0	10.75	0-1	1
	1908.5	19185	3	QPSK	8	4	10.84	0-1	1
	1908.5	19185	3	QPSK	8	7	10.67	0-1	1
	1908.5	19185	3	QPSK	15	0	10.69	0-1	1
	1908.5	19185	3	16-QAM	1	0	10.87	0-1	1
	1908.5	19185	3	16-QAM	1	7	10.75	0-1	1
	1908.5	19185	3	16-QAM	1	14	10.52	0-1	1
	1908.5	19185	3	16-QAM	8	0	10.00	0-2	2
	1908.5	19185	3	16-QAM	8	4	10.01	0-2	2
	1908.5	19185	3	16-QAM	8	7	10.11	0-2	2
	1908.5	19185	3	16-QAM	15	0	9.70	0-2	2

Table 8-39
LTE Band 2 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	18607	1.4	QPSK	1	0	11.77	0	0
	1850.7	18607	1.4	QPSK	1	2	11.52	0	0
	1850.7	18607	1.4	QPSK	1	5	12.26	0	0
	1850.7	18607	1.4	QPSK	3	0	11.58	0	0
	1850.7	18607	1.4	QPSK	3	2	11.50	0	0
	1850.7	18607	1.4	QPSK	3	3	11.68	0	0
	1850.7	18607	1.4	QPSK	6	0	10.53	0-1	1
	1850.7	18607	1.4	16-QAM	1	0	10.60	0-1	1
	1850.7	18607	1.4	16-QAM	1	2	11.27	0-1	1
	1850.7	18607	1.4	16-QAM	1	5	10.64	0-1	1
	1850.7	18607	1.4	16-QAM	3	0	11.00	0-1	1
	1850.7	18607	1.4	16-QAM	3	2	11.29	0-1	1
	1850.7	18607	1.4	16-QAM	3	3	11.30	0-1	1
	1850.7	18607	1.4	16-QAM	6	0	9.89	0-2	2
Mid	1880.0	18900	1.4	QPSK	1	0	11.58	0	0
	1880.0	18900	1.4	QPSK	1	2	11.77	0	0
	1880.0	18900	1.4	QPSK	1	5	11.52	0	0
	1880.0	18900	1.4	QPSK	3	0	12.00	0	0
	1880.0	18900	1.4	QPSK	3	2	12.16	0	0
	1880.0	18900	1.4	QPSK	3	3	12.25	0	0
	1880.0	18900	1.4	QPSK	6	0	10.58	0-1	1
	1880.0	18900	1.4	16-QAM	1	0	11.00	0-1	1
	1880.0	18900	1.4	16-QAM	1	2	10.96	0-1	1
	1880.0	18900	1.4	16-QAM	1	5	10.73	0-1	1
	1880.0	18900	1.4	16-QAM	3	0	11.26	0-1	1
	1880.0	18900	1.4	16-QAM	3	2	10.58	0-1	1
	1880.0	18900	1.4	16-QAM	3	3	10.87	0-1	1
	1880.0	18900	1.4	16-QAM	6	0	10.13	0-2	2
High	1909.3	19193	1.4	QPSK	1	0	11.87	0	0
	1909.3	19193	1.4	QPSK	1	2	12.04	0	0
	1909.3	19193	1.4	QPSK	1	5	11.94	0	0
	1909.3	19193	1.4	QPSK	3	0	11.87	0	0
	1909.3	19193	1.4	QPSK	3	2	11.86	0	0
	1909.3	19193	1.4	QPSK	3	3	11.78	0	0
	1909.3	19193	1.4	QPSK	6	0	10.63	0-1	1
	1909.3	19193	1.4	16-QAM	1	0	10.81	0-1	1
	1909.3	19193	1.4	16-QAM	1	2	10.69	0-1	1
	1909.3	19193	1.4	16-QAM	1	5	10.50	0-1	1
	1909.3	19193	1.4	16-QAM	3	0	10.54	0-1	1
	1909.3	19193	1.4	16-QAM	3	2	10.87	0-1	1
	1909.3	19193	1.4	16-QAM	3	3	10.51	0-1	1
	1909.3	19193	1.4	16-QAM	6	0	9.64	0-2	2

8.4 WLAN Conducted Powers

Table 8-40
IEEE 802.11b Average RF Power

Mode	Freq [MHz]	Channel	802.11b Conducted Power [dBm]			
			Data Rate [Mbps]			
			1	2	5.5	11
802.11b	2412	1*	13.24	13.28	13.05	13.06
802.11b	2437	6*	12.38	12.34	12.17	12.23
802.11b	2462	11*	**13.28**	13.24	13.10	13.03

Table 8-41
IEEE 802.11g Average RF Power

Mode	Freq [MHz]	Channel	802.11g Conducted Power [dBm]							
			Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11g	2412	1	11.50	11.41	11.66	11.58	11.40	11.63	11.56	11.38
802.11g	2437	6	10.71	10.65	10.88	10.82	10.61	10.80	10.73	10.60
802.11g	2462	11	12.42	12.33	12.40	12.44	12.30	12.39	12.48	12.25

Table 8-42
IEEE 802.11n Average RF Power

Mode	Freq [MHz]	Channel	802.11n (2.4GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6.5	13	19.5	26	39	52	58.5	65
802.11n	2412	1	10.51	10.70	10.72	10.60	10.45	10.42	10.64	10.73
802.11n	2437	6	9.85	10.05	10.09	9.89	9.84	9.77	9.89	10.05
802.11n	2462	11	11.18	11.33	11.32	11.29	11.14	11.06	11.30	11.43

Table 8-43
IEEE 802.11a Average RF Power

Mode	Freq [MHz]	Channel	802.11a Conducted Power [dBm]							
			Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11a	5180	36*	**10.14**	10.13	10.11	10.16	10.11	10.09	10.04	10.05
802.11a	5200	40	10.03	9.99	9.95	10.06	10.00	9.91	9.87	9.99
802.11a	5220	44	10.02	10.01	10.09	10.04	10.04	9.94	9.95	10.00
802.11a	5240	48*	10.13	10.19	10.08	10.22	10.12	10.02	10.03	10.07
802.11a	5260	52*	10.20	10.09	10.11	10.15	10.19	10.21	10.22	10.09
802.11a	5280	56	10.17	10.10	10.01	10.15	10.11	10.19	10.18	10.06
802.11a	5300	60	**10.34**	10.24	10.23	10.29	10.29	10.33	10.34	10.23
802.11a	5320	64*	10.31	10.13	10.28	10.29	10.27	10.31	10.33	10.27
802.11a	5500	100	9.69	9.66	9.70	9.68	9.65	9.62	9.65	9.74
802.11a	5520	104*	9.70	9.63	9.71	9.74	9.60	9.66	9.64	9.73
802.11a	5540	108	9.65	9.63	9.63	9.68	9.63	9.57	9.59	9.72
802.11a	5560	112	9.59	9.58	9.61	9.50	9.63	9.57	9.58	9.66
802.11a	5580	116*	9.80	9.79	9.83	9.77	9.77	9.70	9.84	9.85
802.11a	5660	132	9.13	9.11	9.18	9.14	9.05	9.11	9.13	9.17
802.11a	5680	136*	8.90	8.91	8.93	8.87	8.78	8.89	8.91	8.93
802.11a	5700	140	**10.21**	10.18	10.17	10.20	10.19	10.09	10.21	10.20
802.11a	5745	149*	9.59	9.50	9.47	9.48	9.35	9.45	9.70	9.59
802.11a	5765	153	9.61	9.59	9.48	9.52	9.38	9.42	9.74	9.58
802.11a	5785	157*	**9.86**	9.68	9.72	9.70	9.56	9.69	10.03	9.85
802.11a	5805	161	9.81	9.66	9.72	9.72	9.59	9.62	9.92	9.81
802.11a	5825	165*	9.61	9.51	9.53	9.50	9.40	9.46	9.66	9.62

Per FCC KDB Publication 443999 and RSS-210 A9.2(3), transmission on channels which overlap the 5600-5650 MHz is prohibited as a client. This device does not transmit any beacons or initiate any transmissions in 5.3 and 5.5 GHz Band.

(*) – indicates default channels per KDB Publication 248227 D01v01r02. When the adjacent channels are higher in power then the default channels, these “required channels” are considered for SAR testing instead of the default channels.

Table 8-44
IEEE 802.11n Average RF Power – 20 MHz Bandwidth

Mode	Freq [MHz]	Channel	20MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6.5	13	19.5	26	39	52	58.5	65
802.11n	5180	36	9.80	9.76	9.72	9.77	9.78	9.77	9.69	9.78
802.11n	5200	40	9.59	9.58	9.49	9.52	9.56	9.55	9.49	9.62
802.11n	5220	44	9.61	9.58	9.51	9.53	9.56	9.53	9.45	9.57
802.11n	5240	48	9.62	9.58	9.60	9.50	9.59	9.58	9.51	9.64
802.11n	5260	52	9.64	9.63	9.55	9.50	9.62	9.67	9.61	9.51
802.11n	5280	56	9.50	9.49	9.40	9.45	9.40	9.55	9.45	9.32
802.11n	5300	60	9.53	9.50	9.47	9.37	9.50	9.54	9.54	9.44
802.11n	5320	64	9.40	9.44	9.23	9.26	9.41	9.42	9.35	9.25
802.11n	5500	100	9.24	9.13	9.17	9.24	9.03	9.05	9.00	9.12
802.11n	5520	104	9.22	9.09	9.12	9.26	9.00	9.06	8.92	9.16
802.11n	5540	108	9.23	9.18	9.14	9.28	9.07	8.99	9.03	9.08
802.11n	5560	112	9.17	9.05	9.09	9.12	8.98	8.99	8.96	9.04
802.11n	5580	116	9.66	9.55	9.59	9.65	9.36	9.46	9.43	9.60
802.11n	5600	120	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
802.11n	5620	124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
802.11n	5640	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
802.11n	5660	132	9.85	9.72	9.78	9.86	9.57	9.69	9.59	9.74
802.11n	5680	136	10.01	9.89	9.91	10.09	9.81	9.84	9.72	9.81
802.11n	5700	140	9.74	9.59	9.71	9.74	9.54	9.54	9.49	9.70
802.11n	5745	149	9.48	9.65	9.90	9.65	9.77	9.75	9.85	9.59
802.11n	5765	153	9.44	9.60	9.82	9.67	9.67	9.71	9.81	9.53
802.11n	5785	157	9.87	9.99	9.85	9.98	9.82	10.01	10.07	10.00
802.11n	5805	161	9.88	10.02	10.02	10.10	10.09	10.07	10.10	9.92
802.11n	5825	165	9.72	9.91	10.10	9.83	10.03	10.01	10.07	9.89

Per FCC KDB Publication 443999 and RSS-210 A9.2(3), transmission on channels which overlap the 5600-5650 MHz is prohibited as a client. This device does not transmit any beacons or initiate any transmissions in 5.3 and 5.5 GHz Band.

Table 8-45
IEEE 802.11n Average RF Power – 40 MHz Bandwidth

Mode	Freq [MHz]	Channel	40MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			13.5	27	40.5	54	81	108	121.5	135
802.11n	5190	38	9.42	9.52	9.64	9.44	9.52	9.58	9.54	9.50
802.11n	5230	46	9.37	9.42	9.67	9.44	9.47	9.52	9.46	9.45
802.11n	5270	54	9.35	9.52	9.47	9.47	9.43	9.37	9.49	9.41
802.11n	5310	62	9.37	9.54	9.51	9.49	9.52	9.44	9.45	9.40
802.11n	5510	102	9.47	9.54	9.50	9.46	9.35	9.49	9.46	9.45
802.11n	5550	110	9.60	9.74	9.69	9.63	9.45	9.65	9.65	9.55
802.11n	5590	118	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
802.11n	5630	126	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
802.11n	5670	134	9.27	9.27	9.28	9.21	9.10	9.28	9.25	9.26
802.11n	5755	151	9.80	10.03	9.94	10.02	9.75	9.72	9.74	9.75
802.11n	5795	159	9.74	9.90	9.88	10.00	9.74	9.74	9.71	9.70

Per FCC KDB Publication 443999 and RSS-210 A9.2(3), transmission on channels which overlap the 5600-5650 MHz is prohibited as a client. This device does not transmit any beacons or initiate any transmissions in 5.3 and 5.5 GHz Band.

Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and October 2012/April 2013 FCC/TCB Meeting Notes:

- For 2.4 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11b were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.
- For 5 GHz operations, highest average RF output power channel for the lowest data rate for IEEE 802.11a were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11n 20 MHz and 40 MHz) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11a mode.
- When the maximum extrapolated peak SAR of the zoom scan for the maximum output channel is <1.6 W/kg and the reported 1g averaged SAR is <0.8 W/kg, SAR testing on other channels is not required. Otherwise, the other default (or corresponding required) test channels were additionally tested using the lowest data rate.
- The bolded data rate and channel above were tested for SAR.

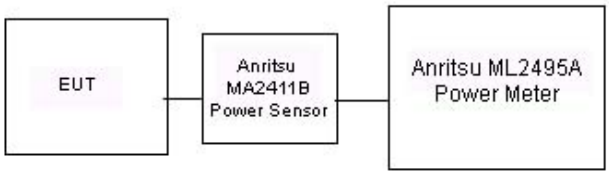

Figure 8-3
Power Measurement Setup

9 SYSTEM VERIFICATION

9.1 Tissue Verification

Table 9-1
Measured Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (C°)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	%dev σ	%dev ε
11/28/2014	740H	20.8	710	0.851	40.914	0.890	42.149	-4.38%	-2.93%
			725	0.867	40.745	0.891	42.071	-2.69%	-3.15%
			740	0.880	40.474	0.893	41.994	-1.46%	-3.62%
			755	0.891	40.277	0.894	41.916	-0.34%	-3.91%
11/24/2014	835H	21.6	820	0.926	41.843	0.899	41.578	3.00%	0.64%
			835	0.937	41.640	0.900	41.500	4.11%	0.34%
			850	0.945	41.370	0.916	41.500	3.17%	-0.31%
11/24/2014	1900H	22.9	1850	1.380	39.097	1.400	40.000	-1.43%	-2.26%
			1880	1.419	39.021	1.400	40.000	1.36%	-2.45%
			1910	1.456	39.090	1.400	40.000	4.00%	-2.27%
11/28/2014	1750H	22.4	1710	1.307	38.942	1.348	40.142	-3.04%	-2.99%
			1750	1.345	38.778	1.371	40.079	-1.90%	-3.25%
			1790	1.384	38.573	1.394	40.016	-0.72%	-3.61%
11/24/2014	2450H	22.3	2401	1.752	37.778	1.756	39.287	-0.23%	-3.84%
			2450	1.801	37.593	1.800	39.200	0.06%	-4.10%
			2499	1.854	37.423	1.853	39.138	0.05%	-4.38%
12/03/2014	5200H-5800H	21.4	5180	4.524	37.086	4.635	36.009	-2.39%	2.99%
			5200	4.552	37.058	4.655	35.986	-2.21%	2.98%
			5300	4.657	36.895	4.758	35.871	-2.12%	2.85%
			5600	4.969	36.550	5.065	35.529	-1.90%	2.87%
			5700	5.070	36.420	5.168	35.414	-1.90%	2.84%
			5785	5.153	36.290	5.255	35.317	-1.94%	2.76%
			5800	5.172	36.270	5.270	35.300	-1.86%	2.75%
12/4/2014	740B	22.8	710	0.955	55.749	0.960	55.687	-0.52%	0.11%
			725	0.968	55.595	0.961	55.629	0.73%	-0.06%
			740	0.981	55.482	0.963	55.570	1.87%	-0.16%
			755	0.995	55.305	0.964	55.512	3.22%	-0.37%
11/24/2014	835B	22.5	820	0.996	53.077	0.969	55.258	2.79%	-3.95%
			835	1.012	52.893	0.970	55.200	4.33%	-4.18%
			850	1.027	52.720	0.988	55.154	3.95%	-4.41%
12/1/2014	1750B	21.5	1710	1.417	51.954	1.463	53.537	-3.14%	-2.96%
			1750	1.465	51.775	1.488	53.432	-1.55%	-3.10%
			1790	1.508	51.719	1.514	53.326	-0.40%	-3.01%
11/24/2014	1900B	22.0	1850	1.504	52.800	1.520	53.300	-1.05%	-0.94%
			1880	1.549	52.820	1.520	53.300	1.91%	-0.90%
			1910	1.589	52.894	1.520	53.300	4.54%	-0.76%
12/1/2014	1900B	21.4	1850	1.519	52.095	1.520	53.300	-0.07%	-2.26%
			1880	1.558	52.024	1.520	53.300	2.50%	-2.39%
			1910	1.595	51.906	1.520	53.300	4.93%	-2.62%
12/1/2014	2450B	23.1	2401	1.981	53.583	1.903	52.765	4.10%	1.55%
			2450	2.045	53.371	1.950	52.700	4.87%	1.27%
			2499	2.111	53.199	2.019	52.638	4.56%	1.07%
11/24/2014	5200B-5800B	24.6	5180	5.425	47.206	5.276	49.041	2.82%	-3.74%
			5200	5.452	47.202	5.299	49.014	2.89%	-3.70%
			5300	5.581	47.006	5.416	48.879	3.05%	-3.83%
			5320	5.603	46.995	5.439	48.851	3.02%	-3.80%
			5500	5.832	46.731	5.650	48.607	3.22%	-3.86%
			5520	5.861	46.675	5.673	48.580	3.31%	-3.92%
			5580	5.950	46.596	5.743	48.499	3.60%	-3.92%
			5600	5.974	46.605	5.766	48.471	3.61%	-3.85%
			5700	6.105	46.408	5.883	48.336	3.77%	-3.99%
			5765	6.178	46.285	5.959	48.248	3.68%	-4.07%
			5785	6.216	46.238	5.982	48.220	3.91%	-4.11%
			5800	6.240	46.246	6.000	48.200	4.00%	-4.05%
			5805	6.245	46.234	6.006	48.193	3.98%	-4.06%

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 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.

9.2 Test System Verification

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

Table 9-2
System Verification Results

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$_{1g}$ (%)
J	750	HEAD	11/28/2014	23.3	20.8	0.100	1003	3022	0.770	8.370	7.700	-8.00%
D	835	HEAD	11/24/2014	24.4	22.5	0.100	4d119	3263	0.928	9.220	9.280	0.65%
G	1750	HEAD	11/28/2014	23.0	22.1	0.100	1008	3258	3.400	36.900	34.000	-7.86%
K	1900	HEAD	11/24/2014	22.8	22.9	0.100	5d141	3288	4.150	40.100	41.500	3.49%
I	2450	HEAD	11/24/2014	23.4	22.3	0.100	797	3209	4.930	51.800	49.300	-4.83%
A	5200	HEAD	12/03/2014	22.8	21.6	0.100	1120	3920	7.650	79.100	76.500	-3.29%
A	5300	HEAD	12/03/2014	22.8	21.6	0.100	1120	3920	8.020	83.400	80.200	-3.84%
A	5600	HEAD	12/03/2014	22.8	21.6	0.100	1120	3920	8.320	82.200	83.200	1.22%
A	5800	HEAD	12/03/2014	22.8	21.6	0.100	1120	3920	7.730	79.100	77.300	-2.28%
G	750	BODY	12/04/2014	23.3	22.8	0.100	1003	3258	0.879	8.770	8.790	0.23%
J	835	BODY	11/24/2014	23.4	22.5	0.100	4d119	3022	0.978	9.340	9.780	4.71%
K	1750	BODY	12/01/2014	23.1	21.7	0.100	1008	3288	3.830	37.600	38.300	1.86%
G	1900	BODY	11/24/2014	20.6	22.0	0.100	5d141	3258	4.150	40.600	41.500	2.22%
G	1900	BODY	12/01/2014	24.5	22.8	0.100	5d141	3258	4.230	40.600	42.300	4.19%
H	2450	BODY	12/01/2014	23.1	23.1	0.100	797	3319	5.210	49.400	52.100	5.47%
A	5200	BODY	11/24/2014	23.5	23.0	0.100	1120	3920	7.860	74.000	78.600	6.22%
A	5300	BODY	11/24/2014	23.4	22.6	0.100	1120	3920	7.980	75.800	79.800	5.28%
A	5500	BODY	11/24/2014	23.4	22.6	0.100	1120	3920	8.340	79.200	83.400	5.30%
A	5600	BODY	11/24/2014	23.4	22.6	0.100	1120	3920	8.460	79.400	84.600	6.55%
A	5800	BODY	11/24/2014	23.4	22.6	0.100	1120	3920	7.970	74.400	79.700	7.12%

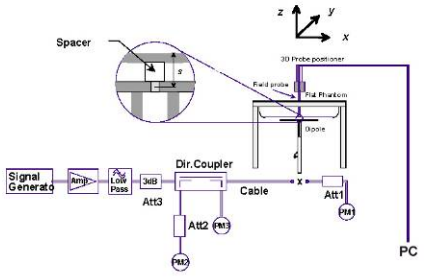

Figure 9-1
System Verification Setup Diagram

Figure 9-2
System Verification Setup Photo

10 SAR DATA SUMMARY

10.1 Standalone Head SAR Data

Table 10-1
GSM 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	190	GSM 850	GSM	33.0	32.66	-0.11	Right	Cheek	M3	1:8.3	0.071	1.081	0.077	
836.60	190	GSM 850	GSM	33.0	32.66	0.09	Right	Tilt	M3	1:8.3	0.075	1.081	0.081	
836.60	190	GSM 850	GSM	33.0	32.66	0.07	Left	Cheek	M3	1:8.3	0.064	1.081	0.069	
836.60	190	GSM 850	GSM	33.0	32.66	0.13	Left	Tilt	M3	1:8.3	0.078	1.081	**0.084**	A1
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 10-2
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	23.0	22.66	0.04	Right	Cheek	M4	1:1	0.067	1.081	0.072	
836.60	4183	UMTS 850	RMC	23.0	22.66	0.03	Right	Tilt	M4	1:1	0.074	1.081	0.080	A2
836.60	4183	UMTS 850	RMC	23.0	22.66	0.07	Left	Cheek	M4	1:1	0.052	1.081	0.056	
836.60	4183	UMTS 850	RMC	23.0	22.66	0.03	Left	Tilt	M4	1:1	0.066	1.081	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 10-3
UMTS 1750 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)	
1732.40	1412	UMTS 1750	RMC	23.0	22.84	0.05	Right	Cheek	M3	1:1	0.040	1.038	0.042	A3
1732.40	1412	UMTS 1750	RMC	23.0	22.84	0.06	Right	Tilt	M3	1:1	0.035	1.038	0.036	
1732.40	1412	UMTS 1750	RMC	23.0	22.84	0.15	Left	Cheek	M3	1:1	0.037	1.038	0.038	
1732.40	1412	UMTS 1750	RMC	23.0	22.84	0.09	Left	Tilt	M3	1:1	0.025	1.038	0.026	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 10-4
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	30.0	29.85	0.03	Right	Cheek	M3	1:8.3	0.028	1.035	0.029	
1880.00	661	GSM 1900	GSM	30.0	29.85	0.03	Right	Tilt	M3	1:8.3	0.028	1.035	0.029	A4
1880.00	661	GSM 1900	GSM	30.0	29.85	0.03	Left	Cheek	M3	1:8.3	0.017	1.035	0.018	
1880.00	661	GSM 1900	GSM	30.0	29.85	-0.04	Left	Tilt	M3	1:8.3	0.020	1.035	0.021	
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 10-5
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	23.0	22.65	-0.08	Right	Cheek	M4	1:1	0.035	1.084	0.038	
1880.00	9400	UMTS 1900	RMC	23.0	22.65	0.16	Right	Tilt	M4	1:1	0.046	1.084	0.050	A5
1880.00	9400	UMTS 1900	RMC	23.0	22.65	0.06	Left	Cheek	M4	1:1	0.043	1.084	0.047	
1880.00	9400	UMTS 1900	RMC	23.0	22.65	0.05	Left	Tilt	M4	1:1	0.033	1.084	0.036	
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 10-6
LTE band 17 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)	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	-0.03	0	Right	Cheek	QPSK	1	25	M1	1:1	0.025	1.009	0.025	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.18	1	Right	Cheek	QPSK	25	0	M1	1:1	0.020	1.007	0.020	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	0.03	0	Right	Tilt	QPSK	1	25	M1	1:1	0.010	1.009	0.010	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.03	1	Right	Tilt	QPSK	25	0	M1	1:1	0.009	1.007	0.009	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	0.04	0	Left	Cheek	QPSK	1	25	M1	1:1	0.029	1.009	0.029	A6
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.03	1	Left	Cheek	QPSK	25	0	M1	1:1	0.020	1.007	0.020	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	0.03	0	Left	Tilt	QPSK	1	25	M1	1:1	0.017	1.009	0.017	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.04	1	Left	Tilt	QPSK	25	0	M1	1:1	0.010	1.007	0.010	
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 10-7
LTE band 5 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	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.01	0	Right	Cheek	QPSK	1	0	M1	1:1	0.069	1.023	0.071	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	0.16	1	Right	Cheek	QPSK	25	12	M1	1:1	0.051	1.042	0.053	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.13	0	Right	Tilt	QPSK	1	0	M1	1:1	0.074	1.023	0.076	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	0.07	1	Right	Tilt	QPSK	25	12	M1	1:1	0.060	1.042	0.063	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.21	0	Left	Cheek	QPSK	1	0	M1	1:1	0.075	1.023	0.077	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	0.05	1	Left	Cheek	QPSK	25	12	M1	1:1	0.053	1.042	0.055	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.08	0	Left	Tilt	QPSK	1	0	M1	1:1	0.079	1.023	0.081	A7
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	0.03	1	Left	Tilt	QPSK	25	12	M1	1:1	0.056	1.042	0.058	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 10-8
LTE band 4 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)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	-0.20	0	Right	Cheek	QPSK	1	0	M2	1:1	0.032	1.186	0.038	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	0.10	1	Right	Cheek	QPSK	50	0	M2	1:1	0.026	1.186	0.031	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	-0.04	0	Right	Tilt	QPSK	1	0	M2	1:1	0.041	1.186	0.049	A8
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	0.16	1	Right	Tilt	QPSK	50	0	M2	1:1	0.031	1.186	0.037	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	0.05	0	Left	Cheek	QPSK	1	0	M2	1:1	0.030	1.186	0.036	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	-0.02	1	Left	Cheek	QPSK	50	0	M2	1:1	0.027	1.186	0.032	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	0.05	0	Left	Tilt	QPSK	1	0	M2	1:1	0.026	1.186	0.031	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	-0.02	1	Left	Tilt	QPSK	50	0	M2	1:1	0.019	1.186	0.023	
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 10-9
LTE band 2 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	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	0.00	0	Right	Cheek	QPSK	1	50	M2	1:1	0.042	1.005	0.042	A9
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	0.11	1	Right	Cheek	QPSK	50	25	M2	1:1	0.028	1.012	0.028	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.12	0	Right	Tilt	QPSK	1	50	M2	1:1	0.042	1.005	0.042	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	0.12	1	Right	Tilt	QPSK	50	25	M2	1:1	0.034	1.012	0.034	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.14	0	Left	Cheek	QPSK	1	50	M2	1:1	0.037	1.005	0.037	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	-0.10	1	Left	Cheek	QPSK	50	25	M2	1:1	0.025	1.012	0.025	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.19	0	Left	Tilt	QPSK	1	50	M2	1:1	0.032	1.005	0.032	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	0.14	1	Left	Tilt	QPSK	50	25	M2	1:1	0.024	1.012	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 10-10
WLAN DTS Head SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	0.17	Right	Cheek	M4	1	1:1	0.120	1.052	0.126	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	0.18	Right	Tilt	M4	1	1:1	0.107	1.052	0.113	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	-0.02	Left	Cheek	M4	1	1:1	0.635	1.052	**0.668**	A10
2462	11	IEEE 802.11b	DSSS	13.5	13.28	0.02	Left	Tilt	M4	1	1:1	0.481	1.052	0.506	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.02	Right	Cheek	M4	6	1:1	0.069	1.159	0.080	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.03	Right	Tilt	M4	6	1:1	0.103	1.159	0.119	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.02	Left	Cheek	M4	6	1:1	0.156	1.159	0.181	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.02	Left	Tilt	M4	6	1:1	0.161	1.159	0.187	A11

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 10-11
WLAN NII Head SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.09	Right	Cheek	M4	6	1:1	0.046	1.086	0.050	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.02	Right	Tilt	M4	6	1:1	0.083	1.086	0.090	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.00	Left	Cheek	M4	6	1:1	0.172	1.086	0.187	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.09	Left	Tilt	M4	6	1:1	0.139	1.086	0.151	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	0.02	Right	Cheek	M4	6	1:1	0.046	1.038	0.048	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	-0.01	Right	Tilt	M4	6	1:1	0.083	1.038	0.086	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	0.21	Left	Cheek	M4	6	1:1	0.132	1.038	0.137	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	0.00	Left	Tilt	M4	6	1:1	0.117	1.038	0.121	
5700	140	IEEE 802.11a	OFDM	10.5	10.21	-0.04	Right	Cheek	M4	6	1:1	0.071	1.069	0.076	
5700	140	IEEE 802.11a	OFDM	10.5	10.21	0.18	Right	Tilt	M4	6	1:1	0.151	1.069	0.161	
5700	140	IEEE 802.11a	OFDM	10.5	10.21	0.02	Left	Cheek	M4	6	1:1	0.272	1.069	**0.291**	A12
5700	140	IEEE 802.11a	OFDM	10.5	10.21	-0.16	Left	Tilt	M4	6	1:1	0.220	1.069	0.235	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Head 1.6 W/kg (mW/g) averaged over 1 gram

10.2 Standalone Body SAR Data

Table 10-12
GPRS/ UMTS Body 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	24.5	23.62	-0.05	0 mm	R1	3	1:2.76	back	0.558	1.225	0.684	A13
836.60	190	GSM 850	GPRS	24.5	23.62	-0.02	0 mm	R1	3	1:2.76	bottom	0.228	1.225	0.279	
836.60	190	GSM 850	GPRS	29.5	28.73	0.11	11 mm	M3	3	1:2.76	back	0.516	1.194	0.616	
836.60	190	GSM 850	GPRS	29.5	28.73	0.04	9 mm	M3	3	1:2.76	bottom	0.404	1.194	0.482	
836.60	190	GSM 850	GPRS	29.5	28.73	-0.02	0 mm	M3	3	1:2.76	left	0.408	1.194	0.487	
836.60	4183	UMTS 850	RMC	18.0	17.52	0.07	0 mm	R2	N/A	1:1	back	0.543	1.117	0.607	A14
836.60	4183	UMTS 850	RMC	18.0	17.52	0.11	0 mm	R2	N/A	1:1	bottom	0.256	1.117	0.286	
836.60	4183	UMTS 850	RMC	23.0	22.66	0.00	11 mm	M3	N/A	1:1	back	0.487	1.081	0.526	
836.60	4183	UMTS 850	RMC	23.0	22.66	0.02	9 mm	M3	N/A	1:1	bottom	0.333	1.081	0.360	
836.60	4183	UMTS 850	RMC	23.0	22.66	-0.02	0 mm	M3	N/A	1:1	left	0.289	1.081	0.312	
1732.40	1412	UMTS 1750	RMC	13.0	12.90	0.05	0 mm	R2	N/A	1:1	back	0.402	1.023	0.411	
1732.40	1412	UMTS 1750	RMC	13.0	12.90	-0.01	0 mm	R2	N/A	1:1	bottom	0.282	1.023	0.288	
1732.40	1412	UMTS 1750	RMC	23.0	22.84	0.11	11 mm	M3	N/A	1:1	back	0.466	1.038	0.484	
1732.40	1412	UMTS 1750	RMC	23.0	22.84	-0.06	9 mm	M3	N/A	1:1	bottom	0.560	1.038	0.581	A15
1732.40	1412	UMTS 1750	RMC	23.0	22.84	-0.06	0 mm	M3	N/A	1:1	left	0.446	1.038	0.463	
1880.00	661	GSM 1900	GPRS	16.0	14.75	-0.17	0 mm	R2	4	1:2.076	back	0.411	1.334	0.548	A16
1880.00	661	GSM 1900	GPRS	16.0	14.75	0.03	0 mm	R2	4	1:2.076	bottom	0.249	1.334	0.321	
1880.00	661	GSM 1900	GPRS	26.0	25.42	0.06	11 mm	M3	4	1:2.076	back	0.320	1.143	0.366	
1880.00	661	GSM 1900	GPRS	26.0	25.42	-0.06	9 mm	M3	4	1:2.076	bottom	0.407	1.143	0.465	
1880.00	661	GSM 1900	GPRS	26.0	25.42	-0.08	0 mm	M3	4	1:2.076	left	0.316	1.143	0.361	
1852.40	9262	UMTS 1900	RMC	12.5	12.50	0.20	0 mm	R2	N/A	1:1	back	0.531	1.000	0.531	
1852.40	9262	UMTS 1900	RMC	12.5	12.50	-0.08	0 mm	R2	N/A	1:1	bottom	0.335	1.000	0.335	
1880.00	9400	UMTS 1900	RMC	23.0	22.65	0.05	11 mm	M3	N/A	1:1	back	0.605	1.084	0.656	
1880.00	9400	UMTS 1900	RMC	23.0	22.65	-0.02	9 mm	M3	N/A	1:1	bottom	0.680	1.084	**0.737**	A17
1880.00	9400	UMTS 1900	RMC	23.0	22.65	0.03	0 mm	M3	N/A	1:1	left	0.474	1.084	0.514	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 10-13
LTE Band 17 Body SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
710.00	23790	Mid	LTE Band 17	10	18.0	17.42	-0.12	0	R2	QPSK	1	49	0 mm	back	1:1	0.350	1.143	0.400	A18
710.00	23790	Mid	LTE Band 17	10	17.0	16.19	-0.05	1	R2	QPSK	25	12	0 mm	back	1:1	0.299	1.205	0.360	
710.00	23790	Mid	LTE Band 17	10	18.0	17.42	0.02	0	R2	QPSK	1	49	0 mm	bottom	1:1	0.180	1.143	0.206	
710.00	23790	Mid	LTE Band 17	10	17.0	16.19	0.04	1	R2	QPSK	25	12	0 mm	bottom	1:1	0.151	1.205	0.182	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	0.09	0	M1	QPSK	1	25	11 mm	back	1:1	0.136	1.009	0.137	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.10	1	M1	QPSK	25	0	11 mm	back	1:1	0.104	1.007	0.105	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	-0.10	0	M1	QPSK	1	25	9 mm	bottom	1:1	0.088	1.009	0.089	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.03	1	M1	QPSK	25	0	9 mm	bottom	1:1	0.067	1.007	0.067	
710.00	23790	Mid	LTE Band 17	10	23.0	22.96	0.10	0	M1	QPSK	1	25	0 mm	left	1:1	0.075	1.009	0.076	
710.00	23790	Mid	LTE Band 17	10	22.0	21.97	0.02	1	M1	QPSK	25	0	0 mm	left	1:1	0.057	1.007	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-14
LTE Band 5 (Cell) Body SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	18.0	17.64	0.02	0	R2	QPSK	1	49	0 mm	back	1:1	0.567	1.086	0.616	A19
836.50	20525	Mid	LTE Band 5 (Cell)	10	17.0	16.44	-0.05	1	R2	QPSK	25	12	0 mm	back	1:1	0.453	1.138	0.516	
836.50	20525	Mid	LTE Band 5 (Cell)	10	18.0	17.64	-0.04	0	R2	QPSK	1	49	0 mm	bottom	1:1	0.238	1.086	0.258	
836.50	20525	Mid	LTE Band 5 (Cell)	10	17.0	16.44	-0.03	1	R2	QPSK	25	12	0 mm	bottom	1:1	0.191	1.138	0.217	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.00	0	M1	QPSK	1	0	11 mm	back	1:1	0.436	1.023	0.446	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	-0.01	1	M1	QPSK	25	12	11 mm	back	1:1	0.355	1.042	0.370	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	-0.19	0	M1	QPSK	1	0	9 mm	bottom	1:1	0.324	1.023	0.331	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	0.03	1	M1	QPSK	25	12	9 mm	bottom	1:1	0.294	1.042	0.306	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.5	23.40	0.00	0	M1	QPSK	1	0	0 mm	left	1:1	0.304	1.023	0.311	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.5	22.32	-0.05	1	M1	QPSK	25	12	0 mm	left	1:1	0.260	1.042	0.271	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-15
LTE Band 4 (AWS) Body SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	12.5	11.89	-0.01	0	R40	QPSK	1	50	0 mm	back	1:1	0.337	1.151	0.388	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	11.5	10.77	-0.03	1	R40	QPSK	50	0	0 mm	back	1:1	0.286	1.183	0.338	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	12.5	11.89	0.01	0	R40	QPSK	1	50	0 mm	bottom	1:1	0.246	1.151	0.283	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	11.5	10.77	0.00	1	R40	QPSK	50	0	0 mm	bottom	1:1	0.187	1.183	0.221	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	0.01	0	M2	QPSK	1	0	11 mm	back	1:1	0.471	1.186	0.559	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	0.04	1	M2	QPSK	50	0	11 mm	back	1:1	0.362	1.186	0.429	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	-0.02	0	M2	QPSK	1	0	9 mm	bottom	1:1	0.499	1.186	0.592	A20
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	-0.06	1	M2	QPSK	50	0	9 mm	bottom	1:1	0.372	1.186	0.441	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.5	22.76	-0.02	0	M2	QPSK	1	0	0 mm	left	1:1	0.371	1.186	0.440	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.5	21.76	-0.04	1	M2	QPSK	50	0	0 mm	left	1:1	0.294	1.186	0.349	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 10-16
LTE Band 2 (PCS) Body SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Scaled SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
1900.00	19100	High	LTE Band 2 (PCS)	20	12.5	12.15	0.14	0	R1201	QPSK	1	50	0 mm	back	1:1	0.328	1.084	0.356	
1900.00	19100	High	LTE Band 2 (PCS)	20	11.5	10.89	0.17	1	R1201	QPSK	50	25	0 mm	back	1:1	0.263	1.151	0.303	
1900.00	19100	High	LTE Band 2 (PCS)	20	12.5	12.15	0.11	0	R1201	QPSK	1	50	0 mm	bottom	1:1	0.225	1.084	0.244	
1900.00	19100	High	LTE Band 2 (PCS)	20	11.5	10.89	0.02	1	R1201	QPSK	50	25	0 mm	bottom	1:1	0.171	1.151	0.197	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.05	0	M2	QPSK	1	50	11 mm	back	1:1	0.434	1.005	0.438	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	0.10	1	M2	QPSK	50	25	11 mm	back	1:1	0.350	1.012	0.354	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.06	0	M2	QPSK	1	50	9 mm	bottom	1:1	0.674	1.005	0.680	A21
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	0.01	1	M2	QPSK	50	25	9 mm	bottom	1:1	0.530	1.012	0.536	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.5	22.48	-0.05	0	M2	QPSK	1	50	0 mm	left	1:1	0.481	1.005	0.485	
1860.00	18700	Low	LTE Band 2 (PCS)	20	21.5	21.45	-0.02	1	M2	QPSK	50	25	0 mm	left	1:1	0.395	1.012	0.406	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 10-17
WLAN DTS Body SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Scaled SAR (1g) (W/kg)	Plot #
MHz	Ch.														
2412	1	IEEE 802.11b	DSSS	13.5	13.24	0.01	0 mm	M4	1	back	1:1	0.752	1.062	**0.799**	A22
2437	6	IEEE 802.11b	DSSS	13.5	12.38	0.01	0 mm	M4	1	back	1:1	0.520	1.294	0.673	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	0.03	0 mm	M4	1	back	1:1	0.750	1.052	0.789	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	-0.01	0 mm	M4	1	top	1:1	0.417	1.052	0.439	
2462	11	IEEE 802.11b	DSSS	13.5	13.28	0.06	0 mm	M4	1	right	1:1	0.072	1.052	0.076	
5765	153	IEEE 802.11a	OFDM	10.5	9.61	0.00	0 mm	M4	6	back	1:1	0.302	1.227	0.371	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.06	0 mm	M4	6	back	1:1	0.309	1.159	0.358	
5805	161	IEEE 802.11a	OFDM	10.5	9.81	0.02	0 mm	M4	6	back	1:1	0.312	1.172	0.366	A23
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.14	0 mm	M4	6	top	1:1	0.246	1.159	0.285	
5785	157	IEEE 802.11a	OFDM	10.5	9.86	0.16	0 mm	M4	6	right	1:1	0.102	1.159	0.118	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram					

Table 10-18
WLAN NII Body SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	-0.19	0 mm	M4	6	back	1:1	0.319	1.086	0.346	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.11	0 mm	M4	6	top	1:1	0.344	1.086	0.374	
5180	36	IEEE 802.11a	OFDM	10.5	10.14	0.19	0 mm	M4	6	right	1:1	0.113	1.086	0.123	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	-0.20	0 mm	M4	6	back	1:1	0.286	1.038	0.297	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	-0.03	0 mm	M4	6	top	1:1	0.230	1.038	0.239	
5300	60	IEEE 802.11a	OFDM	10.5	10.34	0.03	0 mm	M4	6	right	1:1	0.089	1.038	0.092	
5520	104	IEEE 802.11a	OFDM	10.5	9.70	0.04	0 mm	M4	6	back	1:1	0.566	1.202	0.680	
5580	116	IEEE 802.11a	OFDM	10.5	9.80	0.09	0 mm	M4	6	back	1:1	0.758	1.175	**0.891**	A24
5700	140	IEEE 802.11a	OFDM	10.5	10.21	0.20	0 mm	M4	6	back	1:1	0.565	1.069	0.604	
5700	140	IEEE 802.11a	OFDM	10.5	10.21	-0.08	0 mm	M4	6	top	1:1	0.359	1.069	0.384	
5700	140	IEEE 802.11a	OFDM	10.5	10.21	0.06	0 mm	M4	6	right	1:1	0.236	1.069	0.252	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

10.3 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in KDB 616217 D04v01, 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. Per FCC KDB 865664 D01 v01, variability SAR tests were not performed when the measured SAR results for a frequency band were less than 0.8 W/kg. Please see Section 12 for variability analysis.
7. Per FCC KDB 616217 D04 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D01v05 was applied to determine SAR test exclusion for adjacent edge configurations. Bottom and Left Edge SAR tests were required for the main antenna. Top and Right Edge SAR tests were required for the WLAN antenna.

GSM/GPRS Test Notes:

1. Justification for reduced test configurations per KDB Publication 941225 D01v03 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 Body 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.
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). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

UMTS Notes:

1. UMTS mode in Body SAR was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v02. 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 SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D01v05, when the reported (scaled) SAR measured at the middle channel > 0.8 W/kg then testing at the other channels is required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r01. The general test procedures used for testing can be found in Section 7.4.4.
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).

WLAN Notes:

1. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and October 2012 FCC/TCB Meeting Notes for 2.4 GHz WIFI: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11b. Other IEEE 802.11 modes (including 802.11g) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.
2. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and October 2012 FCC/TCB Meeting Notes for 5 GHz WIFI operations: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11a. Other IEEE 802.11 modes (including 802.11n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11a mode.
3. WIFI transmission was verified using an uncalibrated spectrum analyzer.
4. When the maximum extrapolated peak SAR of the zoom scan for the maximum output channel is >1.6 W/kg or the reported 1g averaged SAR is >0.8 W/kg, SAR testing on other default channels was required.
5. There is no sensor power reduction mechanism applied for WIFI/BT modes.

11 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

11.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v05 are applicable to data devices with built-in unlicensed transmitters such as 802.11a/b/g/n and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

11.2 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 a 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 equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

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

Table 11-1
Estimated SAR

Mode	Configuration	Frequency	Maximum Allowed Power	Separation Distance (Body)	Estimated SAR (Body)
		[MHz]	[dBm]	[mm]	[W/kg]
Bluetooth	Back Side Touching*	2480	8.00	5	**0.252**
Bluetooth	Back Side	2480	8.00	11	**0.115**
Bluetooth	Top Edge	2480	8.00	6.8	**0.185**
Bluetooth	Right Edge	2480	8.00	13	**0.097**

Note:
1. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.
2. (*) – Per FCC KDB Publication 447498, when the test separation distance is < 5 mm, a distance of 5 mm is applied to determine estimated SAR.
3. For configurations excluded per 447498 D01v05, an estimated SAR of 0.4 W/kg was used to determine simultaneous transmission SAR exclusion when the test separation distance was >50 mm.

11.1 Head SAR Simultaneous Transmission Analysis

Table 11-2
Simultaneous Transmission Scenario with 2.4 GHz WLAN

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.077	0.126	0.203
	Right Tilt	0.081	0.113	0.194
	Left Cheek	0.069	0.668	**0.737**
	Left Tilt	0.084	0.506	0.590

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.072	0.126	0.198
	Right Tilt	0.080	0.113	0.193
	Left Cheek	0.056	0.668	**0.724**
	Left Tilt	0.071	0.506	0.577

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.042	0.126	0.168
	Right Tilt	0.036	0.113	0.149
	Left Cheek	0.038	0.668	**0.706**
	Left Tilt	0.026	0.506	0.532

Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.029	0.126	0.155
	Right Tilt	0.029	0.113	0.142
	Left Cheek	0.018	0.668	**0.686**
	Left Tilt	0.021	0.506	0.527

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.038	0.126	0.164
	Right Tilt	0.050	0.113	0.163
	Left Cheek	0.047	0.668	**0.715**
	Left Tilt	0.036	0.506	0.542

Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.025	0.126	0.151
	Right Tilt	0.010	0.113	0.123
	Left Cheek	0.029	0.668	**0.697**
	Left Tilt	0.017	0.506	0.523

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.071	0.126	0.197
	Right Tilt	0.076	0.113	0.189
	Left Cheek	0.077	0.668	**0.745**
	Left Tilt	0.081	0.506	0.587

Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.038	0.126	0.164
	Right Tilt	0.049	0.113	0.162
	Left Cheek	0.036	0.668	**0.704**
	Left Tilt	0.031	0.506	0.537

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.042	0.126	0.168
	Right Tilt	0.042	0.113	0.155
	Left Cheek	0.037	0.668	**0.705**
	Left Tilt	0.032	0.506	0.538

Table 11-3
Simultaneous Transmission Scenario with 5 GHz WLAN

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.077	0.080	0.157
	Right Tilt	0.081	0.161	0.242
	Left Cheek	0.069	0.291	**0.360**
	Left Tilt	0.084	0.235	0.319

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.072	0.080	0.152
	Right Tilt	0.080	0.161	0.241
	Left Cheek	0.056	0.291	**0.347**
	Left Tilt	0.071	0.235	0.306

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.042	0.080	0.122
	Right Tilt	0.036	0.161	0.197
	Left Cheek	0.038	0.291	**0.329**
	Left Tilt	0.026	0.235	0.261

Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.029	0.080	0.109
	Right Tilt	0.029	0.161	0.190
	Left Cheek	0.018	0.291	**0.309**
	Left Tilt	0.021	0.235	0.256

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.038	0.080	0.118
	Right Tilt	0.050	0.161	0.211
	Left Cheek	0.047	0.291	**0.338**
	Left Tilt	0.036	0.235	0.271

11.2 Body SAR Simultaneous Transmission Analysis

Table 11-4
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body at 0 mm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.684	0.799	**1.483**
	Top	0.400	0.439	0.839
	Bottom	0.279	0.400	0.679
	Right	0.400	0.076	0.476
	Left	0.487	0.400	0.887

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.607	0.799	**1.406**
	Top	0.400	0.439	0.839
	Bottom	0.286	0.400	0.686
	Right	0.400	0.076	0.476
	Left	0.312	0.400	0.712

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.411	0.799	**1.210**
	Top	0.400	0.439	0.839
	Bottom	0.288	0.400	0.688
	Right	0.400	0.076	0.476
	Left	0.463	0.400	0.863

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.548	0.799	**1.347**
	Top	0.400	0.439	0.839
	Bottom	0.321	0.400	0.721
	Right	0.400	0.076	0.476
	Left	0.361	0.400	0.761

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.531	0.799	**1.330**
	Top	0.400	0.439	0.839
	Bottom	0.335	0.400	0.735
	Right	0.400	0.076	0.476
	Left	0.514	0.400	0.914

Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.400	0.799	**1.199**
	Top	0.400	0.439	0.839
	Bottom	0.206	0.400	0.606
	Right	0.400	0.076	0.476
	Left	0.076	0.400	0.476

Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.388	0.799	**1.187**
	Top	0.400	0.439	0.839
	Bottom	0.283	0.400	0.683
	Right	0.400	0.076	0.476
	Left	0.440	0.400	0.840

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.616	0.799	**1.415**
	Top	0.400	0.439	0.839
	Bottom	0.258	0.400	0.658
	Right	0.400	0.076	0.476
	Left	0.311	0.400	0.711

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.356	0.799	**1.155**
	Top	0.400	0.439	0.839
	Bottom	0.244	0.400	0.644
	Right	0.400	0.076	0.476
	Left	0.485	0.400	0.885

Table 11-5
Simultaneous Transmission Scenario with 5 GHz WLAN (Body at 0 mm)

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.684	0.891	**1.575**
	Top	0.400	0.384	0.784
	Bottom	0.279	0.400	0.679
	Right	0.400	0.252	0.652
	Left	0.487	0.400	0.887

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.607	0.891	**1.498**
	Top	0.400	0.384	0.784
	Bottom	0.286	0.400	0.686
	Right	0.400	0.252	0.652
	Left	0.312	0.400	0.712

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.411	0.891	**1.302**
	Top	0.400	0.384	0.784
	Bottom	0.288	0.400	0.688
	Right	0.400	0.252	0.652
	Left	0.463	0.400	0.863

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.548	0.891	**1.439**
	Top	0.400	0.384	0.784
	Bottom	0.321	0.400	0.721
	Right	0.400	0.252	0.652
	Left	0.361	0.400	0.761

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.531	0.891	**1.422**
	Top	0.400	0.384	0.784
	Bottom	0.335	0.400	0.735
	Right	0.400	0.252	0.652
	Left	0.514	0.400	0.914

Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.400	0.891	**1.291**
	Top	0.400	0.384	0.784
	Bottom	0.206	0.400	0.606
	Right	0.400	0.252	0.652
	Left	0.076	0.400	0.476

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.616	0.891	**1.507**
	Top	0.400	0.384	0.784
	Bottom	0.258	0.400	0.658
	Right	0.400	0.252	0.652
	Left	0.311	0.400	0.711

Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.388	0.891	**1.279**
	Top	0.400	0.384	0.784
	Bottom	0.283	0.400	0.683
	Right	0.400	0.252	0.652
	Left	0.440	0.400	0.840

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.356	0.891	**1.247**
	Top	0.400	0.384	0.784
	Bottom	0.244	0.400	0.644
	Right	0.400	0.252	0.652
	Left	0.485	0.400	0.885

Table 11-6
Simultaneous Transmission Scenario with Bluetooth (Body at 0 mm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.684	0.252	**0.936**
	Top	0.400	0.185	0.585
	Bottom	0.279	0.400	0.679
	Right	0.400	0.097	0.497
	Left	0.487	0.400	0.887

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.607	0.252	**0.859**
	Top	0.400	0.185	0.585
	Bottom	0.286	0.400	0.686
	Right	0.400	0.097	0.497
	Left	0.312	0.400	0.712

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.411	0.252	0.663
	Top	0.400	0.185	0.585
	Bottom	0.288	0.400	0.688
	Right	0.400	0.097	0.497
	Left	0.463	0.400	**0.863**

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.548	0.252	**0.800**
	Top	0.400	0.185	0.585
	Bottom	0.321	0.400	0.721
	Right	0.400	0.097	0.497
	Left	0.361	0.400	0.761

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.531	0.252	0.783
	Top	0.400	0.185	0.585
	Bottom	0.335	0.400	0.735
	Right	0.400	0.097	0.497
	Left	0.514	0.400	**0.914**

Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.400	0.252	**0.652**
	Top	0.400	0.185	0.585
	Bottom	0.206	0.400	0.606
	Right	0.400	0.097	0.497
	Left	0.076	0.400	0.476

Simult Tx	Configuration	LTE Band 5 SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.616	0.252	**0.868**
	Top	0.400	0.185	0.585
	Bottom	0.258	0.400	0.658
	Right	0.400	0.097	0.497
	Left	0.311	0.400	0.711

Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.388	0.252	0.640
	Top	0.400	0.185	0.585
	Bottom	0.283	0.400	0.683
	Right	0.400	0.097	0.497
	Left	0.440	0.400	**0.840**

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.356	0.252	0.608
	Top	0.400	0.185	0.585
	Bottom	0.244	0.400	0.644
	Right	0.400	0.097	0.497
	Left	0.485	0.400	**0.885**

Table 11-7
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Back at 11 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.616	<0.799	**<1.415**
Back Side	UMTS 850	0.526	<0.799	<1.325
Back Side	UMTS 1750	0.484	<0.799	<1.283
Back Side	GSM 1900	0.366	<0.799	<1.165
Back Side	UMTS 1900	0.656	<0.799	<1.455
Back Side	LTE Band 17	0.137	<0.799	<0.936
Back Side	LTE Band 5 (Cell)	0.446	<0.799	<1.245
Back Side	LTE Band 4 (AWS)	0.559	<0.799	<1.358
Back Side	LTE Band 2 (PCS)	0.438	<0.799	<1.237

Table 11-8
Simultaneous Transmission Scenario with 5 GHz WLAN (Back at 11 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.616	<0.891	**<1.507**
Back Side	UMTS 850	0.526	<0.891	<1.417
Back Side	UMTS 1750	0.484	<0.891	<1.375
Back Side	GSM 1900	0.366	<0.891	<1.257
Back Side	UMTS 1900	0.656	<0.891	<1.547
Back Side	LTE Band 17	0.137	<0.891	<1.028
Back Side	LTE Band 5 (Cell)	0.446	<0.891	<1.337
Back Side	LTE Band 4 (AWS)	0.559	<0.891	<1.450
Back Side	LTE Band 2 (PCS)	0.438	<0.891	<1.329

Table 11-9
Simultaneous Transmission Scenario with Bluetooth (Back at 11 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.616	0.115	0.731
Back Side	UMTS 850	0.526	0.115	0.641
Back Side	UMTS 1750	0.484	0.115	0.599
Back Side	GSM 1900	0.366	0.115	0.481
Back Side	UMTS 1900	0.656	0.115	0.771
Back Side	LTE Band 17	0.137	0.115	0.252
Back Side	LTE Band 5 (Cell)	0.446	0.115	0.561
Back Side	LTE Band 4 (AWS)	0.559	0.115	0.674
Back Side	LTE Band 2 (PCS)	0.438	0.115	0.553

Table 11-10
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Bottom at 9 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Bottom Edge	GSM 850	0.482	0.400	0.882
Bottom Edge	UMTS 850	0.360	0.400	0.760
Bottom Edge	UMTS 1750	0.581	0.400	0.981
Bottom Edge	GSM 1900	0.465	0.400	0.865
Bottom Edge	UMTS 1900	0.737	0.400	**1.137**
Bottom Edge	LTE Band 17	0.089	0.400	0.489
Bottom Edge	LTE Band 5 (Cell)	0.331	0.400	0.731
Bottom Edge	LTE Band 4 (AWS)	0.592	0.400	0.992
Bottom Edge	LTE Band 2 (PCS)	0.680	0.400	1.080

Table 11-11
Simultaneous Transmission Scenario with 5 GHz WLAN (Bottom at 9 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Bottom Edge	GSM 850	0.482	0.400	0.882
Bottom Edge	UMTS 850	0.360	0.400	0.760
Bottom Edge	UMTS 1750	0.581	0.400	0.981
Bottom Edge	GSM 1900	0.465	0.400	0.865
Bottom Edge	UMTS 1900	0.737	0.400	**1.137**
Bottom Edge	LTE Band 17	0.089	0.400	0.489
Bottom Edge	LTE Band 5 (Cell)	0.331	0.400	0.731
Bottom Edge	LTE Band 4 (AWS)	0.592	0.400	0.992
Bottom Edge	LTE Band 2 (PCS)	0.680	0.400	1.080

Table 11-12
Simultaneous Transmission Scenario with Bluetooth (Bottom at 9 mm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Bottom Edge	GSM 850	0.482	0.400	0.882
Bottom Edge	UMTS 850	0.360	0.400	0.760
Bottom Edge	UMTS 1750	0.581	0.400	0.981
Bottom Edge	GSM 1900	0.465	0.400	0.865
Bottom Edge	UMTS 1900	0.737	0.400	**1.137**
Bottom Edge	LTE Band 17	0.089	0.400	0.489
Bottom Edge	LTE Band 5 (Cell)	0.331	0.400	0.731
Bottom Edge	LTE Band 4 (AWS)	0.592	0.400	0.992
Bottom Edge	LTE Band 2 (PCS)	0.680	0.400	1.080

Note:
1. For SAR summations for body back at 11 mm, 2.4 GHz WLAN, 2.4 GHz Bluetooth, and 5 GHz WLAN SAR values for 0.0 cm were used since the 0.0 cm test distance for 2.4 GHz WLAN, 2.4 GHz Bluetooth, and 5 GHz WLAN was more conservative. "<" denotes that the 0.0 cm WLAN SAR values were used for summation purposes.
2. For Table 11-7 and 11-9, 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.
3. For configurations excluded per 447498 D01v05, an estimated SAR of 0.4 W/kg was used to determine simultaneous transmission SAR exclusion when the test separation distance was >50 mm.

11.3 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.

12 SAR MEASUREMENT VARIABILITY

12.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01, since all measured SAR values were < 0.8 W/kg, no SAR measurement variability analysis was required.

12.2 Measurement Uncertainty

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

13 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9020A	MXA Signal Analyzer	10/27/2014	Annual	10/27/2015	US46470561
Agilent	N5182A	MXG Vector Signal Generator	4/15/2014	Annual	4/15/2015	MY47420800
Agilent	N5182A	MXG Vector Signal Generator	4/15/2014	Annual	4/15/2015	MY47420651
Agilent	E4438C	ESG Vector Signal Generator	4/25/2014	Annual	4/25/2015	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	4/1/2014	Annual	4/1/2015	MY47270002
Agilent	8753ES	S-Parameter Network Analyzer	5/22/2014	Annual	5/22/2015	US39170118
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433975
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433976
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433977
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433978
Anritsu	MA24106A	USB Power Sensor	5/14/2014	Annual	5/14/2015	1231535
Anritsu	MA24106A	USB Power Sensor	5/15/2014	Annual	5/15/2015	1244524
Anritsu	MA24106A	USB Power Sensor	5/14/2014	Annual	5/14/2015	1244515
Anritsu	MA24106A	USB Power Sensor	5/15/2014	Annual	5/15/2015	1244512
Anritsu	MT8820C	Radio Communication Analyzer	8/28/2014	Annual	8/28/2015	6201240328
Anritsu	MT8820C	Radio Communication Analyzer	9/19/2014	Annual	9/19/2015	6201144418
Anritsu	MT8820C	Radio Communication Analyzer	5/6/2014	Annual	5/6/2015	6201144419
Anritsu	MA2411B	Pulse Sensor	4/8/2014	Biennial	4/8/2016	846215
Anritsu	ML2469A	Power Meter	3/14/2014	Annual	3/14/2015	1306009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
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	130764558
Fisher Scientific	S407993	Long Stem Thermometer	11/4/2013	Biennial	11/4/2015	130671826
Fisher Scientific	S407993	Long Stem Thermometer	11/4/2013	Biennial	11/4/2015	130671801
Fisher Scientific	S407993	Long Stem Thermometer	11/4/2013	Biennial	11/4/2015	130671821
Fisher Scientific	S97611	Thermometer	4/12/2013	Biennial	4/12/2015	130219303
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	4/24/2014	Annual	4/24/2015	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	12/4/2014	Annual	12/4/2015	833855/0010
Rohde & Schwarz	CMU200	Base Station Simulator	6/6/2014	Annual	6/6/2015	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	7/22/2014	Annual	7/22/2015	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	2/20/2014	Annual	2/20/2015	128633
Rohde & Schwarz	CMW500	Radio Communication Tester	6/3/2014	Annual	6/3/2015	108843
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	22313
SPEAG	D1765V2	1765 MHz SAR Dipole	5/7/2014	Annual	5/7/2015	1008
SPEAG	D2450V2	2450 MHz SAR Dipole	1/21/2014	Annual	1/21/2015	797
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/26/2014	Annual	2/26/2015	1120
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/26/2014	Annual	2/26/2015	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/12/2013	Annual	12/12/2014	649
SPEAG	ES3DV2	SAR Probe	8/19/2014	Annual	8/19/2015	3022
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/14/2014	Annual	5/14/2015	859
SPEAG	D750V3	750 MHz Dipole	1/20/2014	Annual	1/20/2015	1003
SPEAG	ES3DV3	SAR Probe	5/15/2014	Annual	5/15/2015	3263
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/12/2014	Annual	8/12/2015	1322
SPEAG	D1900V2	1900 MHz SAR Dipole	4/9/2014	Annual	4/9/2015	5d141
SPEAG	D835V2	835 MHz SAR Dipole	4/7/2014	Annual	4/7/2015	4d119
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/17/2014	Annual	3/17/2015	1334
SPEAG	ES3DV3	SAR Probe	9/24/2014	Annual	9/24/2015	3288
SPEAG	ES3DV3	SAR Probe	4/17/2014	Annual	4/17/2015	3319
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/18/2014	Annual	9/18/2015	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/11/2014	Annual	4/11/2015	1368
SPEAG	EX3DV4	SAR Probe	12/18/2013	Annual	12/18/2014	3920
SPEAG	ES3DV3	SAR Probe	3/19/2014	Annual	3/19/2015	3209
SPEAG	ES3DV3	SAR Probe	2/25/2014	Annual	2/25/2015	3258
VWR	36934-158	Wall-Mounted Thermometer	8/8/2013	Biennial	8/8/2015	130477877
VWR	36934-158	Wall-Mounted Thermometer	8/8/2013	Biennial	8/8/2015	130477866

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.

14 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	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				12.1	11.7	299
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.2	23.5	

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

Applicable for frequencies less than 6000 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	6.55	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	299
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.7	24.0	

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

15 CONCLUSION

15.1 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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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M3

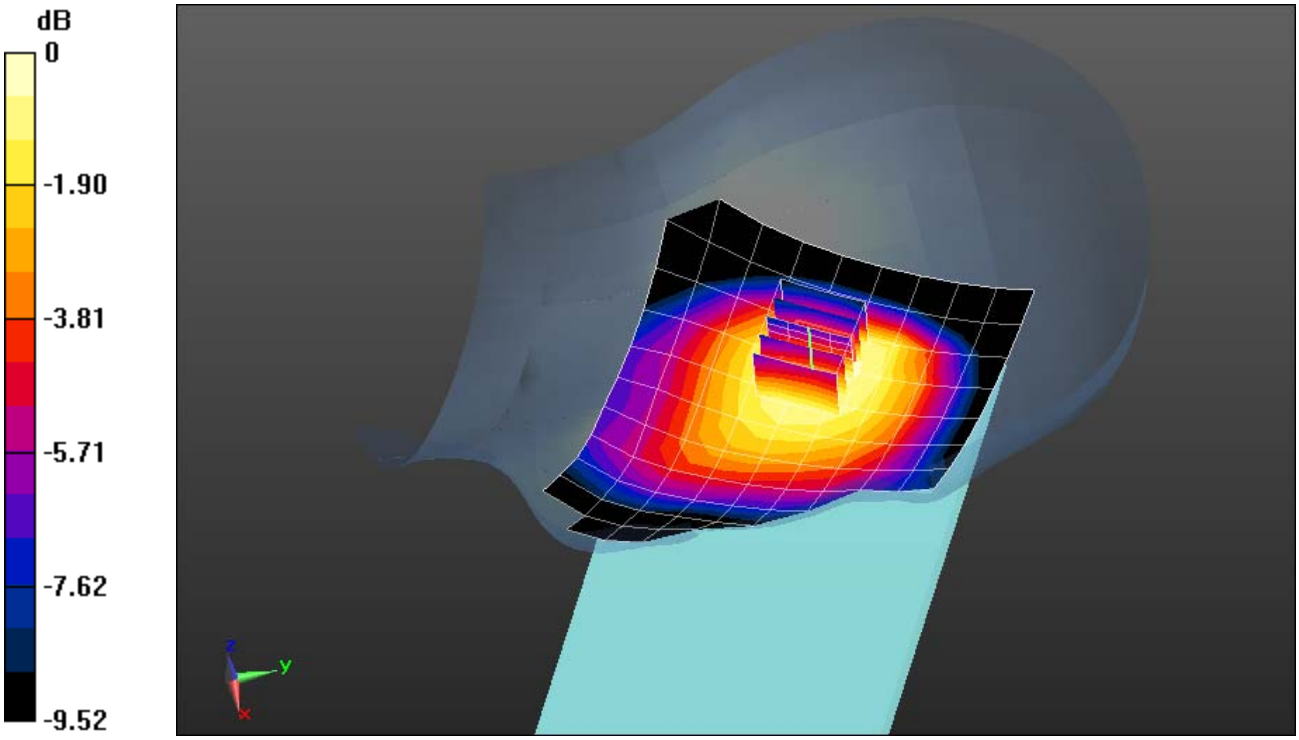
Communication System: UID 0, GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 0.938$ S/m; $\varepsilon_r = 41.611$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 11-24-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(6.23, 6.23, 6.23); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
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: GSM 850, Left Head, Tilt, Mid.ch

Area Scan (10x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.326 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.106 W/kg
SAR(1 g) = 0.078 W/kg



0 dB = 0.0864 W/kg = -10.63 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

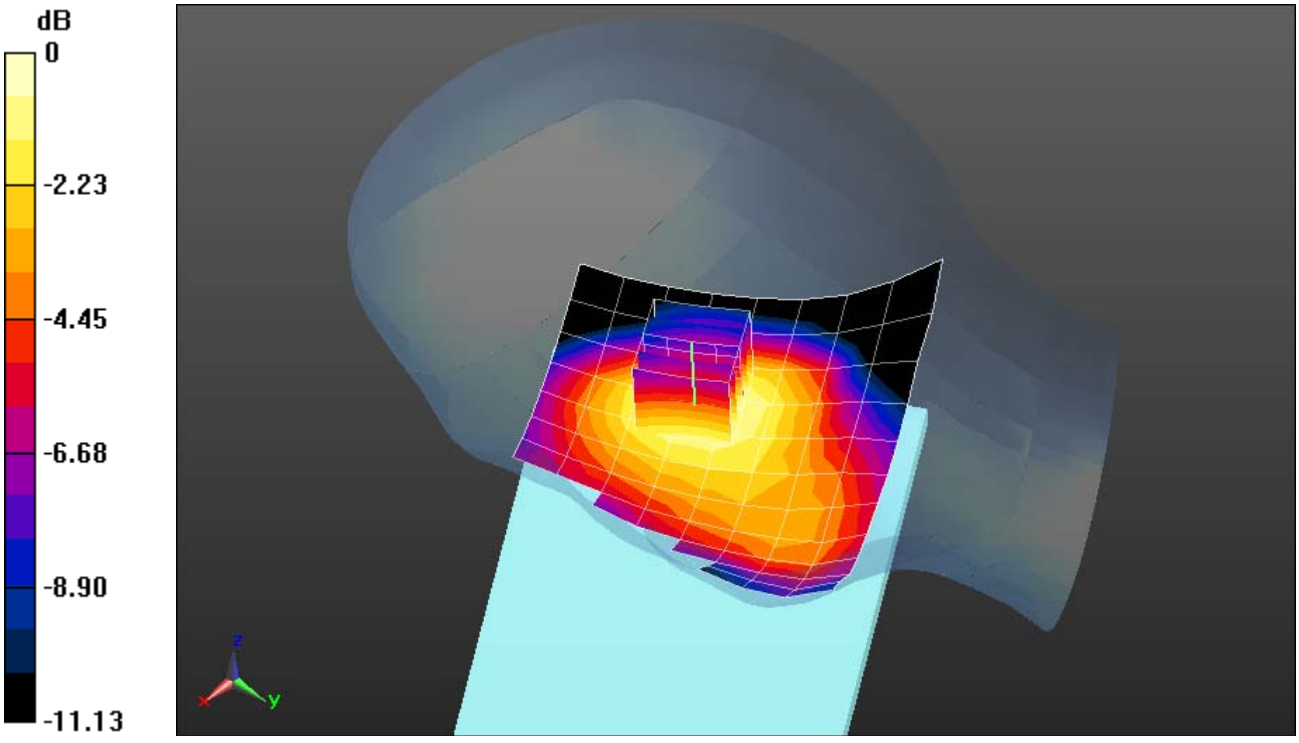
Communication System: UID 0, UMTS; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 0.938$ S/m; $\varepsilon_r = 41.611$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 11-24-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(6.23, 6.23, 6.23); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
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: UMTS 850, Right Head, Tilt, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.654 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.102 W/kg
SAR(1 g) = 0.074 W/kg



0 dB = 0.0833 W/kg = -10.79 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M3

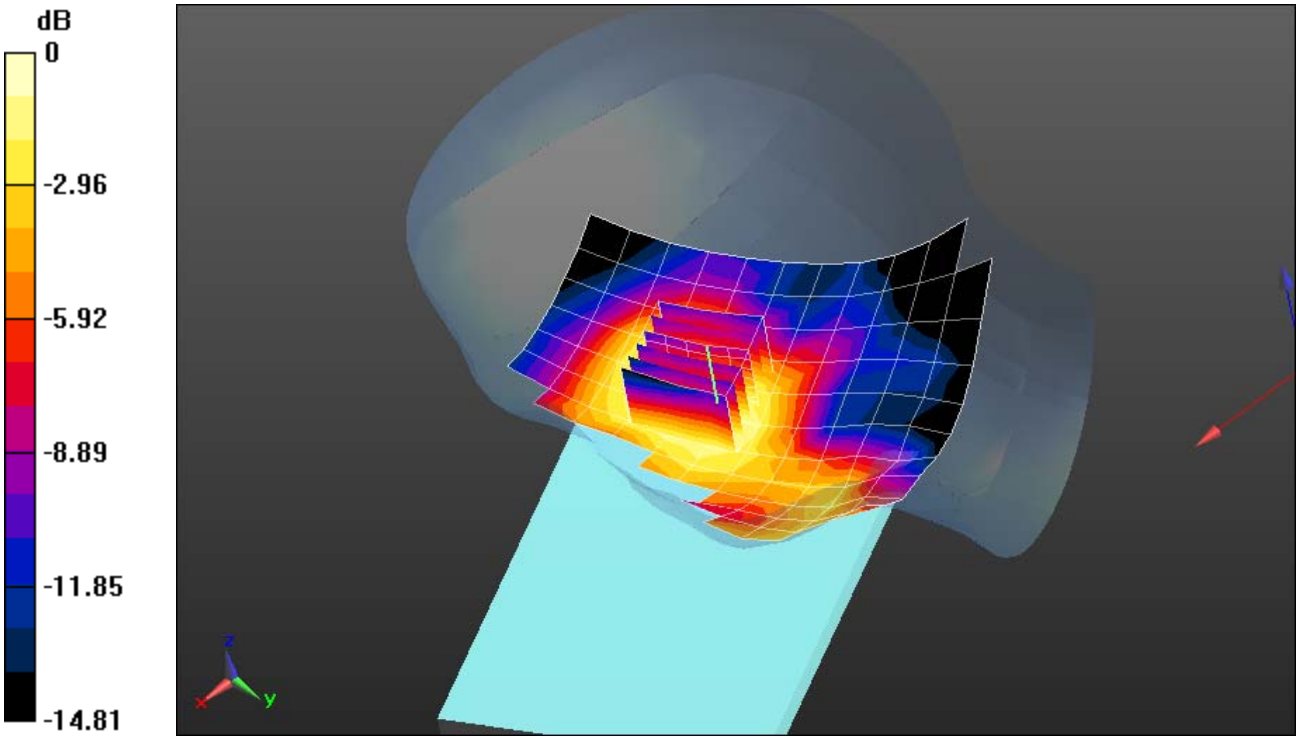
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1732.4$ MHz; $\sigma = 1.328$ S/m; $\varepsilon_r = 38.85$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 11-28-2014; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(5.19, 5.19, 5.19); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

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

Area Scan (12x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.496 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.0570 W/kg
SAR(1 g) = 0.040 W/kg



0 dB = 0.0455 W/kg = -13.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M3

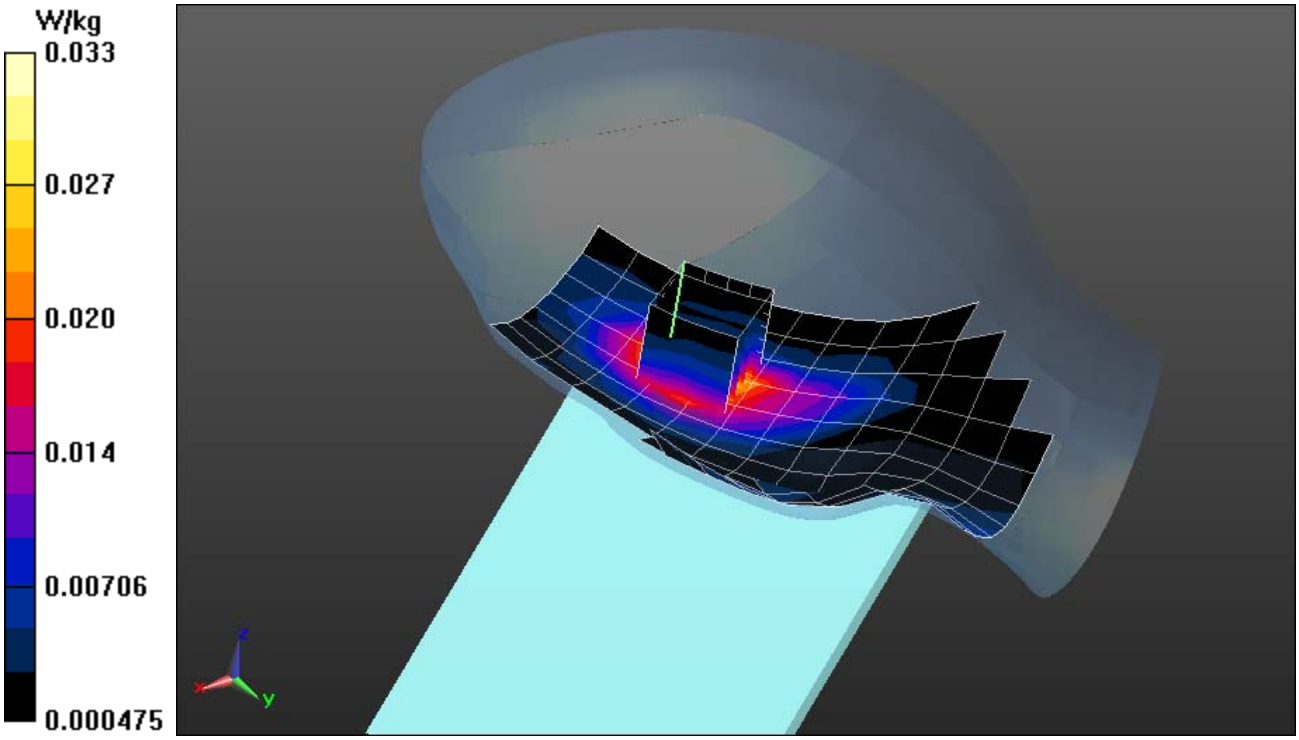
Communication System: UID 0, GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.419 S/m; ε_r = 39.021; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-24-2014; Ambient Temp: 22.8°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3288; ConvF(5.17, 5.17, 5.17); 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 1900, Right Head, Tilt, Mid.ch

Area Scan (13x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.234 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0440 W/kg
SAR(1 g) = 0.028 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

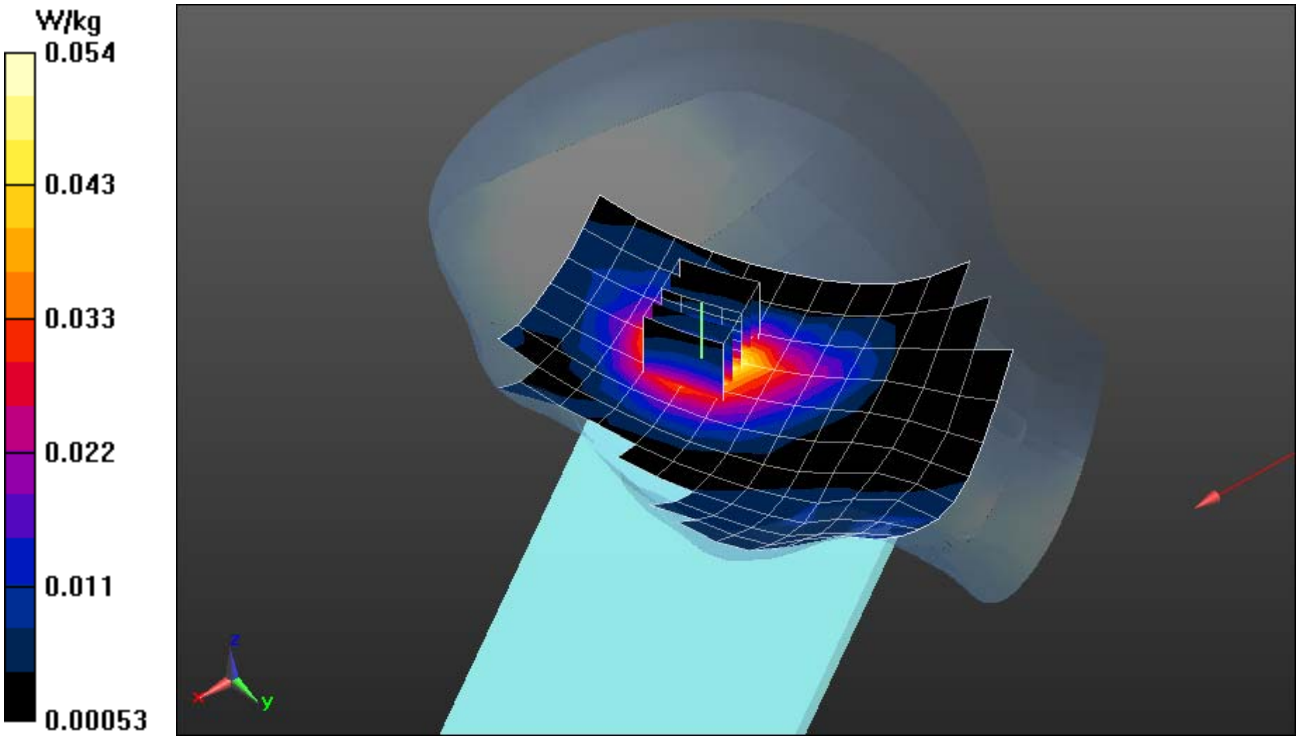
Communication System: UID 0, UMTS; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.419 S/m; ε_r = 39.021; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-24-2014; Ambient Temp: 22.8°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3288; ConvF(5.17, 5.17, 5.17); 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 1900, Right Head, Tilt, Mid.ch

Area Scan (13x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.961 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.0710 W/kg
SAR(1 g) = 0.046 W/kg



DUT: A3LSMT365M; Type: Portable Tablet; Serial: M1

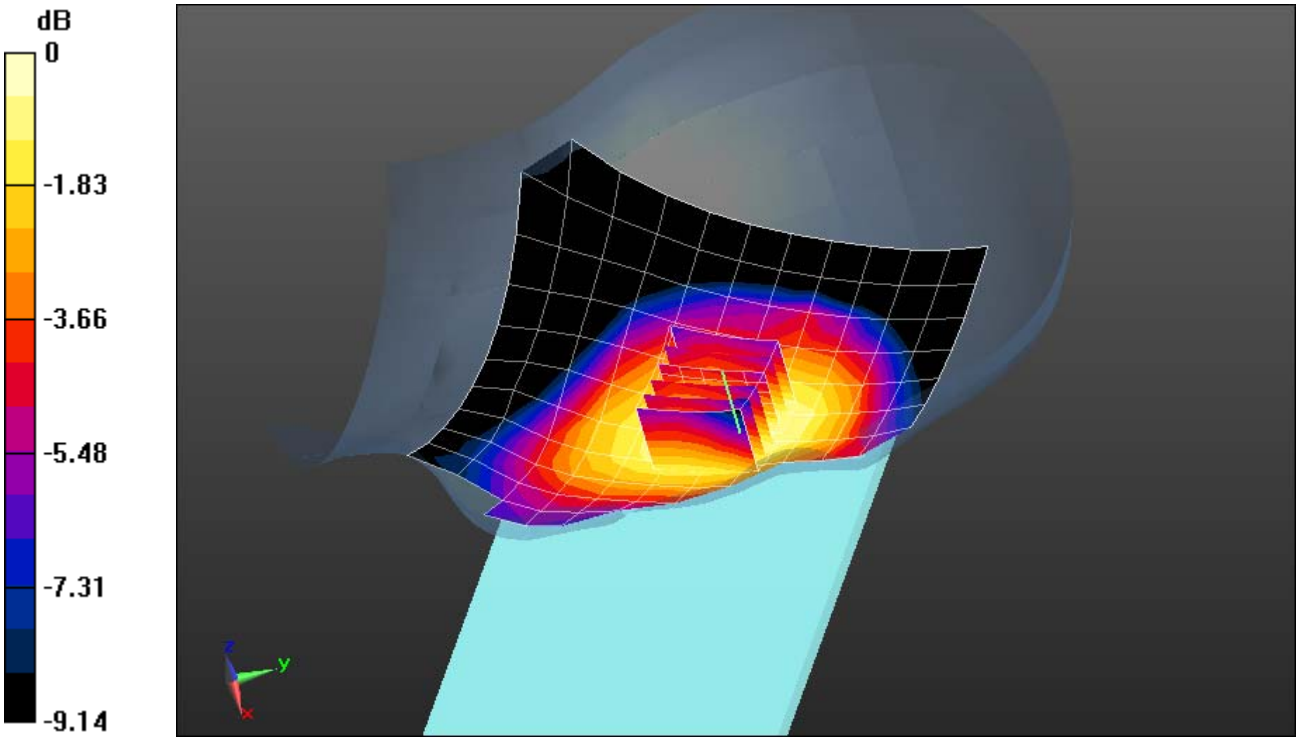
Communication System: UID 0, LTE Band 17; Frequency: 710 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used:
f = 710 MHz; σ = 0.851 S/m; ε_r = 40.914; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-28-2014; Ambient Temp: 23.3°C; Tissue Temp: 20.8°C

Probe: ES3DV2 - SN3022; ConvF(6.39, 6.39, 6.39); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 17, Left Head, Cheek, Mid.ch, QPSK
10 MHz Bandwidth, 1 RB, 25 RB Offset

Area Scan (12x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.180 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0350 W/kg
SAR(1 g) = 0.029 W/kg



0 dB = 0.0310 W/kg = -15.09 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M1

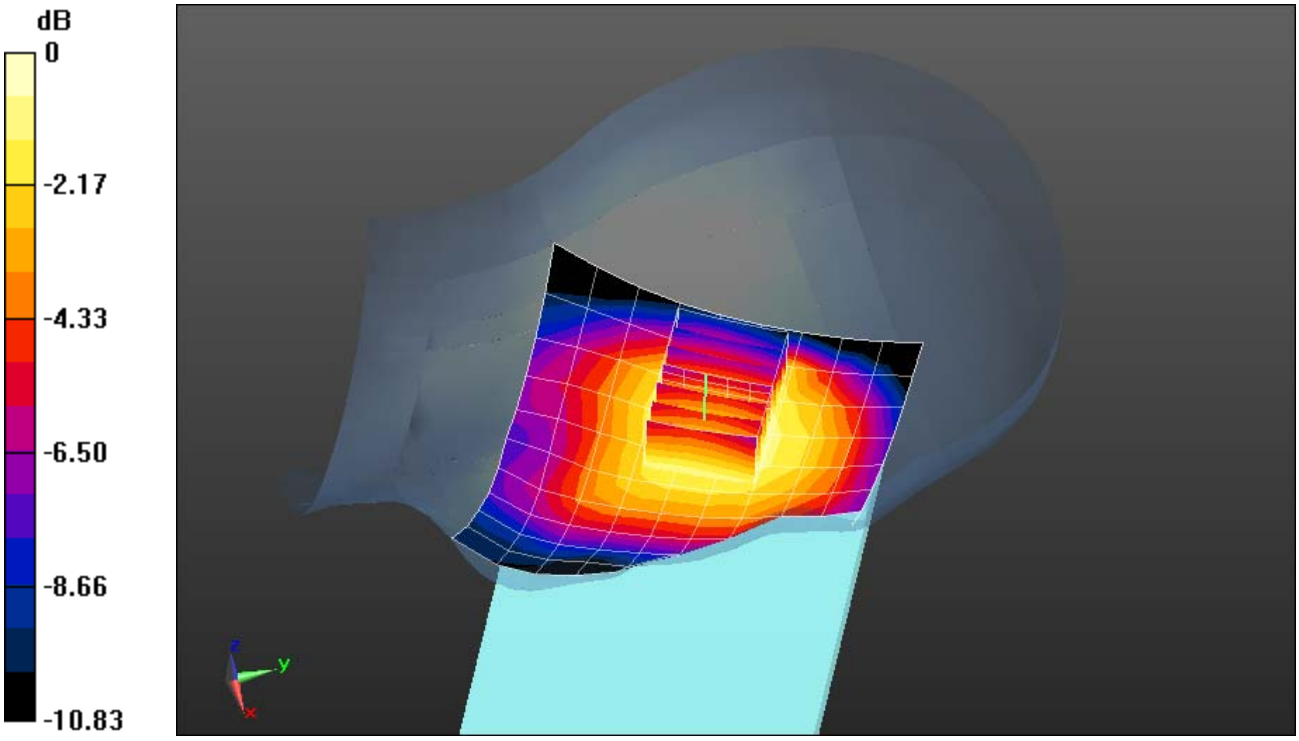
Communication System: UID 0, LTE Band 5 (Cell.) ; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.938$ S/m; $\varepsilon_r = 41.613$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 11-24-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(6.23, 6.23, 6.23); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
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 5 (Cell), Left Head, Tilt, Mid.ch, QPSK
10 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (10x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.871 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.101 W/kg
SAR(1 g) = 0.079 W/kg



0 dB = 0.0859 W/kg = -10.66 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M2

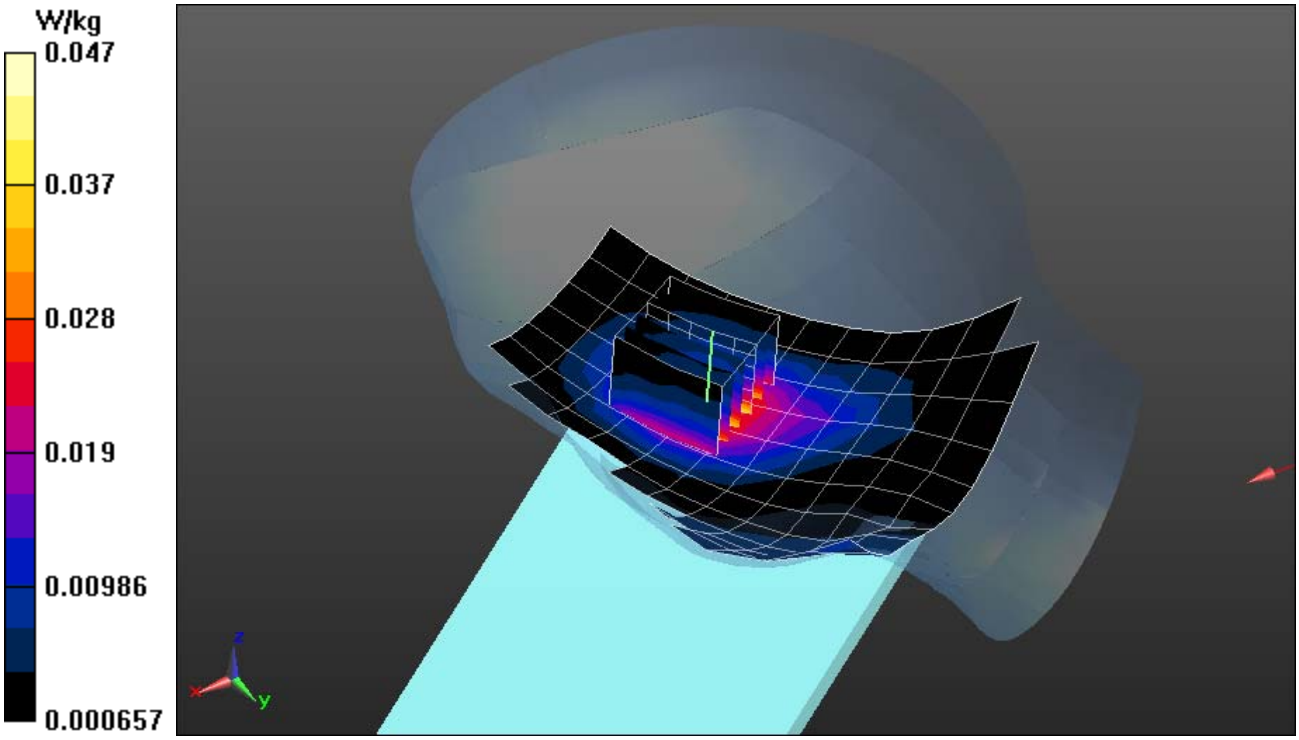
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.328$ S/m; $\varepsilon_r = 38.85$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 11-28-2014; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(5.19, 5.19, 5.19); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
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), Right Head, Tilt, Mid.ch.
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (12x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.895 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.0580 W/kg
SAR(1 g) = 0.041 W/kg



DUT: A3LSMT365M; Type: Portable Tablet; Serial: M2

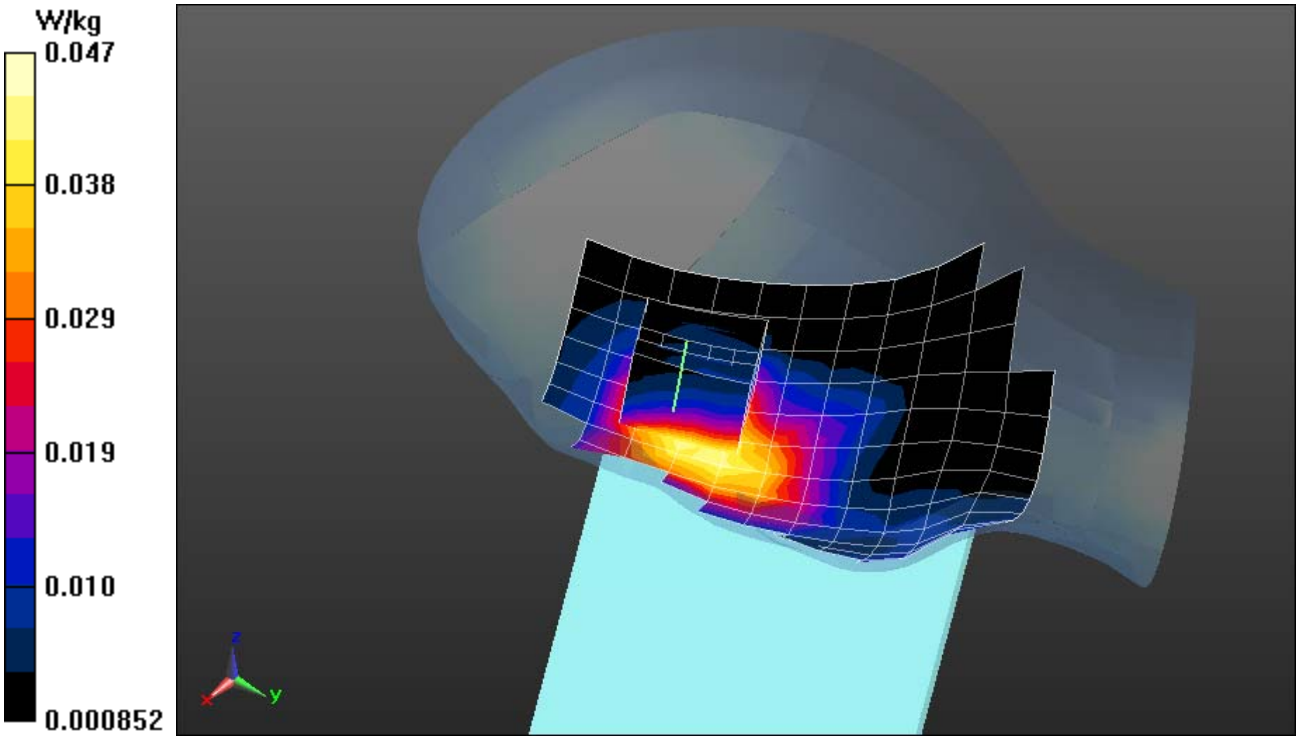
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.393 S/m; ε_r = 39.072; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-24-2014; Ambient Temp: 22.8°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3288; ConvF(5.17, 5.17, 5.17); 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 2 (PCS), Right Head, Cheek, Low.ch.
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (12x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.938 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.0590 W/kg
SAR(1 g) = 0.042 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

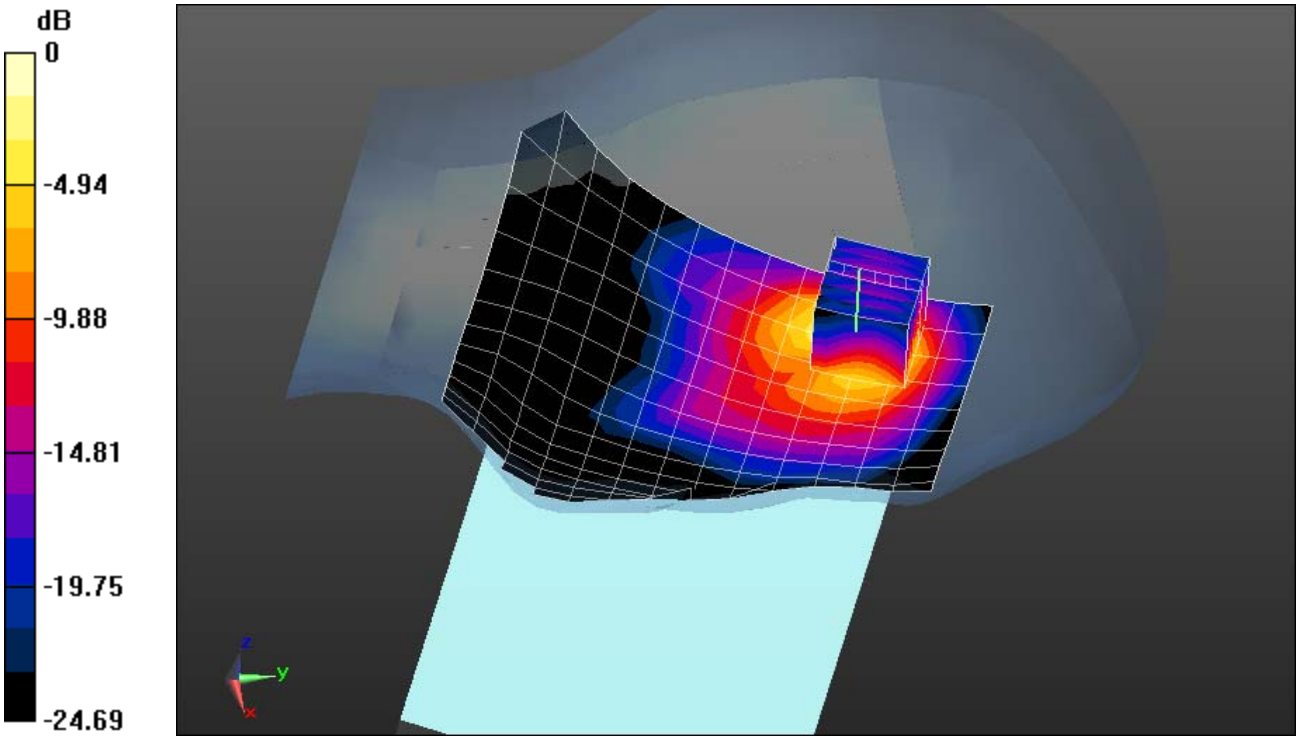
Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.814 S/m; ε_r = 37.551; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3209; ConvF(4.54, 4.54, 4.54); Calibrated: 3/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 3/17/2014
Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, Left Head, Cheek, Ch 11, 1 Mbps

Area Scan (14x21x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.61 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.635 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

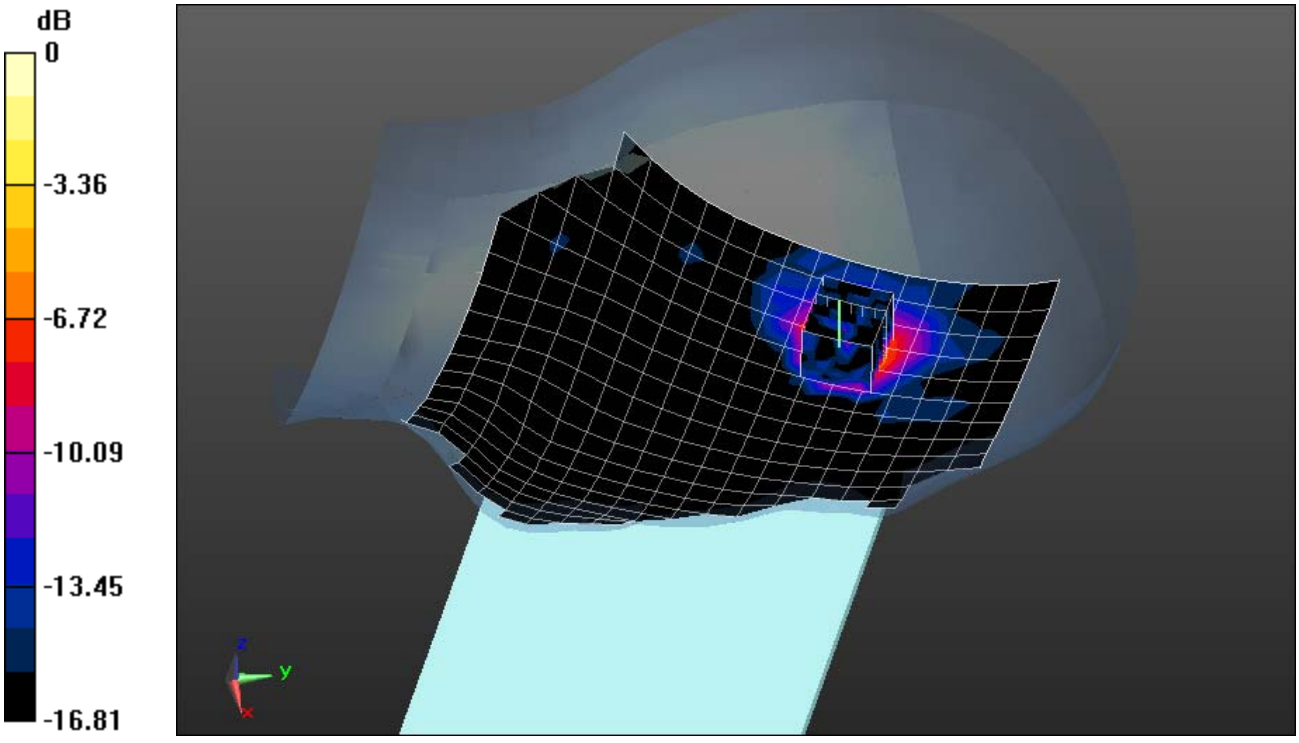
Communication System: UID 0, IEEE 802.11a ; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5785 MHz; σ = 5.153 S/m; ε_r = 36.29; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.11, 4.11, 4.11); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, 5.8 GHz, Left Head, Tilt, Ch 157, 6 Mbps

Area Scan (19x22x1): 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 = 5.745 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.678 W/kg
SAR(1 g) = 0.161 W/kg



0 dB = 0.429 W/kg = -3.68 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

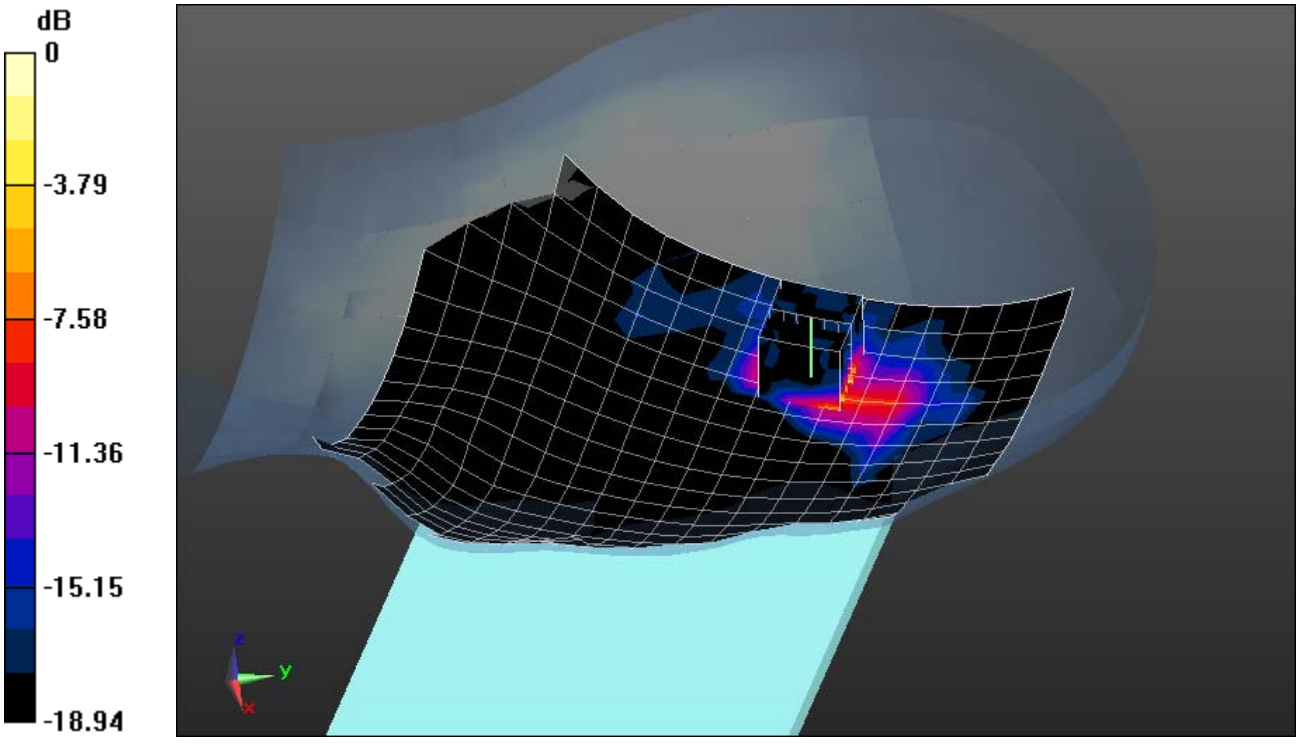
Communication System: UID 0, IEEE 802.11a; Frequency: 5700 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5700 MHz; σ = 5.07 S/m; ε_r = 36.42; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.37, 4.37, 4.37); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, 5.7 GHz, Left Head, Cheek, Ch 140, 6 Mbps

Area Scan (19x22x1): 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 = 6.685 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.272 W/kg



0 dB = 0.689 W/kg = -1.62 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: R1

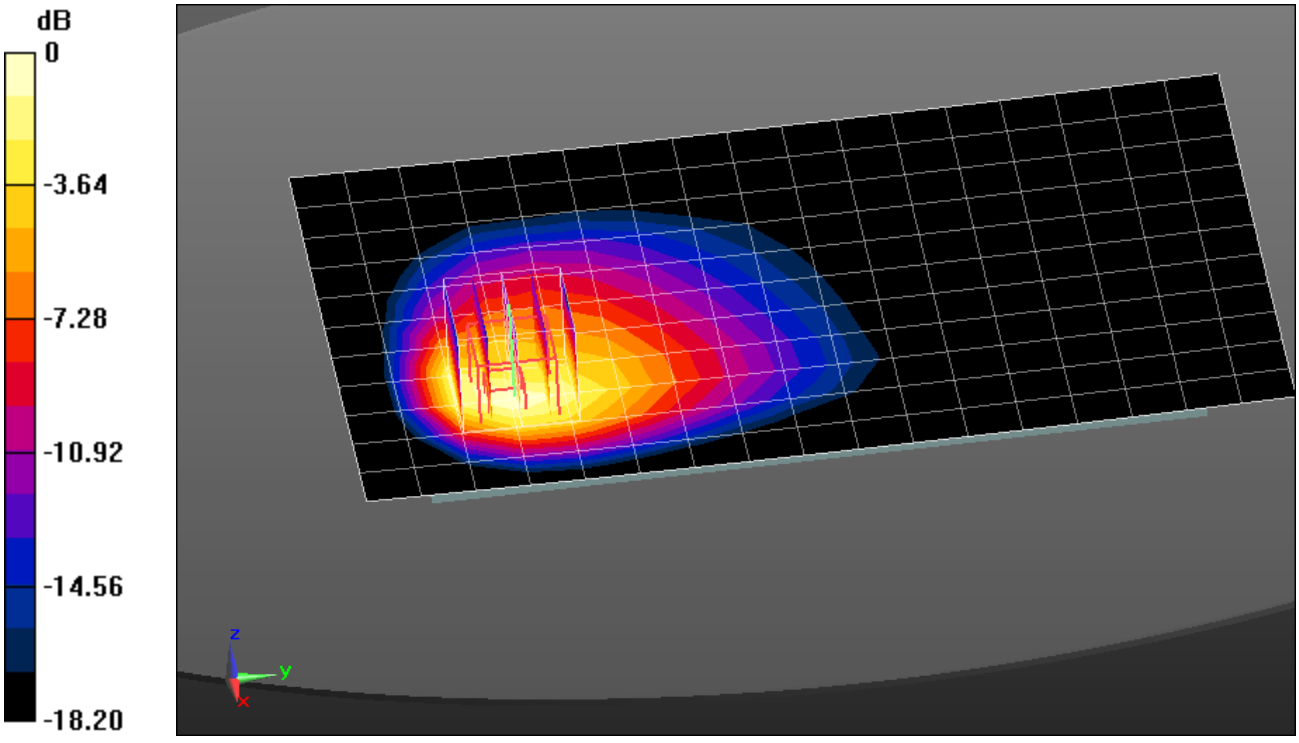
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz;Duty Cycle: 1:2.76
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1.014$ S/m; $\varepsilon_r = 52.875$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(5.98, 5.98, 5.98); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1226
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

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

Area Scan (12x18x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.08 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.558 W/kg



0 dB = 0.680 W/kg = -1.67 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: R2

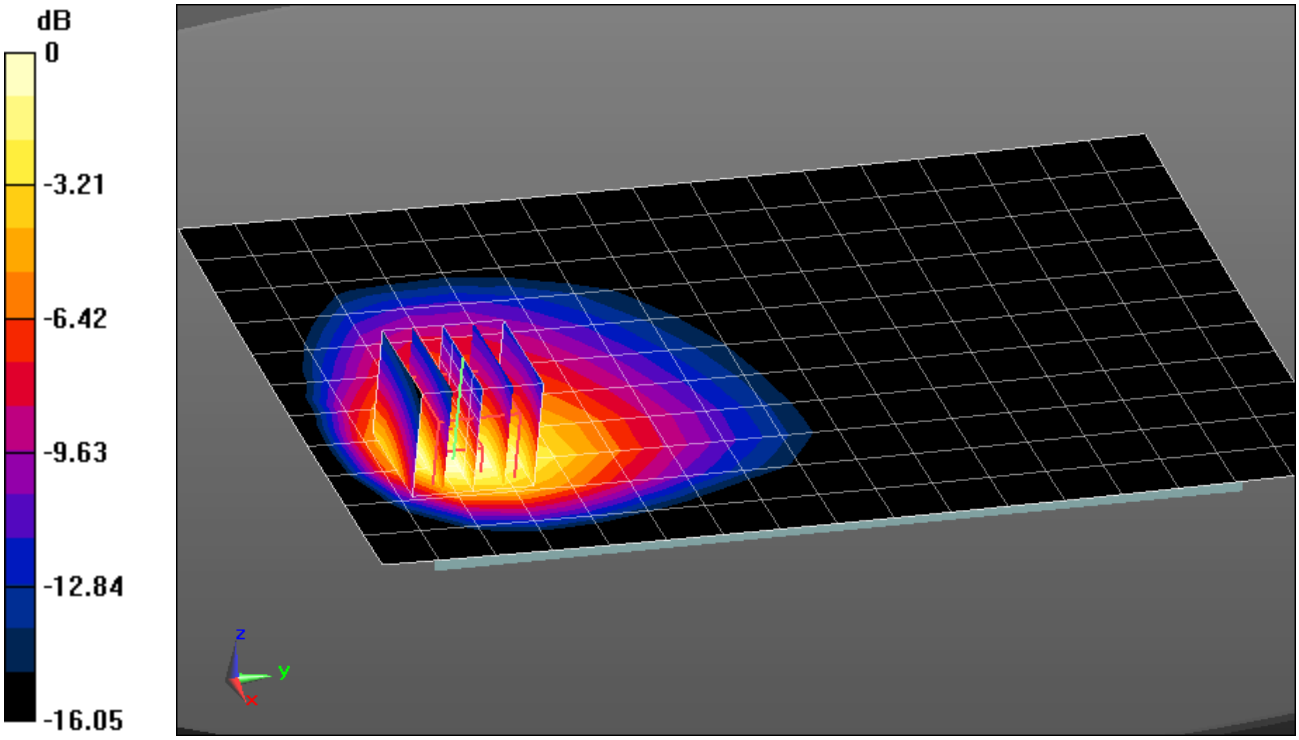
Communication System: UID 0, UMTS; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1.014$ S/m; $\varepsilon_r = 52.875$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(5.98, 5.98, 5.98); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1226
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 (12x18x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.01 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.543 W/kg



0 dB = 0.665 W/kg = -1.77 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M3

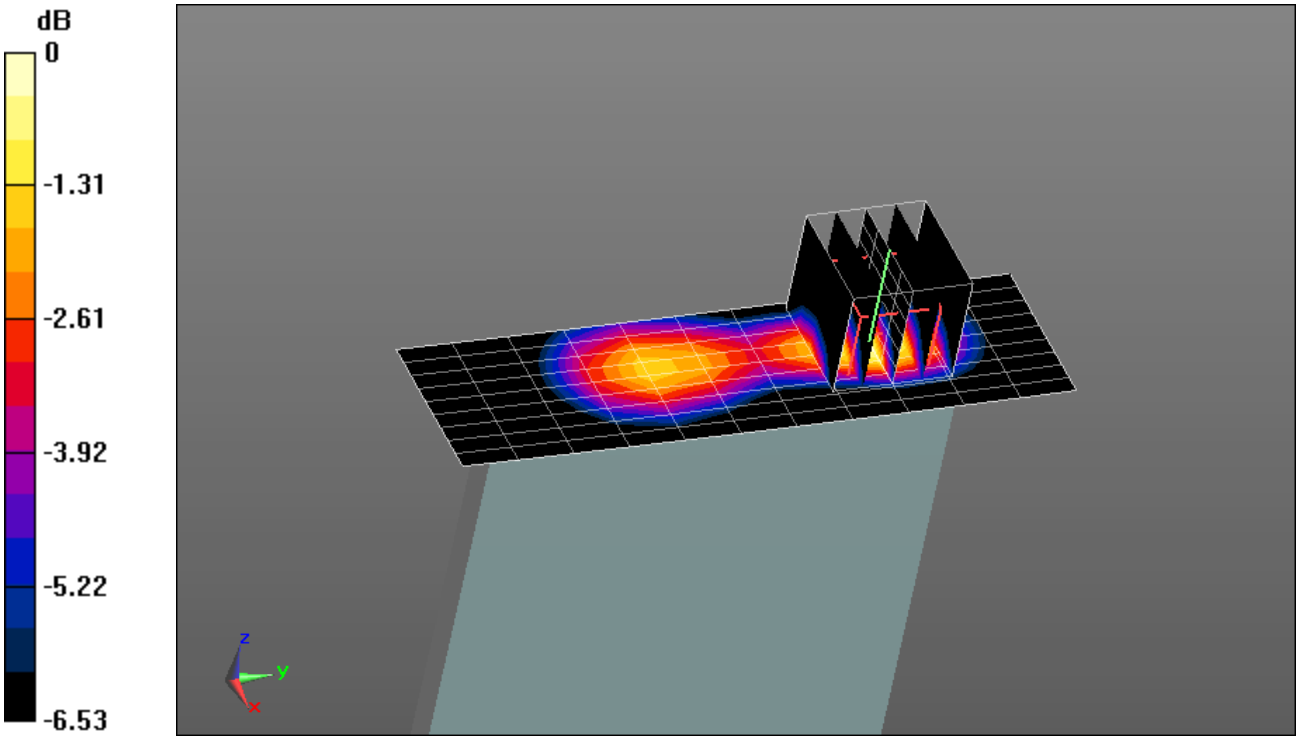
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.444 S/m; ε_r = 51.854; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.09 cm

Test Date: 12-01-2014; Ambient Temp: 23.1°C; Tissue Temp: 21.7°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: ELI v5.0; Type: QDOVA001BB; Serial: 1229
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

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

Area Scan (10x12x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.08 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.915 W/kg
SAR(1 g) = 0.560 W/kg



0 dB = 0.691 W/kg = -1.61 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: R2

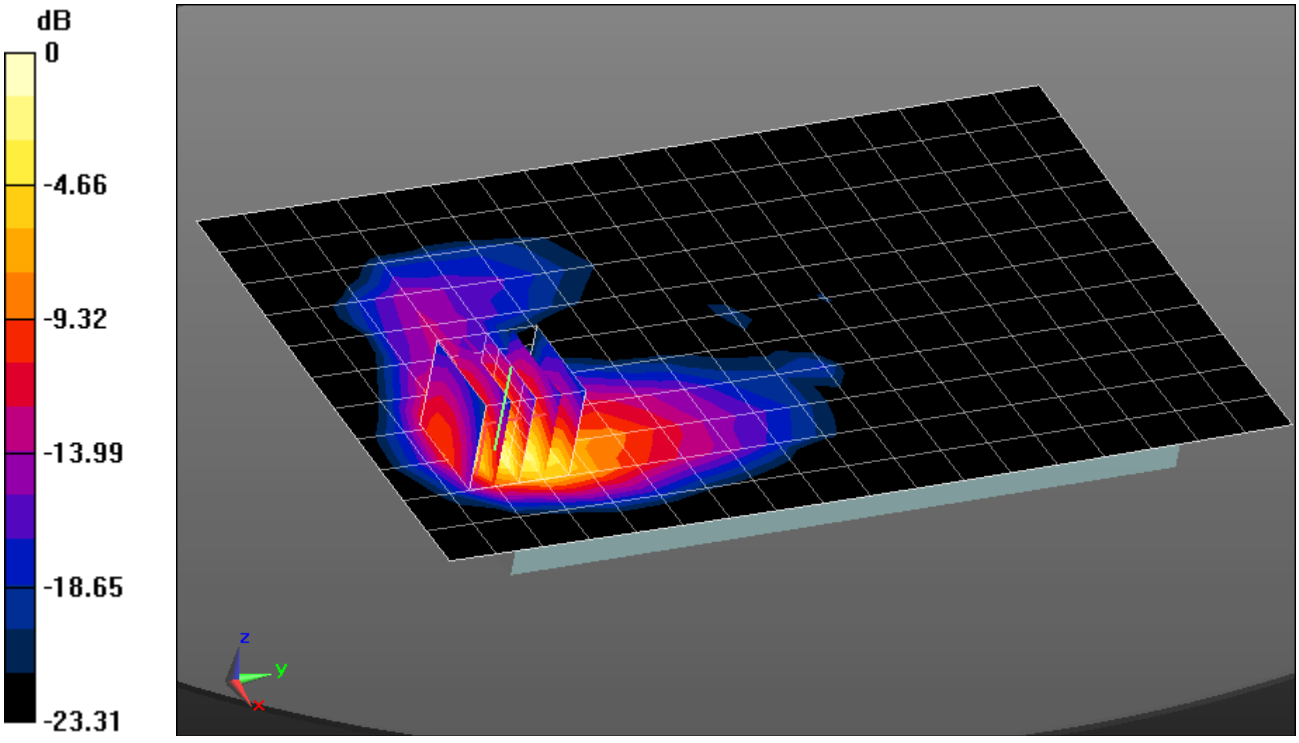
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz;Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.549 S/m; ε_r = 52.82; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 20.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3258; ConvF(4.61, 4.61, 4.61); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
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 1900, Body SAR, Back side, Mid.ch, 4 Tx Slots

Area Scan (12x19x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.25 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.762 W/kg
SAR(1 g) = 0.411 W/kg



0 dB = 0.544 W/kg = -2.64 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M3

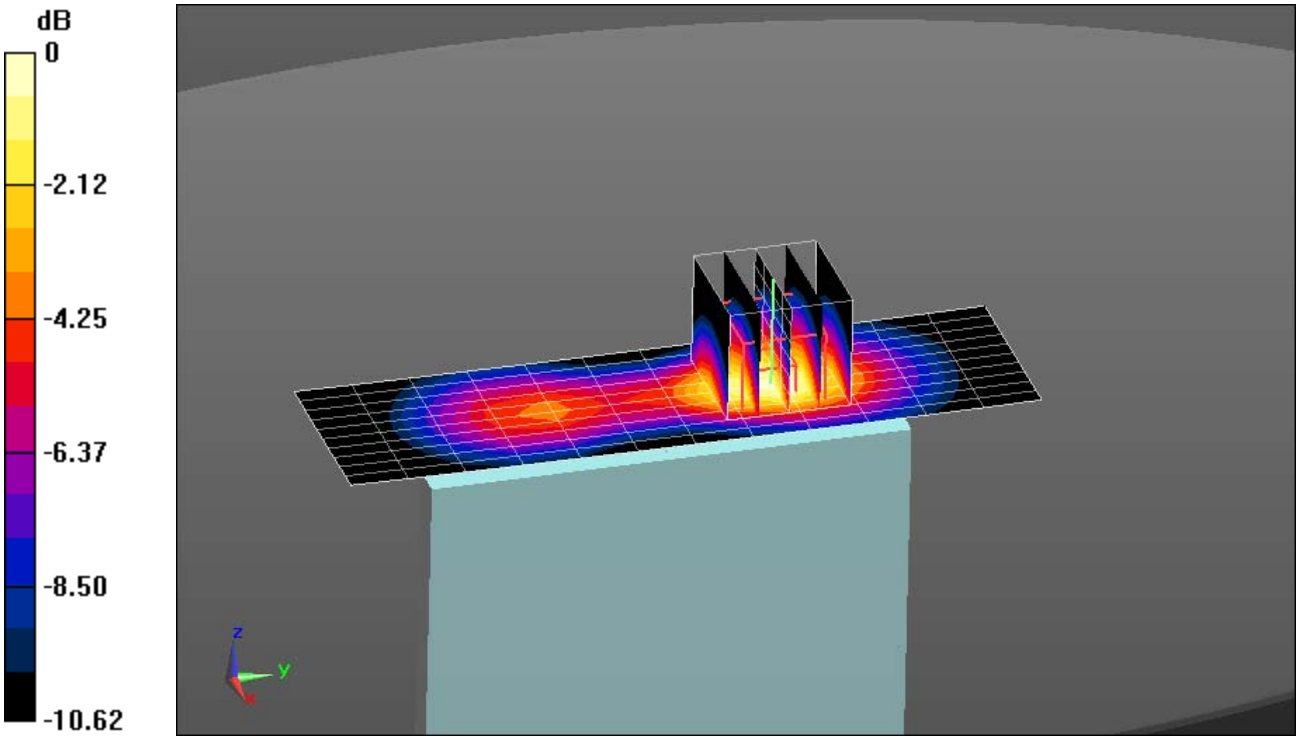
Communication System: UID 0, UMTS; Frequency:1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.558 S/m; ε_r = 52.024; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.09 cm

Test Date: 12-01-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3258; ConvF(4.61, 4.61, 4.61); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
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 1900, Body SAR, Bottom Edge, Mid.ch

Area Scan (11x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.51 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.680 W/kg



0 dB = 0.834 W/kg = -0.79 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: R2

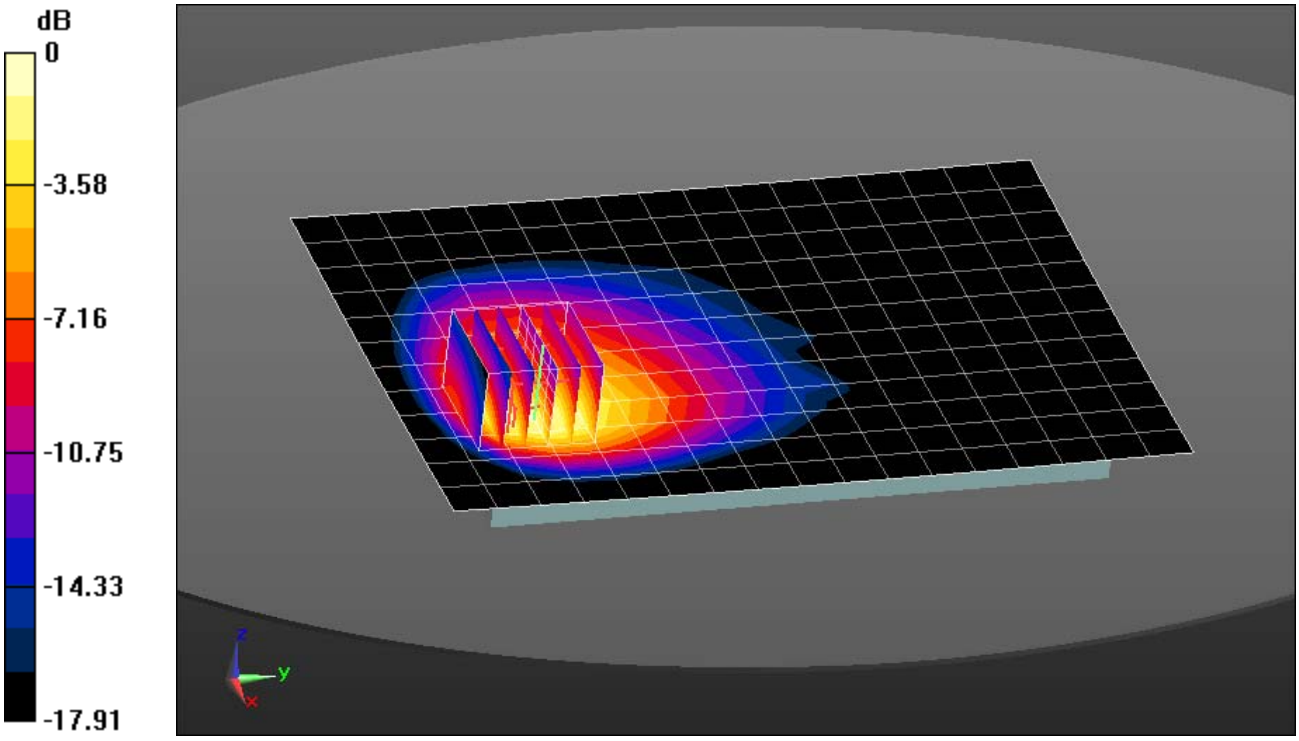
Communication System: UID 0, LTE Band 17; Frequency: 710 MHz;Duty Cycle: 1:1
Medium: 750 Body Medium parameters used:
f = 710 MHz; σ = 0.955 S/m; ε_r = 55.749; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 mm

Test Date: 12-04-2014; Ambient Temp: 23.3°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3258; ConvF(6.15, 6.15, 6.15); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 17, Body SAR, Back side, Mid.ch.
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset

Area Scan (13x18x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.46 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.663 W/kg
SAR(1 g) = 0.350 W/kg



0 dB = 0.435 W/kg = -3.62 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: R2

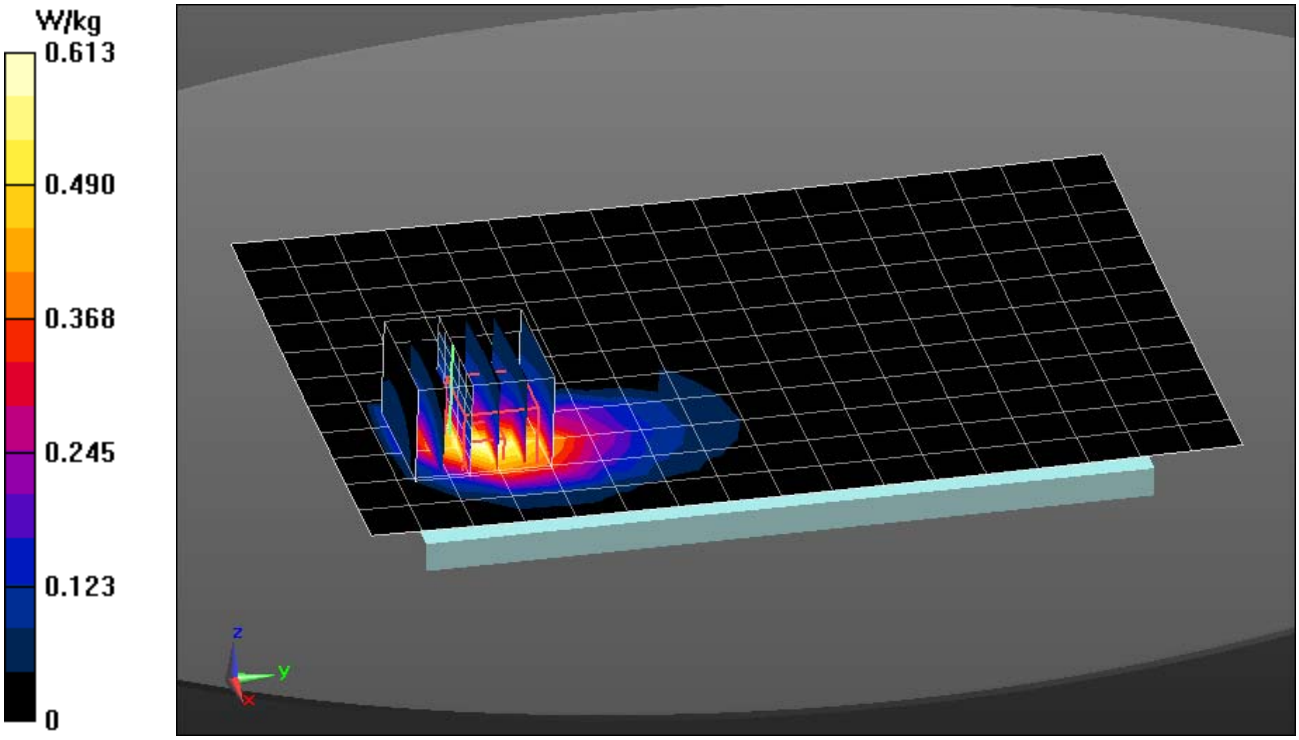
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 1.014$ S/m; $\varepsilon_r = 52.876$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(5.98, 5.98, 5.98); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
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 5 (Cell.), Body SAR, Back side, Mid.ch,
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset

Area Scan (12x18x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.02 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.567 W/kg



DUT: A3LSMT365M; Type: Portable Tablet; Serial: M2

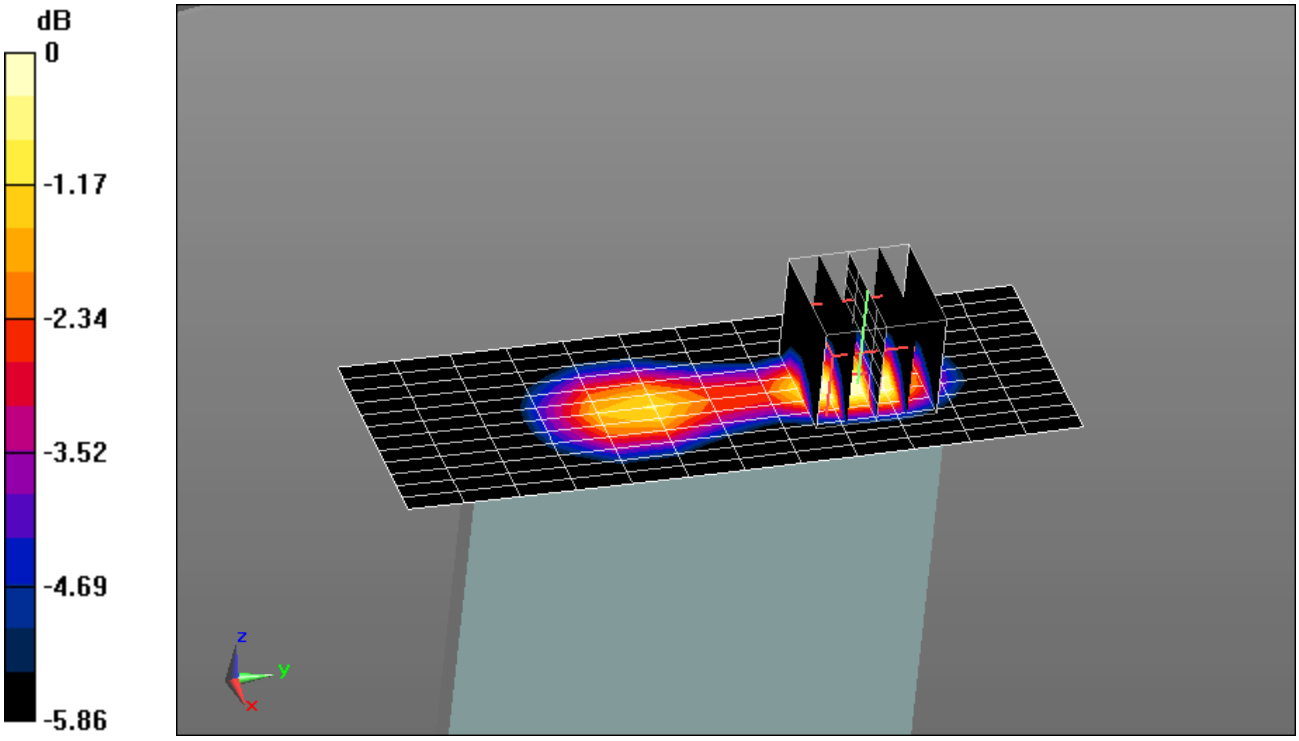
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.5 MHz; σ = 1.444 S/m; ε_r = 51.853; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.09 cm

Test Date: 12-01-2014; Ambient Temp: 23.1°C; Tissue Temp: 21.7°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: ELI v5.0; Type: QDOVA001BB; Serial: 1229
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

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

Area Scan (13x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.06 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.810 W/kg
SAR(1 g) = 0.499 W/kg



0 dB = 0.557 W/kg = -2.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Handset; Serial: M2

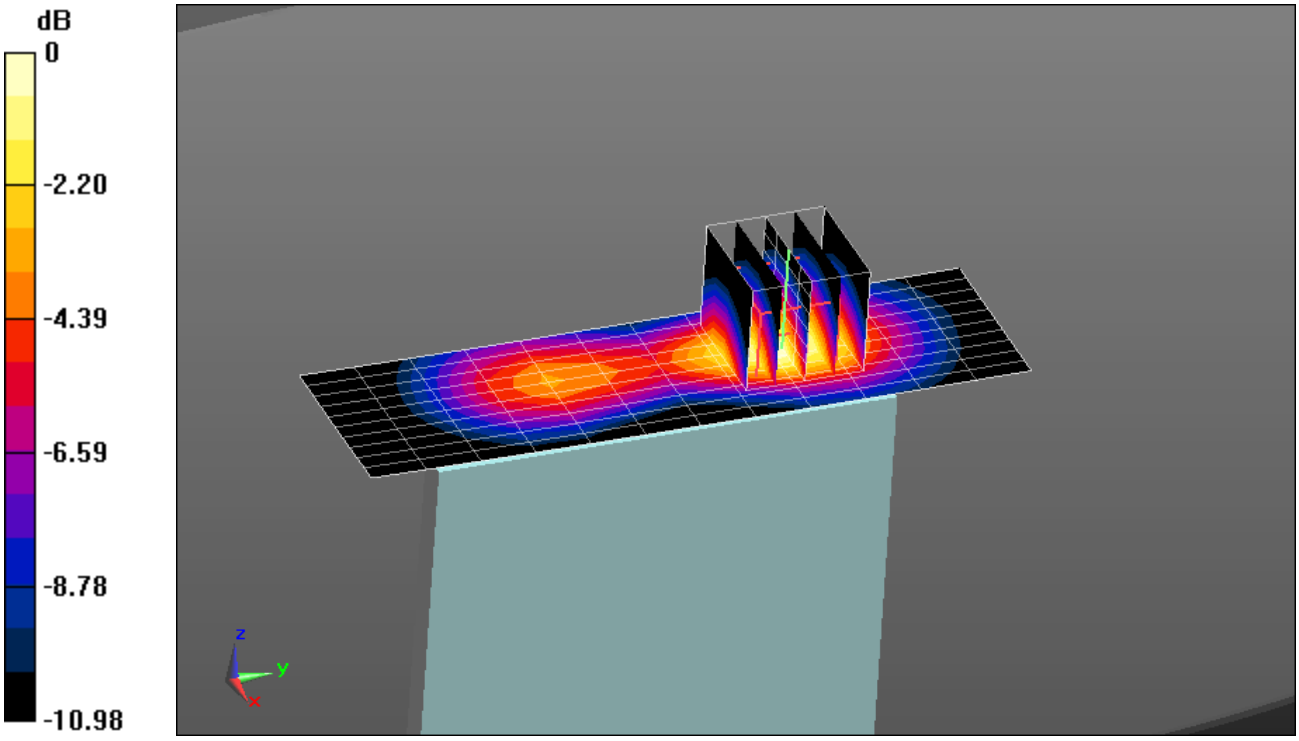
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.532 S/m; ε_r = 52.071; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 0.09 cm

Test Date: 12-01-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3258; ConvF(4.61, 4.61, 4.61); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 2 (PCS), Body SAR, Bottom Edge, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.80 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.674 W/kg



0 dB = 0.822 W/kg = -0.85 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

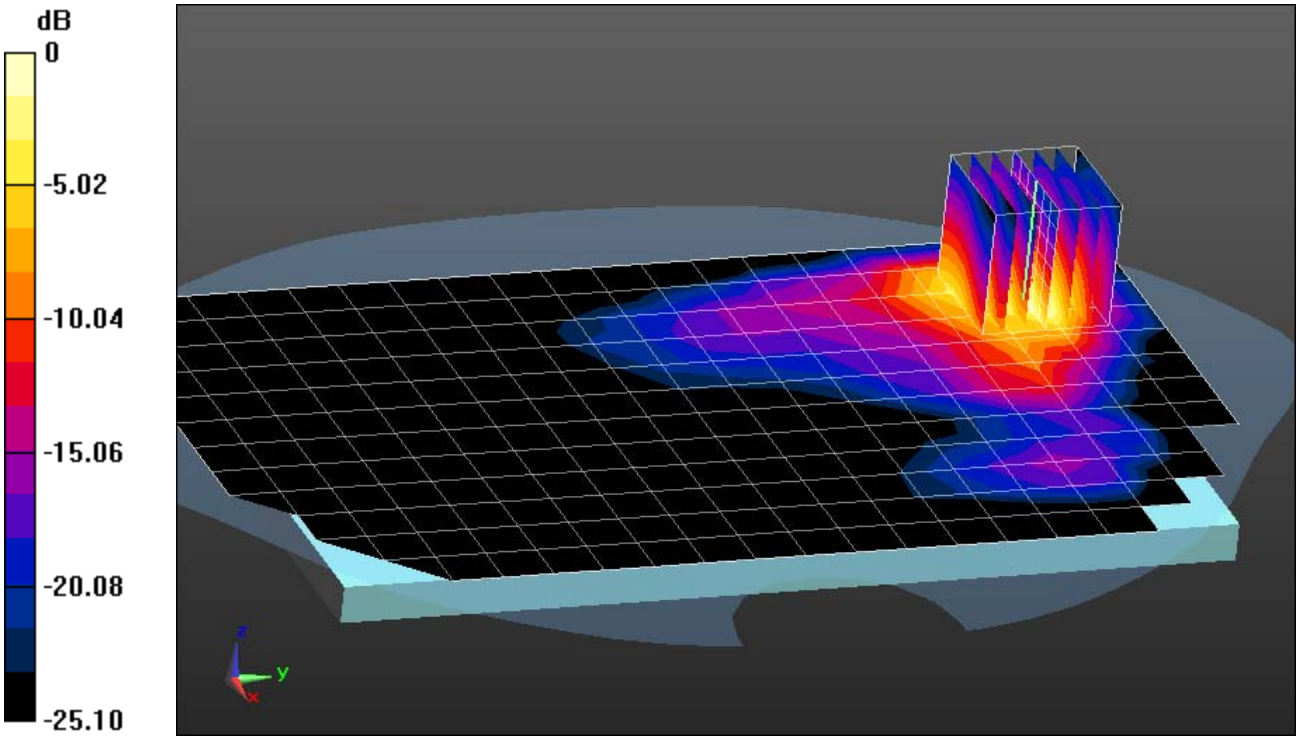
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2412$ MHz; $\sigma = 1.995$ S/m; $\varepsilon_r = 53.535$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-01-2014; Ambient Temp: 23.1°C; Tissue Temp: 23.1°C

Probe: ES3DV3 - SN3319; ConvF(4.24, 4.24, 4.24); Calibrated: 4/17/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 4/11/2014
Phantom: SAM; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, Body SAR, Ch 1, 1 Mbps, Back Side

Area Scan (13x21x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.79 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.752 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

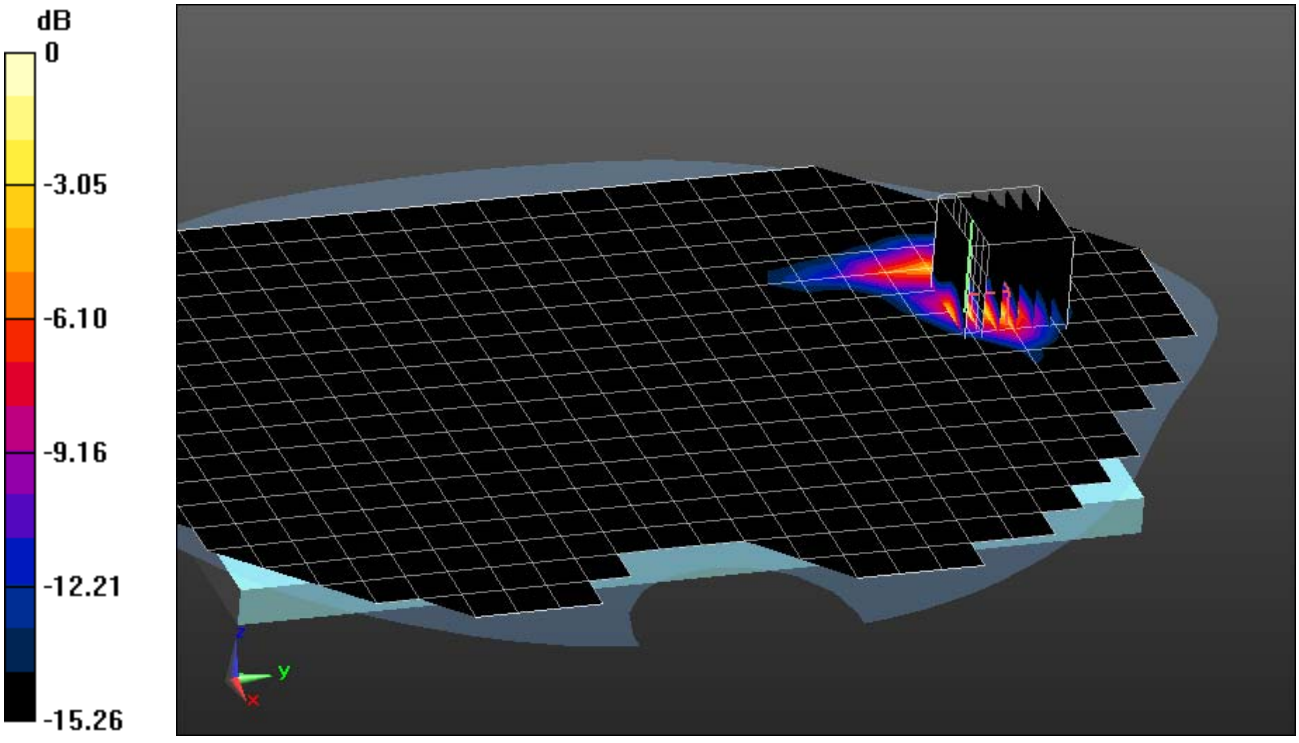
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5805 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5805 MHz; σ = 6.245 S/m; ε_r = 46.234; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(4, 4, 4); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, 5.8 GHz, Body SAR, Ch 161, 6 Mbps, Back Side

Area Scan (19x29x1): 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 = 6.059 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.312 W/kg



0 dB = 0.912 W/kg = -0.40 dBW/kg

DUT: A3LSMT365M; Type: Portable Tablet; Serial: M4

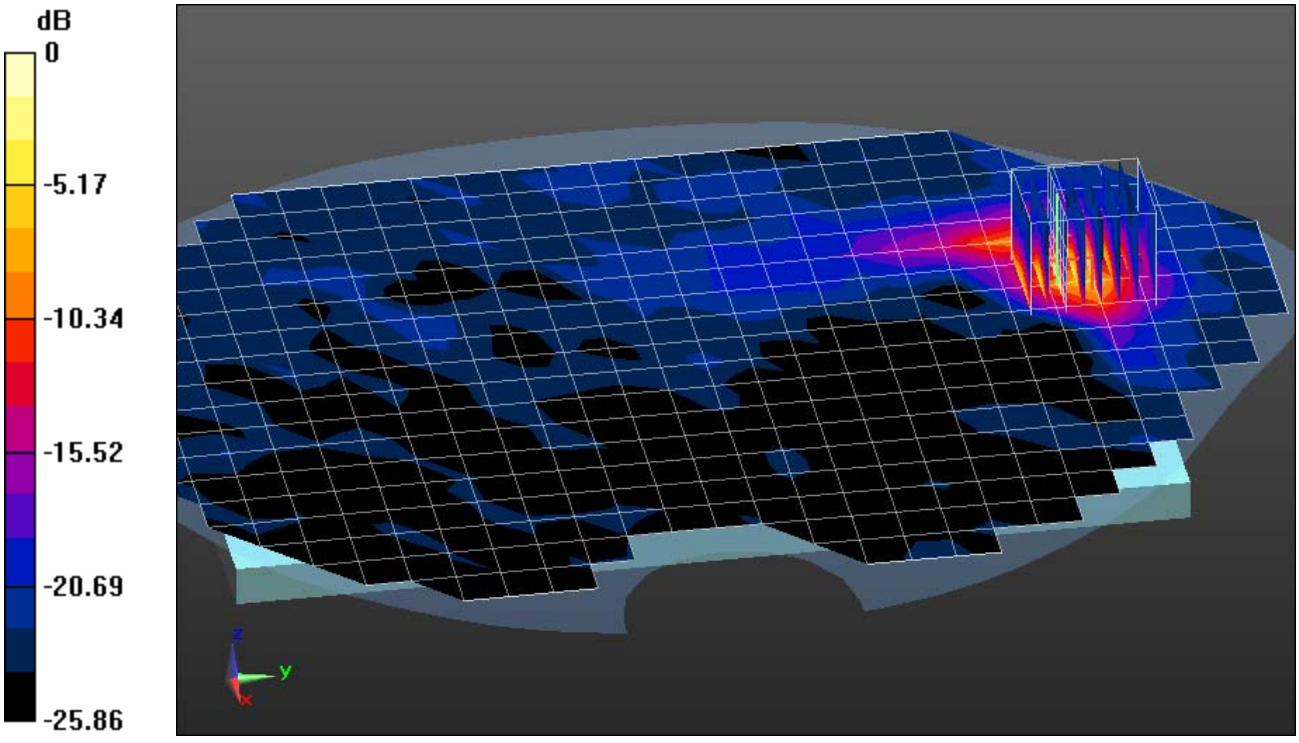
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5580 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5580 MHz; σ = 5.95 S/m; ε_r = 46.596; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(3.62, 3.62, 3.62); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, 5.6 GHz, Body SAR, Ch 116, 6 Mbps, Back Side

Area Scan (19x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 10.10 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 4.02 W/kg
SAR(1 g) = 0.758 W/kg



0 dB = 2.25 W/kg = 3.52 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

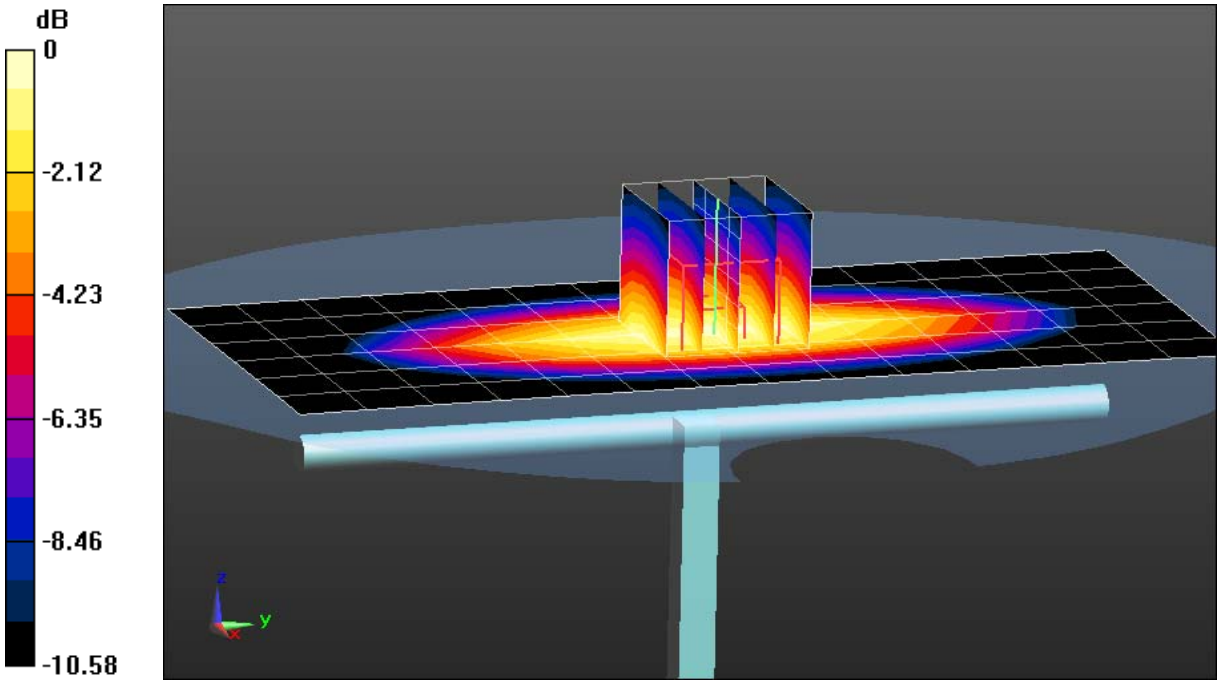
Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
$f = 750$ MHz; $\sigma = 0.887$ S/m; $\varepsilon_r = 40.343$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section ; Space: 1.5 cm

Test Date: 11-28-2014; Ambient Temp: 23.3°C; Tissue Temp: 20.8°C

Probe: ES3DV2 - SN3022; ConvF(6.39, 6.39, 6.39); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

750 MHz System Verification

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.770 W/kg
Deviation: -8.00%



0 dB = 0.899 W/kg = -0.46 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d119

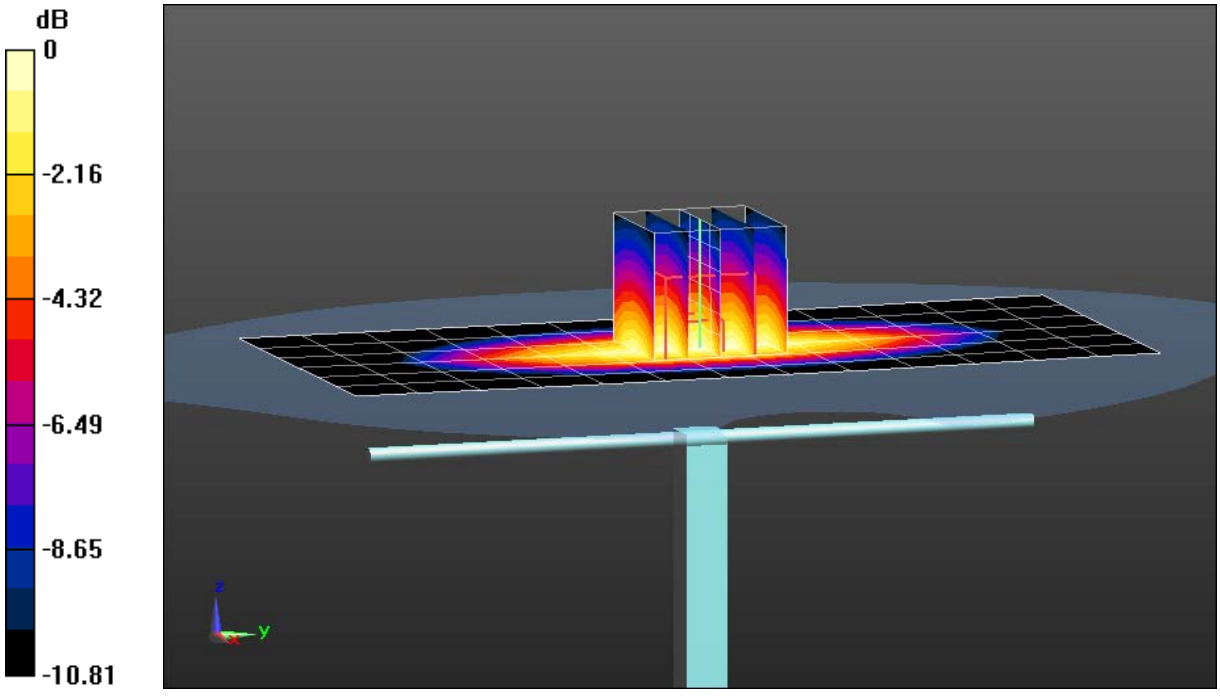
Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.937 S/m; ε_r = 41.64; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.5 cm

Test Date: 11-24-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(6.23, 6.23, 6.23); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.928 W/kg
Deviation: 0.65%



0 dB = 1.09 W/kg = 0.37 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

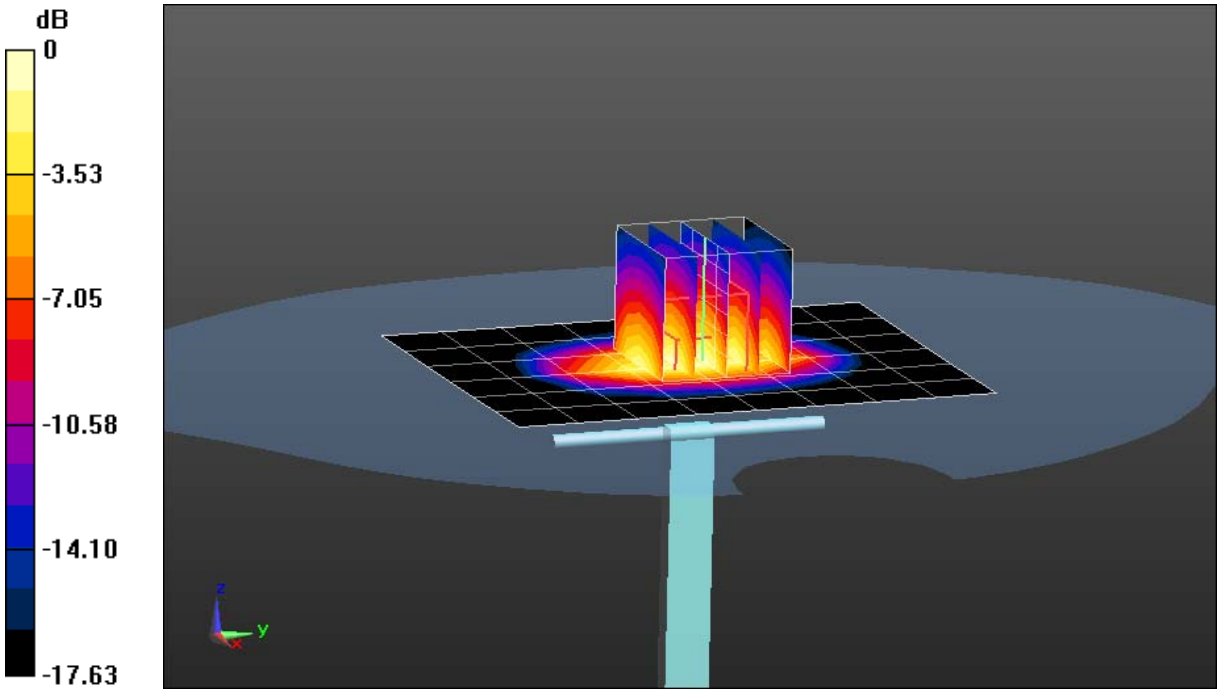
Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.345 S/m; ε_r = 38.778; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-28-2014; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(5.19, 5.19, 5.19); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
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=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 6.22 W/kg
SAR(1 g) = 3.4 W/kg
Deviation: -7.86%



0 dB = 4.25 W/kg = 6.28 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

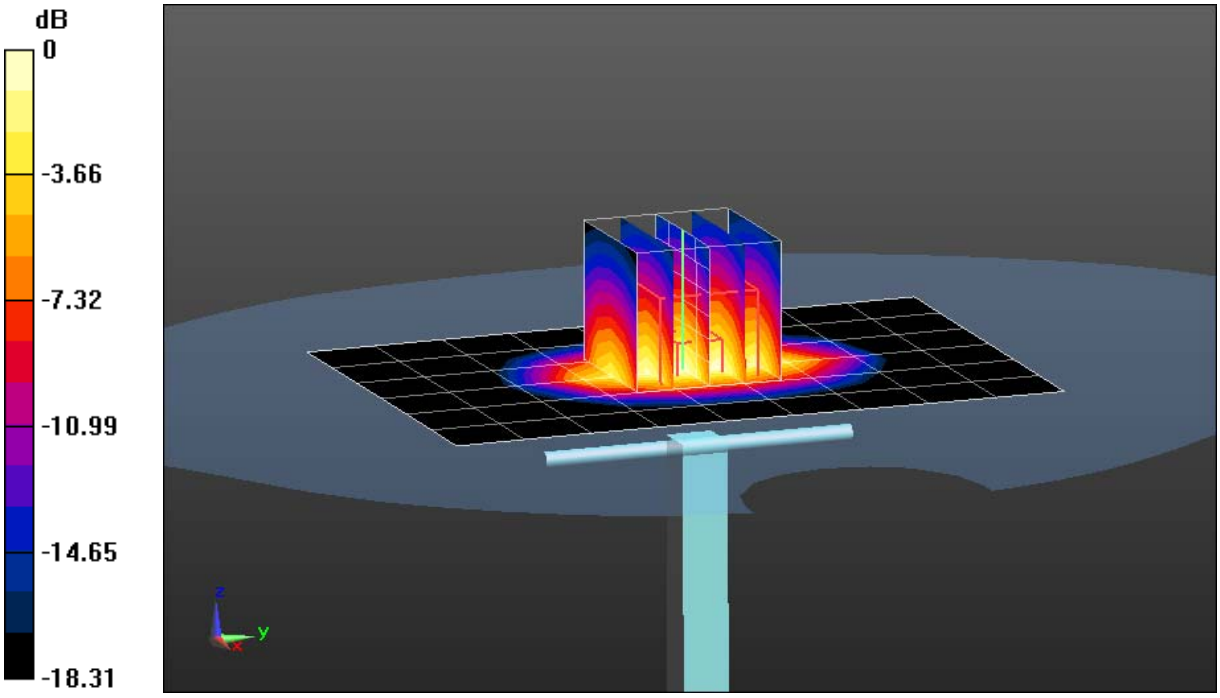
Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.444 S/m; ε_r = 39.067; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 22.8°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3288; ConvF(5.17, 5.17, 5.17); 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)

1900 MHz System Verification

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 7.72 W/kg
SAR(1 g) = 4.15 W/kg
Deviation: 3.49%



0 dB = 5.27 W/kg = 7.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

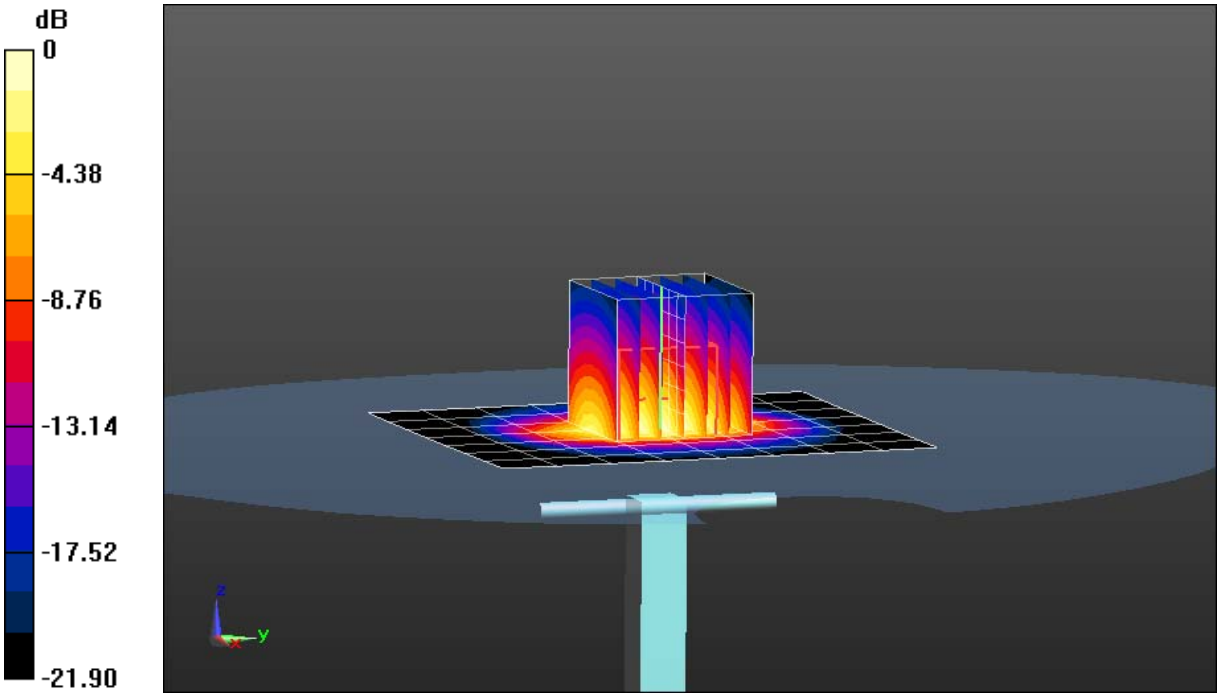
Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.801 S/m; ε_r = 37.593; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3209; ConvF(4.54, 4.54, 4.54); Calibrated: 3/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 3/17/2014
Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759
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 dBm (100 mW)
Peak SAR (extrapolated) = 10.1 W/kg
SAR(1 g) = 4.93 W/kg
Deviation: -4.83%



0 dB = 6.43 W/kg = 8.08 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1120

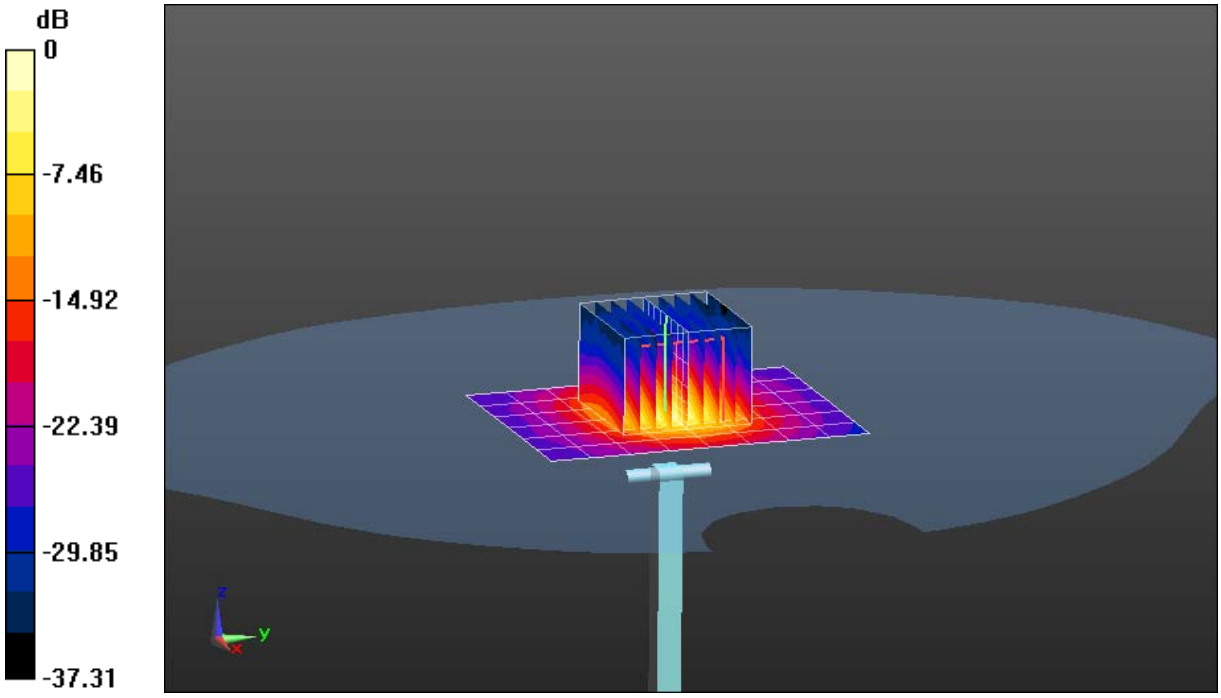
Communication System: UID 0, CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5200 MHz; σ = 4.552 S/m; ε_r = 37.058; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.87, 4.87, 4.87); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5200 MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 30.9 W/kg
SAR(1 g) = 7.65 W/kg
Deviation: -3.29%



0 dB = 19.3 W/kg = 12.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1120

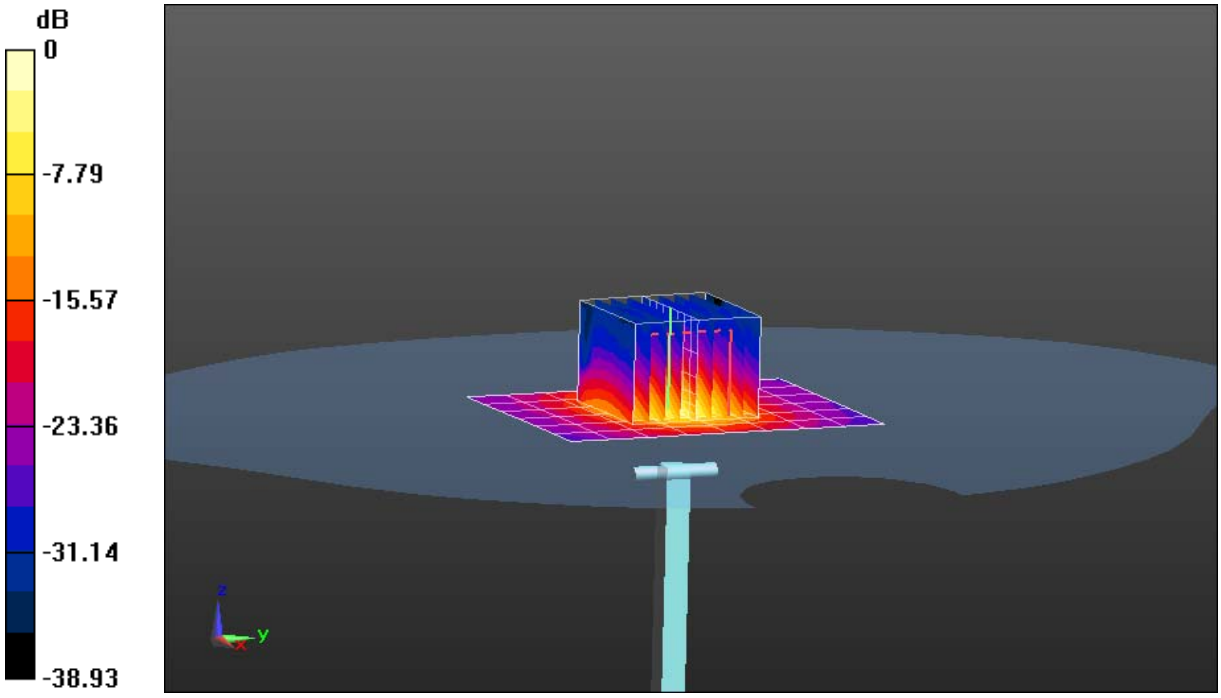
Communication System: UID 0, CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5300 MHz; σ = 4.657 S/m; ε_r = 36.895; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.66, 4.66, 4.66); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5300MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 8.02 W/kg
Deviation: -3.84%



0 dB = 20.4 W/kg = 13.10 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: 1120

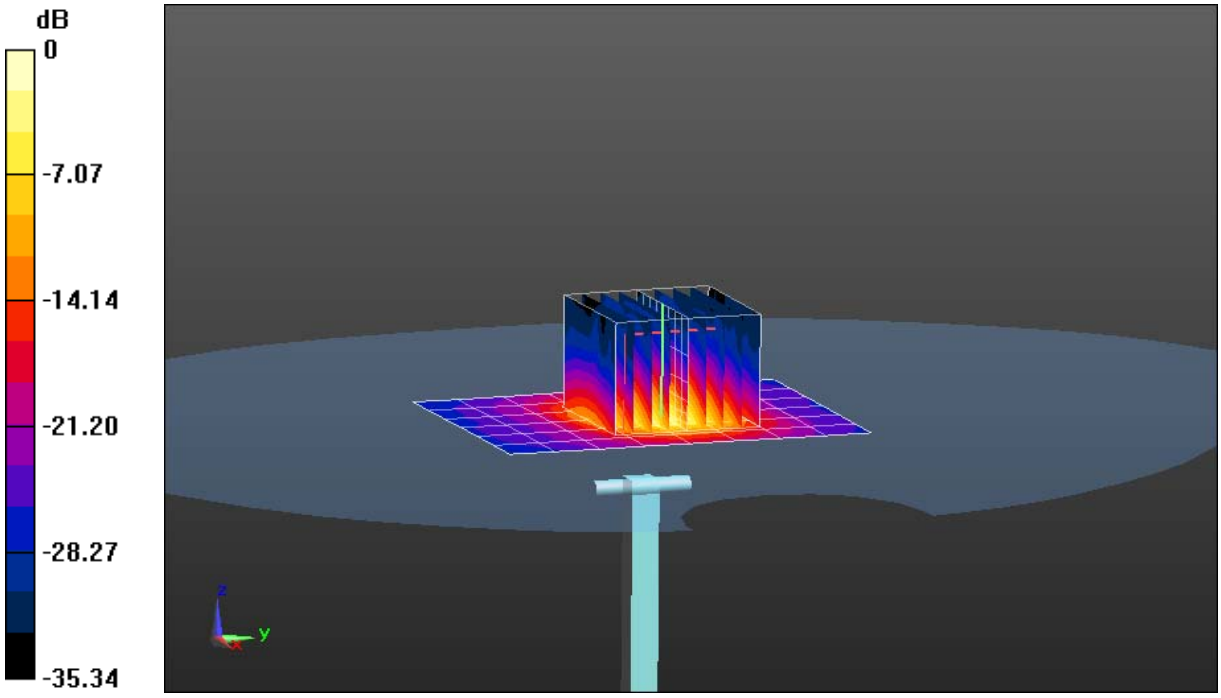
Communication System: UID 0, CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.969 S/m; ε_r = 36.55; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.37, 4.37, 4.37); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5600MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 37.3 W/kg
SAR(1 g) = 8.32 W/kg
Deviation: 1.22%



0 dB = 21.8 W/kg = 13.38 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1120

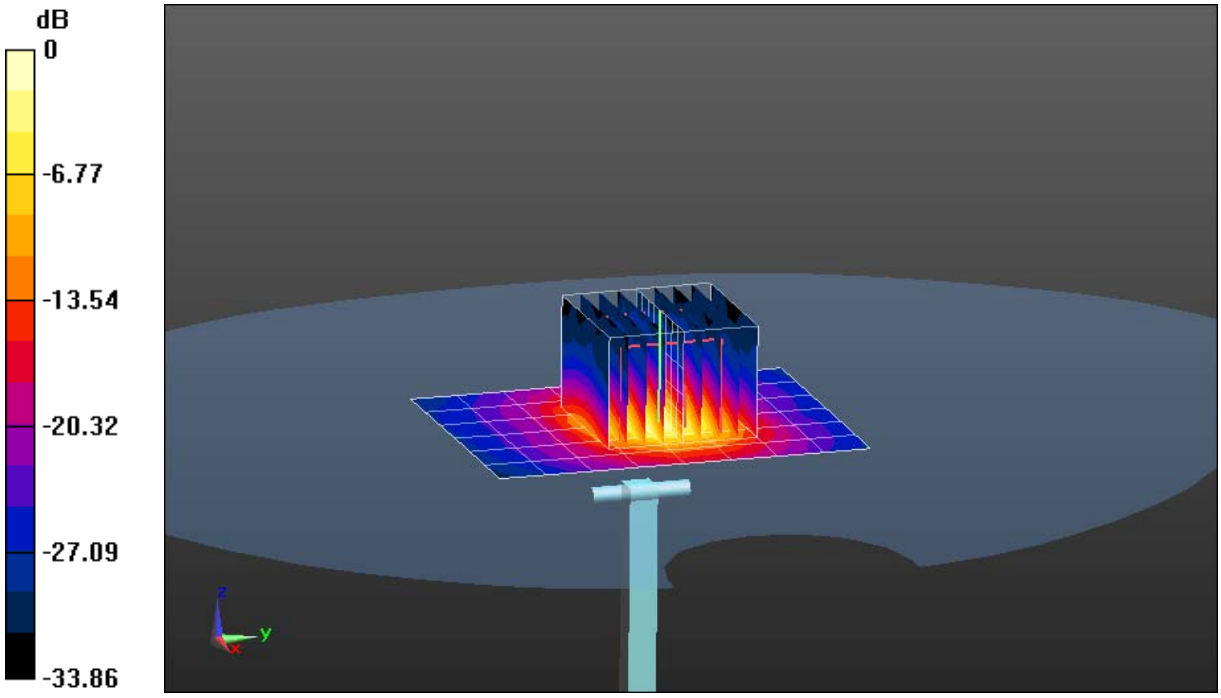
Communication System: UID 0, CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5800 MHz; σ = 5.172 S/m; ε_r = 36.27; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 12-03-2014; Ambient Temp: 22.8°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN3920; ConvF(4.11, 4.11, 4.11); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5800MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 33.4 W/kg
SAR(1 g) = 7.73 W/kg
Deviation: -2.28%



0 dB = 20.1 W/kg = 13.03 dBW/kg

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

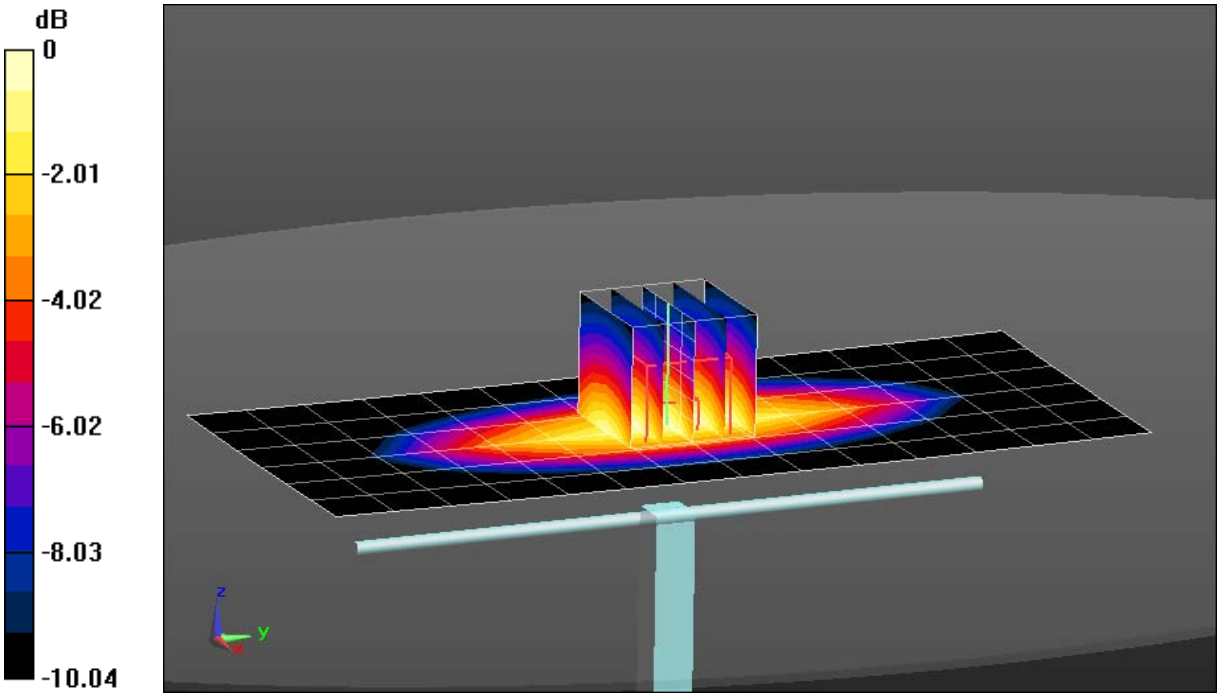
Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.99 S/m; ε_r = 55.364; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-04-2014; Ambient Temp: 23.3°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3258; ConvF(6.15, 6.15, 6.15); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

750 MHz System Verification

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.879 W/kg
Deviation: 0.23%



0 dB = 1.02 W/kg = 0.09 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d119

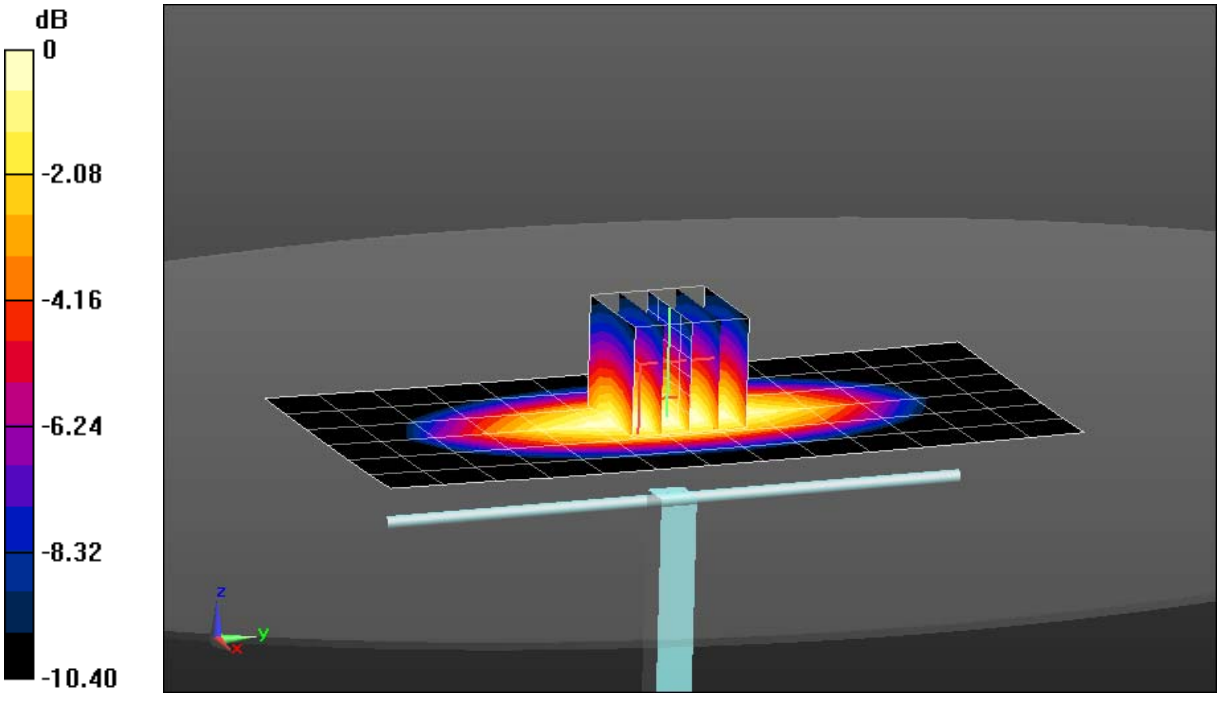
Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1.012 S/m; ε_r = 52.893; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(5.98, 5.98, 5.98); Calibrated: 8/19/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/12/2014
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1226
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.978 W/kg
Deviation: 4.71%



0 dB = 1.14 W/kg = 0.57 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

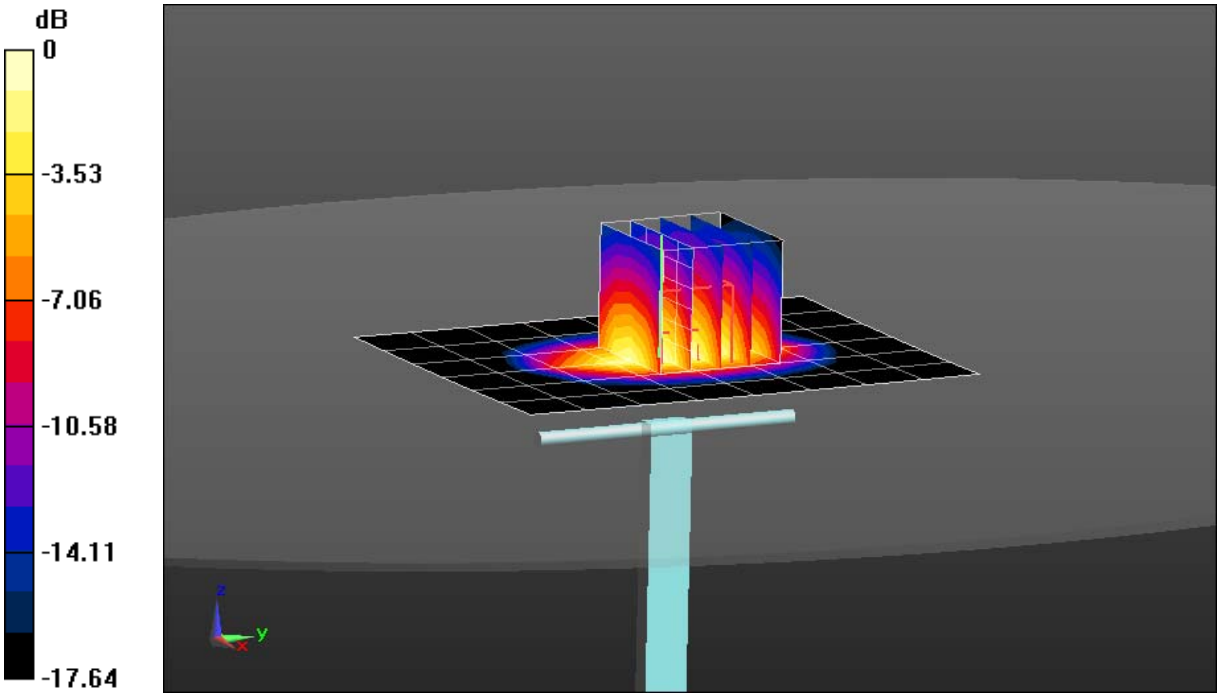
Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.465 S/m; ε_r = 51.775; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-01-2014; Ambient Temp: 23.1°C; Tissue Temp: 21.7°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: ELI v5.0; Type: QDOVA001BB; Serial: 1229
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

1750 MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 6.72 W/kg
SAR(1 g) = 3.83 W/kg
Deviation: 1.86%



0 dB = 4.74 W/kg = 6.76 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

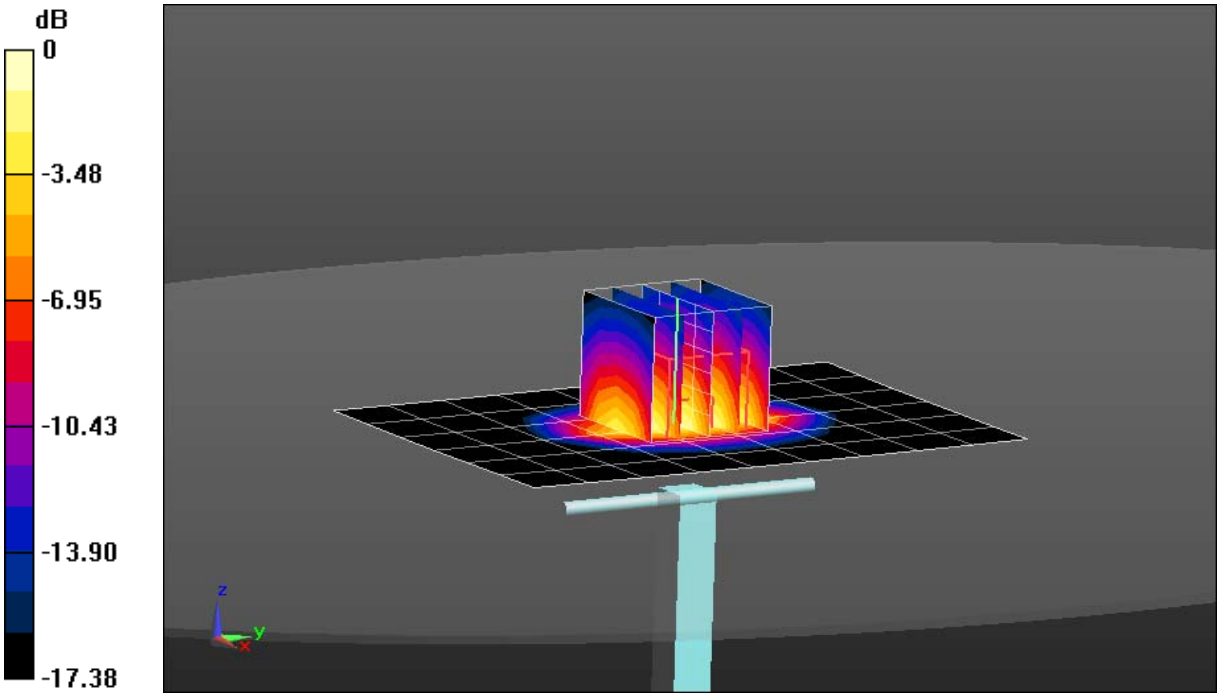
Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.583 S/m; ε_r = 51.945; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-01-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3258; ConvF(4.61, 4.61, 4.61); Calibrated: 2/25/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/26/2014
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP-1158
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 7.30 W/kg
SAR(1 g) = 4.23 W/kg
Deviation: 4.19%



0 dB = 5.30 W/kg = 7.24 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

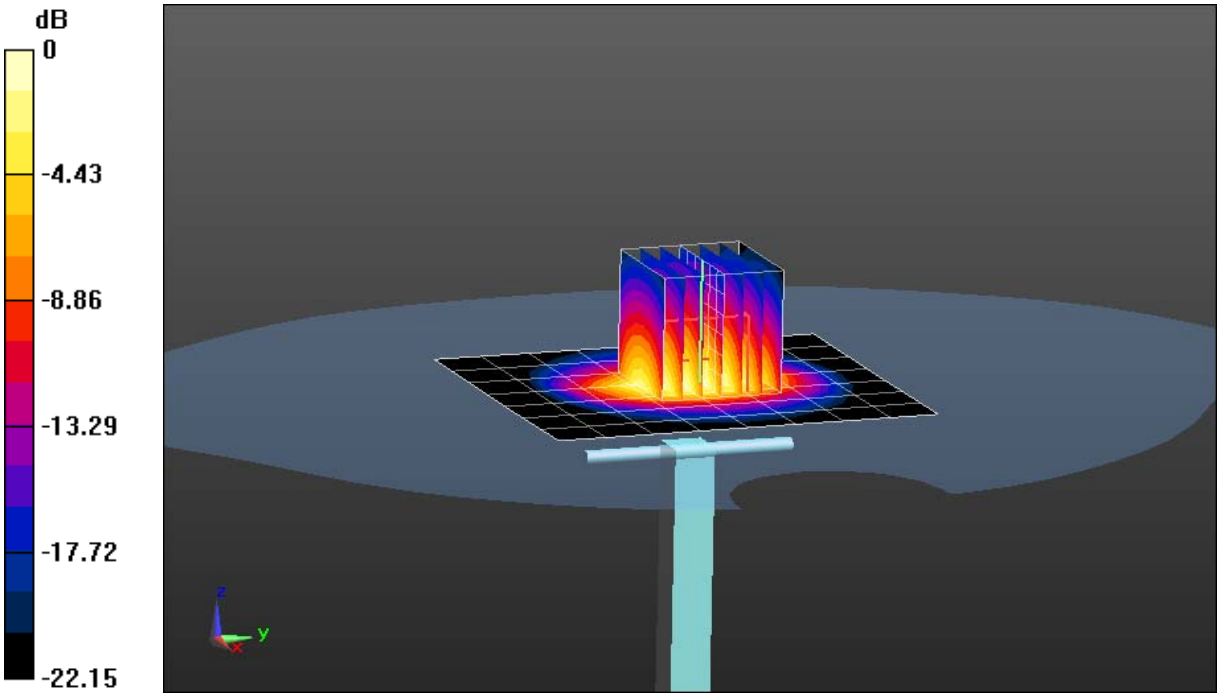
Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.045 S/m; ε_r = 53.371; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-01-2014; Ambient Temp: 23.1°C; Tissue Temp: 23.1°C

Probe: ES3DV3 - SN3319; ConvF(4.24, 4.24, 4.24); Calibrated: 4/17/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 4/11/2014
Phantom: SAM; Type: QD000P40CD; Serial: TP:1758
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 dBm (100 mW)
Peak SAR (extrapolated) = 11.0 W/kg
SAR(1 g) = 5.21 W/kg
Deviation: 5.47%



0 dB = 6.81 W/kg = 8.33 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1120

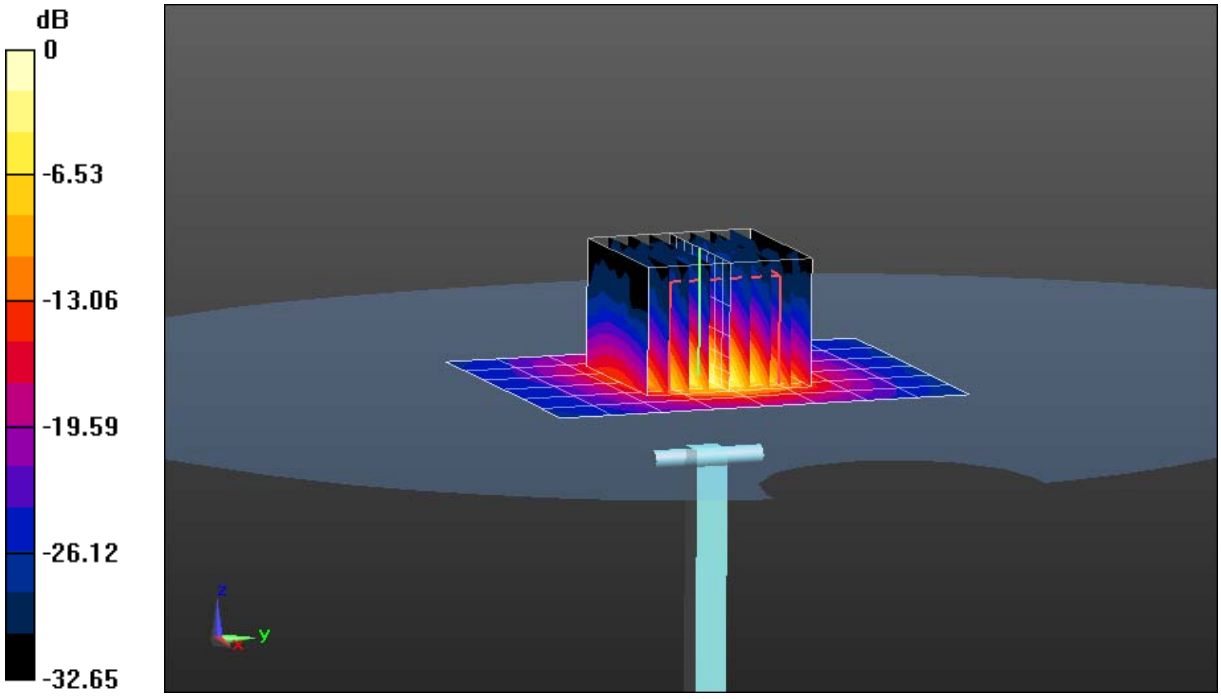
Communication System: UID 0, CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5200 MHz; σ = 5.452 S/m; ε_r = 47.202; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.5°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN3920; ConvF(4.23, 4.23, 4.23); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5200MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 7.86 W/kg
Deviation: 6.22%



0 dB = 19.9 W/kg = 12.99 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1120

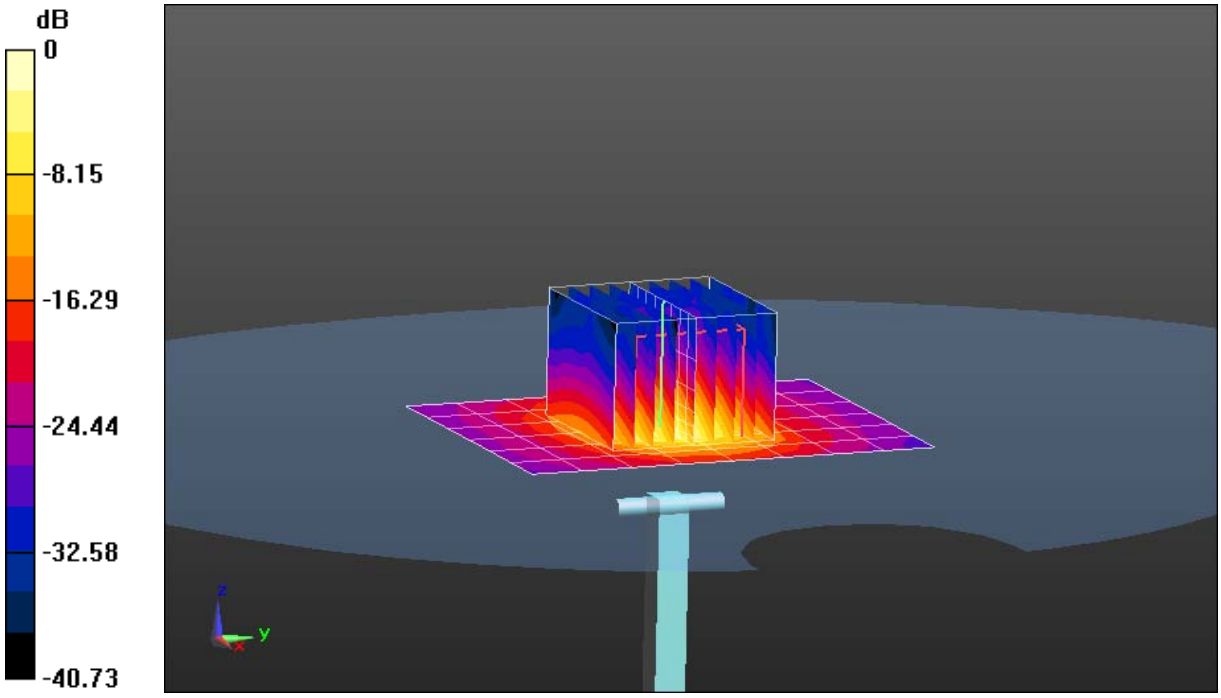
Communication System: UID 0, CW; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5300 MHz; σ = 5.581 S/m; ε_r = 47.006; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(4.11, 4.11, 4.11); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5300MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 33.2 W/kg
SAR(1 g) = 7.98 W/kg
Deviation: 5.28%



0 dB = 20.5 W/kg = 13.12 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1120

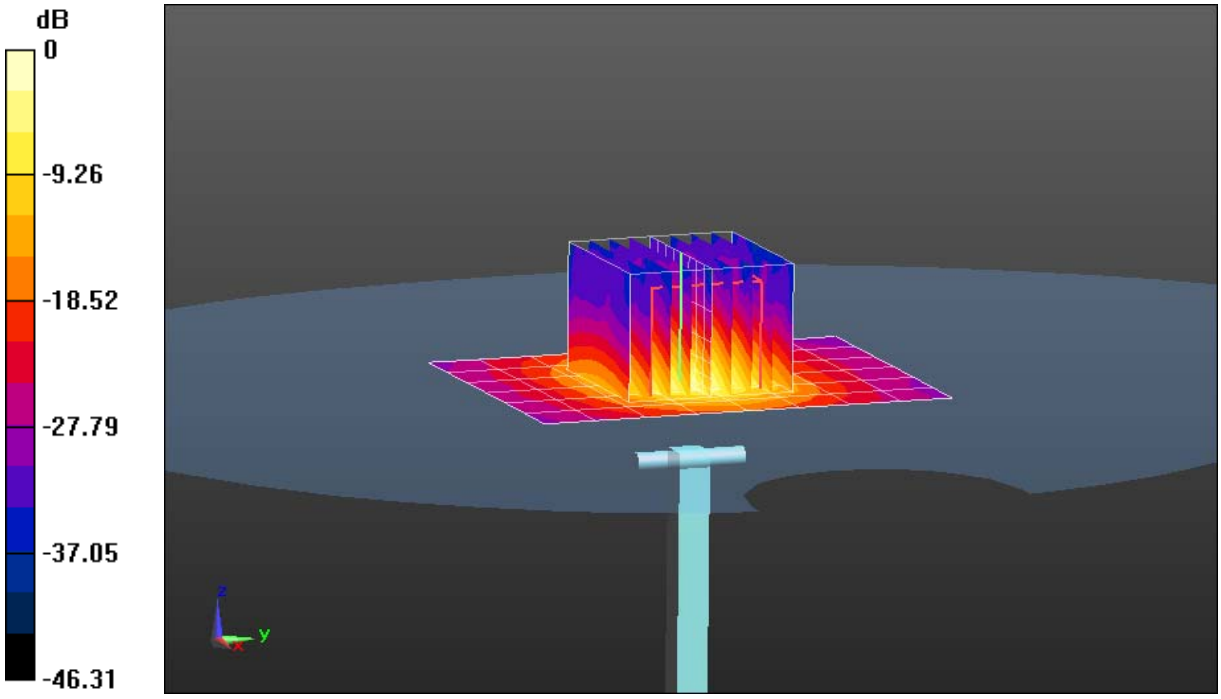
Communication System: UID 0, CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5500 MHz; σ = 5.832 S/m; ε_r = 46.731; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(3.8, 3.8, 3.8); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5500MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 36.7 W/kg
SAR(1 g) = 8.34 W/kg
Deviation: 5.30%



0 dB = 21.9 W/kg = 13.40 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: 1120

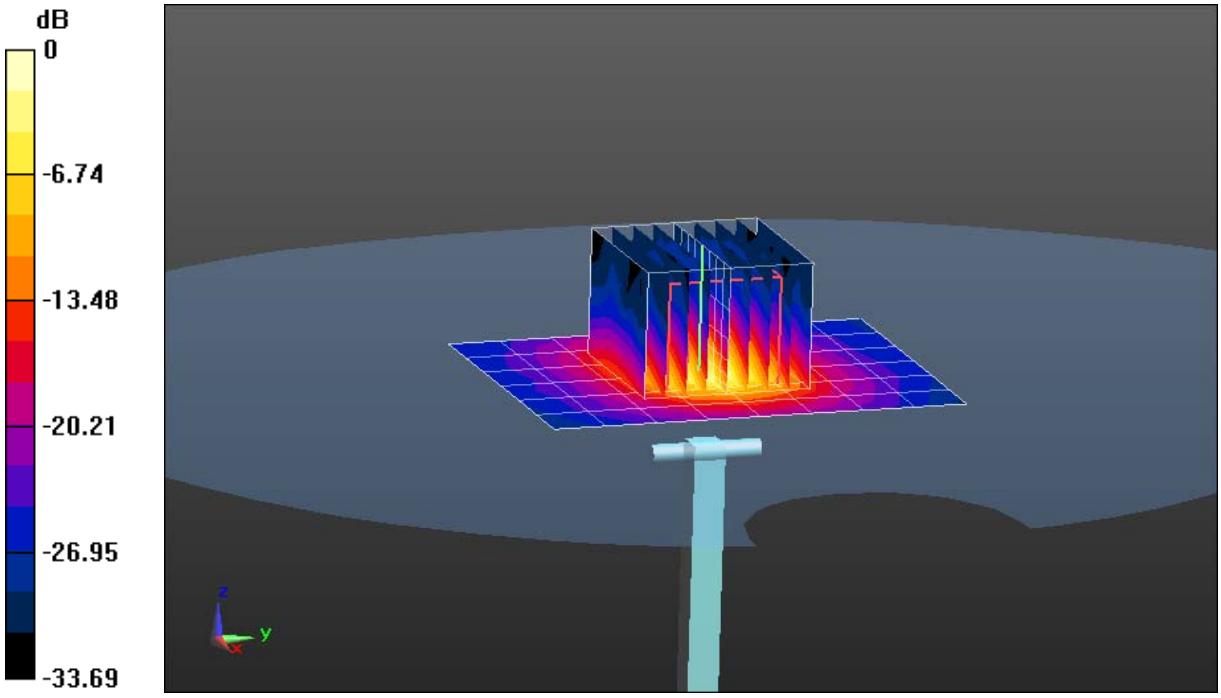
Communication System: UID 0, CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5600 MHz; σ = 5.974 S/m; ε_r = 46.605; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(3.62, 3.62, 3.62); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5600MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 36.8 W/kg
SAR(1 g) = 8.46 W/kg
Deviation: 6.55%



0 dB = 22.1 W/kg = 13.44 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1120

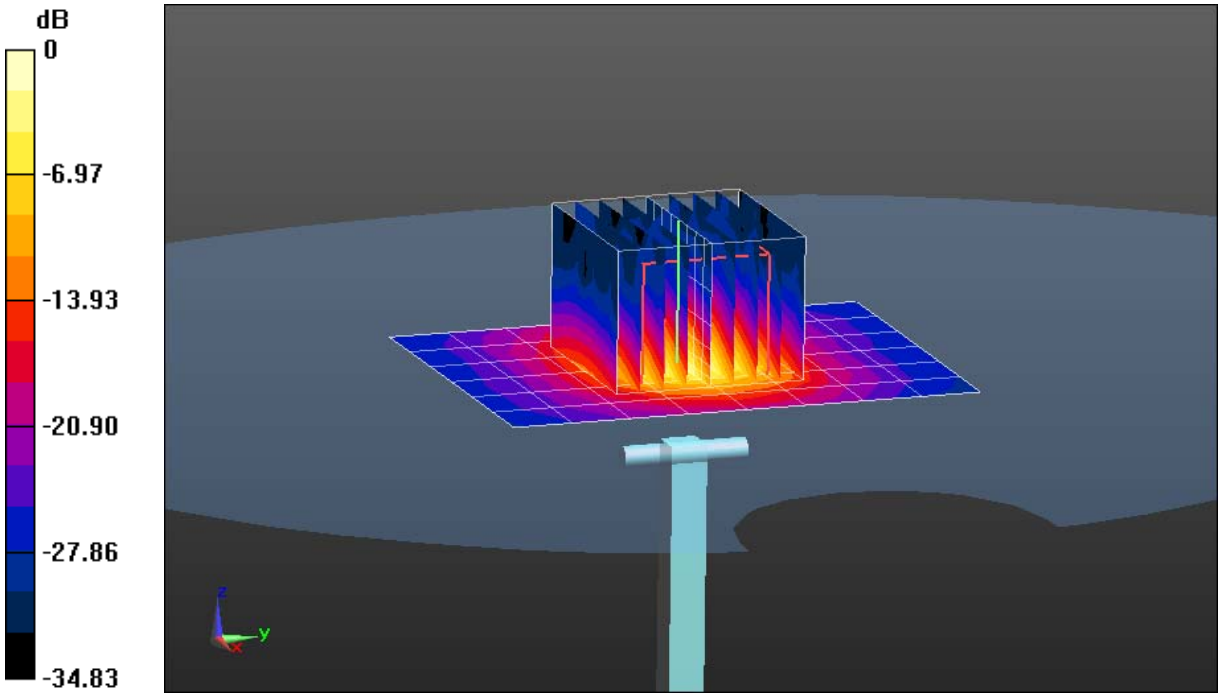
Communication System: UID 0, CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5800 MHz; σ = 6.24 S/m; ε_r = 46.246; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 11-24-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3920; ConvF(4, 4, 4); Calibrated: 12/18/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 12/12/2013
Phantom: SAM Sub ; Type: QD000P40CC; Serial: TP:1357
Measurement SW: DASY52, Version 52.8 (8);SEMCAD X Version 14.6.10 (7331)

5800MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power: 20 dBm (100 mW)
Peak SAR (extrapolated) = 36.7 W/kg
SAR(1 g) = 7.97 W/kg
Deviation: 7.12%



0 dB = 21.0 W/kg = 13.22 dBW/kg