



SAR EVALUATION REPORT

Applicant Name:

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

Date of Testing:

09/23/14 - 10/13/14

Test Site/Location:

PCTEST Lab, Columbia, MD, USA

Document Serial No.:

0Y1409231952.A3L

FCC ID:

A3LSMN915F

APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

DUT Type:

Portable Handset

Application Type:

Certification

FCC Rule Part(s):

CFR §2.1093

Model(s):

SM-N915F

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)	10 gm Extremity (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.15	0.33	0.58	
PCE	UMTS 850	826.40 - 846.60 MHz	0.12	0.28	0.40	
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.32	1.09	
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.11	0.50	1.03	
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.16	0.37	0.42	
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.17	0.77	0.95	
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.13	0.54	1.09	
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.49	0.38	0.38	
DTS	5.8 GHz WLAN	5745 - 5825 MHz	0.14	0.17		0.47
NII	5.2 GHz WLAN	5180 - 5240 MHz	0.16	0.19		0.49
NII	5.3 GHz WLAN	5260 - 5320 MHz	0.19	0.17		0.38
NII	5.5 GHz WLAN	5500 - 5700 MHz	0.26	0.25		0.58
DSS/DTS	Bluetooth	2402 - 2480 MHz	N/A			
Simultaneous SAR per KDB 690783 D01v01r03:			0.66	1.15	1.15	0.58

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.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 1 of 78

T A B L E O F C O N T E N T S

1	DEVICE UNDER TEST	3
2	LTE INFORMATION	10
3	INTRODUCTION	11
4	DOSIMETRIC ASSESSMENT	12
5	DEFINITION OF REFERENCE POINTS	13
6	TEST CONFIGURATION POSITIONS FOR HANDSETS	14
7	RF EXPOSURE LIMITS	17
8	FCC MEASUREMENT PROCEDURES	18
9	RF CONDUCTED POWERS	23
10	SYSTEM VERIFICATION	47
11	SAR DATA SUMMARY	51
12	FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS	63
13	SAR MEASUREMENT VARIABILITY	72
14	EQUIPMENT LIST	73
15	MEASUREMENT UNCERTAINTIES	74
16	CONCLUSION	76
17	REFERENCES	77
APPENDIX A: SAR TEST PLOTS		
APPENDIX B: SAR DIPOLE VERIFICATION PLOTS		
APPENDIX C: PROBE AND DIPOLE CALIBRATION CERTIFICATES		
APPENDIX D: SAR TISSUE SPECIFICATIONS		
APPENDIX E: SAR SYSTEM VALIDATION		
APPENDIX F: SAR TEST SETUP PHOTOGRAPHS		

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 2 of 78	

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
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 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
NFC	Data	13.56 MHz
ANT+	Data	2402 - 2480 MHz

1.2 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.

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	1 TX Slot	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slot	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 850	Maximum	33.5	33.5	31.0	29.0	28.5	26.0	24.5	23.5	22.5
	Nominal	33.0	33.0	30.5	28.5	28.0	25.5	24.0	23.0	22.0
GSM/GPRS/EDGE 1900	Maximum	30.0	30.0	29.0	27.0	25.5	26.0	24.0	23.0	22.0
	Nominal	29.5	29.5	28.5	26.5	25.0	25.5	23.5	22.5	21.5

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
UMTS Band 5 (850 MHz)	Maximum	23.5	23.5	23.5	22.5
	Nominal	23.0	23.0	23.0	22.0
UMTS Band 2 (1900 MHz)	Maximum	22.0	21.5	21.5	21.5
	Nominal	21.5	21.0	21.0	21.0

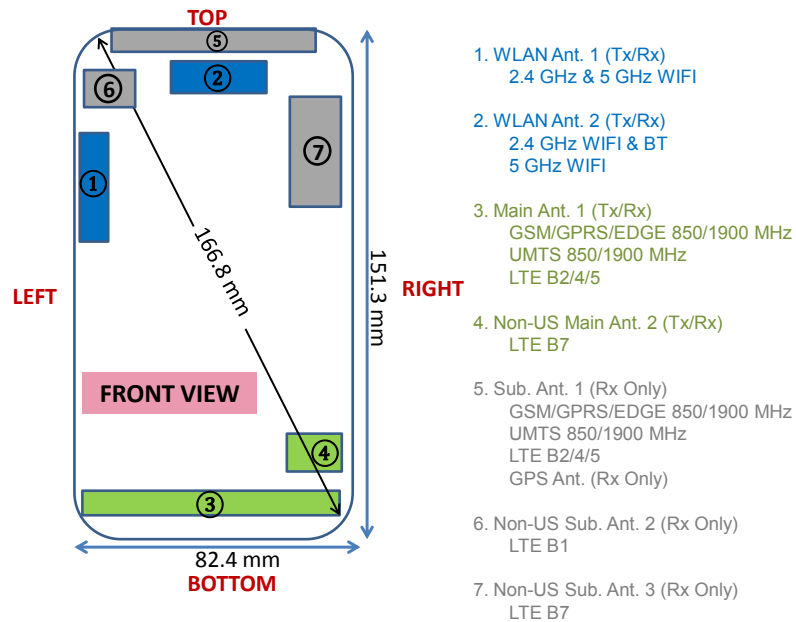
FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 3 of 78	

Mode / Band		Modulated Average (dBm)
LTE Band 5 (Cell)	Maximum	24.0
	Nominal	23.5
LTE Band 4 (AWS)	Maximum	23.0
	Nominal	22.5
LTE Band 2 (PCS)	Maximum	23.0
	Nominal	22.5

Mode / Band		Modulated Average (dBm)
SISO IEEE 802.11b (2.4 GHz)	Maximum	17.5
	Nominal	17.0
SISO IEEE 802.11g (2.4 GHz)	Maximum	14.5
	Nominal	14.0
SISO IEEE 802.11n (2.4 GHz)	Maximum	13.5
	Nominal	13.0
MIMO IEEE 802.11n (2.4 GHz)	Maximum	16.5
	Nominal	16.0
SISO IEEE 802.11a (5 GHz)	Maximum	14.5
	Nominal	14.0
SISO IEEE 802.11n (5 GHz) 20MHz Bandwidth	Maximum	13.5
	Nominal	13.0
MIMO IEEE 802.11n (5 GHz) 20MHz Bandwidth	Maximum	16.5
	Nominal	16.0
SISO IEEE 802.11n (5 GHz) 40MHz Bandwidth	Maximum	12.5
	Nominal	12.0
MIMO IEEE 802.11n (5 GHz) 40MHz Bandwidth	Maximum	15.5
	Nominal	15.0
SISO IEEE 802.11ac (5 GHz) 80MHz Bandwidth	Maximum	11.5
	Nominal	11.0
MIMO IEEE 802.11ac (5 GHz) 80MHz Bandwidth	Maximum	14.5
	Nominal	14.0
Bluetooth	Maximum	9.5
	Nominal	9.0
Bluetooth LE	Maximum	5.5
	Nominal	5.0

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 4 of 78

1.3 DUT Antenna Locations



Note: Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC Filing. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a “phablet.”

Figure 1-1
DUT Antenna Locations

Table 1-1
Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 4 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 2 (PCS)	Yes	Yes	No	Yes	Yes	Yes
2.4 GHz WLAN - Antenna 1 and MIMO	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN - Antenna 2	Yes	Yes	Yes	No	No	No
5 GHz WLAN - Antenna 1 and MIMO	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN - Antenna 2	Yes	Yes	Yes	No	No	No

Note: Particular DUT edges were not required to be evaluated for Wireless Router SAR or Extremity SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v01 guidance, page 2 and FCC KDB 648474 D04v01r01. The distances between the transmit antennas and the edges of the device are included in the filing.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 5 of 78	

1.4 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the specialized battery. The SAR tests were performed with the specialized battery (model: **EB-BN915BBE**).

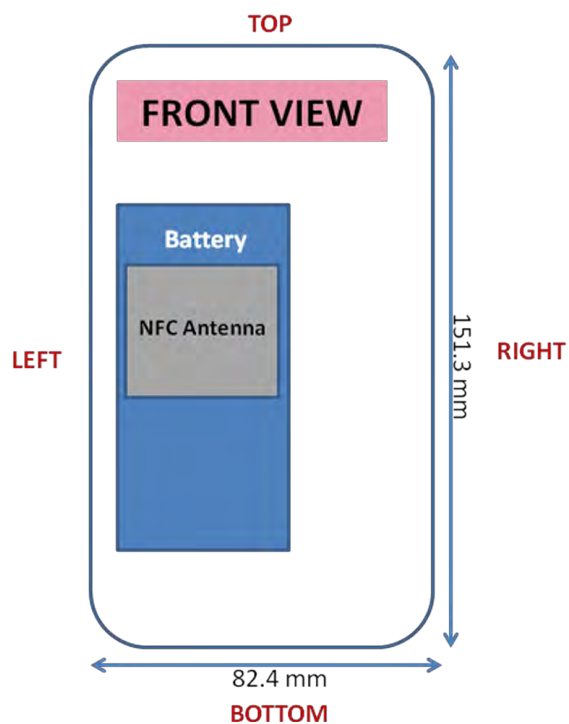


Figure 1-2
NFC Antenna Locations

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT	 SAMSUNG	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 6 of 78	

1.5 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 1-3 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.

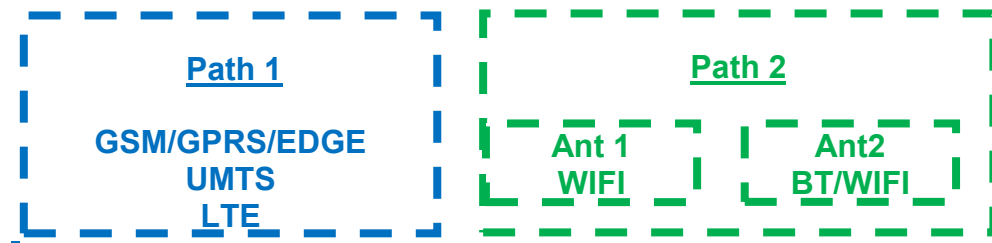


Figure 1-3
Simultaneous Transmission Paths

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 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Extremity	Notes
1	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
2	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
3	GSM voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	
4	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
5	UMTS + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
6	UMTS + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	
7	LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
8	LTE + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
9	LTE + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	
10	GPRS/EDGE + 2.4 GHz Wi-Fi	N/A	N/A	Yes	Yes	
11	GPRS/EDGE + 5 GHz Wi-Fi	N/A	N/A	N/A	Yes	For Wi-Fi Direct Only

- 2.4 GHz WLAN, 5 GHz WLAN, and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
- All licensed modes share the same antenna path and cannot transmit simultaneously.
- When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
- Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
- When wireless router mode is enabled, all 5GHz bands are disabled.
- This device supports 2x2 MIMO Tx for WLAN 802.11n/ac. Each WLAN antenna can transmit independently or together when operating with MIMO.
- This device supports VoLTE.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 7 of 78	

1.6 SAR Test Exclusions Applied

(A) WIFI/BT

Since Wireless Router operations are not allowed by the chipset firmware using 5 GHz WIFI, only 2.4 GHz WIFI Hotspot SAR tests and combinations are considered for SAR with respect to Wireless Router configurations according to FCC KDB 941225 D06v01.

Per FCC KDB 447498 D01v05, the 1g SAR exclusion threshold for distances <50mm is defined by the following equation:

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

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, body-worn Bluetooth SAR was not required; $[(9/10) * \sqrt{2.480}] = 1.4 < 3.0$. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.

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

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

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, extremity Bluetooth SAR was not required; $[(9/5) * \sqrt{2.480}] = 2.8 < 7.5$. Per KDB Publication 447498 D01v05, the maximum power of the channel was rounded to the nearest mW before calculation.

This device supports 20 MHz and 40 MHz Bandwidths for IEEE 802.11n for 5 GHz WIFI only. IEEE 802.11n was not evaluated for SAR since the average output power of 20 MHz and 40 MHz bandwidths was not more than 0.25 dB higher than the average output power of IEEE 802.11a.

This device supports IEEE 802.11ac with the following features:

- a) Up to 80 MHz Bandwidth only
- b) No aggregate channel configurations
- c) 2 Tx antenna output
- d) 256 QAM is supported
- e) No new 5 GHz channels

Per April 2013 TCB Workshop notes, full SAR tests for all SISO IEEE 802.11ac configurations were not required because the average output power was not more than 0.25 dB higher than SISO IEEE 802.11a mode. SISO IEEE 802.11ac was evaluated for the highest SISO IEEE 802.11a position in each 5 GHz band and exposure condition.

Per FCC KDB Publication 648474 D04v01r01, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for 5 GHz WLAN, extremity SAR tests were performed. Extremity SAR was not evaluated for 2.4 GHz WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 8 of 78

(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.

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

1.7 Power Reduction for SAR

There is no power reduction used for any band/mode implemented in this device for SAR purposes.

1.8 Guidance Applied

- IEEE 1528-2003
- FCC KDB Publication 941225 D01v02, D02v02r02, D03v01, D05v02r03, D06v01r01 (2G/3G/4G and Hotspot)
- 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 648474 D03-D04 (Phablet Procedures)
- April 2013 TCB Workshop Notes (IEEE 802.11ac)
- October 2013 TCB Workshop Notes (GPRS Testing 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.

	Head Serial Number	Body-Worn Serial Number	Hotspot Serial Number	Extremity Serial Number
GSM/GPRS/EDGE 850	0923-1	0923-1	0923-1	-
UMTS 850	0923-1	0923-1	0923-1	-
GSM/GPRS/EDGE 1900	0923-1	0923-1	0923-1	-
UMTS 1900	0923-1	0923-1	0923-1	-
LTE Band 5 (Cell)	0923-5	0923-5	0923-5	-
LTE Band 4 (AWS)	0923-2	0923-2	0923-2	-
LTE Band 2 (PCS)	0923-3	0923-3	0923-3	-
2.4 GHz WLAN	0923-1	0923-1	0923-1	-
5 GHz WLAN	0923-1	0923-5	-	0923-5

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
		Page 9 of 78

2

LTE INFORMATION

LTE Information			
FCC ID	A3LSMN915F		
Form Factor	Portable Handset		
Frequency Range of each LTE transmission band	LTE Band 5 (Cell) (824.7 - 848.3 MHz)		
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)		
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)		
Channel Bandwidths	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
Channel Numbers and Frequencies (MHz)	Low	Mid	High
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
LTE Band 5 (Cell): 3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
LTE Band 5 (Cell): 5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
LTE Band 5 (Cell): 10 MHz	829 (20450)	836.5 (20525)	844 (20600)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	1732.5 (20175)	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	1732.5 (20175)	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	1732.5 (20175)	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715 (20000)	1732.5 (20175)	1750 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	1732.5 (20175)	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720 (20050)	1732.5 (20175)	1745 (20300)
LTE Band 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)
UE Category	6		
Modulations Supported in UL	QPSK, 16QAM		
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES		
A-MPR (Additional MPR) disabled for SAR Testing?	YES		

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 10 of 78	

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/m³)
- E = Total RMS electric field strength (V/m)

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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 11 of 78

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:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):
 - a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
 - b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
 - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

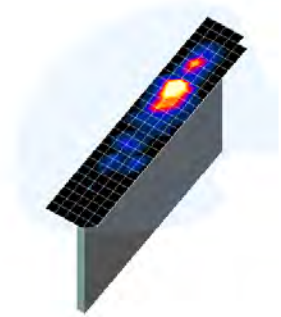


Figure 4-1
Sample SAR Area
Scan

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

Frequency	Maximum Area Scan Resolution (mm) (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		
				$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5* $\Delta z_{\text{zoom}}(n-1)$	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 12 of 78	

5

DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

Figure 5-2 shows the front, back and side views of the SAM Twin Phantom. The point “M” is the reference point for the center of the mouth, “LE” is the left ear reference point (ERP), and “RE” is the right ERP. The ERP is 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5-1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (see Figure 5-1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

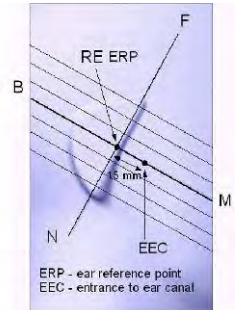


Figure 5-1
Close-Up Side view
of ERP

5.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (See Figure 5-3). The acoustic output was then located at the same level as the center of the ear reference point. The test device was positioned so that the “vertical centerline” was bisecting the front surface of the handset at its top and bottom edges, positioning the “ear reference point” on the outer surface of the both the left and right head phantoms on the ear reference point.



Figure 5-2
Front, back and side view of SAM Twin Phantom

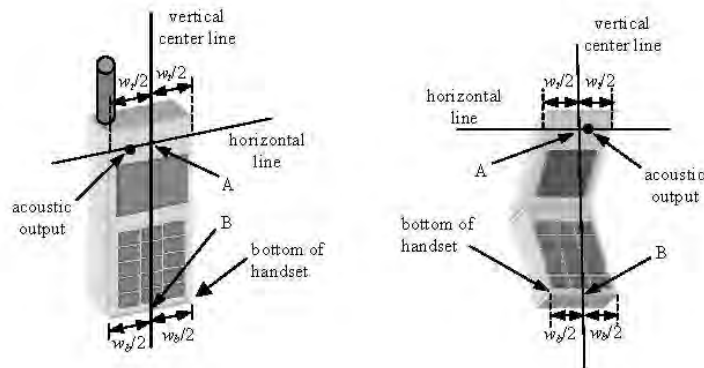


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 13 of 78

6 TEST CONFIGURATION POSITIONS FOR HANDSETS

6.1 Device Holder

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

6.2 Positioning for Cheek

1. The test device was positioned with the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6-1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.



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

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical with respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 6-2).

6.3 Positioning for Ear / 15° Tilt

With the test device aligned in the “Cheek Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15 degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 6-2).

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 14 of 78	



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

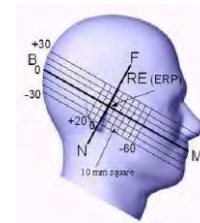


Figure 6-3 Side view w/ relevant markings

6.4 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-4). Per FCC KDB Publication 648474 D04v01, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v05 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

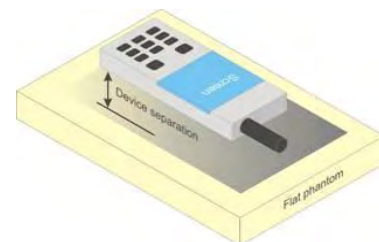


Figure 6-4 Sample Body-Worn Diagram

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

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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 15 of 78

6.5 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 44798 D01v05 should be applied to determine SAR test requirements.

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC minitables that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04 v01r01DR04 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna ≤ 25 mm from that surface or edge, in direct contact with the phantom, for 10-g SAR. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg.

6.6 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v01 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v05 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

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

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

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

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
		Page 17 of 78

Power measurements were performed using a base station simulator under digital average power.

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v05, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r02.

8.2 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.

8.3 SAR Measurement Conditions for UMTS

8.3.1 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.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 18 of 78

8.3.2 Head SAR Measurements for Handsets

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.

8.3.3 Body SAR Measurements

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

8.3.4 SAR Measurements for Handsets with Rel 5 HSDPA

Body SAR for HSDPA is not required for handsets with HSDPA capabilities when the maximum average output power of each RF channel with HSDPA active is less than 0.25 dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise, SAR is measured for HSDPA, using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration measured in 12.2 kbps RMC without HSDPA, on the maximum output channel with the body exposure configuration that resulted in the highest SAR in 12.2 kbps RMC mode for that RF channel.

The H-set used in FRC for HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HSPDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the applicable H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the FRC for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 2 ms to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors of $\beta_c=9$ and $\beta_d=15$, and power offset parameters of $\Delta_{ACK} = \Delta_{NACK} = 5$ and $\Delta_{CQI}=2$ is used. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the FRC.

Sub-Test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, 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: $\Delta_{ACK}, \Delta_{NACK}$ 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 $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. 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 8-1
Table C.10.1.4 of TS 234.121-1

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 19 of 78	

8.3.5 SAR Measurements for Handsets with Rel 6 HSUPA

Body SAR for HSUPA is not required when the maximum average output of each RF channel with HSUPA/HSDPA active is less than 0.25 dB higher than as measured without HSUPA/HSDPA using 12.2 kbps RMC and maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise SAR is measured on the maximum output channel for the body exposure configuration produced highest SAR in 12.2 kbps RMC for that RF channel, using the additional procedures under "Release 6 HSPA data devices"

Head SAR for VOIP operations under HSPA is not required when maximum average output of each RF channel with HSPA is less than 0.25 dB higher than as measured using 12.2 kbps RMC. Otherwise SAR is measured using same HSPA configuration as used for body SAR.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{1e}^{(1)}$	β_{1e}	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	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	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 $\Delta_{CQI} = 8 \Leftrightarrow A_{1e} = \beta_{1e}/\beta_c = 30/15 \Leftrightarrow \beta_{1e} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{1e}/\beta_c = 24/15$. 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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 $\beta_c = 14/15$ and $\beta_d = 15/15$.

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.

8.3.6 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 $\leq 1/4$ dB higher than that measured using 12.2 kbps RMC, or the maximum reported SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit, SAR evaluation for DC-HSDPA is not required.

8.4 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).

8.4.1 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.

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 20 of 78	

8.4.2 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.

8.4.3 A-MPR

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

8.4.4 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 $\frac{1}{2}$ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

8.5 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.

8.5.1 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.

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 21 of 78	

8.5.2 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 than 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. 802.11ac SAR was evaluated for highest 802.11a configuration in each 5 GHz band and each exposure condition. 802.11ac modes were additionally evaluated for SAR if the output power for the respective mode was more than 0.25 dB higher than powers of 802.11a modes.

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.

8.5.3 MIMO SAR considerations

Per KDB 248227, SAR for MIMO was measured with both transmitting simultaneously and was evaluated independently of SISO operation. For 2.4 and 5 GHz MIMO, IEEE 802.11n 20 MHz bandwidth was evaluated. Other IEEE 802.11 modes and bandwidths were not investigated for MIMO operations since the maximum allowed output power (including tolerance) was not higher for these modes.

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 22 of 78	

9 RF CONDUCTED POWERS

9.1 GSM 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 Slots	GPRS [dBm] 3 Tx Slots	GPRS [dBm] 4 Tx Slots	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slots	EDGE [dBm] 3 Tx Slots	EDGE [dBm] 4 Tx Slots
GSM 850	128	33.00	33.06	30.90	27.89	26.52	25.23	24.41	23.24	21.44
	190	33.05	33.13	30.26	27.97	26.61	25.19	24.50	23.30	21.46
	251	33.04	33.10	30.42	28.04	26.70	25.20	24.50	23.38	21.43
GSM 1900	512	29.56	29.62	28.48	26.06	23.85	25.60	23.70	22.29	20.96
	661	29.62	29.66	28.50	26.03	23.78	25.47	23.75	22.27	20.96
	810	29.64	29.70	28.60	26.50	23.89	25.64	23.73	22.25	21.05
		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 Slots	GPRS [dBm] 3 Tx Slots	GPRS [dBm] 4 Tx Slots	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slots	EDGE [dBm] 3 Tx Slots	EDGE [dBm] 4 Tx Slots
GSM 850	128	23.97	24.03	24.88	23.63	23.51	16.20	18.39	18.98	18.43
	190	24.02	24.10	24.24	23.71	23.60	16.16	18.48	19.04	18.45
	251	24.01	24.07	24.40	23.78	23.69	16.17	18.48	19.12	18.42
GSM 1900	512	20.53	20.59	22.46	21.80	20.84	16.57	17.68	18.03	17.95
	661	20.59	20.63	22.48	21.77	20.77	16.44	17.73	18.01	17.95
	810	20.61	20.67	22.58	22.24	20.88	16.61	17.71	17.99	18.04
GSM 850	Frame Avg.Targets:	23.97	23.97	24.48	24.24	24.99	16.47	17.98	18.74	18.99
GSM 1900		20.47	20.47	22.48	22.24	21.99	16.47	17.48	18.24	18.49

Note:

- Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
- GPRS/EDGE (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
- EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8PSK modulation do not have an impact on output power.

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



Figure 9-1
Power Measurement Setup

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 23 of 78	

9.2 UMTS Conducted Powers

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.09	23.03	23.18	21.45	21.40	21.52	-
99		12.2 kbps AMR	23.05	23.01	23.16	21.48	21.47	21.53	-
6	HSDPA	Subtest 1	22.09	22.02	22.27	20.22	20.30	20.70	0
6		Subtest 2	22.12	22.03	22.29	20.27	20.39	20.71	0
6		Subtest 3	21.62	21.50	21.78	20.22	20.28	20.40	0.5
6		Subtest 4	21.58	21.51	21.76	20.17	20.17	20.42	0.5
6	HSUPA	Subtest 1	21.83	21.89	21.89	20.39	20.58	20.64	0
6		Subtest 2	21.23	21.18	21.92	19.91	19.93	19.99	2
6		Subtest 3	21.22	21.27	21.23	19.09	18.82	18.71	1
6		Subtest 4	21.24	21.61	21.87	19.82	20.39	20.54	2
6		Subtest 5	21.54	21.82	21.79	20.47	20.42	20.76	0
8	DC-HSDPA	Subtest 1	22.29	22.27	22.35	21.00	20.89	20.90	0
8		Subtest 2	22.22	22.23	22.39	21.02	20.90	20.91	0
8		Subtest 3	21.71	21.94	21.79	20.54	20.43	20.42	0.5
8		Subtest 4	21.74	21.69	21.78	20.56	20.40	20.43	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.

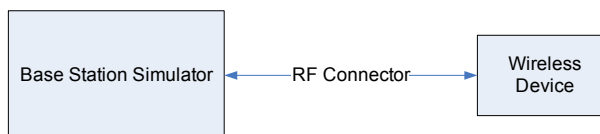


Figure 9-2
Power Measurement Setup

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 24 of 78	

9.3 LTE Conducted Powers

9.3.1

LTE Band 5 (Cell)

Table 9-1
LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	836.5	20525	10	QPSK	1	0	23.69	0	0
	836.5	20525	10	QPSK	1	25	23.72	0	0
	836.5	20525	10	QPSK	1	49	23.13	0	0
	836.5	20525	10	QPSK	25	0	22.69	0-1	1
	836.5	20525	10	QPSK	25	12	22.74	0-1	1
	836.5	20525	10	QPSK	25	25	22.44	0-1	1
	836.5	20525	10	QPSK	50	0	22.54	0-1	1
	836.5	20525	10	16QAM	1	0	22.77	0-1	1
	836.5	20525	10	16QAM	1	25	22.72	0-1	1
	836.5	20525	10	16QAM	1	49	22.27	0-1	1
	836.5	20525	10	16QAM	25	0	21.71	0-2	2
	836.5	20525	10	16QAM	25	12	21.77	0-2	2
	836.5	20525	10	16QAM	25	25	21.45	0-2	2
	836.5	20525	10	16QAM	50	0	21.54	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.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 25 of 78

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	826.5	20425	5	QPSK	1	0	23.37	0	0
	826.5	20425	5	QPSK	1	12	23.21	0	0
	826.5	20425	5	QPSK	1	24	23.08	0	0
	826.5	20425	5	QPSK	12	0	22.38	0-1	1
	826.5	20425	5	QPSK	12	6	22.23	0-1	1
	826.5	20425	5	QPSK	12	13	22.29	0-1	1
	826.5	20425	5	QPSK	25	0	22.27	0-1	1
	826.5	20425	5	16-QAM	1	0	22.43	0-1	1
	826.5	20425	5	16-QAM	1	12	22.32	0-1	1
	826.5	20425	5	16-QAM	1	24	22.22	0-1	1
	826.5	20425	5	16-QAM	12	0	21.29	0-2	2
	826.5	20425	5	16-QAM	12	6	21.22	0-2	2
	826.5	20425	5	16-QAM	12	13	21.35	0-2	2
	826.5	20425	5	16-QAM	25	0	21.26	0-2	2
Mid	836.5	20525	5	QPSK	1	0	23.12	0	0
	836.5	20525	5	QPSK	1	12	23.28	0	0
	836.5	20525	5	QPSK	1	24	23.33	0	0
	836.5	20525	5	QPSK	12	0	22.28	0-1	1
	836.5	20525	5	QPSK	12	6	22.50	0-1	1
	836.5	20525	5	QPSK	12	13	22.41	0-1	1
	836.5	20525	5	QPSK	25	0	22.41	0-1	1
	836.5	20525	5	16-QAM	1	0	22.38	0-1	1
	836.5	20525	5	16-QAM	1	12	22.53	0-1	1
	836.5	20525	5	16-QAM	1	24	22.51	0-1	1
	836.5	20525	5	16-QAM	12	0	21.37	0-2	2
	836.5	20525	5	16-QAM	12	6	21.34	0-2	2
	836.5	20525	5	16-QAM	12	13	21.33	0-2	2
	836.5	20525	5	16-QAM	25	0	21.38	0-2	2
High	846.5	20625	5	QPSK	1	0	23.16	0	0
	846.5	20625	5	QPSK	1	12	23.00	0	0
	846.5	20625	5	QPSK	1	24	23.06	0	0
	846.5	20625	5	QPSK	12	0	22.06	0-1	1
	846.5	20625	5	QPSK	12	6	22.01	0-1	1
	846.5	20625	5	QPSK	12	13	22.25	0-1	1
	846.5	20625	5	QPSK	25	0	22.09	0-1	1
	846.5	20625	5	16-QAM	1	0	22.55	0-1	1
	846.5	20625	5	16-QAM	1	12	22.30	0-1	1
	846.5	20625	5	16-QAM	1	24	22.47	0-1	1
	846.5	20625	5	16-QAM	12	0	21.10	0-2	2
	846.5	20625	5	16-QAM	12	6	21.02	0-2	2
	846.5	20625	5	16-QAM	12	13	21.07	0-2	2
	846.5	20625	5	16-QAM	25	0	21.00	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 26 of 78		

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	825.5	20415	3	QPSK	1	0	23.69	0	0
	825.5	20415	3	QPSK	1	7	23.47	0	0
	825.5	20415	3	QPSK	1	14	23.21	0	0
	825.5	20415	3	QPSK	8	0	22.48	0-1	1
	825.5	20415	3	QPSK	8	4	22.38	0-1	1
	825.5	20415	3	QPSK	8	7	22.33	0-1	1
	825.5	20415	3	QPSK	15	0	22.41	0-1	1
	825.5	20415	3	16-QAM	1	0	22.94	0-1	1
	825.5	20415	3	16-QAM	1	7	22.78	0-1	1
	825.5	20415	3	16-QAM	1	14	22.56	0-1	1
	825.5	20415	3	16-QAM	8	0	21.52	0-2	2
	825.5	20415	3	16-QAM	8	4	21.46	0-2	2
	825.5	20415	3	16-QAM	8	7	21.41	0-2	2
	825.5	20415	3	16-QAM	15	0	21.39	0-2	2
Mid	836.5	20525	3	QPSK	1	0	23.40	0	0
	836.5	20525	3	QPSK	1	7	23.59	0	0
	836.5	20525	3	QPSK	1	14	23.48	0	0
	836.5	20525	3	QPSK	8	0	22.41	0-1	1
	836.5	20525	3	QPSK	8	4	22.50	0-1	1
	836.5	20525	3	QPSK	8	7	22.38	0-1	1
	836.5	20525	3	QPSK	15	0	22.39	0-1	1
	836.5	20525	3	16-QAM	1	0	22.75	0-1	1
	836.5	20525	3	16-QAM	1	7	22.80	0-1	1
	836.5	20525	3	16-QAM	1	14	22.68	0-1	1
	836.5	20525	3	16-QAM	8	0	21.46	0-2	2
	836.5	20525	3	16-QAM	8	4	21.53	0-2	2
	836.5	20525	3	16-QAM	8	7	21.45	0-2	2
	836.5	20525	3	16-QAM	15	0	21.41	0-2	2
High	847.5	20635	3	QPSK	1	0	23.03	0	0
	847.5	20635	3	QPSK	1	7	23.04	0	0
	847.5	20635	3	QPSK	1	14	23.02	0	0
	847.5	20635	3	QPSK	8	0	22.01	0-1	1
	847.5	20635	3	QPSK	8	4	22.18	0-1	1
	847.5	20635	3	QPSK	8	7	22.19	0-1	1
	847.5	20635	3	QPSK	15	0	22.08	0-1	1
	847.5	20635	3	16-QAM	1	0	22.31	0-1	1
	847.5	20635	3	16-QAM	1	7	22.40	0-1	1
	847.5	20635	3	16-QAM	1	14	22.39	0-1	1
	847.5	20635	3	16-QAM	8	0	21.15	0-2	2
	847.5	20635	3	16-QAM	8	4	21.30	0-2	2
	847.5	20635	3	16-QAM	8	7	21.30	0-2	2
	847.5	20635	3	16-QAM	15	0	21.12	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 27 of 78		

Table 9-4
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	23.47	0	0
	824.7	20407	1.4	QPSK	1	2	23.43	0	0
	824.7	20407	1.4	QPSK	1	5	23.37	0	0
	824.7	20407	1.4	QPSK	3	0	23.46	0	0
	824.7	20407	1.4	QPSK	3	2	23.47	0	0
	824.7	20407	1.4	QPSK	3	3	23.32	0	0
	824.7	20407	1.4	QPSK	6	0	22.41	0-1	1
	824.7	20407	1.4	16-QAM	1	0	22.76	0-1	1
	824.7	20407	1.4	16-QAM	1	2	22.70	0-1	1
	824.7	20407	1.4	16-QAM	1	5	22.64	0-1	1
	824.7	20407	1.4	16-QAM	3	0	22.53	0-1	1
	824.7	20407	1.4	16-QAM	3	2	22.54	0-1	1
	824.7	20407	1.4	16-QAM	3	3	22.49	0-1	1
Mid	824.7	20407	1.4	16-QAM	6	0	21.38	0-2	2
	836.5	20525	1.4	QPSK	1	0	23.38	0	0
	836.5	20525	1.4	QPSK	1	2	23.54	0	0
	836.5	20525	1.4	QPSK	1	5	23.48	0	0
	836.5	20525	1.4	QPSK	3	0	23.35	0	0
	836.5	20525	1.4	QPSK	3	2	23.49	0	0
	836.5	20525	1.4	QPSK	3	3	23.43	0	0
	836.5	20525	1.4	QPSK	6	0	22.48	0-1	1
	836.5	20525	1.4	16-QAM	1	0	22.69	0-1	1
	836.5	20525	1.4	16-QAM	1	2	22.78	0-1	1
	836.5	20525	1.4	16-QAM	1	5	22.77	0-1	1
	836.5	20525	1.4	16-QAM	3	0	22.51	0-1	1
	836.5	20525	1.4	16-QAM	3	2	22.66	0-1	1
	836.5	20525	1.4	16-QAM	3	3	22.61	0-1	1
High	836.5	20525	1.4	16-QAM	6	0	21.58	0-2	2
	848.3	20643	1.4	QPSK	1	0	23.18	0	0
	848.3	20643	1.4	QPSK	1	2	23.27	0	0
	848.3	20643	1.4	QPSK	1	5	23.11	0	0
	848.3	20643	1.4	QPSK	3	0	23.24	0	0
	848.3	20643	1.4	QPSK	3	2	23.23	0	0
	848.3	20643	1.4	QPSK	3	3	23.16	0	0
	848.3	20643	1.4	QPSK	6	0	22.27	0-1	1
	848.3	20643	1.4	16-QAM	1	0	22.51	0-1	1
	848.3	20643	1.4	16-QAM	1	2	22.62	0-1	1
	848.3	20643	1.4	16-QAM	1	5	22.43	0-1	1
	848.3	20643	1.4	16-QAM	3	0	22.44	0-1	1
	848.3	20643	1.4	16-QAM	3	2	22.43	0-1	1
	848.3	20643	1.4	16-QAM	3	3	22.34	0-1	1
	848.3	20643	1.4	16-QAM	6	0	21.37	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 28 of 78		

9.3.2

LTE Band 4 (AWS)

Table 9-5
LTE Band 4 (AWS) Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Mid	1732.5	20175	20	QPSK	1	0	22.18	0	0
	1732.5	20175	20	QPSK	1	50	21.82	0	0
	1732.5	20175	20	QPSK	1	99	21.84	0	0
	1732.5	20175	20	QPSK	50	0	20.98	0-1	1
	1732.5	20175	20	QPSK	50	25	20.88	0-1	1
	1732.5	20175	20	QPSK	50	50	20.83	0-1	1
	1732.5	20175	20	QPSK	100	0	20.85	0-1	1
	1732.5	20175	20	16QAM	1	0	21.50	0-1	1
	1732.5	20175	20	16QAM	1	50	21.21	0-1	1
	1732.5	20175	20	16QAM	1	99	21.29	0-1	1
	1732.5	20175	20	16QAM	50	0	20.04	0-2	2
	1732.5	20175	20	16QAM	50	25	19.92	0-2	2
	1732.5	20175	20	16QAM	50	50	19.87	0-2	2
	1732.5	20175	20	16QAM	100	0	19.89	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.

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
		Page 29 of 78

Table 9-6
LTE Band 4 (AWS) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1717.5	20025	15	QPSK	1	0	21.87	0	0
	1717.5	20025	15	QPSK	1	36	21.93	0	0
	1717.5	20025	15	QPSK	1	74	21.95	0	0
	1717.5	20025	15	QPSK	36	0	20.93	0-1	1
	1717.5	20025	15	QPSK	36	18	21.02	0-1	1
	1717.5	20025	15	QPSK	36	37	21.01	0-1	1
	1717.5	20025	15	QPSK	75	0	20.94	0-1	1
	1717.5	20025	15	16QAM	1	0	20.97	0-1	1
	1717.5	20025	15	16QAM	1	36	21.10	0-1	1
	1717.5	20025	15	16QAM	1	74	21.09	0-1	1
	1717.5	20025	15	16QAM	36	0	19.91	0-2	2
	1717.5	20025	15	16QAM	36	18	20.01	0-2	2
Mid	1717.5	20025	15	16QAM	36	37	20.00	0-2	2
	1717.5	20025	15	16QAM	75	0	20.00	0-2	2
	1732.5	20175	15	QPSK	1	0	22.02	0	0
	1732.5	20175	15	QPSK	1	36	21.78	0	0
	1732.5	20175	15	QPSK	1	74	21.74	0	0
	1732.5	20175	15	QPSK	36	0	20.96	0-1	1
	1732.5	20175	15	QPSK	36	18	20.83	0-1	1
	1732.5	20175	15	QPSK	36	37	20.84	0-1	1
	1732.5	20175	15	QPSK	75	0	20.87	0-1	1
	1732.5	20175	15	16QAM	1	0	21.45	0-1	1
	1732.5	20175	15	16QAM	1	36	21.09	0-1	1
	1732.5	20175	15	16QAM	1	74	21.10	0-1	1
High	1732.5	20175	15	16QAM	36	0	20.01	0-2	2
	1732.5	20175	15	16QAM	36	18	19.88	0-2	2
	1732.5	20175	15	16QAM	36	37	19.89	0-2	2
	1732.5	20175	15	16QAM	75	0	19.92	0-2	2
	1747.5	20325	15	QPSK	1	0	21.91	0	0
	1747.5	20325	15	QPSK	1	36	21.78	0	0
	1747.5	20325	15	QPSK	1	74	21.94	0	0
	1747.5	20325	15	QPSK	36	0	20.64	0-1	1
	1747.5	20325	15	QPSK	36	18	20.70	0-1	1
	1747.5	20325	15	QPSK	36	37	20.75	0-1	1
	1747.5	20325	15	QPSK	75	0	20.65	0-1	1
	1747.5	20325	15	16QAM	1	0	21.06	0-1	1
	1747.5	20325	15	16QAM	1	36	20.78	0-1	1
	1747.5	20325	15	16QAM	1	74	21.04	0-1	1
	1747.5	20325	15	16QAM	36	0	19.67	0-2	2
	1747.5	20325	15	16QAM	36	18	19.69	0-2	2
	1747.5	20325	15	16QAM	36	37	19.76	0-2	2
	1747.5	20325	15	16QAM	75	0	19.65	0-2	2

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 30 of 78

Table 9-7
LTE Band 4 (AWS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1715	20000	10	QPSK	1	0	21.69	0	0
	1715	20000	10	QPSK	1	25	21.89	0	0
	1715	20000	10	QPSK	1	49	21.77	0	0
	1715	20000	10	QPSK	25	0	20.81	0-1	1
	1715	20000	10	QPSK	25	12	20.95	0-1	1
	1715	20000	10	QPSK	25	25	21.05	0-1	1
	1715	20000	10	QPSK	50	0	20.90	0-1	1
	1715	20000	10	16QAM	1	0	20.79	0-1	1
	1715	20000	10	16QAM	1	25	20.96	0-1	1
	1715	20000	10	16QAM	1	49	20.80	0-1	1
	1715	20000	10	16QAM	25	0	19.75	0-2	2
	1715	20000	10	16QAM	25	12	19.97	0-2	2
	1715	20000	10	16QAM	25	25	20.07	0-2	2
Mid	1732.5	20175	10	QPSK	1	0	21.94	0	0
	1732.5	20175	10	QPSK	1	25	21.72	0	0
	1732.5	20175	10	QPSK	1	49	21.66	0	0
	1732.5	20175	10	QPSK	25	0	20.90	0-1	1
	1732.5	20175	10	QPSK	25	12	20.85	0-1	1
	1732.5	20175	10	QPSK	25	25	20.77	0-1	1
	1732.5	20175	10	QPSK	50	0	20.82	0-1	1
	1732.5	20175	10	16QAM	1	0	21.35	0-1	1
	1732.5	20175	10	16QAM	1	25	21.04	0-1	1
	1732.5	20175	10	16QAM	1	49	21.05	0-1	1
	1732.5	20175	10	16QAM	25	0	19.90	0-2	2
	1732.5	20175	10	16QAM	25	12	19.90	0-2	2
	1732.5	20175	10	16QAM	25	25	19.82	0-2	2
	1732.5	20175	10	16QAM	50	0	19.83	0-2	2
High	1750	20350	10	QPSK	1	0	21.50	0	0
	1750	20350	10	QPSK	1	25	21.61	0	0
	1750	20350	10	QPSK	1	49	21.63	0	0
	1750	20350	10	QPSK	25	0	20.61	0-1	1
	1750	20350	10	QPSK	25	12	20.77	0-1	1
	1750	20350	10	QPSK	25	25	20.75	0-1	1
	1750	20350	10	QPSK	50	0	20.65	0-1	1
	1750	20350	10	16QAM	1	0	20.61	0-1	1
	1750	20350	10	16QAM	1	25	20.87	0-1	1
	1750	20350	10	16QAM	1	49	20.88	0-1	1
	1750	20350	10	16QAM	25	0	19.53	0-2	2
	1750	20350	10	16QAM	25	12	19.71	0-2	2
	1750	20350	10	16QAM	25	25	19.77	0-2	2
	1750	20350	10	16QAM	50	0	19.66	0-2	2

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 31 of 78	

Table 9-8
LTE Band 4 (AWS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1712.5	19975	5	QPSK	1	0	21.76	0	0
	1712.5	19975	5	QPSK	1	12	21.73	0	0
	1712.5	19975	5	QPSK	1	24	21.83	0	0
	1712.5	19975	5	QPSK	12	0	20.89	0-1	1
	1712.5	19975	5	QPSK	12	6	20.78	0-1	1
	1712.5	19975	5	QPSK	12	13	20.81	0-1	1
	1712.5	19975	5	QPSK	25	0	20.73	0-1	1
	1712.5	19975	5	16-QAM	1	0	20.84	0-1	1
	1712.5	19975	5	16-QAM	1	12	20.76	0-1	1
	1712.5	19975	5	16-QAM	1	24	20.88	0-1	1
	1712.5	19975	5	16-QAM	12	0	19.82	0-2	2
	1712.5	19975	5	16-QAM	12	6	19.83	0-2	2
	1712.5	19975	5	16-QAM	12	13	19.86	0-2	2
Mid	1732.5	20175	5	QPSK	1	0	21.66	0	0
	1732.5	20175	5	QPSK	1	12	21.69	0	0
	1732.5	20175	5	QPSK	1	24	21.72	0	0
	1732.5	20175	5	QPSK	12	0	20.72	0-1	1
	1732.5	20175	5	QPSK	12	6	20.82	0-1	1
	1732.5	20175	5	QPSK	12	13	20.71	0-1	1
	1732.5	20175	5	QPSK	25	0	20.81	0-1	1
	1732.5	20175	5	16-QAM	1	0	20.88	0-1	1
	1732.5	20175	5	16-QAM	1	12	20.83	0-1	1
	1732.5	20175	5	16-QAM	1	24	20.87	0-1	1
	1732.5	20175	5	16-QAM	12	0	19.82	0-2	2
	1732.5	20175	5	16-QAM	12	6	19.88	0-2	2
	1732.5	20175	5	16-QAM	12	13	19.78	0-2	2
	1732.5	20175	5	16-QAM	25	0	19.80	0-2	2
High	1752.5	20375	5	QPSK	1	0	21.74	0	0
	1752.5	20375	5	QPSK	1	12	21.72	0	0
	1752.5	20375	5	QPSK	1	24	21.76	0	0
	1752.5	20375	5	QPSK	12	0	20.75	0-1	1
	1752.5	20375	5	QPSK	12	6	20.79	0-1	1
	1752.5	20375	5	QPSK	12	13	20.84	0-1	1
	1752.5	20375	5	QPSK	25	0	20.77	0-1	1
	1752.5	20375	5	16-QAM	1	0	21.15	0-1	1
	1752.5	20375	5	16-QAM	1	12	21.13	0-1	1
	1752.5	20375	5	16-QAM	1	24	21.19	0-1	1
	1752.5	20375	5	16-QAM	12	0	19.73	0-2	2
	1752.5	20375	5	16-QAM	12	6	19.82	0-2	2
	1752.5	20375	5	16-QAM	12	13	19.74	0-2	2
	1752.5	20375	5	16-QAM	25	0	19.67	0-2	2

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 32 of 78	

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1711.5	19965	3	QPSK	1	0	21.79	0	0
	1711.5	19965	3	QPSK	1	7	21.81	0	0
	1711.5	19965	3	QPSK	1	14	21.73	0	0
	1711.5	19965	3	QPSK	8	0	20.82	0-1	1
	1711.5	19965	3	QPSK	8	4	20.75	0-1	1
	1711.5	19965	3	QPSK	8	7	20.78	0-1	1
	1711.5	19965	3	QPSK	15	0	20.73	0-1	1
	1711.5	19965	3	16-QAM	1	0	20.91	0-1	1
	1711.5	19965	3	16-QAM	1	7	20.94	0-1	1
	1711.5	19965	3	16-QAM	1	14	20.74	0-1	1
	1711.5	19965	3	16-QAM	8	0	19.59	0-2	2
	1711.5	19965	3	16-QAM	8	4	19.64	0-2	2
Mid	1711.5	19965	3	16-QAM	8	7	19.67	0-2	2
	1711.5	19965	3	16-QAM	15	0	19.74	0-2	2
	1732.5	20175	3	QPSK	1	0	21.68	0	0
	1732.5	20175	3	QPSK	1	7	21.79	0	0
	1732.5	20175	3	QPSK	1	14	21.72	0	0
	1732.5	20175	3	QPSK	8	0	20.75	0-1	1
	1732.5	20175	3	QPSK	8	4	20.80	0-1	1
	1732.5	20175	3	QPSK	8	7	20.68	0-1	1
	1732.5	20175	3	QPSK	15	0	20.78	0-1	1
	1732.5	20175	3	16-QAM	1	0	21.05	0-1	1
	1732.5	20175	3	16-QAM	1	7	21.10	0-1	1
	1732.5	20175	3	16-QAM	1	14	21.01	0-1	1
High	1732.5	20175	3	16-QAM	8	0	19.71	0-2	2
	1732.5	20175	3	16-QAM	8	4	19.74	0-2	2
	1732.5	20175	3	16-QAM	8	7	19.61	0-2	2
	1732.5	20175	3	16-QAM	15	0	19.80	0-2	2
	1753.5	20385	3	QPSK	1	0	21.70	0	0
	1753.5	20385	3	QPSK	1	7	21.81	0	0
	1753.5	20385	3	QPSK	1	14	21.80	0	0
	1753.5	20385	3	QPSK	8	0	20.74	0-1	1
	1753.5	20385	3	QPSK	8	4	20.85	0-1	1
	1753.5	20385	3	QPSK	8	7	20.83	0-1	1
	1753.5	20385	3	QPSK	15	0	20.85	0-1	1
	1753.5	20385	3	16-QAM	1	0	20.96	0-1	1
	1753.5	20385	3	16-QAM	1	7	21.07	0-1	1
	1753.5	20385	3	16-QAM	1	14	21.04	0-1	1
	1753.5	20385	3	16-QAM	8	0	19.84	0-2	2
	1753.5	20385	3	16-QAM	8	4	19.85	0-2	2
	1753.5	20385	3	16-QAM	8	7	19.83	0-2	2
	1753.5	20385	3	16-QAM	15	0	19.77	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 33 of 78		

Table 9-10
LTE Band 4 (AWS) Conducted Powers - 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1710.7	19957	1.4	QPSK	1	0	21.67	0	0
	1710.7	19957	1.4	QPSK	1	2	21.72	0	0
	1710.7	19957	1.4	QPSK	1	5	21.67	0	0
	1710.7	19957	1.4	QPSK	3	0	21.69	0	0
	1710.7	19957	1.4	QPSK	3	2	21.76	0	0
	1710.7	19957	1.4	QPSK	3	3	21.72	0	0
	1710.7	19957	1.4	QPSK	6	0	20.70	0-1	1
	1710.7	19957	1.4	16-QAM	1	0	20.74	0-1	1
	1710.7	19957	1.4	16-QAM	1	2	20.83	0-1	1
	1710.7	19957	1.4	16-QAM	1	5	20.80	0-1	1
	1710.7	19957	1.4	16-QAM	3	0	20.87	0-1	1
	1710.7	19957	1.4	16-QAM	3	2	20.93	0-1	1
Mid	1710.7	19957	1.4	16-QAM	3	3	20.87	0-1	1
	1710.7	19957	1.4	16-QAM	6	0	19.71	0-2	2
	1732.5	20175	1.4	QPSK	1	0	21.76	0	0
	1732.5	20175	1.4	QPSK	1	2	21.80	0	0
	1732.5	20175	1.4	QPSK	1	5	21.79	0	0
	1732.5	20175	1.4	QPSK	3	0	21.67	0	0
	1732.5	20175	1.4	QPSK	3	2	21.73	0	0
	1732.5	20175	1.4	QPSK	3	3	21.69	0	0
	1732.5	20175	1.4	QPSK	6	0	20.66	0-1	1
	1732.5	20175	1.4	16-QAM	1	0	20.60	0-1	1
	1732.5	20175	1.4	16-QAM	1	2	20.65	0-1	1
	1732.5	20175	1.4	16-QAM	1	5	20.64	0-1	1
High	1732.5	20175	1.4	16-QAM	3	0	20.67	0-1	1
	1732.5	20175	1.4	16-QAM	3	2	20.78	0-1	1
	1732.5	20175	1.4	16-QAM	3	3	20.72	0-1	1
	1732.5	20175	1.4	16-QAM	6	0	19.77	0-2	2
	1754.3	20393	1.4	QPSK	1	0	21.59	0	0
	1754.3	20393	1.4	QPSK	1	2	21.66	0	0
	1754.3	20393	1.4	QPSK	1	5	21.70	0	0
	1754.3	20393	1.4	QPSK	3	0	21.74	0	0
	1754.3	20393	1.4	QPSK	3	2	21.80	0	0
	1754.3	20393	1.4	QPSK	3	3	21.70	0	0
	1754.3	20393	1.4	QPSK	6	0	20.77	0-1	1
	1754.3	20393	1.4	16-QAM	1	0	20.82	0-1	1
	1754.3	20393	1.4	16-QAM	1	2	20.91	0-1	1
	1754.3	20393	1.4	16-QAM	1	5	20.96	0-1	1
	1754.3	20393	1.4	16-QAM	3	0	20.71	0-1	1
	1754.3	20393	1.4	16-QAM	3	2	20.83	0-1	1
	1754.3	20393	1.4	16-QAM	3	3	20.74	0-1	1
	1754.3	20393	1.4	16-QAM	6	0	19.79	0-2	2

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 34 of 78	

9.3.3

LTE Band 2 (PCS)

Table 9-11
LTE Band 2 (PCS) Conducted Powers - 20 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1860	18700	20	QPSK	1	0	21.35	0	0
	1860	18700	20	QPSK	1	50	21.28	0	0
	1860	18700	20	QPSK	1	99	21.48	0	0
	1860	18700	20	QPSK	50	0	20.50	0-1	1
	1860	18700	20	QPSK	50	25	20.54	0-1	1
	1860	18700	20	QPSK	50	50	20.53	0-1	1
	1860	18700	20	QPSK	100	0	20.51	0-1	1
	1860	18700	20	16QAM	1	0	20.61	0-1	1
	1860	18700	20	16QAM	1	50	20.56	0-1	1
	1860	18700	20	16QAM	1	99	20.55	0-1	1
	1860	18700	20	16QAM	50	0	19.46	0-2	2
	1860	18700	20	16QAM	50	25	19.64	0-2	2
	1860	18700	20	16QAM	50	50	19.65	0-2	2
Mid	1860	18700	20	16QAM	100	0	19.57	0-2	2
	1880.0	18900	20	QPSK	1	0	21.37	0	0
	1880.0	18900	20	QPSK	1	50	21.20	0	0
	1880.0	18900	20	QPSK	1	99	21.39	0	0
	1880.0	18900	20	QPSK	50	0	20.32	0-1	1
	1880.0	18900	20	QPSK	50	25	20.22	0-1	1
	1880.0	18900	20	QPSK	50	50	20.08	0-1	1
	1880.0	18900	20	QPSK	100	0	20.18	0-1	1
	1880.0	18900	20	16QAM	1	0	20.78	0-1	1
	1880.0	18900	20	16QAM	1	50	20.51	0-1	1
	1880.0	18900	20	16QAM	1	99	20.66	0-1	1
	1880.0	18900	20	16QAM	50	0	19.35	0-2	2
	1880.0	18900	20	16QAM	50	25	19.21	0-2	2
	1880.0	18900	20	16QAM	50	50	19.02	0-2	2
High	1880.0	18900	20	16QAM	100	0	19.10	0-2	2
	1900	19100	20	QPSK	1	0	21.08	0	0
	1900	19100	20	QPSK	1	50	21.20	0	0
	1900	19100	20	QPSK	1	99	21.47	0	0
	1900	19100	20	QPSK	50	0	20.46	0-1	1
	1900	19100	20	QPSK	50	25	20.48	0-1	1
	1900	19100	20	QPSK	50	50	20.52	0-1	1
	1900	19100	20	QPSK	100	0	20.42	0-1	1
	1900	19100	20	16QAM	1	0	20.56	0-1	1
	1900	19100	20	16QAM	1	50	20.64	0-1	1
	1900	19100	20	16QAM	1	99	20.73	0-1	1
	1900	19100	20	16QAM	50	0	19.45	0-2	2
	1900	19100	20	16QAM	50	25	19.55	0-2	2
	1900	19100	20	16QAM	50	50	19.61	0-2	2
	1900	19100	20	16QAM	100	0	19.46	0-2	2

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 35 of 78	

Table 9-12
LTE Band 2 (PCS) Conducted Powers - 15 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1857.5	18675	15	QPSK	1	0	21.18	0	0
	1857.5	18675	15	QPSK	1	36	21.06	0	0
	1857.5	18675	15	QPSK	1	74	21.38	0	0
	1857.5	18675	15	QPSK	36	0	20.30	0-1	1
	1857.5	18675	15	QPSK	36	18	20.19	0-1	1
	1857.5	18675	15	QPSK	36	37	20.25	0-1	1
	1857.5	18675	15	QPSK	75	0	20.14	0-1	1
	1857.5	18675	15	16QAM	1	0	20.00	0-1	1
	1857.5	18675	15	16QAM	1	36	20.46	0-1	1
	1857.5	18675	15	16QAM	1	74	20.34	0-1	1
	1857.5	18675	15	16QAM	36	0	19.08	0-2	2
	1857.5	18675	15	16QAM	36	18	19.04	0-2	2
Mid	1857.5	18675	15	16QAM	36	37	19.28	0-2	2
	1857.5	18675	15	16QAM	75	0	19.16	0-2	2
	1880.0	18900	15	QPSK	1	0	21.11	0	0
	1880.0	18900	15	QPSK	1	36	21.10	0	0
	1880.0	18900	15	QPSK	1	74	21.27	0	0
	1880.0	18900	15	QPSK	36	0	20.26	0-1	1
	1880.0	18900	15	QPSK	36	18	20.33	0-1	1
	1880.0	18900	15	QPSK	36	37	20.28	0-1	1
	1880.0	18900	15	QPSK	75	0	20.05	0-1	1
	1880.0	18900	15	16QAM	1	0	20.18	0-1	1
	1880.0	18900	15	16QAM	1	36	20.36	0-1	1
	1880.0	18900	15	16QAM	1	74	20.44	0-1	1
High	1880.0	18900	15	16QAM	36	0	19.20	0-2	2
	1880.0	18900	15	16QAM	36	18	19.08	0-2	2
	1880.0	18900	15	16QAM	36	37	19.25	0-2	2
	1880.0	18900	15	16QAM	75	0	19.24	0-2	2
	1902.5	19125	15	QPSK	1	0	21.14	0	0
	1902.5	19125	15	QPSK	1	36	21.10	0	0
	1902.5	19125	15	QPSK	1	74	21.29	0	0
	1902.5	19125	15	QPSK	36	0	20.33	0-1	1
	1902.5	19125	15	QPSK	36	18	20.35	0-1	1
	1902.5	19125	15	QPSK	36	37	20.38	0-1	1
	1902.5	19125	15	QPSK	75	0	20.06	0-1	1
	1902.5	19125	15	16QAM	1	0	20.08	0-1	1
	1902.5	19125	15	16QAM	1	36	20.31	0-1	1
	1902.5	19125	15	16QAM	1	74	20.52	0-1	1
	1902.5	19125	15	16QAM	36	0	19.21	0-2	2
	1902.5	19125	15	16QAM	36	18	19.18	0-2	2
	1902.5	19125	15	16QAM	36	37	19.23	0-2	2
	1902.5	19125	15	16QAM	75	0	19.15	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 36 of 78		

Table 9-13
LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1855	18650	10	QPSK	1	0	21.46	0	0
	1855	18650	10	QPSK	1	25	21.27	0	0
	1855	18650	10	QPSK	1	49	21.41	0	0
	1855	18650	10	QPSK	25	0	20.34	0-1	1
	1855	18650	10	QPSK	25	12	20.42	0-1	1
	1855	18650	10	QPSK	25	25	20.42	0-1	1
	1855	18650	10	QPSK	50	0	20.46	0-1	1
	1855	18650	10	16QAM	1	0	20.44	0-1	1
	1855	18650	10	16QAM	1	25	20.68	0-1	1
	1855	18650	10	16QAM	1	49	20.47	0-1	1
	1855	18650	10	16QAM	25	0	19.56	0-2	2
	1855	18650	10	16QAM	25	12	19.47	0-2	2
	1855	18650	10	16QAM	25	25	19.58	0-2	2
	1855	18650	10	16QAM	50	0	19.53	0-2	2
Mid	1880.0	18900	10	QPSK	1	0	21.39	0	0
	1880.0	18900	10	QPSK	1	25	21.06	0	0
	1880.0	18900	10	QPSK	1	49	21.48	0	0
	1880.0	18900	10	QPSK	25	0	20.45	0-1	1
	1880.0	18900	10	QPSK	25	12	20.20	0-1	1
	1880.0	18900	10	QPSK	25	25	20.02	0-1	1
	1880.0	18900	10	QPSK	50	0	20.24	0-1	1
	1880.0	18900	10	16QAM	1	0	20.89	0-1	1
	1880.0	18900	10	16QAM	1	25	20.40	0-1	1
	1880.0	18900	10	16QAM	1	49	20.59	0-1	1
	1880.0	18900	10	16QAM	25	0	19.21	0-2	2
	1880.0	18900	10	16QAM	25	12	19.24	0-2	2
	1880.0	18900	10	16QAM	25	25	19.19	0-2	2
	1880.0	18900	10	16QAM	50	0	19.24	0-2	2
High	1905	19150	10	QPSK	1	0	21.06	0	0
	1905	19150	10	QPSK	1	25	21.30	0	0
	1905	19150	10	QPSK	1	49	21.28	0	0
	1905	19150	10	QPSK	25	0	20.53	0-1	1
	1905	19150	10	QPSK	25	12	20.54	0-1	1
	1905	19150	10	QPSK	25	25	20.66	0-1	1
	1905	19150	10	QPSK	50	0	20.33	0-1	1
	1905	19150	10	16QAM	1	0	20.48	0-1	1
	1905	19150	10	16QAM	1	25	20.71	0-1	1
	1905	19150	10	16QAM	1	49	20.61	0-1	1
	1905	19150	10	16QAM	25	0	19.25	0-2	2
	1905	19150	10	16QAM	25	12	19.46	0-2	2
	1905	19150	10	16QAM	25	25	19.70	0-2	2
	1905	19150	10	16QAM	50	0	19.34	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 37 of 78		

Table 9-14
LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1852.5	18625	5	QPSK	1	0	21.07	0	0
	1852.5	18625	5	QPSK	1	12	21.15	0	0
	1852.5	18625	5	QPSK	1	24	21.10	0	0
	1852.5	18625	5	QPSK	12	0	20.19	0-1	1
	1852.5	18625	5	QPSK	12	6	20.25	0-1	1
	1852.5	18625	5	QPSK	12	13	20.21	0-1	1
	1852.5	18625	5	QPSK	25	0	20.08	0-1	1
	1852.5	18625	5	16-QAM	1	0	20.13	0-1	1
	1852.5	18625	5	16-QAM	1	12	20.14	0-1	1
	1852.5	18625	5	16-QAM	1	24	20.08	0-1	1
	1852.5	18625	5	16-QAM	12	0	19.16	0-2	2
	1852.5	18625	5	16-QAM	12	6	19.18	0-2	2
Mid	1852.5	18625	5	16-QAM	12	13	19.13	0-2	2
	1852.5	18625	5	16-QAM	25	0	19.21	0-2	2
	1880.0	18900	5	QPSK	1	0	21.10	0	0
	1880.0	18900	5	QPSK	1	12	21.11	0	0
	1880.0	18900	5	QPSK	1	24	21.00	0	0
	1880.0	18900	5	QPSK	12	0	20.21	0-1	1
	1880.0	18900	5	QPSK	12	6	20.19	0-1	1
	1880.0	18900	5	QPSK	12	13	20.22	0-1	1
	1880.0	18900	5	QPSK	25	0	20.14	0-1	1
	1880.0	18900	5	16-QAM	1	0	20.18	0-1	1
	1880.0	18900	5	16-QAM	1	12	20.16	0-1	1
	1880.0	18900	5	16-QAM	1	24	20.00	0-1	1
High	1880.0	18900	5	16-QAM	12	0	19.24	0-2	2
	1880.0	18900	5	16-QAM	12	6	19.16	0-2	2
	1880.0	18900	5	16-QAM	12	13	19.18	0-2	2
	1880.0	18900	5	16-QAM	25	0	19.13	0-2	2
	1907.5	19175	5	QPSK	1	0	21.10	0	0
	1907.5	19175	5	QPSK	1	12	21.18	0	0
	1907.5	19175	5	QPSK	1	24	21.05	0	0
	1907.5	19175	5	QPSK	12	0	20.16	0-1	1
	1907.5	19175	5	QPSK	12	6	20.25	0-1	1
	1907.5	19175	5	QPSK	12	13	20.20	0-1	1
	1907.5	19175	5	QPSK	25	0	20.12	0-1	1
	1907.5	19175	5	16-QAM	1	0	20.13	0-1	1
	1907.5	19175	5	16-QAM	1	12	20.06	0-1	1
	1907.5	19175	5	16-QAM	1	24	20.07	0-1	1
	1907.5	19175	5	16-QAM	12	0	19.32	0-2	2
	1907.5	19175	5	16-QAM	12	6	19.14	0-2	2
	1907.5	19175	5	16-QAM	12	13	19.14	0-2	2
	1907.5	19175	5	16-QAM	25	0	19.22	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 38 of 78		

Table 9-15
LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1851.5	18615	3	QPSK	1	0	21.05	0	0
	1851.5	18615	3	QPSK	1	7	21.04	0	0
	1851.5	18615	3	QPSK	1	14	21.01	0	0
	1851.5	18615	3	QPSK	8	0	20.05	0-1	1
	1851.5	18615	3	QPSK	8	4	20.04	0-1	1
	1851.5	18615	3	QPSK	8	7	20.09	0-1	1
	1851.5	18615	3	QPSK	15	0	20.10	0-1	1
	1851.5	18615	3	16-QAM	1	0	20.30	0-1	1
	1851.5	18615	3	16-QAM	1	7	20.22	0-1	1
	1851.5	18615	3	16-QAM	1	14	20.15	0-1	1
	1851.5	18615	3	16-QAM	8	0	19.13	0-2	2
	1851.5	18615	3	16-QAM	8	4	19.08	0-2	2
Mid	1851.5	18615	3	16-QAM	8	7	19.20	0-2	2
	1851.5	18615	3	16-QAM	15	0	19.05	0-2	2
	1880.0	18900	3	QPSK	1	0	21.00	0	0
	1880.0	18900	3	QPSK	1	7	21.04	0	0
	1880.0	18900	3	QPSK	1	14	21.07	0	0
	1880.0	18900	3	QPSK	8	0	20.11	0-1	1
	1880.0	18900	3	QPSK	8	4	20.08	0-1	1
	1880.0	18900	3	QPSK	8	7	20.10	0-1	1
	1880.0	18900	3	QPSK	15	0	20.04	0-1	1
	1880.0	18900	3	16-QAM	1	0	20.20	0-1	1
	1880.0	18900	3	16-QAM	1	7	20.14	0-1	1
	1880.0	18900	3	16-QAM	1	14	20.21	0-1	1
High	1880.0	18900	3	16-QAM	8	0	19.17	0-2	2
	1880.0	18900	3	16-QAM	8	4	19.12	0-2	2
	1880.0	18900	3	16-QAM	8	7	19.11	0-2	2
	1880.0	18900	3	16-QAM	15	0	19.10	0-2	2
	1908.5	19185	3	QPSK	1	0	21.04	0	0
	1908.5	19185	3	QPSK	1	7	21.08	0	0
	1908.5	19185	3	QPSK	1	14	21.02	0	0
	1908.5	19185	3	QPSK	8	0	20.03	0-1	1
	1908.5	19185	3	QPSK	8	4	20.06	0-1	1
	1908.5	19185	3	QPSK	8	7	20.19	0-1	1
	1908.5	19185	3	QPSK	15	0	20.02	0-1	1
	1908.5	19185	3	16-QAM	1	0	20.18	0-1	1
	1908.5	19185	3	16-QAM	1	7	20.23	0-1	1
	1908.5	19185	3	16-QAM	1	14	20.26	0-1	1
	1908.5	19185	3	16-QAM	8	0	19.17	0-2	2
	1908.5	19185	3	16-QAM	8	4	19.18	0-2	2
	1908.5	19185	3	16-QAM	8	7	19.07	0-2	2
	1908.5	19185	3	16-QAM	15	0	19.05	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 39 of 78		

Table 9-16
LTE Band 2 (PCS) Conducted Powers - 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
Low	1850.7	18607	1.4	QPSK	1	0	21.01	0	0
	1850.7	18607	1.4	QPSK	1	2	21.12	0	0
	1850.7	18607	1.4	QPSK	1	5	21.02	0	0
	1850.7	18607	1.4	QPSK	3	0	21.12	0	0
	1850.7	18607	1.4	QPSK	3	2	21.18	0	0
	1850.7	18607	1.4	QPSK	3	3	21.01	0	0
	1850.7	18607	1.4	QPSK	6	0	20.14	0-1	1
	1850.7	18607	1.4	16-QAM	1	0	20.23	0-1	1
	1850.7	18607	1.4	16-QAM	1	2	20.15	0-1	1
	1850.7	18607	1.4	16-QAM	1	5	20.06	0-1	1
	1850.7	18607	1.4	16-QAM	3	0	20.06	0-1	1
	1850.7	18607	1.4	16-QAM	3	2	20.09	0-1	1
Mid	1850.7	18607	1.4	16-QAM	3	3	20.26	0-1	1
	1850.7	18607	1.4	16-QAM	6	0	19.04	0-2	2
	1880.0	18900	1.4	QPSK	1	0	21.06	0	0
	1880.0	18900	1.4	QPSK	1	2	21.14	0	0
	1880.0	18900	1.4	QPSK	1	5	21.16	0	0
	1880.0	18900	1.4	QPSK	3	0	21.10	0	0
	1880.0	18900	1.4	QPSK	3	2	21.14	0	0
	1880.0	18900	1.4	QPSK	3	3	21.00	0	0
	1880.0	18900	1.4	QPSK	6	0	20.05	0-1	1
	1880.0	18900	1.4	16-QAM	1	0	20.28	0-1	1
	1880.0	18900	1.4	16-QAM	1	2	20.22	0-1	1
	1880.0	18900	1.4	16-QAM	1	5	20.27	0-1	1
High	1880.0	18900	1.4	16-QAM	3	0	20.09	0-1	1
	1880.0	18900	1.4	16-QAM	3	2	20.19	0-1	1
	1880.0	18900	1.4	16-QAM	3	3	20.14	0-1	1
	1880.0	18900	1.4	16-QAM	6	0	19.00	0-2	2
	1909.3	19193	1.4	QPSK	1	0	21.05	0	0
	1909.3	19193	1.4	QPSK	1	2	21.08	0	0
	1909.3	19193	1.4	QPSK	1	5	21.07	0	0
	1909.3	19193	1.4	QPSK	3	0	21.00	0	0
	1909.3	19193	1.4	QPSK	3	2	21.02	0	0
	1909.3	19193	1.4	QPSK	3	3	21.25	0	0
	1909.3	19193	1.4	QPSK	6	0	20.08	0-1	1
	1909.3	19193	1.4	16-QAM	1	0	20.11	0-1	1
	1909.3	19193	1.4	16-QAM	1	2	20.30	0-1	1
	1909.3	19193	1.4	16-QAM	1	5	20.30	0-1	1
	1909.3	19193	1.4	16-QAM	3	0	20.24	0-1	1
	1909.3	19193	1.4	16-QAM	3	2	20.13	0-1	1
	1909.3	19193	1.4	16-QAM	3	3	20.08	0-1	1
	1909.3	19193	1.4	16-QAM	6	0	19.06	0-2	2

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 40 of 78		

9.4 WLAN Conducted Powers

Table 9-17
SISO IEEE 802.11b Average RF Power

802.11b	Antenna	Mode	Freq [MHz]	Channel	802.11b Conducted Power [dBm]			
					Data Rate [Mbps]			
					1	2	5.5	11
Antenna 1		802.11b	2412	1*	16.14	16.34	16.46	16.30
		802.11b	2437	6*	16.66	16.96	16.94	17.02
		802.11b	2462	11*	16.78	17.02	17.01	16.95
Antenna 2		802.11b	2412	1*	16.51	16.74	16.73	16.75
		802.11b	2437	6*	16.10	16.31	16.24	16.29
		802.11b	2462	11*	16.00	16.14	16.17	16.21

Table 9-18
SISO IEEE 802.11g Average RF Power

802.11g	Antenna	Mode	Freq [MHz]	Channel	802.11g Conducted Power [dBm]							
					Data Rate [Mbps]							
					6	9	12	18	24	36	48	54
Antenna 1		802.11g	2412	1	13.79	13.68	13.45	13.57	13.60	13.62	13.72	13.78
		802.11g	2437	6	14.03	14.05	14.00	13.96	14.06	14.07	14.12	14.22
		802.11g	2462	11	14.13	14.08	14.01	14.04	14.07	14.17	14.23	14.24
Antenna 2		802.11g	2412	1	13.91	13.95	13.84	13.80	13.83	13.97	14.10	14.13
		802.11g	2437	6	13.70	13.83	13.62	13.63	13.62	13.83	13.83	13.94
		802.11g	2462	11	13.56	13.54	13.50	13.43	13.53	13.61	13.76	13.81

Table 9-19
SISO IEEE 802.11n Average RF Power

802.11n (2.4GHz)	Antenna	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
Antenna 1		802.11n	2412	1	12.58	12.48	12.47	12.67	12.83	12.85	12.93	12.96
		802.11n	2437	6	12.89	12.83	12.93	13.10	13.12	13.11	13.25	13.31
		802.11n	2462	11	12.93	12.92	12.99	13.30	13.41	13.30	13.27	13.25
Antenna 2		802.11n	2412	1	12.77	12.77	12.76	13.04	13.14	13.06	13.37	13.17
		802.11n	2437	6	12.48	12.49	12.43	12.68	12.79	12.71	12.98	12.83
		802.11n	2462	11	12.35	12.46	12.44	12.70	12.72	12.70	13.00	12.87

Table 9-20
MIMO IEEE 802.11n Average RF Power

802.11n (2.4GHz)	Antenna	Mode	Freq [MHz]	Channel	802.11n (2.4 GHz) Conducted Power [dBm]
					Data Rate [Mbps]
					13
	MIMO	802.11n	2412	1*	15.69
		802.11n	2437	6*	15.70
		802.11n	2462	11*	15.66

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 41 of 78	

Table 9-21
SISO IEEE 802.11a Average RF Power

802.11a	Antenna	Mode	Freq [MHz]	Channel	802.11a Conducted Power [dBm]							
					Data Rate [Mbps]							
					6	9	12	18	24	36	48	54
Antenna 1	802.11a	5180	36*	14.09	14.15	13.96	14.02	14.06	14.14	14.11	14.21	
	802.11a	5200	40	14.05	14.00	13.92	14.03	13.96	14.06	14.12	14.16	
	802.11a	5220	44	14.04	13.93	13.92	13.96	13.98	14.04	14.08	14.01	
	802.11a	5240	48*	14.02	13.94	13.92	13.89	13.96	14.01	14.02	14.16	
	802.11a	5260	52*	13.76	13.61	13.51	13.60	13.62	13.74	13.80	13.71	
	802.11a	5280	56	13.74	13.55	13.63	13.57	13.58	13.66	13.70	13.73	
	802.11a	5300	60	13.65	13.58	13.54	13.55	13.62	13.61	13.63	13.74	
	802.11a	5320	64*	13.58	13.54	13.52	13.47	13.63	13.57	13.79	13.74	
	802.11a	5500	100	14.18	14.12	14.10	14.06	14.09	14.15	14.18	14.37	
	802.11a	5520	104*	14.16	14.11	14.10	14.06	14.05	14.06	14.19	14.28	
	802.11a	5540	108	14.10	14.09	14.02	14.04	14.15	14.21	14.19	14.27	
	802.11a	5560	112	14.22	14.11	14.03	14.10	14.09	14.11	14.24	14.35	
	802.11a	5580	116*	14.16	14.11	14.01	14.03	14.08	14.21	14.24	14.20	
	802.11a	5600	120	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5620	124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5640	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5660	132	14.28	14.19	14.07	14.14	14.08	14.11	14.22	14.30	
	802.11a	5680	136*	14.25	14.19	14.04	14.11	14.13	14.09	14.25	14.32	
	802.11a	5700	140	14.26	14.20	13.99	14.09	14.22	14.11	14.16	14.33	
	802.11a	5745	149*	14.17	14.15	13.93	14.04	14.07	14.09	14.19	14.15	
	802.11a	5765	153	14.21	14.14	13.94	13.99	14.04	14.20	14.28	14.35	
	802.11a	5785	157*	14.12	14.04	13.95	14.02	14.03	14.10	14.14	14.27	
	802.11a	5805	161	14.15	14.21	13.94	14.06	14.19	14.14	14.18	14.33	
	802.11a	5825	165*	14.18	14.01	13.95	13.97	14.06	14.13	14.04	14.16	
Antenna 2	802.11a	5180	36*	13.54	13.44	13.30	13.35	13.44	13.49	13.51	13.55	
	802.11a	5200	40	13.52	13.49	13.29	13.38	13.36	13.52	13.48	13.53	
	802.11a	5220	44	13.35	13.20	13.15	13.18	13.27	13.30	13.28	13.39	
	802.11a	5240	48*	13.45	13.31	13.22	13.31	13.43	13.36	13.38	13.41	
	802.11a	5260	52*	13.65	13.51	13.29	13.59	13.40	13.56	13.64	13.72	
	802.11a	5280	56	13.68	13.50	13.34	13.67	13.52	13.63	13.64	13.70	
	802.11a	5300	60	13.30	13.13	12.93	13.19	13.14	13.22	13.23	13.31	
	802.11a	5320	64*	13.31	13.12	12.98	13.30	13.05	13.23	13.30	13.45	
	802.11a	5500	100	13.71	13.62	13.31	13.62	13.72	13.56	13.66	13.71	
	802.11a	5520	104*	13.49	13.37	13.05	13.40	13.49	13.44	13.42	13.56	
	802.11a	5540	108	13.60	13.49	13.24	13.51	13.59	13.50	13.49	13.58	
	802.11a	5560	112	13.61	13.49	13.25	13.56	13.61	13.46	13.51	13.62	
	802.11a	5580	116*	13.59	13.49	13.17	13.55	13.53	13.35	13.59	13.63	
	802.11a	5600	120	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5620	124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5640	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	802.11a	5660	132	13.49	13.38	13.09	13.43	13.53	13.37	13.45	13.47	
	802.11a	5680	136*	13.57	13.43	13.22	13.50	13.65	13.49	13.53	13.56	
	802.11a	5700	140	13.49	13.48	13.07	13.39	13.53	13.34	13.45	13.52	
	802.11a	5745	149*	13.40	13.39	13.30	13.27	13.45	13.40	13.51	13.42	
	802.11a	5765	153	13.49	13.57	13.34	13.37	13.63	13.48	13.59	13.49	
	802.11a	5785	157*	13.35	13.35	13.28	13.22	13.34	13.34	13.43	13.40	
	802.11a	5805	161	13.25	13.24	13.16	13.12	13.29	13.30	13.39	13.34	
	802.11a	5825	165*	13.30	13.25	13.21	13.18	13.35	13.30	13.40	13.29	

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.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 42 of 78

Table 9-22
SISO IEEE 802.11n Average RF Power – 20 MHz Bandwidth

20MHz 802.11n (5GHz)	Antenna	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
20MHz 802.11n (5GHz)	Antenna 1	802.11n	5180	36	12.53	12.52	12.54	12.95	12.98	12.80	12.99	12.95
		802.11n	5200	40	12.54	12.57	12.57	12.93	12.99	12.80	12.92	13.00
		802.11n	5220	44	12.58	12.58	12.59	12.94	13.01	12.83	12.97	13.07
		802.11n	5240	48	12.42	12.37	12.47	12.88	12.81	12.66	12.89	12.83
		802.11n	5260	52	12.87	12.85	12.76	13.04	13.16	13.05	13.28	13.07
		802.11n	5280	56	12.72	12.70	12.61	12.80	12.99	12.84	13.18	12.96
		802.11n	5300	60	12.81	12.83	12.64	12.96	13.11	12.96	13.24	12.98
		802.11n	5320	64	12.65	12.58	12.48	12.88	12.96	12.84	13.02	12.87
		802.11n	5500	100	12.31	12.20	12.26	12.55	12.63	12.52	12.61	12.50
		802.11n	5520	104	12.34	12.18	12.28	12.58	12.74	12.55	12.63	12.49
		802.11n	5540	108	12.30	12.18	12.28	12.58	12.61	12.52	12.68	12.56
		802.11n	5560	112	12.32	12.23	12.29	12.61	12.65	12.46	12.65	12.44
		802.11n	5580	116	12.31	12.21	12.23	12.48	12.62	12.50	12.62	12.50
		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	12.35	12.25	12.25	12.56	12.67	12.55	12.59	12.53
		802.11n	5680	136	12.30	12.14	12.24	12.54	12.60	12.53	12.58	12.47
		802.11n	5700	140	12.40	12.27	12.36	12.60	12.73	12.61	12.73	12.58
		802.11n	5745	149	12.50	12.31	12.45	12.80	12.79	12.54	12.72	12.60
		802.11n	5765	153	12.42	12.23	12.30	12.68	12.65	12.45	12.63	12.48
		802.11n	5785	157	12.45	12.21	12.41	12.74	12.69	12.51	12.68	12.51
		802.11n	5805	161	12.43	12.32	12.40	12.73	12.73	12.48	12.69	12.53
		802.11n	5825	165	12.36	12.17	12.26	12.62	12.69	12.43	12.53	12.50
	Antenna 2	802.11n	5180	36	12.91	12.71	12.84	13.01	13.15	12.90	13.05	13.04
		802.11n	5200	40	12.60	12.44	12.54	12.75	12.85	12.64	12.75	12.71
		802.11n	5220	44	12.76	12.57	12.75	12.78	13.00	12.72	12.87	12.90
		802.11n	5240	48	12.55	12.30	12.50	12.62	12.80	12.56	12.68	12.69
		802.11n	5260	52	12.90	12.97	12.95	13.23	13.15	13.03	13.26	13.13
		802.11n	5280	56	12.86	12.98	12.91	13.10	13.03	12.95	13.19	13.10
		802.11n	5300	60	12.73	12.80	12.77	13.04	12.95	12.93	13.02	12.92
		802.11n	5320	64	12.70	12.75	12.80	13.05	12.88	12.79	13.00	12.88
		802.11n	5500	100	12.26	12.15	12.12	12.44	12.55	12.45	12.57	12.46
		802.11n	5520	104	12.31	12.18	12.10	12.45	12.62	12.50	12.56	12.49
		802.11n	5540	108	12.27	12.19	12.09	12.48	12.61	12.49	12.58	12.49
		802.11n	5560	112	12.24	12.11	12.11	12.37	12.58	12.44	12.56	12.41
		802.11n	5580	116	12.30	12.24	12.15	12.48	12.60	12.51	12.67	12.47
		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	12.37	12.19	12.25	12.55	12.71	12.59	12.63	12.57
		802.11n	5680	136	12.44	12.30	12.26	12.58	12.66	12.66	12.74	12.71
		802.11n	5700	140	12.45	12.33	12.31	12.66	12.76	12.67	12.76	12.67
		802.11n	5745	149	12.44	12.30	12.35	12.61	12.77	12.63	12.69	12.56
		802.11n	5765	153	12.39	12.33	12.29	12.63	12.75	12.64	12.65	12.49
		802.11n	5785	157	12.42	12.31	12.42	12.64	12.82	12.60	12.66	12.55
		802.11n	5805	161	12.27	12.13	12.18	12.38	12.59	12.50	12.53	12.44
		802.11n	5825	165	12.27	12.14	12.14	12.45	12.60	12.46	12.45	12.36

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 43 of 78	

Table 9-23
MIMO IEEE 802.11n Average RF Power – 20 MHz Bandwidth

20MHz 802.11n (5GHz)	Antenna	Mode	Freq [MHz]	Channel	802.11n (5 GHz) Conducted Power [dBm]
					Data Rate [Mbps]
					13
MIMO		802.11n	5180	36*	15.73
		802.11n	5200	40	15.58
		802.11n	5220	44	15.68
		802.11n	5240	48*	15.50
		802.11n	5260	52*	15.90
		802.11n	5280	56	15.80
		802.11n	5300	60	15.78
		802.11n	5320	64*	15.69
		802.11n	5500	100	15.30
		802.11n	5520	104*	15.34
		802.11n	5540	108	15.30
		802.11n	5560	112	15.29
		802.11n	5580	116*	15.32
		802.11n	5600	120	N/A
		802.11n	5620	124	N/A
		802.11n	5640	128	N/A
		802.11n	5660	132	15.37
		802.11n	5680	136*	15.38
		802.11n	5700	140	15.44
		802.11n	5745	149*	15.48
		802.11n	5765	153	15.42
		802.11n	5785	157*	15.45
		802.11n	5805	161	15.36
		802.11n	5825	165*	15.33

Table 9-24
SISO IEEE 802.11n Average RF Power – 40 MHz Bandwidth

40MHz 802.11n (5GHz)	Antenna	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
Antenna 1		802.11n	5190	38	11.84	11.98	12.01	12.30	12.42	12.46	12.49	12.47
		802.11n	5230	46	11.75	11.87	11.88	12.18	12.34	12.31	12.36	12.44
		802.11n	5270	54	11.15	11.44	11.46	11.90	12.03	11.77	12.05	11.69
		802.11n	5310	62	11.18	11.42	11.49	11.99	12.06	11.88	12.06	11.81
		802.11n	5510	102	11.53	11.81	11.84	12.03	12.29	12.09	12.15	12.18
		802.11n	5550	110	11.75	12.04	12.07	12.30	12.48	12.33	12.42	12.45
		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	11.62	11.91	11.90	12.16	12.36	12.24	12.29	12.26
		802.11n	5755	151	11.65	11.85	11.98	12.28	12.32	12.22	12.26	12.21
		802.11n	5795	159	11.68	11.86	12.01	12.30	12.34	12.20	12.30	12.20
	Antenna 2	802.11n	5190	38	11.57	11.73	11.76	12.12	12.14	12.12	12.21	12.10
		802.11n	5230	46	11.51	11.60	11.73	12.03	12.07	12.08	12.19	12.04
		802.11n	5270	54	11.25	11.53	11.56	11.86	11.74	11.78	11.94	11.78
		802.11n	5310	62	11.27	11.50	11.61	11.89	11.71	11.81	11.92	11.84
		802.11n	5510	102	11.53	11.78	11.77	12.03	12.10	11.96	12.21	12.09
		802.11n	5550	110	11.53	11.81	11.83	11.97	12.08	11.92	12.21	12.16
		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	11.25	11.55	11.53	11.72	11.76	11.72	12.00	11.83
		802.11n	5755	151	11.78	12.03	12.13	12.32	12.30	12.35	12.42	12.30
		802.11n	5795	159	11.82	12.14	12.25	12.34	12.44	12.33	12.48	12.28

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 44 of 78	

Table 9-25
MIMO IEEE 802.11n Average RF Power – 40 MHz Bandwidth

40MHz 802.11n (5GHz)	Antenna	Mode	Freq [MHz]	Channel	40 MHz 802.11n (5 GHz) Conducted Power [dBm]
					Data Rate [Mbps]
					27
MIMO		802.11n	5190	38	14.72
		802.11n	5230	46	14.64
		802.11n	5270	54	14.21
		802.11n	5310	62	14.24
		802.11n	5510	102	14.54
		802.11n	5550	110	14.65
		802.11n	5590	118	N/A
		802.11n	5630	126	N/A
		802.11n	5670	134	14.45
		802.11n	5755	151	14.73
		802.11n	5795	159	14.76

Table 9-26
SISO IEEE 802.11ac Average RF Power – 80 MHz Bandwidth

80MHz 802.11ac (5GHz)	Antenna	Mode	Freq [MHz]	Channel	80MHz BW 802.11ac (5GHz) Conducted Power [dBm]									
					Data Rate [Mbps]									
					29.3	58.5	87.8	117	175.5	234	263.3	292.5	351	390
	Antenna 1	802.11ac	5210	42	11.00	10.84	10.85	11.21	11.24	10.51	10.49	10.45	10.52	10.55
		802.11ac	5290	58	10.45	10.30	10.33	10.66	10.62	9.95	9.90	9.91	10.01	10.03
		802.11ac	5530	106	10.59	10.55	10.49	10.21	10.26	10.20	10.27	10.30	10.20	10.33
		802.11ac	5775	155	10.65	10.68	10.61	10.05	10.19	10.08	10.17	10.09	10.05	10.33
	Antenna 2	802.11ac	5210	42	10.55	10.45	10.35	10.78	10.15	10.13	10.04	10.21	10.16	10.17
		802.11ac	5290	58	10.39	10.32	10.28	10.63	10.12	10.04	10.08	10.11	10.13	10.23
		802.11ac	5530	106	10.63	10.62	10.54	10.87	10.27	10.25	10.19	10.29	10.24	10.40
802.11ac		5775	155	10.91	10.79	10.73	11.11	10.46	10.43	10.42	10.46	10.32	10.40	

Table 9-27
MIMO IEEE 802.11ac Average RF Power – 80 MHz Bandwidth

80MHz 802.11ac (5GHz)	Antenna	Mode	Freq [MHz]	Channel	80 MHz 802.11 ac (5 GHz) Conducted Power [dBm]
					Data Rate [Mbps]
					58.5
MIMO		802.11ac	5210	42	13.79
		802.11ac	5290	58	13.43
		802.11ac	5530	106	13.62
		802.11ac	5775	155	13.79

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 45 of 78	

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 SISO operations, highest average RF output power channel for the lowest data rate for IEEE 802.11b were selected for SAR evaluation. Other IEEE 802.11 SISO 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 SISO 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 SISO 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.
- Full SAR tests for all SISO IEEE 802.11ac configurations were not required because the average output power was not more than 0.25 dB higher than IEEE 802.11a mode. IEEE 802.11ac in SISO mode was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.
- For MIMO 2.4 GHz and 5 GHz operations, the highest average RF output power channel for the lowest data rate for IEEE 802.11n (20 MHz bandwidth) was selected for SAR evaluation. Other IEEE 802.11 modes and bandwidths were not investigated for MIMO operations since the maximum allowed output power (including tolerance) was not higher for these modes.
- The individual spectra for each 2x2 MIMO WIFI Antenna were summed mathematically in linear power units for the MIMO output power measurements.
- 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.

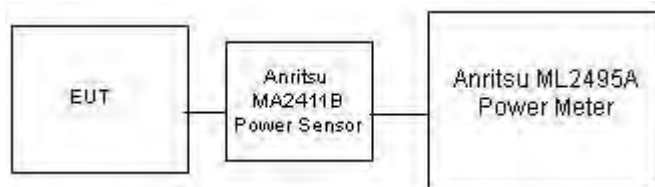


Figure 9-3
Power Measurement Setup for Bandwidths < 50 MHz

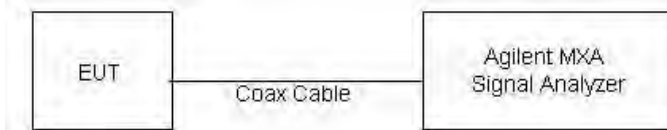


Figure 9-4
Power Measurement Setup for Bandwidths > 50 MHz

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 46 of 78

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (C°)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
09/25/2014	835H	23.3	820	0.901	41.608	0.899	41.578	0.22%	0.07%
			835	0.914	41.417	0.900	41.500	1.56%	-0.20%
			850	0.928	41.212	0.916	41.500	1.31%	-0.69%
09/24/2014	1750H	22.9	1710	1.301	39.460	1.348	40.142	-3.49%	-1.70%
			1750	1.340	39.248	1.371	40.079	-2.26%	-2.07%
			1790	1.380	39.065	1.394	40.016	-1.00%	-2.38%
09/26/2014	1900H	22.5	1850	1.377	39.441	1.400	40.000	-1.64%	-1.40%
			1880	1.408	39.288	1.400	40.000	0.57%	-1.78%
			1910	1.438	39.168	1.400	40.000	2.71%	-2.08%
10/07/2014	1900H	22.4	1850	1.395	39.578	1.400	40.000	-0.36%	-1.05%
			1880	1.426	39.457	1.400	40.000	1.86%	-1.36%
			1910	1.457	39.331	1.400	40.000	4.07%	-1.67%
10/01/2014	2450H	22.3	2401	1.771	41.033	1.756	39.287	0.85%	4.44%
			2450	1.826	40.866	1.800	39.200	1.44%	4.25%
			2499	1.879	40.704	1.853	39.138	1.40%	4.00%
10/06/2014	5200H-5800H	21.7	5180	4.495	36.198	4.635	36.009	-3.02%	0.52%
			5200	4.510	36.178	4.655	35.986	-3.11%	0.53%
			5220	4.534	36.135	4.676	35.963	-3.04%	0.48%
			5260	4.590	36.137	4.717	35.917	-2.69%	0.61%
			5280	4.602	36.107	4.737	35.894	-2.85%	0.59%
			5300	4.615	36.041	4.758	35.871	-3.01%	0.47%
			5500	4.820	35.772	4.963	35.643	-2.88%	0.36%
			5520	4.845	35.759	4.983	35.620	-2.77%	0.39%
			5540	4.851	35.742	5.004	35.597	-3.06%	0.41%
			5600	4.915	35.629	5.065	35.529	-2.96%	0.28%
			5660	4.977	35.604	5.127	35.460	-2.93%	0.41%
			5700	5.019	35.500	5.168	35.414	-2.88%	0.24%
			5745	5.076	35.465	5.214	35.363	-2.65%	0.29%
			5765	5.104	35.454	5.234	35.340	-2.48%	0.32%
			5785	5.111	35.457	5.255	35.317	-2.74%	0.40%
			5800	5.120	35.396	5.270	35.300	-2.85%	0.27%

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 47 of 78	

Table 10-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (C°)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
09/24/2014	835B	23.4	820	0.986	52.947	0.969	55.258	1.75%	-4.18%
			835	1.001	52.819	0.970	55.200	3.20%	-4.31%
			850	1.015	52.632	0.988	55.154	2.73%	-4.57%
09/24/2014	1750B	22.1	1710	1.404	53.373	1.463	53.537	-4.03%	-0.31%
			1750	1.447	53.197	1.488	53.432	-2.76%	-0.44%
			1790	1.494	53.111	1.514	53.326	-1.32%	-0.40%
09/23/2014	1900B	23.7	1850	1.468	50.986	1.520	53.300	-3.42%	-4.34%
			1880	1.502	50.892	1.520	53.300	-1.18%	-4.52%
			1910	1.539	50.799	1.520	53.300	1.25%	-4.69%
10/06/2014	1900B	21.8	1850	1.516	51.021	1.520	53.300	-0.26%	-4.28%
			1880	1.549	50.915	1.520	53.300	1.91%	-4.47%
			1910	1.585	50.800	1.520	53.300	4.28%	-4.69%
10/09/2014	1900B	21.9	1850	1.513	50.981	1.520	53.300	-0.46%	-4.35%
			1880	1.546	50.899	1.520	53.300	1.71%	-4.50%
			1910	1.581	50.775	1.520	53.300	4.01%	-4.74%
10/13/2014	2450B	22.2	2401	1.942	50.752	1.903	52.765	2.05%	-3.82%
			2450	2.009	50.556	1.950	52.700	3.03%	-4.07%
			2499	2.074	50.362	2.019	52.638	2.72%	-4.32%
10/02/2014	5200B-5800B	22.5	5180	5.316	48.782	5.276	49.041	0.76%	-0.53%
			5200	5.358	48.671	5.299	49.014	1.11%	-0.70%
			5220	5.398	48.647	5.323	48.987	1.41%	-0.69%
			5260	5.470	48.587	5.369	48.933	1.88%	-0.71%
			5280	5.493	48.505	5.393	48.906	1.85%	-0.82%
			5300	5.508	48.466	5.416	48.879	1.70%	-0.84%
			5500	5.832	47.976	5.650	48.607	3.22%	-1.30%
			5520	5.859	47.879	5.673	48.580	3.28%	-1.44%
			5540	5.891	47.859	5.696	48.553	3.42%	-1.43%
			5600	5.989	47.730	5.766	48.471	3.87%	-1.53%
			5660	6.073	47.583	5.837	48.390	4.04%	-1.67%
			5700	6.141	47.495	5.883	48.336	4.39%	-1.74%
			5745	6.214	47.352	5.936	48.275	4.68%	-1.91%
			5765	6.239	47.309	5.959	48.248	4.70%	-1.95%
			5785	6.273	47.301	5.982	48.220	4.86%	-1.91%
			5800	6.291	47.230	6.000	48.200	4.85%	-2.01%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 48 of 78	

10.2 Test System Verification

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

Table 10-3
System Verification Results – 1g SAR

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} (%)
D	835	HEAD	09/25/2014	23.6	23.3	0.100	4d119	3263	0.971	9.220	9.710	5.31%
G	1750	HEAD	09/24/2014	23.6	22.9	0.100	1008	3258	3.390	36.900	33.900	-8.13%
K	1900	HEAD	09/26/2014	23.6	22.5	0.100	5d141	3287	3.850	40.100	38.500	-3.99%
G	1900	HEAD	10/07/2014	23.6	22.4	0.100	5d141	3258	4.260	40.100	42.600	6.23%
G	2450	HEAD	10/01/2014	23.4	22.3	0.100	797	3258	5.390	51.800	53.900	4.05%
E	5200	HEAD	10/06/2014	21.7	22.4	0.100	1057	3914	7.210	78.000	72.100	-7.56%
E	5300	HEAD	10/06/2014	21.7	22.3	0.100	1057	3914	7.900	83.000	79.000	-4.82%
E	5500	HEAD	10/06/2014	21.5	22.4	0.100	1057	3914	7.920	84.300	79.200	-6.05%
E	5600	HEAD	10/06/2014	21.5	22.2	0.100	1057	3914	8.020	83.500	80.200	-3.95%
E	5800	HEAD	10/06/2014	21.6	22.3	0.100	1057	3914	7.300	79.300	73.000	-7.94%
D	835	BODY	09/24/2014	23.6	23.4	0.100	4d119	3263	0.984	9.340	9.840	5.35%
G	1750	BODY	09/24/2014	23.5	22.1	0.100	1008	3258	3.460	37.600	34.600	-7.98%
K	1900	BODY	09/23/2014	23.8	23.7	0.100	5d141	3287	3.960	40.600	39.600	-2.46%
H	1900	BODY	10/06/2014	23.1	21.8	0.100	5d141	3319	4.090	40.600	40.900	0.74%
H	1900	BODY	10/09/2014	22.6	21.9	0.100	5d141	3319	4.330	40.600	43.300	6.65%
H	2450	BODY	10/13/2014	23.3	22.2	0.100	797	3319	5.280	49.400	52.800	6.88%
I	5200	BODY	10/02/2014	22.5	23.3	0.100	1057	3589	7.940	75.300	79.400	5.44%
I	5300	BODY	10/02/2014	22.5	23.1	0.100	1057	3589	8.180	77.400	81.800	5.68%
I	5500	BODY	10/02/2014	22.3	23.3	0.100	1057	3589	7.990	79.100	79.900	1.01%
I	5600	BODY	10/02/2014	22.4	23.2	0.100	1057	3589	7.730	80.200	77.300	-3.62%
I	5800	BODY	10/02/2014	22.5	23.1	0.100	1057	3589	7.300	74.300	73.000	-1.75%

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 49 of 78

Table 10-4
System Verification Results – 10g SAR

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Dipole SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
I	5200	BODY	10/02/2014	22.5	23.3	0.100	1057	3589	2.220	21.000	22.200	5.71%
I	5300	BODY	10/02/2014	22.5	23.1	0.100	1057	3589	2.270	21.500	22.700	5.58%
I	5500	BODY	10/02/2014	22.3	23.3	0.100	1057	3589	2.210	22.000	22.100	0.45%
I	5600	BODY	10/02/2014	22.4	23.2	0.100	1057	3589	2.140	22.200	21.400	-3.60%
I	5800	BODY	10/02/2014	22.5	23.1	0.100	1057	3589	2.000	20.400	20.000	-1.96%

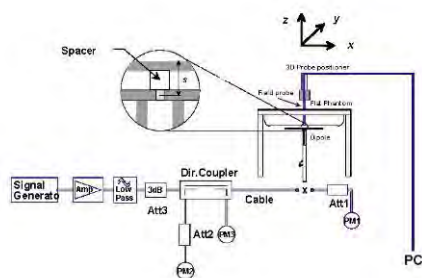


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 50 of 78	

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

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

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	33.05	0.07	Right	Cheek	0923-1	1:8.3	0.132	1.109	0.146	A1
836.60	190	GSM 850	GSM	33.5	33.05	-0.01	Right	Tilt	0923-1	1:8.3	0.070	1.109	0.078	
836.60	190	GSM 850	GSM	33.5	33.05	0.01	Left	Cheek	0923-1	1:8.3	0.083	1.109	0.092	
836.60	190	GSM 850	GSM	33.5	33.05	0.08	Left	Tilt	0923-1	1:8.3	0.070	1.109	0.078	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

**Table 11-2
UMTS 850 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.07	Right	Cheek	0923-1	1:1	0.107	1.114	0.119	A2
836.60	4183	UMTS 850	RMC	23.5	23.03	0.13	Right	Tilt	0923-1	1:1	0.058	1.114	0.065	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.09	Left	Cheek	0923-1	1:1	0.069	1.114	0.077	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.09	Left	Tilt	0923-1	1:1	0.061	1.114	0.068	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

**Table 11-3
GSM 1900 Head SAR**

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.0	29.62	0.02	Right	Cheek	0923-1	1:8.3	0.055	1.091	0.060	
1880.00	661	GSM 1900	GSM	30.0	29.62	0.11	Right	Tilt	0923-1	1:8.3	0.030	1.091	0.033	
1880.00	661	GSM 1900	GSM	30.0	29.62	0.15	Left	Cheek	0923-1	1:8.3	0.069	1.091	0.075	A3
1880.00	661	GSM 1900	GSM	30.0	29.62	0.14	Left	Tilt	0923-1	1:8.3	0.024	1.091	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						

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 51 of 78

Table 11-4
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.05	Right	Cheek	0923-1	1:1	0.078	1.148	0.090	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	-0.10	Right	Tilt	0923-1	1:1	0.043	1.148	0.049	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.18	Left	Cheek	0923-1	1:1	0.095	1.148	0.109	A4
1880.00	9400	UMTS 1900	RMC	22.0	21.40	-0.03	Left	Tilt	0923-1	1:1	0.047	1.148	0.054	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-5
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	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	24.0	23.72	0.06	0	Right	Cheek	QPSK	1	25	0923-5	1:1	0.147	1.067	0.157	A5
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	0.07	1	Right	Cheek	QPSK	25	12	0923-5	1:1	0.122	1.062	0.130	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	0.06	0	Right	Tilt	QPSK	1	25	0923-5	1:1	0.079	1.067	0.084	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	0.06	1	Right	Tilt	QPSK	25	12	0923-5	1:1	0.066	1.062	0.070	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	-0.01	0	Left	Cheek	QPSK	1	25	0923-5	1:1	0.081	1.067	0.086	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	0.03	1	Left	Cheek	QPSK	25	12	0923-5	1:1	0.070	1.062	0.074	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	0.00	0	Left	Tilt	QPSK	1	25	0923-5	1:1	0.069	1.067	0.074	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	0.12	1	Left	Tilt	QPSK	25	12	0923-5	1:1	0.059	1.062	0.063	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-6
LTE Band 4 (AWS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	0.14	0	Right	Cheek	QPSK	1	0	0923-2	1:1	0.132	1.208	0.159	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	0.03	1	Right	Cheek	QPSK	50	0	0923-2	1:1	0.103	1.265	0.130	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	0.04	0	Right	Tilt	QPSK	1	0	0923-2	1:1	0.060	1.208	0.072	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	-0.17	1	Right	Tilt	QPSK	50	0	0923-2	1:1	0.058	1.265	0.073	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	0.06	0	Left	Cheek	QPSK	1	0	0923-2	1:1	0.144	1.208	0.174	A6
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	0.06	1	Left	Cheek	QPSK	50	0	0923-2	1:1	0.106	1.265	0.134	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.08	0	Left	Tilt	QPSK	1	0	0923-2	1:1	0.072	1.208	0.087	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	-0.17	1	Left	Tilt	QPSK	50	0	0923-2	1:1	0.068	1.265	0.086	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 52 of 78

Table 11-7
LTE Band 2 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	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	23.0	21.48	-0.10	0	Right	Cheek	QPSK	1	99	0923-3	1:1	0.058	1.419	0.082	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.04	1	Right	Cheek	QPSK	50	25	0923-3	1:1	0.048	1.400	0.067	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	-0.12	0	Right	Tilt	QPSK	1	99	0923-3	1:1	0.051	1.419	0.072	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	-0.17	1	Right	Tilt	QPSK	50	25	0923-3	1:1	0.033	1.400	0.046	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	0.14	0	Left	Cheek	QPSK	1	99	0923-3	1:1	0.090	1.419	0.128	A7
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.07	1	Left	Cheek	QPSK	50	25	0923-3	1:1	0.060	1.400	0.084	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	0.14	0	Left	Tilt	QPSK	1	99	0923-3	1:1	0.034	1.419	0.048	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.16	1	Left	Tilt	QPSK	50	25	0923-3	1:1	0.029	1.400	0.041	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-8
DTS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g) (W/kg)	Plot #
MHz	Ch.												(W/kg)			
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.03	Right	Cheek	1	0923-1	1	1:1	0.041	1.180	0.048	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.02	Right	Tilt	1	0923-1	1	1:1	0.025	1.180	0.030	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.12	Left	Cheek	1	0923-1	1	1:1	0.023	1.180	0.027	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.08	Left	Tilt	1	0923-1	1	1:1	0.018	1.180	0.021	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	0.12	Right	Cheek	2	0923-1	1	1:1	0.101	1.256	0.127	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	0.18	Right	Tilt	2	0923-1	1	1:1	0.078	1.256	0.098	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	-0.02	Left	Cheek	2	0923-1	1	1:1	0.390	1.256	0.490	A8
2412	1	IEEE 802.11b	DSSS	17.5	16.51	-0.07	Left	Tilt	2	0923-1	1	1:1	0.295	1.256	0.371	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.03	Right	Cheek	MIMO	0923-1	13	1:1	0.294	1.202	0.353	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.17	Right	Tilt	MIMO	0923-1	13	1:1	0.223	1.202	0.268	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.04	Left	Cheek	MIMO	0923-1	13	1:1	0.153	1.202	0.184	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.07	Left	Tilt	MIMO	0923-1	13	1:1	0.119	1.202	0.143	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	-0.17	Right	Cheek	1	0923-1	6	1:1	0.084	1.069	0.090	
5775	155	IEEE 802.11ac	OFDM	11.5	10.65	0.12	Right	Cheek	1	0923-1	29.3	1:1	0.022	1.216	0.027	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.00	Right	Tilt	1	0923-1	6	1:1	0.000	1.069	0.000	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.02	Left	Cheek	1	0923-1	6	1:1	0.023	1.069	0.025	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.00	Left	Tilt	1	0923-1	6	1:1	0.002	1.069	0.002	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.11	Right	Cheek	2	0923-1	6	1:1	0.111	1.262	0.140	A9
5775	155	IEEE 802.11ac	OFDM	11.5	10.91	0.05	Right	Cheek	2	0923-1	29.3	1:1	0.033	1.146	0.038	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.01	Right	Tilt	2	0923-1	6	1:1	0.058	1.262	0.073	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.10	Left	Cheek	2	0923-1	6	1:1	0.083	1.262	0.105	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.17	Left	Tilt	2	0923-1	6	1:1	0.057	1.262	0.072	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.09	Right	Cheek	MIMO	0923-1	13	1:1	0.059	1.265	0.075	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.02	Right	Tilt	MIMO	0923-1	13	1:1	0.053	1.265	0.067	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.12	Left	Cheek	MIMO	0923-1	13	1:1	0.082	1.265	0.104	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.08	Left	Tilt	MIMO	0923-1	13	1:1	0.059	1.265	0.075	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram						

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 53 of 78

**Table 11-9
NII Head SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	14.5	14.09	0.05	Right	Cheek	1	0923-1	6	1:1	0.089	1.099	0.098	
5210	42	IEEE 802.11ac	OFDM	11.5	11.00	0.09	Right	Cheek	1	0923-1	29.3	1:1	0.017	1.122	0.019	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.03	Right	Tilt	1	0923-1	6	1:1	0.002	1.099	0.002	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.02	Left	Cheek	1	0923-1	6	1:1	0.000	1.099	0.000	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.01	Left	Tilt	1	0923-1	6	1:1	0.000	1.099	0.000	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.17	Right	Cheek	1	0923-1	6	1:1	0.043	1.186	0.051	
5290	58	IEEE 802.11ac	OFDM	11.5	10.45	0.06	Right	Cheek	1	0923-1	29.3	1:1	0.028	1.274	0.036	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.01	Right	Tilt	1	0923-1	6	1:1	0.001	1.186	0.001	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.18	Left	Cheek	1	0923-1	6	1:1	0.000	1.186	0.000	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.03	Left	Tilt	1	0923-1	6	1:1	0.004	1.186	0.005	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.06	Right	Cheek	1	0923-1	6	1:1	0.078	1.052	0.082	
5530	106	IEEE 802.11ac	OFDM	11.5	10.59	0.11	Right	Cheek	1	0923-1	29.3	1:1	0.018	1.233	0.022	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.03	Right	Tilt	1	0923-1	6	1:1	0.011	1.052	0.012	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.08	Left	Cheek	1	0923-1	6	1:1	0.040	1.052	0.042	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.02	Left	Tilt	1	0923-1	6	1:1	0.013	1.052	0.014	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.14	Right	Cheek	2	0923-1	6	1:1	0.131	1.247	0.163	
5210	42	IEEE 802.11ac	OFDM	11.5	10.55	-0.15	Right	Cheek	2	0923-1	29.3	1:1	0.047	1.245	0.059	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.14	Right	Tilt	2	0923-1	6	1:1	0.101	1.247	0.126	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.01	Left	Cheek	2	0923-1	6	1:1	0.127	1.247	0.158	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.04	Left	Tilt	2	0923-1	6	1:1	0.094	1.247	0.117	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.02	Right	Cheek	2	0923-1	6	1:1	0.153	1.208	0.185	
5290	58	IEEE 802.11ac	OFDM	11.5	10.39	0.11	Right	Cheek	2	0923-1	29.3	1:1	0.042	1.291	0.054	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.03	Right	Tilt	2	0923-1	6	1:1	0.113	1.208	0.137	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.03	Left	Cheek	2	0923-1	6	1:1	0.139	1.208	0.168	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.19	Left	Tilt	2	0923-1	6	1:1	0.097	1.208	0.117	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.08	Right	Cheek	2	0923-1	6	1:1	0.213	1.199	0.255	A10
5530	106	IEEE 802.11ac	OFDM	11.5	10.63	-0.16	Right	Cheek	2	0923-1	29.3	1:1	0.060	1.222	0.073	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.16	Right	Tilt	2	0923-1	6	1:1	0.144	1.199	0.173	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.05	Left	Cheek	2	0923-1	6	1:1	0.192	1.199	0.230	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.17	Left	Tilt	2	0923-1	6	1:1	0.127	1.199	0.152	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.14	Right	Cheek	MIMO	0923-1	13	1:1	0.090	1.194	0.107	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	-0.02	Right	Tilt	MIMO	0923-1	13	1:1	0.071	1.194	0.085	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.15	Left	Cheek	MIMO	0923-1	13	1:1	0.077	1.194	0.092	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.18	Left	Tilt	MIMO	0923-1	13	1:1	0.068	1.194	0.081	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.15	Right	Cheek	MIMO	0923-1	13	1:1	0.135	1.148	0.155	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.02	Right	Tilt	MIMO	0923-1	13	1:1	0.098	1.148	0.113	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.02	Left	Cheek	MIMO	0923-1	13	1:1	0.114	1.148	0.131	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.03	Left	Tilt	MIMO	0923-1	13	1:1	0.055	1.148	0.063	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.04	Right	Cheek	MIMO	0923-1	13	1:1	0.099	1.276	0.126	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.13	Right	Tilt	MIMO	0923-1	13	1:1	0.055	1.276	0.070	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.16	Left	Cheek	MIMO	0923-1	13	1:1	0.099	1.276	0.126	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.09	Left	Tilt	MIMO	0923-1	13	1:1	0.055	1.276	0.070	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 54 of 78

11.2 Standalone Body-Worn SAR Data

Table 11-10
GSM/UMTS Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	33.05	-0.07	10 mm	0923-1	1	1:8.3	back	0.301	1.109	0.334	A11
836.60	4183	UMTS 850	RMC	23.5	23.03	0.00	10 mm	0923-1	N/A	1:1	back	0.247	1.114	0.275	A13
1880.00	661	GSM 1900	GSM	30.0	29.62	0.09	10 mm	0923-1	1	1:8.3	back	0.290	1.091	0.316	A15
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.06	10 mm	0923-1	N/A	1:1	back	0.437	1.148	0.502	A17
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-11
LTE Body-Worn 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	24.0	23.72	-0.04	0	0923-5	QPSK	1	25	10 mm	back	1:1	0.342	1.067	0.365	A19
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.01	1	0923-5	QPSK	25	12	10 mm	back	1:1	0.279	1.062	0.296	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.04	0	0923-2	QPSK	1	0	10 mm	back	1:1	0.637	1.208	0.769	A21
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	0.01	1	0923-2	QPSK	50	0	10 mm	back	1:1	0.537	1.265	0.679	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	-0.02	0	0923-3	QPSK	1	99	10 mm	back	1:1	0.380	1.419	0.539	A23
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.00	1	0923-3	QPSK	50	25	10 mm	back	1:1	0.298	1.400	0.417	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-12
DTS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.20	10 mm	1	0923-1	1	back	1:1	0.120	1.180	0.142	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	-0.13	10 mm	2	0923-1	1	back	1:1	0.306	1.256	0.384	A25
2437	6	IEEE 802.11n	OFDM	16.5	15.70	-0.09	10 mm	MIMO	0923-1	13	back	1:1	0.136	1.202	0.163	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.06	10 mm	1	0923-5	6	back	1:1	0.140	1.069	0.150	A26
5775	155	IEEE 802.11ac	OFDM	11.5	10.65	0.01	10 mm	1	0923-5	29.3	back	1:1	0.059	1.216	0.072	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.16	10 mm	2	0923-5	6	back	1:1	0.132	1.262	0.167	
5775	155	IEEE 802.11ac	OFDM	11.5	10.91	0.01	10 mm	2	0923-5	29.3	back	1:1	0.064	1.146	0.073	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.16	10 mm	MIMO	0923-5	13	back	1:1	0.111	1.265	0.140	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 55 of 78

Table 11-13
NII Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	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	14.5	14.09	0.18	10 mm	1	0923-5	6	back	1:1	0.095	1.099	0.104	
5210	42	IEEE 802.11ac	OFDM	11.5	11.00	0.14	10 mm	1	0923-5	29.3	back	1:1	0.048	1.122	0.054	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.14	10 mm	1	0923-5	6	back	1:1	0.111	1.186	0.132	
5290	58	IEEE 802.11ac	OFDM	11.5	10.45	0.07	10 mm	1	0923-5	29.3	back	1:1	0.046	1.274	0.059	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.12	10 mm	1	0923-5	6	back	1:1	0.237	1.052	0.249	A27
5530	106	IEEE 802.11ac	OFDM	11.5	10.59	0.12	10 mm	1	0923-5	29.3	back	1:1	0.088	1.233	0.109	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.19	10 mm	2	0923-5	6	back	1:1	0.153	1.247	0.191	
5210	42	IEEE 802.11ac	OFDM	11.5	10.55	0.01	10 mm	2	0923-5	29.3	back	1:1	0.060	1.245	0.075	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.07	10 mm	2	0923-5	6	back	1:1	0.138	1.208	0.167	
5290	58	IEEE 802.11ac	OFDM	11.5	10.39	0.13	10 mm	2	0923-5	29.3	back	1:1	0.052	1.291	0.067	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.16	10 mm	2	0923-5	6	back	1:1	0.143	1.199	0.171	
5530	106	IEEE 802.11ac	OFDM	11.5	10.63	0.15	10 mm	2	0923-5	29.3	back	1:1	0.073	1.222	0.089	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.07	10 mm	MIMO	0923-5	13	back	1:1	0.124	1.194	0.148	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.07	10 mm	MIMO	0923-5	13	back	1:1	0.147	1.148	0.169	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.18	10 mm	MIMO	0923-5	13	back	1:1	0.130	1.276	0.166	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 56 of 78

11.3 Standalone Wireless Router SAR Data

Table 11-14
GPRS/UMTS Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	28.5	26.61	0.05	10 mm	0923-1	4	1:2.076	back	0.253	1.545	0.391	
836.60	190	GSM 850	GPRS	28.5	26.61	0.00	10 mm	0923-1	4	1:2.076	front	0.374	1.545	0.578	A12
836.60	190	GSM 850	GPRS	28.5	26.61	-0.16	10 mm	0923-1	4	1:2.076	bottom	0.277	1.545	0.428	
836.60	190	GSM 850	GPRS	28.5	26.61	-0.03	10 mm	0923-1	4	1:2.076	right	0.143	1.545	0.221	
836.60	190	GSM 850	GPRS	28.5	26.61	0.10	10 mm	0923-1	4	1:2.076	left	0.047	1.545	0.073	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.00	10 mm	0923-1	N/A	1:1	back	0.247	1.114	0.275	
836.60	4183	UMTS 850	RMC	23.5	23.03	-0.02	10 mm	0923-1	N/A	1:1	front	0.357	1.114	0.398	A14
836.60	4183	UMTS 850	RMC	23.5	23.03	-0.12	10 mm	0923-1	N/A	1:1	bottom	0.268	1.114	0.299	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.01	10 mm	0923-1	N/A	1:1	right	0.150	1.114	0.167	
836.60	4183	UMTS 850	RMC	23.5	23.03	0.04	10 mm	0923-1	N/A	1:1	left	0.053	1.114	0.059	
1880.00	661	GSM 1900	GPRS	27.0	26.03	0.09	10 mm	0923-1	3	1:2.76	back	0.328	1.250	0.410	
1880.00	661	GSM 1900	GPRS	27.0	26.03	0.11	10 mm	0923-1	3	1:2.76	front	0.552	1.250	0.690	
1850.20	512	GSM 1900	GPRS	27.0	26.06	-0.05	10 mm	0923-1	3	1:2.76	bottom	0.706	1.242	0.877	
1880.00	661	GSM 1900	GPRS	27.0	26.03	0.07	10 mm	0923-1	3	1:2.76	bottom	0.813	1.250	1.016	
1909.80	810	GSM 1900	GPRS	27.0	26.50	0.07	10 mm	0923-1	3	1:2.76	bottom	0.928	1.122	1.041	
1880.00	661	GSM 1900	GPRS	27.0	26.03	-0.05	10 mm	0923-1	3	1:2.76	right	0.072	1.250	0.090	
1880.00	661	GSM 1900	GPRS	27.0	26.03	0.07	10 mm	0923-1	3	1:2.76	left	0.138	1.250	0.173	
1909.80	810	GSM 1900	GPRS	27.0	26.50	-0.06	10 mm	0923-1	3	1:2.76	bottom	0.975	1.122	1.094	A16
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.06	10 mm	0923-1	N/A	1:1	back	0.437	1.148	0.502	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	-0.17	10 mm	0923-1	N/A	1:1	front	0.606	1.148	0.696	
1852.40	9262	UMTS 1900	RMC	22.0	21.45	-0.06	10 mm	0923-1	N/A	1:1	bottom	0.677	1.135	0.768	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	-0.05	10 mm	0923-1	N/A	1:1	bottom	0.824	1.148	0.946	
1907.60	9538	UMTS 1900	RMC	22.0	21.52	0.01	10 mm	0923-1	N/A	1:1	bottom	0.918	1.117	1.025	A18
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.02	10 mm	0923-1	N/A	1:1	right	0.081	1.148	0.093	
1880.00	9400	UMTS 1900	RMC	22.0	21.40	0.01	10 mm	0923-1	N/A	1:1	left	0.152	1.148	0.174	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT															
Spatial Peak							Body								
Uncontrolled Exposure/General Population							1.6 W/kg (mW/g)								
							averaged over 1 gram								

Blue entry represents variability measurement.

Table 11-15
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	-0.04	0	0923-5	QPSK	1	25	10 mm	back	1:1	0.342	1.067	0.365	A20
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.01	1	0923-5	QPSK	25	12	10 mm	back	1:1	0.279	1.062	0.296	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	0.00	0	0923-5	QPSK	1	25	10 mm	front	1:1	0.393	1.067	0.419	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.02	1	0923-5	QPSK	25	12	10 mm	front	1:1	0.319	1.062	0.339	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	-0.02	0	0923-5	QPSK	1	25	10 mm	bottom	1:1	0.387	1.067	0.413	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.01	1	0923-5	QPSK	25	12	10 mm	bottom	1:1	0.313	1.062	0.332	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	0.00	0	0923-5	QPSK	1	25	10 mm	right	1:1	0.194	1.067	0.207	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.07	1	0923-5	QPSK	25	12	10 mm	right	1:1	0.165	1.062	0.175	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.72	0.01	0	0923-5	QPSK	1	25	10 mm	left	1:1	0.082	1.067	0.087	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.0	22.74	-0.03	1	0923-5	QPSK	25	12	10 mm	left	1:1	0.067	1.062	0.071	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram												

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 57 of 78	

Table 11-16
LTE Band 4 (AWS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
																(W/kg)		(W/kg)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.04	0	0923-2	QPSK	1	0	10 mm	back	1:1	0.637	1.208	0.769	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	0.01	1	0923-2	QPSK	50	0	10 mm	back	1:1	0.537	1.265	0.679	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.02	0	0923-2	QPSK	1	0	10 mm	front	1:1	0.782	1.208	0.945	A22
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	-0.02	1	0923-2	QPSK	50	0	10 mm	front	1:1	0.673	1.265	0.851	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.85	-0.04	1	0923-2	QPSK	100	0	10 mm	front	1:1	0.681	1.303	0.887	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.02	0	0923-2	QPSK	1	0	10 mm	bottom	1:1	0.673	1.208	0.813	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	-0.01	1	0923-2	QPSK	50	0	10 mm	bottom	1:1	0.588	1.265	0.744	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.85	-0.02	1	0923-2	QPSK	100	0	10 mm	bottom	1:1	0.662	1.303	0.863	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	0.04	0	0923-2	QPSK	1	0	10 mm	right	1:1	0.117	1.208	0.141	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	-0.01	1	0923-2	QPSK	50	0	10 mm	right	1:1	0.096	1.265	0.121	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.0	22.18	-0.07	0	0923-2	QPSK	1	0	10 mm	left	1:1	0.190	1.208	0.230	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	20.98	0.02	1	0923-2	QPSK	50	0	10 mm	left	1:1	0.152	1.265	0.192	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-17
LTE Band 2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	-0.02	0	0923-3	QPSK	1	99	10 mm	back	1:1	0.380	1.419	0.539	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.00	1	0923-3	QPSK	50	25	10 mm	back	1:1	0.298	1.400	0.417	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	0.02	0	0923-3	QPSK	1	99	10 mm	front	1:1	0.515	1.419	0.731	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.03	1	0923-3	QPSK	50	25	10 mm	front	1:1	0.408	1.400	0.571	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	-0.01	0	0923-3	QPSK	1	99	10 mm	bottom	1:1	0.754	1.419	1.070	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	23.0	21.39	0.13	0	0923-3	QPSK	1	99	10 mm	bottom	1:1	0.737	1.449	1.068	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.0	21.47	-0.01	0	0923-3	QPSK	1	99	10 mm	bottom	1:1	0.766	1.422	1.089	A24
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.02	1	0923-3	QPSK	50	25	10 mm	bottom	1:1	0.587	1.400	0.822	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	22.0	20.32	-0.01	1	0923-3	QPSK	50	0	10 mm	bottom	1:1	0.585	1.472	0.861	
1900.00	19100	High	LTE Band 2 (PCS)	20	22.0	20.52	0.00	1	0923-3	QPSK	50	50	10 mm	bottom	1:1	0.637	1.406	0.896	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.51	0.01	1	0923-3	QPSK	100	0	10 mm	bottom	1:1	0.540	1.409	0.761	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	0.05	0	0923-3	QPSK	1	99	10 mm	right	1:1	0.079	1.419	0.112	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	-0.10	1	0923-3	QPSK	50	25	10 mm	right	1:1	0.054	1.400	0.076	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	21.48	0.01	0	0923-3	QPSK	1	99	10 mm	left	1:1	0.115	1.419	0.163	
1860.00	18700	Low	LTE Band 2 (PCS)	20	22.0	20.54	0.03	1	0923-3	QPSK	50	25	10 mm	left	1:1	0.083	1.400	0.116	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 58 of 78	

Table 11-18
WLAN Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.20	10 mm	1	0923-1	1	back	1:1	0.120	1.180	0.142	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.20	10 mm	1	0923-1	1	front	1:1	0.006	1.180	0.007	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.07	10 mm	1	0923-1	1	top	1:1	0.009	1.180	0.011	
2462	11	IEEE 802.11b	DSSS	17.5	16.78	0.10	10 mm	1	0923-1	1	left	1:1	0.051	1.180	0.060	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	-0.13	10 mm	2	0923-1	1	back	1:1	0.306	1.256	0.384	A25
2412	1	IEEE 802.11b	DSSS	17.5	16.51	0.04	10 mm	2	0923-1	1	front	1:1	0.099	1.256	0.124	
2412	1	IEEE 802.11b	DSSS	17.5	16.51	0.06	10 mm	2	0923-1	1	top	1:1	0.127	1.256	0.160	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	-0.09	10 mm	MIMO	0923-1	13	back	1:1	0.136	1.202	0.163	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.14	10 mm	MIMO	0923-1	13	front	1:1	0.037	1.202	0.044	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.06	10 mm	MIMO	0923-1	13	top	1:1	0.059	1.202	0.071	
2437	6	IEEE 802.11n	OFDM	16.5	15.70	0.07	10 mm	MIMO	0923-1	13	left	1:1	0.019	1.202	0.023	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 59 of 78	

11.4 Standalone Hand SAR Data

Table 11-19
WLAN Hand SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (10g) (W/kg)	Scaling Factor	Scaled SAR (10g) (W/kg)	Plot
MHz	Ch.															
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.17	0 mm	1	0923-5	6	back	1:1	0.443	1.069	0.474	A28
5775	155	IEEE 802.11ac	OFDM	11.5	10.65	0.14	0 mm	1	0923-5	29.3	back	1:1	0.191	1.216	0.232	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.07	0 mm	1	0923-5	6	front	1:1	0.026	1.069	0.028	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	0.19	0 mm	1	0923-5	6	top	1:1	0.014	1.069	0.015	
5765	153	IEEE 802.11a	OFDM	14.5	14.21	-0.20	0 mm	1	0923-5	6	left	1:1	0.114	1.069	0.122	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	-0.01	0 mm	1	0923-5	6	back	1:1	0.447	1.099	0.491	
5210	42	IEEE 802.11ac	OFDM	11.5	11.00	0.17	0 mm	1	0923-5	29.3	back	1:1	0.198	1.122	0.222	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.01	0 mm	1	0923-5	6	front	1:1	0.012	1.099	0.013	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.04	0 mm	1	0923-5	6	top	1:1	0.005	1.099	0.005	
5180	36	IEEE 802.11a	OFDM	14.5	14.09	0.02	0 mm	1	0923-5	6	left	1:1	0.105	1.099	0.115	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	-0.13	0 mm	1	0923-5	6	back	1:1	0.324	1.186	0.384	
5290	58	IEEE 802.11ac	OFDM	11.5	10.45	0.11	0 mm	1	0923-5	29.3	back	1:1	0.173	1.274	0.220	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.14	0 mm	1	0923-5	6	front	1:1	0.018	1.186	0.021	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.18	0 mm	1	0923-5	6	top	1:1	0.005	1.186	0.006	
5260	52	IEEE 802.11a	OFDM	14.5	13.76	0.04	0 mm	1	0923-5	6	left	1:1	0.072	1.186	0.085	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.03	0 mm	1	0923-5	6	back	1:1	0.553	1.052	0.582	A29
5530	106	IEEE 802.11ac	OFDM	11.5	10.59	0.14	0 mm	1	0923-5	29.3	back	1:1	0.201	1.233	0.248	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.15	0 mm	1	0923-5	6	front	1:1	0.032	1.052	0.034	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.02	0 mm	1	0923-5	6	top	1:1	0.014	1.052	0.015	
5660	132	IEEE 802.11a	OFDM	14.5	14.28	0.08	0 mm	1	0923-5	6	left	1:1	0.142	1.052	0.149	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	-0.17	0 mm	2	0923-5	6	back	1:1	0.333	1.262	0.420	
5775	155	IEEE 802.11ac	OFDM	11.5	10.91	0.07	0 mm	2	0923-5	29.3	back	1:1	0.177	1.146	0.203	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	0.04	0 mm	2	0923-5	6	front	1:1	0.094	1.262	0.119	
5765	153	IEEE 802.11a	OFDM	14.5	13.49	-0.15	0 mm	2	0923-5	6	top	1:1	0.108	1.262	0.136	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	-0.10	0 mm	2	0923-5	6	back	1:1	0.344	1.247	0.429	
5210	42	IEEE 802.11ac	OFDM	11.5	10.55	0.09	0 mm	2	0923-5	29.3	back	1:1	0.141	1.245	0.176	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	0.06	0 mm	2	0923-5	6	front	1:1	0.049	1.247	0.061	
5180	36	IEEE 802.11a	OFDM	14.5	13.54	-0.02	0 mm	2	0923-5	6	top	1:1	0.093	1.247	0.116	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	-0.08	0 mm	2	0923-5	6	back	1:1	0.299	1.208	0.361	
5290	58	IEEE 802.11ac	OFDM	11.5	10.39	0.04	0 mm	2	0923-5	29.3	back	1:1	0.197	1.291	0.254	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	0.17	0 mm	2	0923-5	6	front	1:1	0.061	1.208	0.074	
5280	56	IEEE 802.11a	OFDM	14.5	13.68	-0.02	0 mm	2	0923-5	6	top	1:1	0.089	1.208	0.108	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	-0.13	0 mm	2	0923-5	6	back	1:1	0.341	1.199	0.409	
5530	106	IEEE 802.11ac	OFDM	11.5	10.63	0.13	0 mm	2	0923-5	29.3	back	1:1	0.192	1.222	0.235	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	-0.07	0 mm	2	0923-5	6	front	1:1	0.122	1.199	0.146	
5500	100	IEEE 802.11a	OFDM	14.5	13.71	0.01	0 mm	2	0923-5	6	top	1:1	0.001	1.199	0.001	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.06	0 mm	MMO	0923-5	13	back	1:1	0.271	1.265	0.343	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.11	0 mm	MMO	0923-5	13	front	1:1	0.062	1.265	0.078	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	-0.04	0 mm	MMO	0923-5	13	top	1:1	0.069	1.265	0.087	
5745	149	IEEE 802.11n	OFDM	16.5	15.48	0.11	0 mm	MMO	0923-5	13	left	1:1	0.065	1.265	0.082	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.11	0 mm	MMO	0923-5	13	back	1:1	0.406	1.194	0.485	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	0.12	0 mm	MMO	0923-5	13	front	1:1	0.059	1.194	0.070	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	-0.06	0 mm	MMO	0923-5	13	top	1:1	0.103	1.194	0.123	
5180	36	IEEE 802.11n	OFDM	16.5	15.73	-0.09	0 mm	MMO	0923-5	13	left	1:1	0.056	1.194	0.067	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.12	0 mm	MMO	0923-5	13	back	1:1	0.419	1.148	0.481	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.03	0 mm	MMO	0923-5	13	front	1:1	0.089	1.148	0.102	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.01	0 mm	MMO	0923-5	13	top	1:1	0.118	1.148	0.135	
5260	52	IEEE 802.11n	OFDM	16.5	15.90	0.02	0 mm	MMO	0923-5	13	left	1:1	0.057	1.148	0.065	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.03	0 mm	MMO	0923-5	13	back	1:1	0.321	1.276	0.410	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.04	0 mm	MMO	0923-5	13	front	1:1	0.075	1.276	0.096	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	-0.04	0 mm	MMO	0923-5	13	top	1:1	0.084	1.276	0.107	
5700	140	IEEE 802.11n	OFDM	16.5	15.44	0.17	0 mm	MMO	0923-5	13	left	1:1	0.088	1.276	0.112	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Hand 4.0 W/kg (mW/g) averaged over 10 grams									

FCC ID: A3LSMN915F			SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 60 of 78		

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2003, and FCC KDB Publication 447498 D01v05.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01 v01, variability SAR tests were performed when the measured SAR results for all frequency bands tested were greater than 0.8 W/kg for 1g SAR and 2.0 W/kg for 10g SAR. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.6 for more details).
10. Per FCC KDB Publication 648474 D04v01r01, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, hand SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D03v01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

UMTS Notes:

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

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 61 of 78	

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 8.4.4.
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 SISO operations: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11b. Other SISO 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.
2. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 D01v01r02 and October 2012 FCC/TCB Meeting Notes for SISO 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 SISO 802.11 modes (including 802.11n 20 MHz and 40 MHz bandwidths) 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. Per April 2013 TCB Workshop notes, full SISO SAR tests for all IEEE 802.11ac configurations were not required because the average output power was not more than 0.25 dB higher than IEEE 802.11a mode. IEEE 802.11ac SISO was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.
4. When Hotspot is enabled, all 5 GHz bands are disabled. Therefore no 5 GHz WIFI Wireless Router SAR Data was required.
5. Per KDB 248227, SAR for MIMO was measured with both transmitting simultaneously and was evaluated independently of SISO operation. For 2.4 GHz MIMO, IEEE 802.11n 20 MHz bandwidth was evaluated. For 5 GHz MIMO, IEEE 802.11n 20 MHz bandwidth was evaluated.
6. WIFI transmission was verified using an uncalibrated spectrum analyzer.
7. 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 default channels was not required. When the reported 10g averaged SAR is <2.0 W/kg, SAR testing on other default channels was not required for extremity exposure conditions.

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 62 of 78	

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v05 IV.C.1.iii and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific physical test configuration is ≤ 1.6 W/kg. When standalone SAR is not required to be measured, per FCC KDB 447498 D01v05 4.3.2.2), the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

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

Table 12-1
Estimated SAR

Mode	Frequency	Maximum Allowed Power	Separation Distance (Body)	Estimated SAR (Body)
	[MHz]	[dBm]	[mm]	[W/kg]
Bluetooth	2480	9.50	10	0.189

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

Main antenna SAR testing was not required for extremity exposure conditions per FCC KDB 648474. Therefore, no further analysis was required to determine that possible simultaneous scenarios would not exceed the SAR limit.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset		Page 63 of 78

12.3 Head SAR Simultaneous Transmission Analysis

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.048	0.194	Head SAR	Right Cheek	0.119	0.048	0.167
	Right Tilt	0.078	0.030	0.108		Right Tilt	0.065	0.030	0.095
	Left Cheek	0.092	0.027	0.119		Left Cheek	0.077	0.027	0.104
	Left Tilt	0.078	0.021	0.099		Left Tilt	0.068	0.021	0.089
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.048	0.108	Head SAR	Right Cheek	0.090	0.048	0.138
	Right Tilt	0.033	0.030	0.063		Right Tilt	0.049	0.030	0.079
	Left Cheek	0.075	0.027	0.102		Left Cheek	0.109	0.027	0.136
	Left Tilt	0.026	0.021	0.047		Left Tilt	0.054	0.021	0.075
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.048	0.205	Head SAR	Right Cheek	0.159	0.048	0.207
	Right Tilt	0.084	0.030	0.114		Right Tilt	0.073	0.030	0.103
	Left Cheek	0.086	0.027	0.113		Left Cheek	0.174	0.027	0.201
	Left Tilt	0.074	0.021	0.095		Left Tilt	0.087	0.021	0.108
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Right Cheek	0.082	0.048	0.130					
	Right Tilt	0.072	0.030	0.102					
	Left Cheek	0.128	0.027	0.155					
	Left Tilt	0.048	0.021	0.069					

Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 (Held to Ear)

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.127	0.273	Head SAR	Right Cheek	0.119	0.127	0.246
	Right Tilt	0.078	0.098	0.176		Right Tilt	0.065	0.098	0.163
	Left Cheek	0.092	0.490	0.582		Left Cheek	0.077	0.490	0.567
	Left Tilt	0.078	0.371	0.449		Left Tilt	0.068	0.371	0.439
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.127	0.187	Head SAR	Right Cheek	0.090	0.127	0.217
	Right Tilt	0.033	0.098	0.131		Right Tilt	0.049	0.098	0.147
	Left Cheek	0.075	0.490	0.565		Left Cheek	0.109	0.490	0.599
	Left Tilt	0.026	0.371	0.397		Left Tilt	0.054	0.371	0.425
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.127	0.284	Head SAR	Right Cheek	0.159	0.127	0.286
	Right Tilt	0.084	0.098	0.182		Right Tilt	0.073	0.098	0.171
	Left Cheek	0.086	0.490	0.576		Left Cheek	0.174	0.490	0.664
	Left Tilt	0.074	0.371	0.445		Left Tilt	0.087	0.371	0.458
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Right Cheek	0.082	0.127	0.209					
	Right Tilt	0.072	0.098	0.170					
	Left Cheek	0.128	0.490	0.618					
	Left Tilt	0.048	0.371	0.419					

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 64 of 78	

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.353	0.499	Head SAR	Right Cheek	0.119	0.353	0.472
	Right Tilt	0.078	0.268	0.346		Right Tilt	0.065	0.268	0.333
	Left Cheek	0.092	0.184	0.276		Left Cheek	0.077	0.184	0.261
	Left Tilt	0.078	0.143	0.221		Left Tilt	0.068	0.143	0.211
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.353	0.413	Head SAR	Right Cheek	0.090	0.353	0.443
	Right Tilt	0.033	0.268	0.301		Right Tilt	0.049	0.268	0.317
	Left Cheek	0.075	0.184	0.259		Left Cheek	0.109	0.184	0.293
	Left Tilt	0.026	0.143	0.169		Left Tilt	0.054	0.143	0.197
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.353	0.510	Head SAR	Right Cheek	0.159	0.353	0.512
	Right Tilt	0.084	0.268	0.352		Right Tilt	0.073	0.268	0.341
	Left Cheek	0.086	0.184	0.270		Left Cheek	0.174	0.184	0.358
	Left Tilt	0.074	0.143	0.217		Left Tilt	0.087	0.143	0.230
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.082	0.353	0.435			
			Right Tilt	0.072	0.268	0.340			
			Left Cheek	0.128	0.184	0.312			
			Left Tilt	0.048	0.143	0.191			

Table 12-5
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Held to Ear)

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.098	0.244	Head SAR	Right Cheek	0.119	0.098	0.217
	Right Tilt	0.078	0.012	0.090		Right Tilt	0.065	0.012	0.077
	Left Cheek	0.092	0.042	0.134		Left Cheek	0.077	0.042	0.119
	Left Tilt	0.078	0.014	0.092		Left Tilt	0.068	0.014	0.082
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.098	0.158	Head SAR	Right Cheek	0.090	0.098	0.188
	Right Tilt	0.033	0.012	0.045		Right Tilt	0.049	0.012	0.061
	Left Cheek	0.075	0.042	0.117		Left Cheek	0.109	0.042	0.151
	Left Tilt	0.026	0.014	0.040		Left Tilt	0.054	0.014	0.068
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.098	0.255	Head SAR	Right Cheek	0.159	0.098	0.257
	Right Tilt	0.084	0.012	0.096		Right Tilt	0.073	0.012	0.085
	Left Cheek	0.086	0.042	0.128		Left Cheek	0.174	0.042	0.216
	Left Tilt	0.074	0.014	0.088		Left Tilt	0.087	0.014	0.101
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.082	0.098	0.180			
			Right Tilt	0.072	0.012	0.084			
			Left Cheek	0.128	0.042	0.170			
			Left Tilt	0.048	0.014	0.062			

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 65 of 78	

Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 2 (Held to Ear)

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.255	0.401	Head SAR	Right Cheek	0.119	0.255	0.374
	Right Tilt	0.078	0.173	0.251		Right Tilt	0.065	0.173	0.238
	Left Cheek	0.092	0.230	0.322		Left Cheek	0.077	0.230	0.307
	Left Tilt	0.078	0.152	0.230		Left Tilt	0.068	0.152	0.220
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.255	0.315	Head SAR	Right Cheek	0.090	0.255	0.345
	Right Tilt	0.033	0.173	0.206		Right Tilt	0.049	0.173	0.222
	Left Cheek	0.075	0.230	0.305		Left Cheek	0.109	0.230	0.339
	Left Tilt	0.026	0.152	0.178		Left Tilt	0.054	0.152	0.206
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.255	0.412	Head SAR	Right Cheek	0.159	0.255	0.414
	Right Tilt	0.084	0.173	0.257		Right Tilt	0.073	0.173	0.246
	Left Cheek	0.086	0.230	0.316		Left Cheek	0.174	0.230	0.404
	Left Tilt	0.074	0.152	0.226		Left Tilt	0.087	0.152	0.239
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Right Cheek	0.082	0.255	0.337					
	Right Tilt	0.072	0.173	0.245					
	Left Cheek	0.128	0.230	0.358					
	Left Tilt	0.048	0.152	0.200					

Table 12-7
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Held to Ear)

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.146	0.155	0.301	Head SAR	Right Cheek	0.119	0.155	0.274
	Right Tilt	0.078	0.113	0.191		Right Tilt	0.065	0.113	0.178
	Left Cheek	0.092	0.131	0.223		Left Cheek	0.077	0.131	0.208
	Left Tilt	0.078	0.081	0.159		Left Tilt	0.068	0.081	0.149
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.060	0.155	0.215	Head SAR	Right Cheek	0.090	0.155	0.245
	Right Tilt	0.033	0.113	0.146		Right Tilt	0.049	0.113	0.162
	Left Cheek	0.075	0.131	0.206		Left Cheek	0.109	0.131	0.240
	Left Tilt	0.026	0.081	0.107		Left Tilt	0.054	0.081	0.135
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.157	0.155	0.312	Head SAR	Right Cheek	0.159	0.155	0.314
	Right Tilt	0.084	0.113	0.197		Right Tilt	0.073	0.113	0.186
	Left Cheek	0.086	0.131	0.217		Left Cheek	0.174	0.131	0.305
	Left Tilt	0.074	0.081	0.155		Left Tilt	0.087	0.081	0.168
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Right Cheek	0.082	0.155	0.237					
	Right Tilt	0.072	0.113	0.185					
	Left Cheek	0.128	0.131	0.259					
	Left Tilt	0.048	0.081	0.129					

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-8
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 1 (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.142	0.476
Back Side	UMTS 850	0.275	0.142	0.417
Back Side	GSM 1900	0.316	0.142	0.458
Back Side	UMTS 1900	0.502	0.142	0.644
Back Side	LTE Band 5 (Cell)	0.365	0.142	0.507
Back Side	LTE Band 4 (AWS)	0.769	0.142	0.911
Back Side	LTE Band 2 (PCS)	0.539	0.142	0.681

Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.384	0.718
Back Side	UMTS 850	0.275	0.384	0.659
Back Side	GSM 1900	0.316	0.384	0.700
Back Side	UMTS 1900	0.502	0.384	0.886
Back Side	LTE Band 5 (Cell)	0.365	0.384	0.749
Back Side	LTE Band 4 (AWS)	0.769	0.384	1.153
Back Side	LTE Band 2 (PCS)	0.539	0.384	0.923

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.163	0.497
Back Side	UMTS 850	0.275	0.163	0.438
Back Side	GSM 1900	0.316	0.163	0.479
Back Side	UMTS 1900	0.502	0.163	0.665
Back Side	LTE Band 5 (Cell)	0.365	0.163	0.528
Back Side	LTE Band 4 (AWS)	0.769	0.163	0.932
Back Side	LTE Band 2 (PCS)	0.539	0.163	0.702

Table 12-11
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 1 (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.249	0.583
Back Side	UMTS 850	0.275	0.249	0.524
Back Side	GSM 1900	0.316	0.249	0.565
Back Side	UMTS 1900	0.502	0.249	0.751
Back Side	LTE Band 5 (Cell)	0.365	0.249	0.614
Back Side	LTE Band 4 (AWS)	0.769	0.249	1.018
Back Side	LTE Band 2 (PCS)	0.539	0.249	0.788

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 67 of 78	

Table 12-12
Simultaneous Transmission Scenario with 5 GHz WLAN Antenna 2 (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.191	0.525
Back Side	UMTS 850	0.275	0.191	0.466
Back Side	GSM 1900	0.316	0.191	0.507
Back Side	UMTS 1900	0.502	0.191	0.693
Back Side	LTE Band 5 (Cell)	0.365	0.191	0.556
Back Side	LTE Band 4 (AWS)	0.769	0.191	0.960
Back Side	LTE Band 2 (PCS)	0.539	0.191	0.730

Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.169	0.503
Back Side	UMTS 850	0.275	0.169	0.444
Back Side	GSM 1900	0.316	0.169	0.485
Back Side	UMTS 1900	0.502	0.169	0.671
Back Side	LTE Band 5 (Cell)	0.365	0.169	0.534
Back Side	LTE Band 4 (AWS)	0.769	0.169	0.938
Back Side	LTE Band 2 (PCS)	0.539	0.169	0.708

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.334	0.189	0.523
Back Side	UMTS 850	0.275	0.189	0.464
Back Side	GSM 1900	0.316	0.189	0.505
Back Side	UMTS 1900	0.502	0.189	0.691
Back Side	LTE Band 5 (Cell)	0.365	0.189	0.554
Back Side	LTE Band 4 (AWS)	0.769	0.189	0.958
Back Side	LTE Band 2 (PCS)	0.539	0.189	0.728

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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 68 of 78	

12.5 Hotspot SAR Simultaneous Transmission Analysis

Per FCC KDB Publication 941225 D06v01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR (“-”).

Table 12-15
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 1 (Hotspot at 1.0 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.391	0.142	0.533	Body SAR	Back	0.275	0.142	0.417
	Front	0.578	0.007	0.585		Front	0.398	0.007	0.405
	Top	-	0.011	0.011		Top	-	0.011	0.011
	Bottom	0.428	-	0.428		Bottom	0.299	-	0.299
	Right	0.221	-	0.221		Right	0.167	-	0.167
	Left	0.073	0.060	0.133		Left	0.059	0.060	0.119
Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.410	0.142	0.552	Body SAR	Back	0.502	0.142	0.644
	Front	0.690	0.007	0.697		Front	0.696	0.007	0.703
	Top	-	0.011	0.011		Top	-	0.011	0.011
	Bottom	1.094	-	1.094		Bottom	1.025	-	1.025
	Right	0.090	-	0.090		Right	0.093	-	0.093
	Left	0.173	0.060	0.233		Left	0.174	0.060	0.234
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.365	0.142	0.507	Body SAR	Back	0.769	0.142	0.911
	Front	0.419	0.007	0.426		Front	0.945	0.007	0.952
	Top	-	0.011	0.011		Top	-	0.011	0.011
	Bottom	0.413	-	0.413		Bottom	0.863	-	0.863
	Right	0.207	-	0.207		Right	0.141	-	0.141
	Left	0.087	0.060	0.147		Left	0.230	0.060	0.290
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.539	0.142	0.681					
	Front	0.731	0.007	0.738					
	Top	-	0.011	0.011					
	Bottom	1.089	-	1.089					
	Right	0.112	-	0.112					
	Left	0.163	0.060	0.223					

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 69 of 78	

Table 12-16
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 (Hotspot at 1.0 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.391	0.384	0.775	Body SAR	Back	0.275	0.384	0.659
	Front	0.578	0.124	0.702		Front	0.398	0.124	0.522
	Top	-	0.160	0.160		Top	-	0.160	0.160
	Bottom	0.428	-	0.428		Bottom	0.299	-	0.299
	Right	0.221	-	0.221		Right	0.167	-	0.167
	Left	0.073	-	0.073		Left	0.059	-	0.059
Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.410	0.384	0.794	Body SAR	Back	0.502	0.384	0.886
	Front	0.690	0.124	0.814		Front	0.696	0.124	0.820
	Top	-	0.160	0.160		Top	-	0.160	0.160
	Bottom	1.094	-	1.094		Bottom	1.025	-	1.025
	Right	0.090	-	0.090		Right	0.093	-	0.093
	Left	0.173	-	0.173		Left	0.174	-	0.174
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.365	0.384	0.749	Body SAR	Back	0.769	0.384	1.153
	Front	0.419	0.124	0.543		Front	0.945	0.124	1.069
	Top	-	0.160	0.160		Top	-	0.160	0.160
	Bottom	0.413	-	0.413		Bottom	0.863	-	0.863
	Right	0.207	-	0.207		Right	0.141	-	0.141
	Left	0.087	-	0.087		Left	0.230	-	0.230
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.539	0.384	0.923					
	Front	0.731	0.124	0.855					
	Top	-	0.160	0.160					
	Bottom	1.089	-	1.089					
	Right	0.112	-	0.112					
	Left	0.163	-	0.163					

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset
Page 70 of 78		

Table 12-17
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO (Hotspot at 1.0 cm)

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.391	0.163	0.554	Body SAR	Back	0.275	0.163	0.438
	Front	0.578	0.044	0.622		Front	0.398	0.044	0.442
	Top	-	0.071	0.071		Top	-	0.071	0.071
	Bottom	0.428	-	0.428		Bottom	0.299	-	0.299
	Right	0.221	-	0.221		Right	0.167	-	0.167
	Left	0.073	0.023	0.096		Left	0.059	0.023	0.082
Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.410	0.163	0.573	Body SAR	Back	0.502	0.163	0.665
	Front	0.690	0.044	0.734		Front	0.696	0.044	0.740
	Top	-	0.071	0.071		Top	-	0.071	0.071
	Bottom	1.094	-	1.094		Bottom	1.025	-	1.025
	Right	0.090	-	0.090		Right	0.093	-	0.093
	Left	0.173	0.023	0.196		Left	0.174	0.023	0.197
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.365	0.163	0.528	Body SAR	Back	0.769	0.163	0.932
	Front	0.419	0.044	0.463		Front	0.945	0.044	0.989
	Top	-	0.071	0.071		Top	-	0.071	0.071
	Bottom	0.413	-	0.413		Bottom	0.863	-	0.863
	Right	0.207	-	0.207		Right	0.141	-	0.141
	Left	0.087	0.023	0.110		Left	0.230	0.023	0.253
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.539	0.163	0.702					
	Front	0.731	0.044	0.775					
	Top	-	0.071	0.071					
	Bottom	1.089	-	1.089					
	Right	0.112	-	0.112					
	Left	0.163	0.023	0.186					

12.6 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.

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 71 of 78	

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

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

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	# of Time Slots	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1900	1909.80	810	GSM 1900	GPRS	3	bottom	10 mm	0.928	0.975	1.05	N/A	N/A	N/A	N/A
ICNIRP 1998 - SAFETY LIMIT							Body							
Spatial Peak							2.0 W/kg (mW/g)							
Uncontrolled Exposure/General Population							averaged over 10 grams							

13.2 Measurement Uncertainty

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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 72 of 78	

14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/30/2013	Annual	10/30/2014	1833460
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/15/2014	Annual	4/15/2015	MY45470194
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8648D	(9kHz-4GHz) Signal Generator	4/15/2014	Annual	4/15/2015	3629U00687
SPEAG	D835V2	835 MHz SAR Dipole	4/7/2014	Annual	4/7/2015	4d119
SPEAG	D1765V2	1765 MHz SAR Dipole	5/7/2014	Biennial	5/7/2015	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	4/9/2014	Annual	4/9/2015	5d141
SPEAG	D2450V2	2450 MHz SAR Dipole	1/21/2014	Annual	1/21/2015	797
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/27/2014	Annual	1/27/2015	1057
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433977
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433978
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-53W2	Attenuator (3dB)	CBT	N/A	CBT	120
Rohde & Schwarz	CMU200	Base Station Simulator	4/24/2014	Annual	4/24/2015	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	6/6/2014	Annual	6/6/2015	109892
Pasternack	PE2208-6	Bi-directional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bi-directional Coupler	CBT	N/A	CBT	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/19/2013	Annual	11/19/2014	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/19/2013	Annual	11/19/2014	1408
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/26/2014	Annual	2/26/2015	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/17/2014	Annual	3/17/2015	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/11/2014	Annual	4/11/2015	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/14/2014	Annual	5/14/2015	859
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
SPEAG	DAK-3.5	Dielectric Assessment Kit	11/13/2013	Annual	11/13/2014	1091
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/6/2014	Annual	5/6/2015	1070
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264162
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264165
Fisher Scientific	15-077-960	Digital Thermometer	11/6/2012	Biennial	11/6/2014	122640025
Fisher Scientific	15-078J	Long Stem Thermometer	10/30/2012	Biennial	10/30/2014	122626059
Fisher Scientific	15-078J	Long Stem Thermometer	1/7/2013	Biennial	1/7/2015	130018204
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Agilent	N9020A	NXA Signal Analyzer	10/29/2013	Annual	10/29/2014	US46470561
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Anritsu	ML2495A	Power Meter	10/31/2013	Annual	10/31/2014	1039008
Anritsu	ML2469A	Power Meter	3/14/2014	Annual	3/14/2015	1306009
Anritsu	MA2411B	Pulse Power Sensor	2/3/2014	Annual	2/3/2015	1339018
Anritsu	MA2411B	Pulse Power Sensor	3/25/2014	Annual	3/25/2015	1207470
Anritsu	MT8820C	Radio Communication Analyzer	12/12/2013	Annual	12/12/2014	6200901190
Rohde & Schwarz	CMW500	Radio Communication Tester	10/18/2013	Annual	10/18/2014	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	12/9/2013	Annual	12/9/2014	109366
Tektronix	RSA6114A	Real Time Spectrum Analyzer	4/16/2014	Annual	4/16/2015	B010177
SPEAG	EX3DV4	SAR Probe	10/23/2013	Annual	10/23/2014	3914
SPEAG	ES3DV3	SAR Probe	11/20/2013	Annual	11/20/2014	3287
SPEAG	EX3DV4	SAR Probe	1/29/2014	Annual	1/29/2015	3589
SPEAG	ES3DV3	SAR Probe	2/25/2014	Annual	2/25/2015	3258
SPEAG	ES3DV3	SAR Probe	4/17/2014	Annual	4/17/2015	3319
SPEAG	ES3DV3	SAR Probe	5/15/2014	Annual	5/15/2015	3263
Rohde & Schwarz	SME06	Signal Generator	10/30/2013	Annual	10/30/2014	832026
Rohde & Schwarz	NRVS	Single Channel Power Meter	10/31/2013	Annual	10/31/2014	835360/0079
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
COMTECH	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M155A00-009
Agilent	8753ES	S-Parameter Network Analyzer	10/29/2013	Annual	10/29/2014	US39170122
Fisher Scientific	S97611	Thermometer	4/12/2013	Biennial	4/12/2015	130219303
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	N/A
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	3/18/2014	Biennial	3/18/2016	N/A
Gigatronics	8651A	Universal Power Meter	10/30/2013	Annual	10/30/2014	8650319
Anritsu	MA24106A	USB Power Sensor	12/18/2013	Annual	12/18/2014	1344555
Anritsu	MA24106A	USB Power Sensor	12/18/2013	Annual	12/18/2014	1344556
VWR	36934-158	Wall-Mounted Thermometer	8/8/2013	Biennial	8/8/2015	130477877
Agilent	E5515C	Wireless Communications Test Set	11/5/2013	Biennial	11/5/2015	GB46310798

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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 73 of 78	

15 MEASUREMENT UNCERTAINTIES

Applicable for frequencies less than 3000 MHz.

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System									
Probe Calibration	E.2.1	6.0	N	1	1.0	1.0	6.0	6.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	1.0	1.0	1.3	1.3	∞
Boundary Effect	E.2.3	0.4	N	1	1.0	1.0	0.4	0.4	∞
Linearity	E.2.4	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	E.2.5	5.1	N	1	1.0	1.0	5.1	5.1	∞
Readout Electronics	E.2.6	1.0	N	1	1.0	1.0	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	E.6.3	2.9	R	1.73	1.0	1.0	1.7	1.7	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1.0	1.0	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	6.0	N	1	1.0	1.0	6.0	6.0	287
Device Holder Uncertainty	E.4.1	3.32	R	1.73	1.0	1.0	1.9	1.9	∞
Output Power Variation - SAR drift measurement	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

FCC ID: A3LSMN915F		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 74 of 78	

Applicable for frequencies up to 6 GHz.

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	E.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)							RSS	12.4	12.0
Expanded Uncertainty (95% CONFIDENCE LEVEL)							k=2	24.7	24.0

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

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 75 of 78	

16 CONCLUSION

16.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Industry Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

FCC ID: A3LSMN915F	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 76 of 78	

17 REFERENCES

- [1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.
- [2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.
- [3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.
- [4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.
- [5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2003, Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head Due to Wireless Communications Devices: Measurement Techniques.
- [6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.
- [7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.
- [8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. -124.
- [9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.
- [10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.
- [11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.
- [12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.
- [13] G. Hartsgrrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.
- [14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.
- [15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.
- [16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.
- [17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: OY1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 77 of 78

- [18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.
- [19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hochschule Zürich, Dosimetric Evaluation of the Cellular Phone.
- [20] IEC 62209-1, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz), Feb. 2005.
- [21] Industry Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 4, March 2010.
- [22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2009
- [23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07
- [24] SAR Measurement procedures for IEEE 802.11a/b/g KDB Publication 248227 D01v01r02
- [25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D02-D04
- [26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04
- [27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02
- [28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02
- [29] Anexo à Resolução No. 533, de 10 de Setembro de 2009.
- [30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

FCC ID: A3LSMN915F	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: 0Y1409231952.A3L	Test Dates: 09/23/14 - 10/13/14	DUT Type: Portable Handset	Page 78 of 78

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.915 \text{ S/m}$; $\epsilon_r = 41.395$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 09-25-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.3°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, Right Head, Cheek, Mid.ch

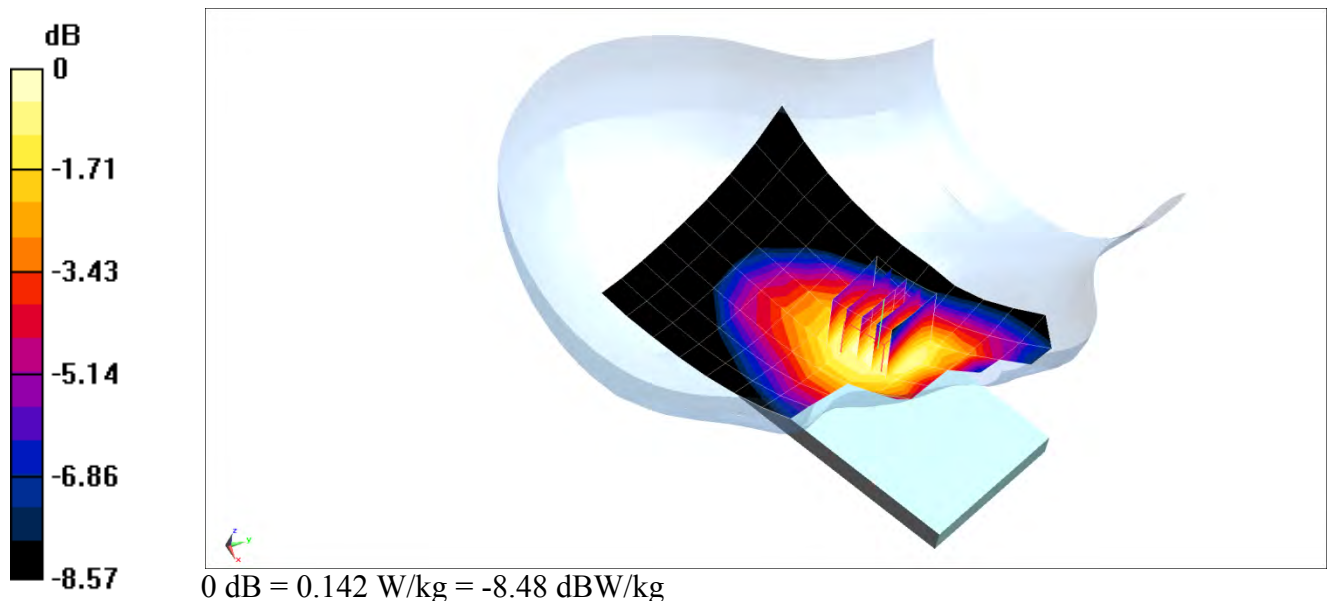
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.35 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.164 W/kg

SAR (1 g) = 0.132 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

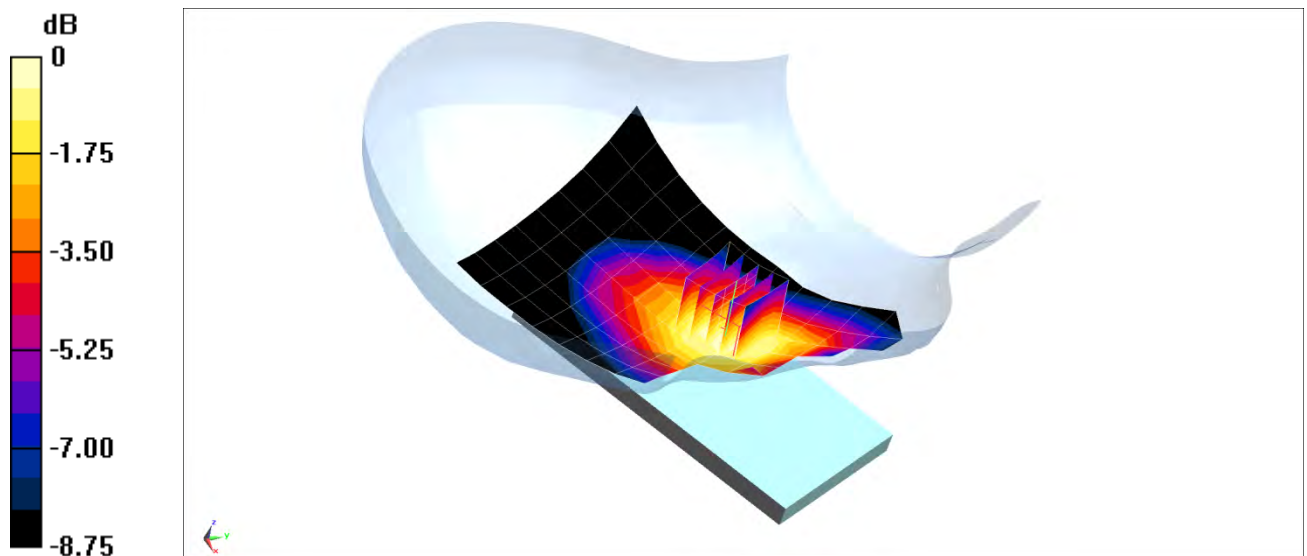
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.915 \text{ S/m}$; $\epsilon_r = 41.395$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 09-25-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.3°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, Cheek, Mid.ch

Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 11.15 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.132 W/kg
SAR (1 g) = 0.107 W/kg



0 dB = 0.116 W/kg = -9.36 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.408 \text{ S/m}$; $\epsilon_r = 39.288$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 09-26-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3287; ConvF(5.08, 5.08, 5.08); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

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, Left Head, Cheek, Mid.ch

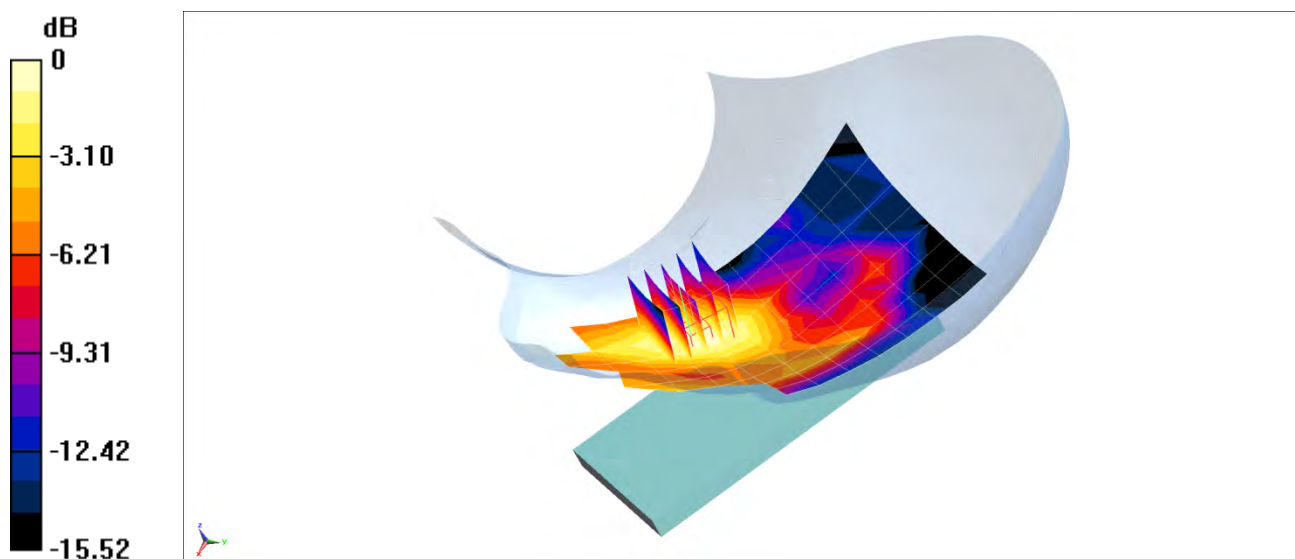
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 6.694 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.101 W/kg

SAR (1 g) = 0.069 W/kg



0 dB = 0.0809 W/kg = -10.92 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.408 \text{ S/m}$; $\epsilon_r = 39.288$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 09-26-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3287; ConvF(5.08, 5.08, 5.08); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

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, Left Head, Cheek, Mid.ch

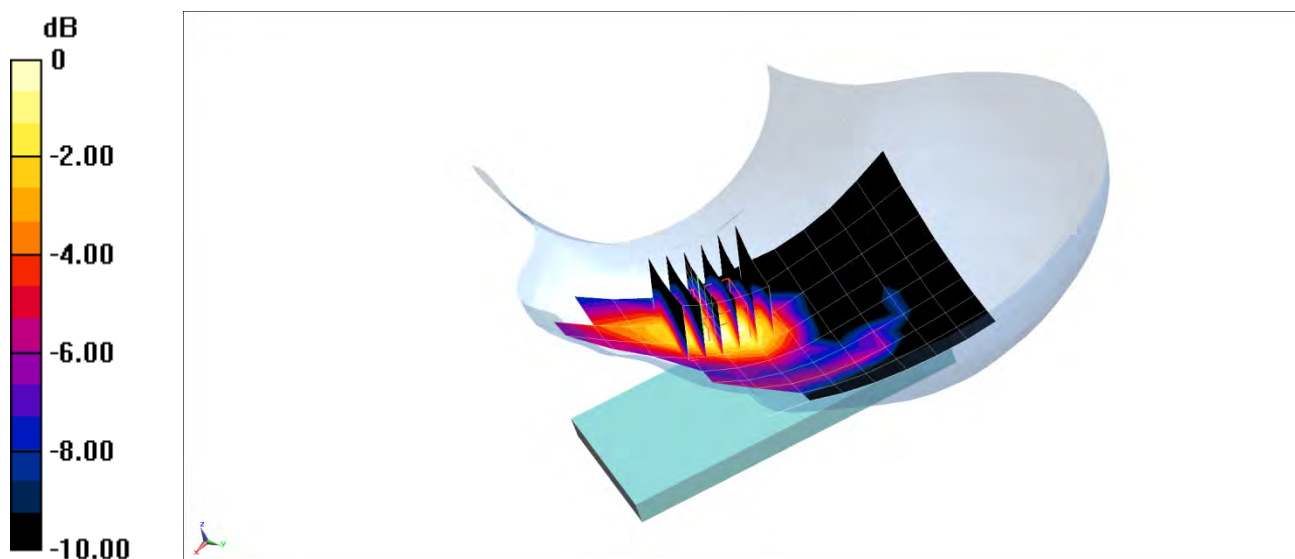
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 8.244 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.140 W/kg

SAR (1 g) = 0.095 W/kg



0 dB = 0.109 W/kg = -9.63 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, LTE Band 5 (Cell); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 0.915 \text{ S/m}$; $\epsilon_r = 41.396$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

Test Date: 09-25-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.3°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.), Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

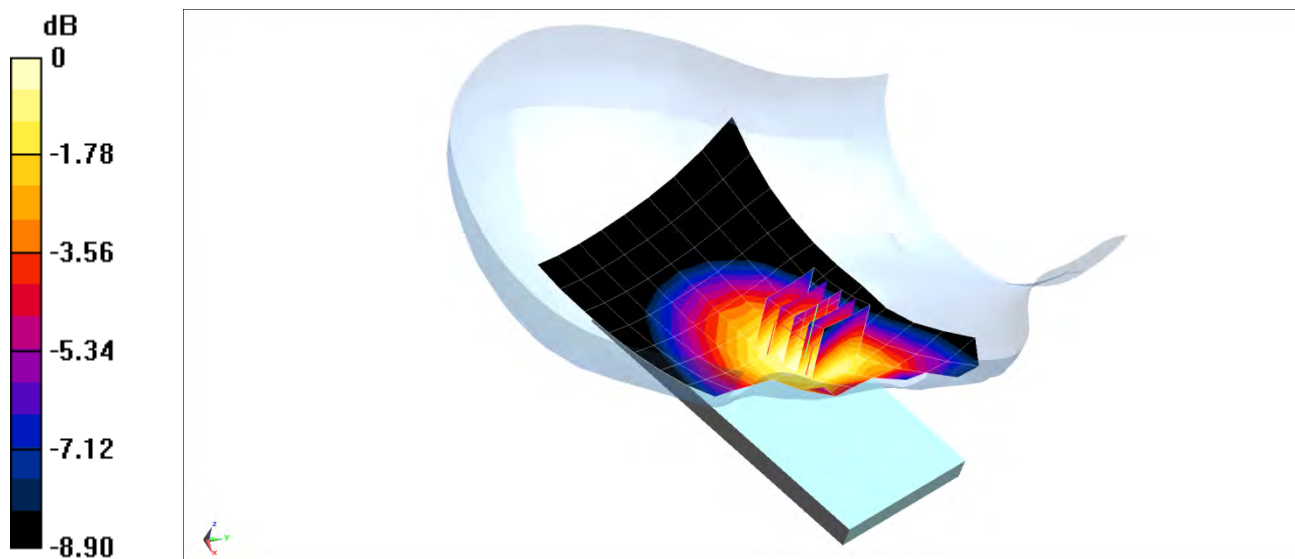
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.53 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.180 W/kg

SAR (1 g) = 0.147 W/kg



0 dB = 0.157 W/kg = -8.04 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-2

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
 $f = 1732.5 \text{ MHz}$; $\sigma = 1.323 \text{ S/m}$; $\epsilon_r = 39.341$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.9°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), Left Head, Cheek, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

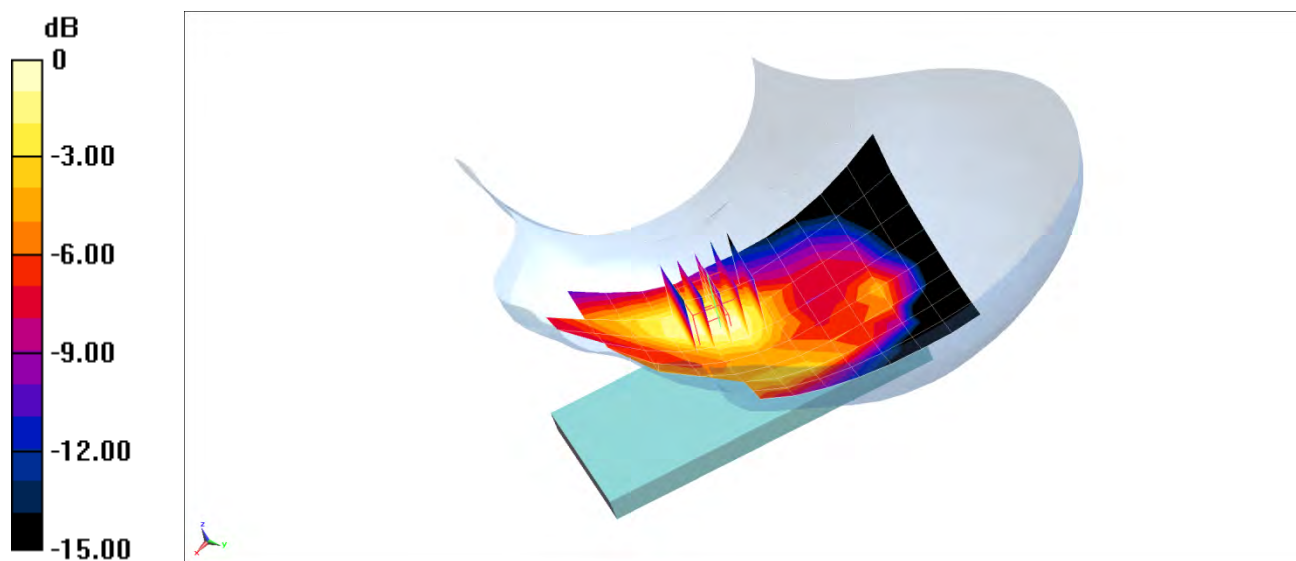
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.70 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.209 W/kg

SAR (1 g) = 0.144 W/kg



0 dB = 0.162 W/kg = -7.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-3

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; $\sigma = 1.405$ S/m; $\epsilon_r = 39.538$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Test Date: 10-07-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3258; ConvF(5.04, 5.04, 5.04); 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 2 (PCS), Left Head, Cheek, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

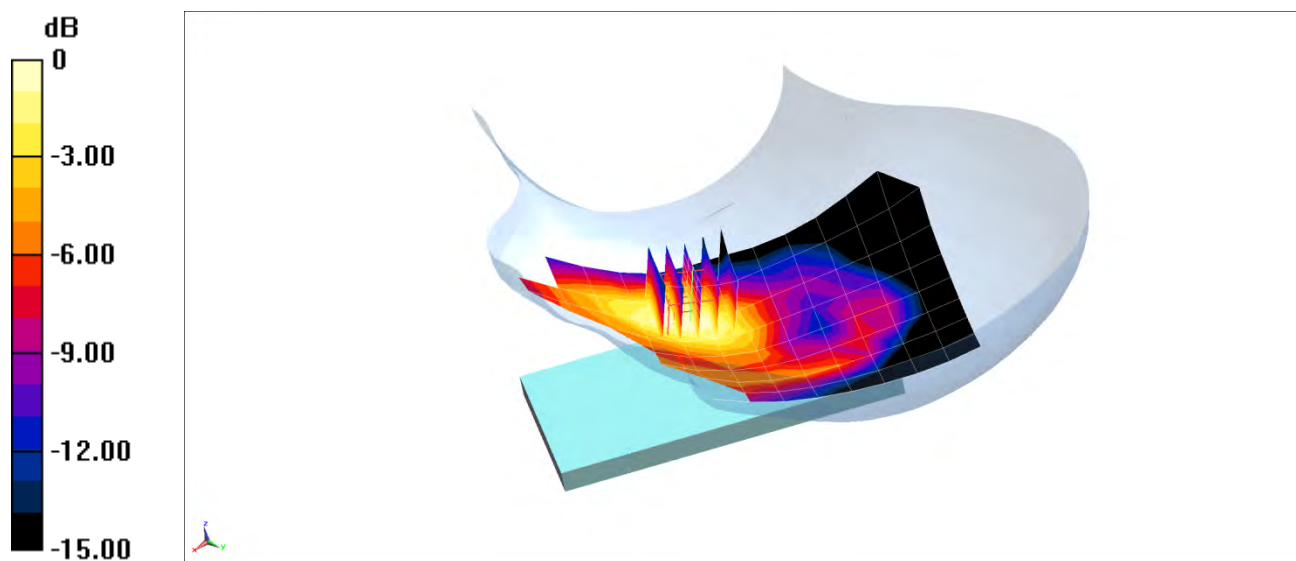
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 8.706 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR (1 g) = 0.090 W/kg



0 dB = 0.101 W/kg = -9.96 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
 $f = 2412 \text{ MHz}$; $\sigma = 1.783 \text{ S/m}$; $\epsilon_r = 40.996$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

Test Date: 10-01-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3258; ConvF(4.52, 4.52, 4.52); 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: IEEE 802.11b, Antenna 2, Left Head, Cheek, Ch 01, 1 Mbps

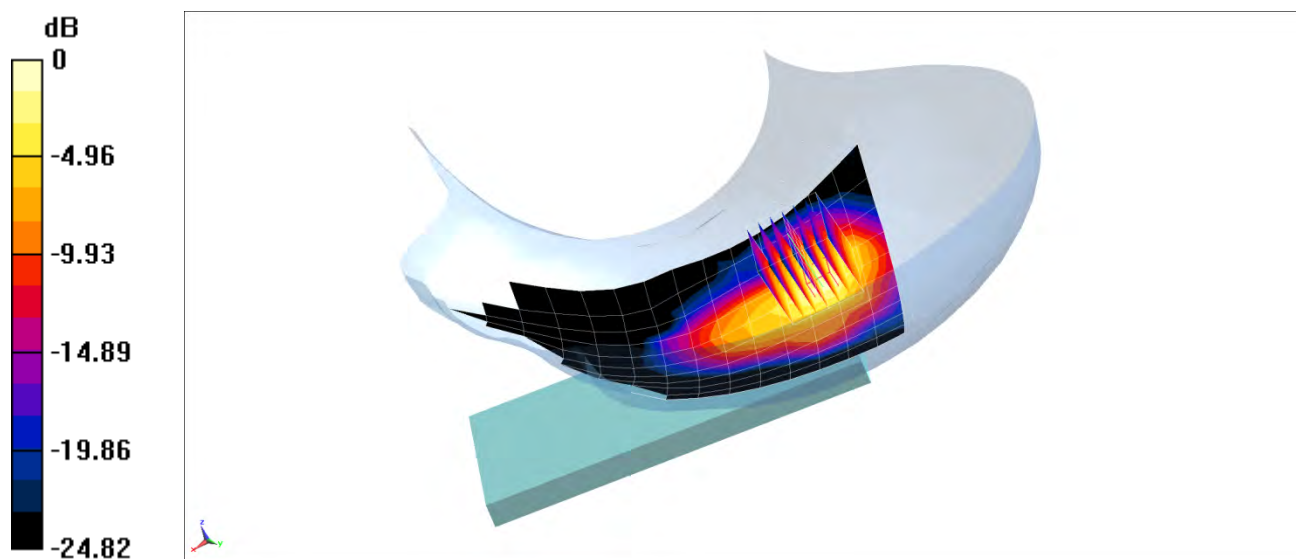
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 9.488 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.809 W/kg

SAR (1 g) = 0.390 W/kg



0 dB = 0.506 W/kg = -2.96 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, IEEE 802.11a; Frequency: 5765 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
 $f = 5765 \text{ MHz}$; $\sigma = 5.104 \text{ S/m}$; $\epsilon_r = 35.454$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

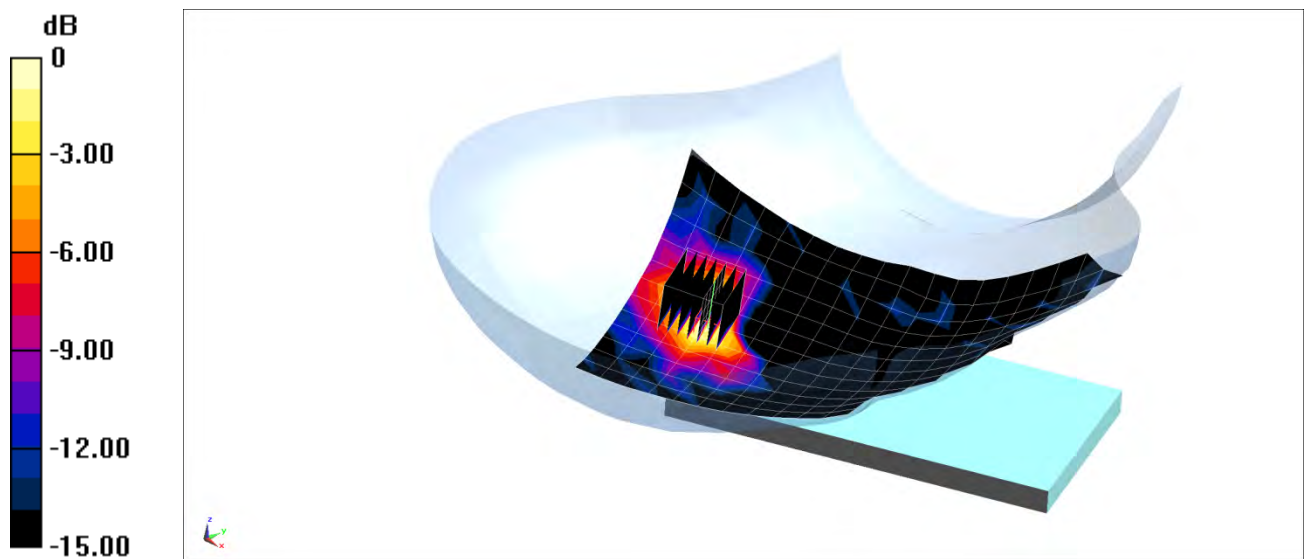
Test Date: 10-06-2014; Ambient Temp: 21.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3914; ConvF(4.52, 4.52, 4.52); Calibrated: 10/23/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 11/19/2013
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, Antenna 2, 5.8 GHz, Right Head, Cheek, Ch 153, 6 Mbps

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

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4
Reference Value = 4.270 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.568 W/kg
SAR (1 g) = 0.111 W/kg



0 dB = 0.321 W/kg = -4.93 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, IEEE 802.11a; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 4.82 \text{ S/m}$; $\epsilon_r = 35.772$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 10-06-2014; Ambient Temp: 21.5°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN3914; ConvF(4.55, 4.55, 4.55); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

Mode: IEEE 802.11a, Antenna 2, 5.5 GHz, Right Head, Cheek, Ch 100, 6 Mbps

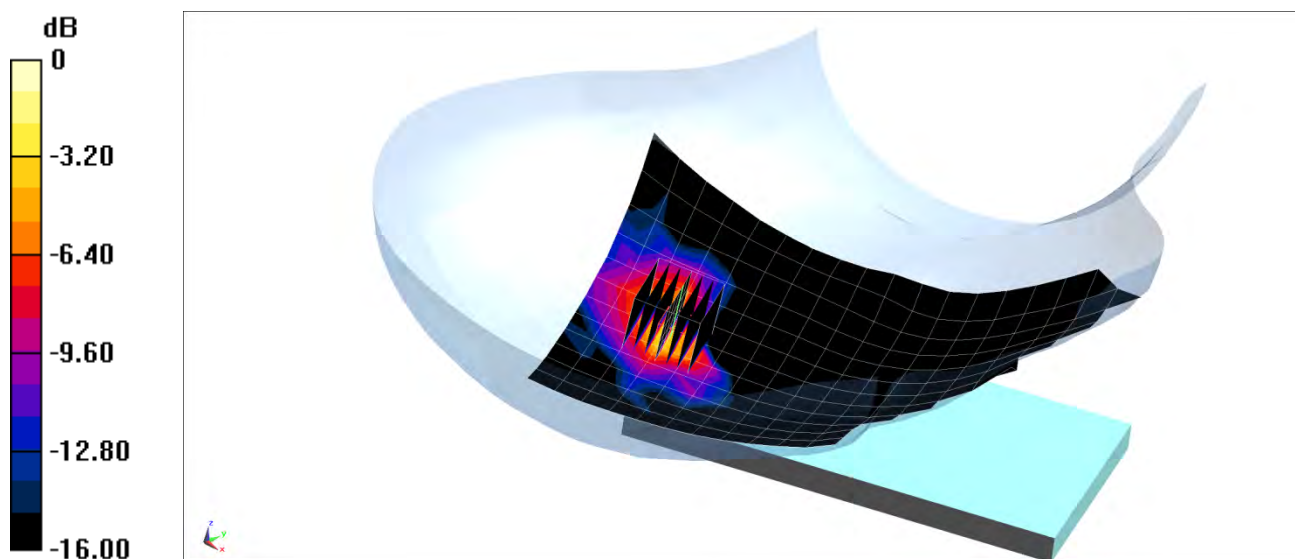
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 6.527 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR (1 g) = 0.213 W/kg



0 dB = 0.602 W/kg = -2.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.799$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/14/2014

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

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

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

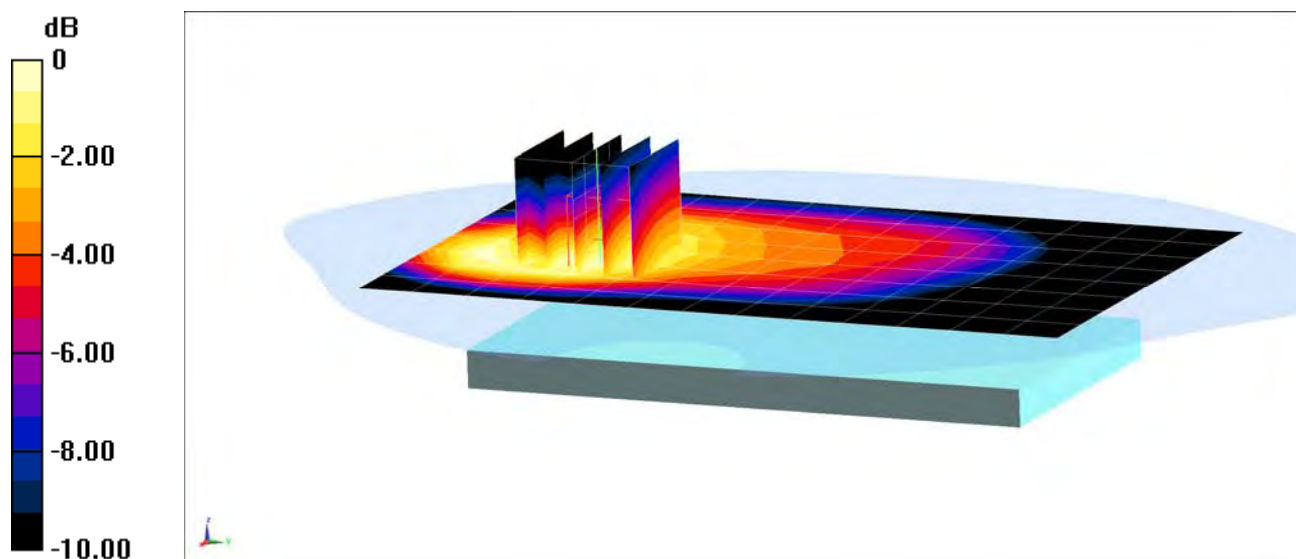
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 18.20 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR (1 g) = 0.301 W/kg



0 dB = 0.350 W/kg = -4.56 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.799$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/14/2014

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

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

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

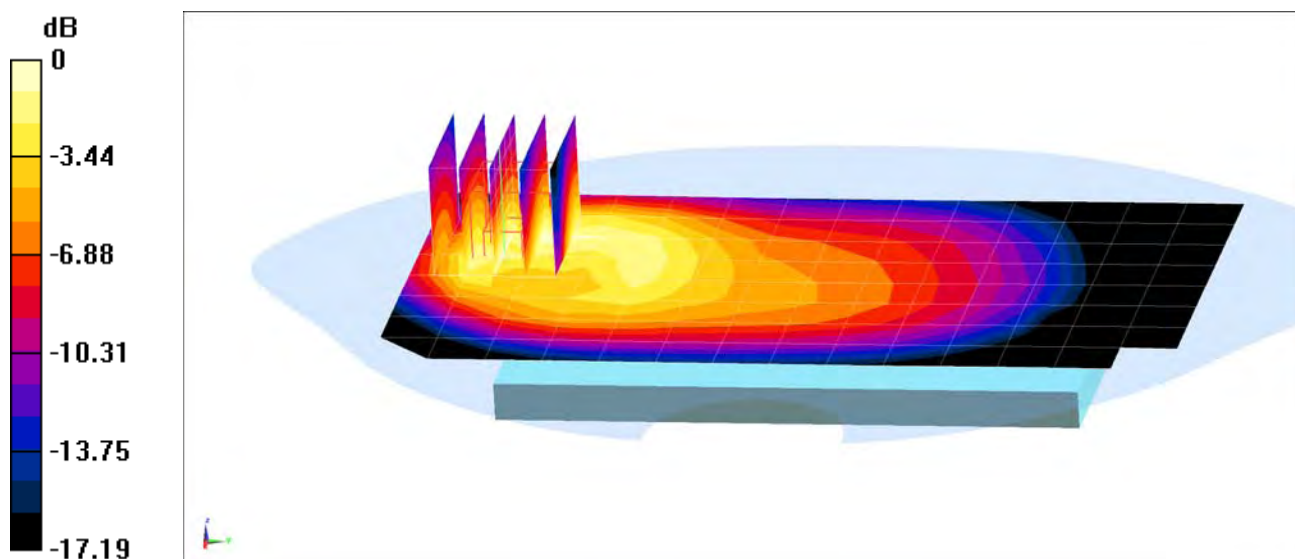
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 20.64 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.649 W/kg

SAR (1 g) = 0.374 W/kg



0 dB = 0.468 W/kg = -3.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.799$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

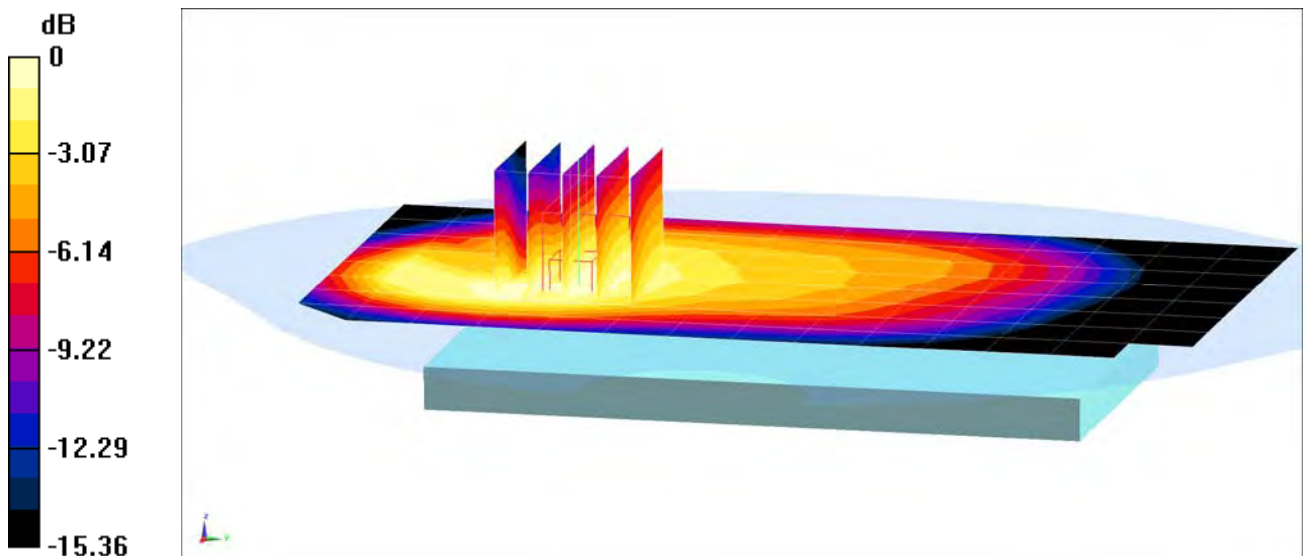
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 16.27 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.367 W/kg

SAR (1 g) = 0.247 W/kg



0 dB = 0.282 W/kg = -5.50 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

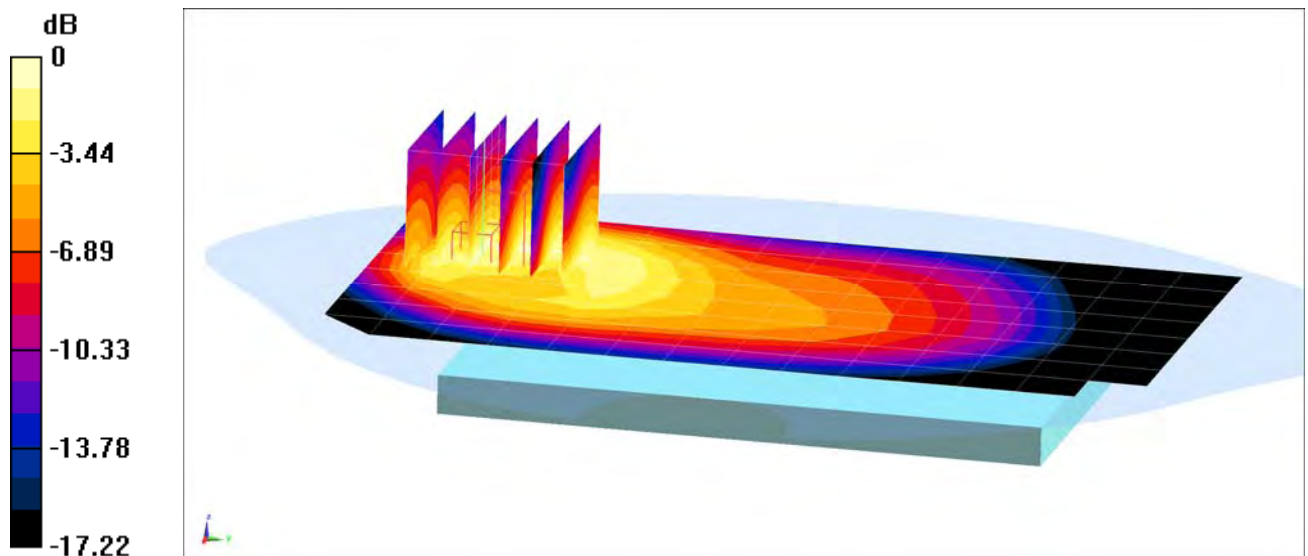
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.799$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 19.56 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.617 W/kg
SAR (1 g) = 0.357 W/kg



0 dB = 0.443 W/kg = -3.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.502 \text{ S/m}$; $\epsilon_r = 50.892$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2014; Ambient Temp: 23.8°C; Tissue Temp: 23.7°C

Probe: ES3DV3 - SN3287; ConvF(4.67, 4.67, 4.67); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229

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

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

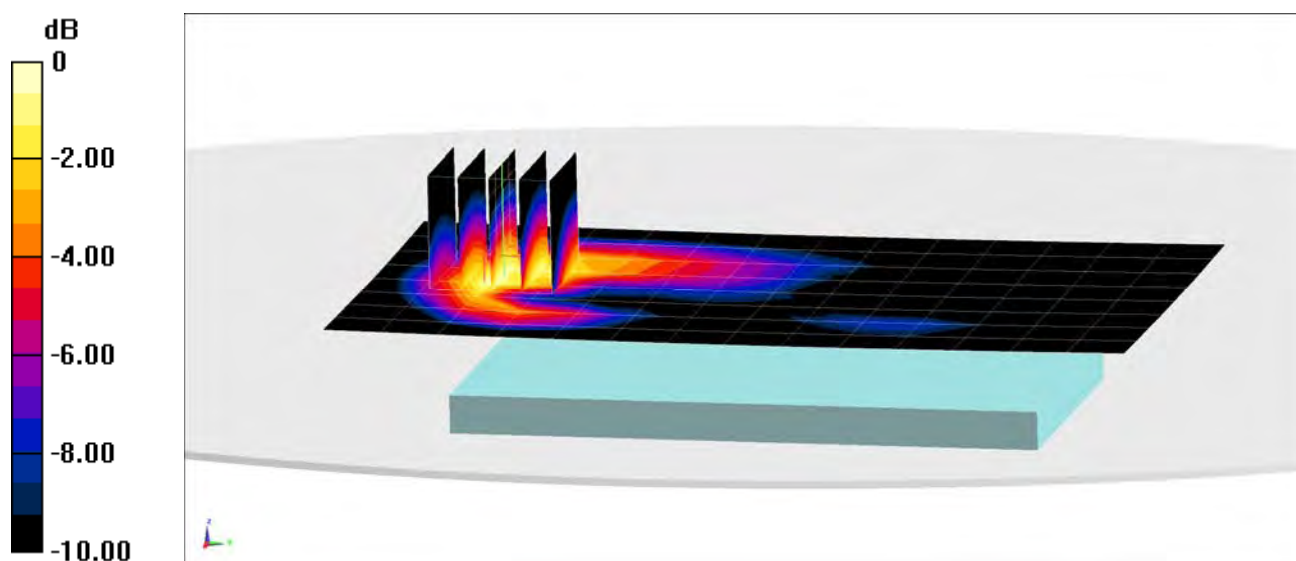
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 14.17 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.464 W/kg

SAR (1 g) = 0.290 W/kg



0 dB = 0.350 W/kg = -4.56 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1909.8 \text{ MHz}$; $\sigma = 1.581 \text{ S/m}$; $\epsilon_r = 50.776$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-09-2014; Ambient Temp: 22.6°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3319; ConvF(4.67, 4.67, 4.67); Calibrated: 4/17/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 4/11/2014
Phantom: ELI left; Type: QDOVA002AA; Serial: TP:1202
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Body SAR, Bottom Edge, High.ch, 3 Tx Slots

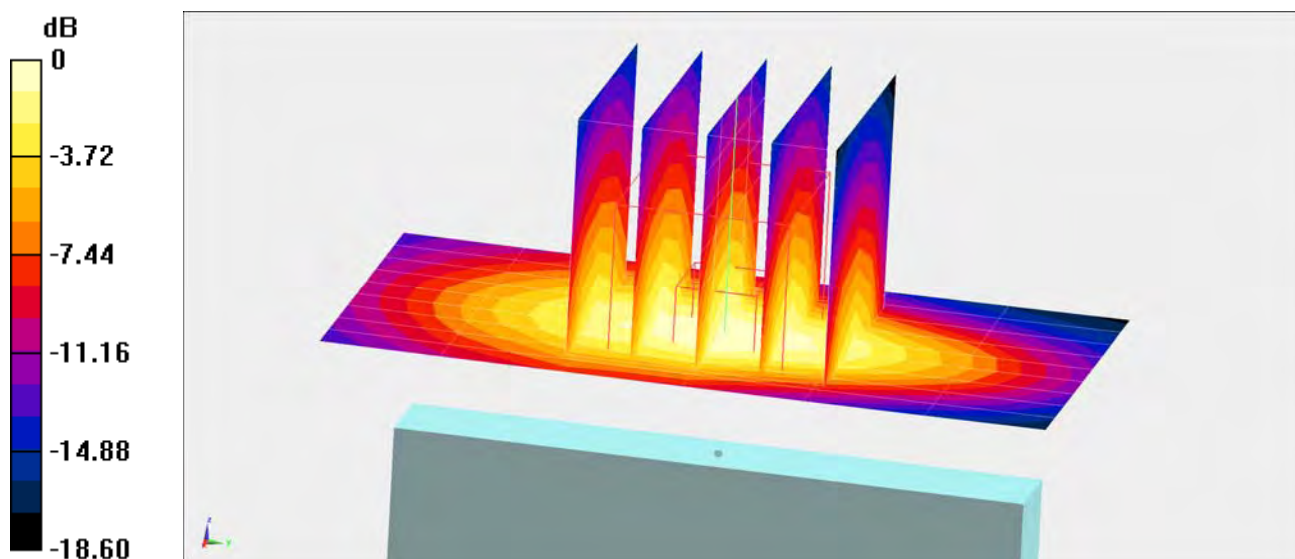
Area Scan (10x7x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 0 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR (1 g) = 0.975 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.502 \text{ S/m}$; $\epsilon_r = 50.892$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2014; Ambient Temp: 23.8°C; Tissue Temp: 23.7°C

Probe: ES3DV3 - SN3287; ConvF(4.67, 4.67, 4.67); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229

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

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

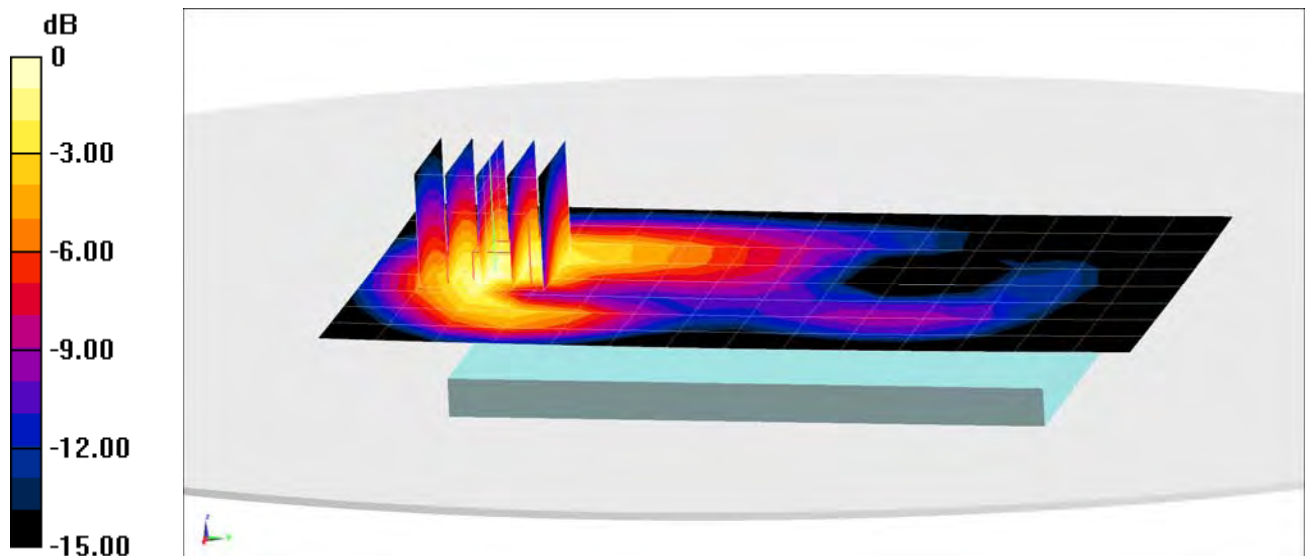
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 18.10 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.705 W/kg

SAR (1 g) = 0.437 W/kg



0 dB = 0.523 W/kg = -2.81 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
 $f = 1907.6 \text{ MHz}$; $\sigma = 1.536 \text{ S/m}$; $\epsilon_r = 50.806$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2014; Ambient Temp: 23.8°C; Tissue Temp: 23.7°C

Probe: ES3DV3 - SN3287; ConvF(4.67, 4.67, 4.67); Calibrated: 11/20/2013;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 11/19/2013
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

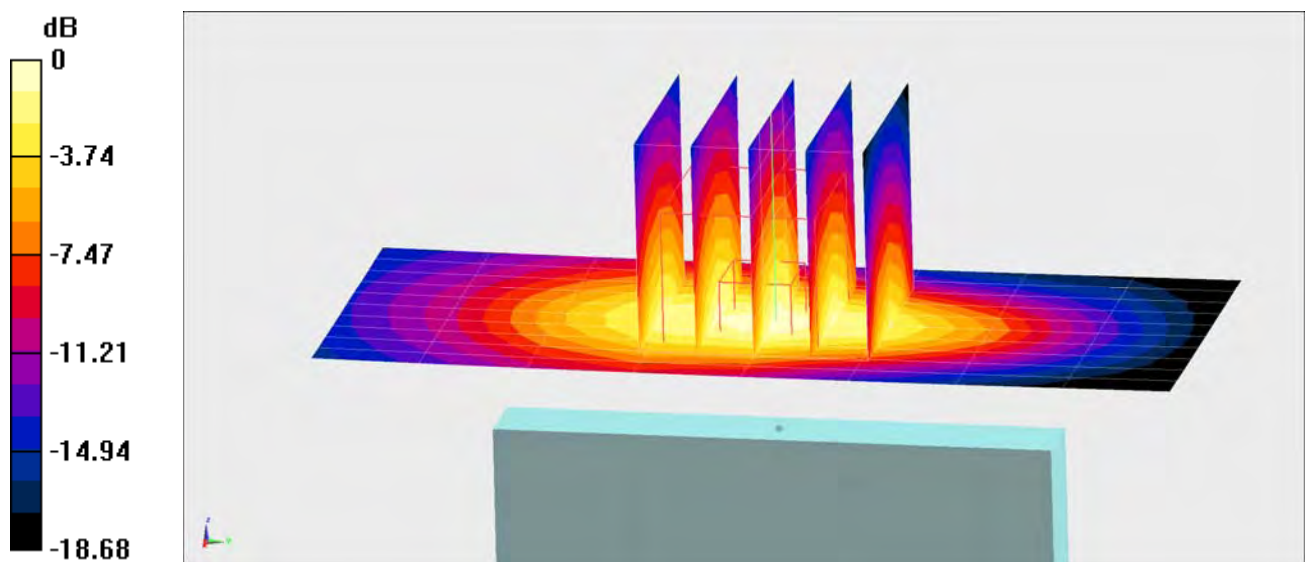
Area Scan (11x9x1): Measurement grid: $dx=5\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 26.22 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR (1 g) = 0.918 W/kg



0 dB = 1.13 W/kg = 0.53 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, LTE Band 5(Cell); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

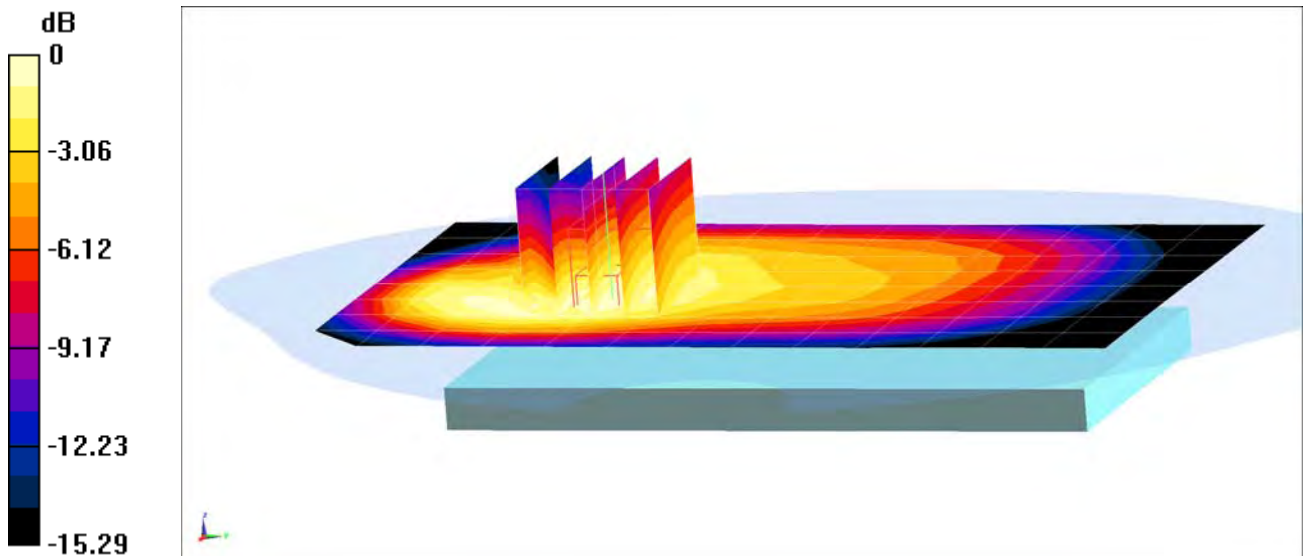
Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 19.44 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.509 W/kg
SAR (1 g) = 0.342 W/kg



0 dB = 0.391 W/kg = -4.08 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, LTE Band 5 (Cell); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
 $f = 836.5 \text{ MHz}$; $\sigma = 1.002 \text{ S/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

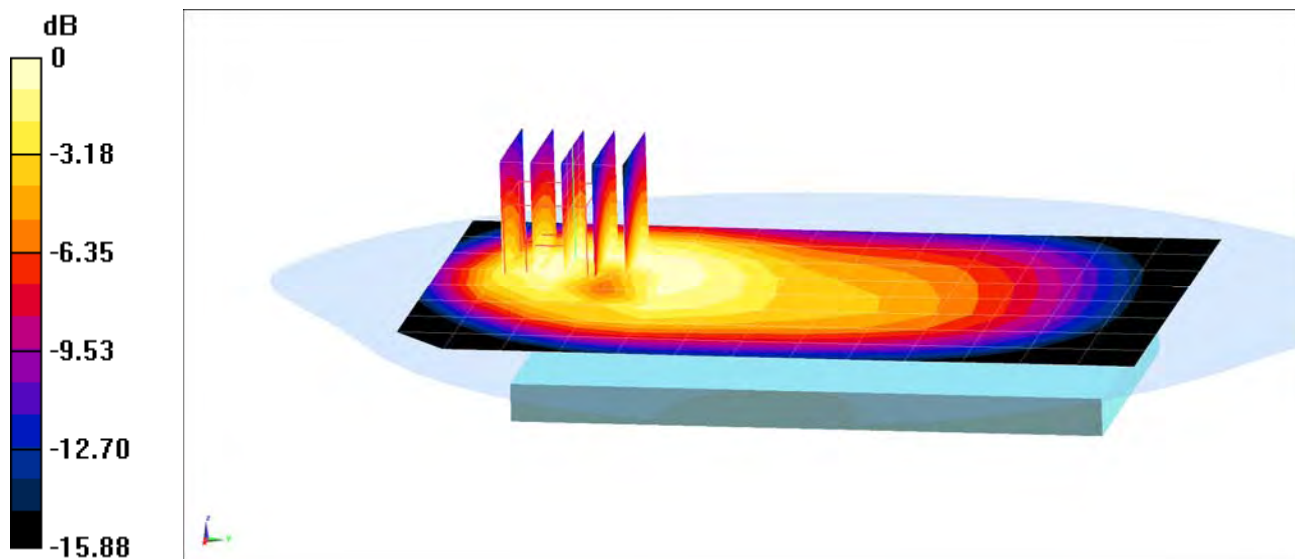
Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/14/2014

Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Body SAR, Front side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 20.68 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.658 W/kg
SAR (1 g) = 0.393 W/kg



0 dB = 0.461 W/kg = -3.36 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-2

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
 $f = 1732.5 \text{ MHz}$; $\sigma = 1.428 \text{ S/m}$; $\epsilon_r = 53.274$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.5°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(4.83, 4.83, 4.83); 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 4 (AWS), Body SAR, Back side, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

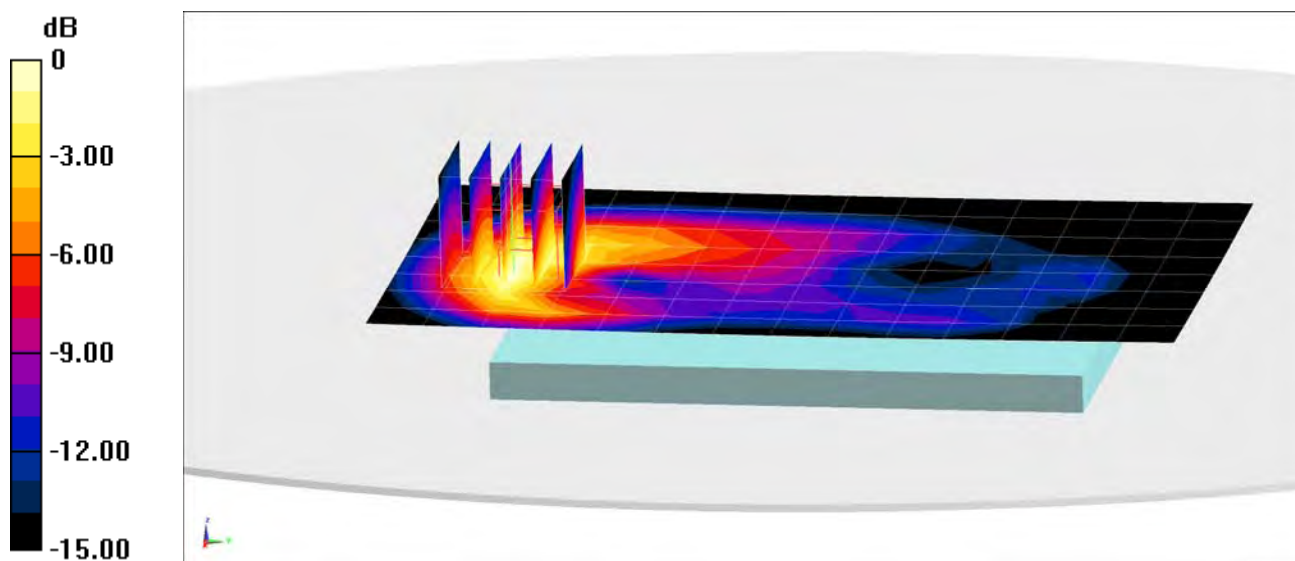
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.75 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR (1 g) = 0.637 W/kg



0 dB = 0.766 W/kg = -1.16 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-2

Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
 $f = 1732.5 \text{ MHz}$; $\sigma = 1.428 \text{ S/m}$; $\epsilon_r = 53.274$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 1.0 cm

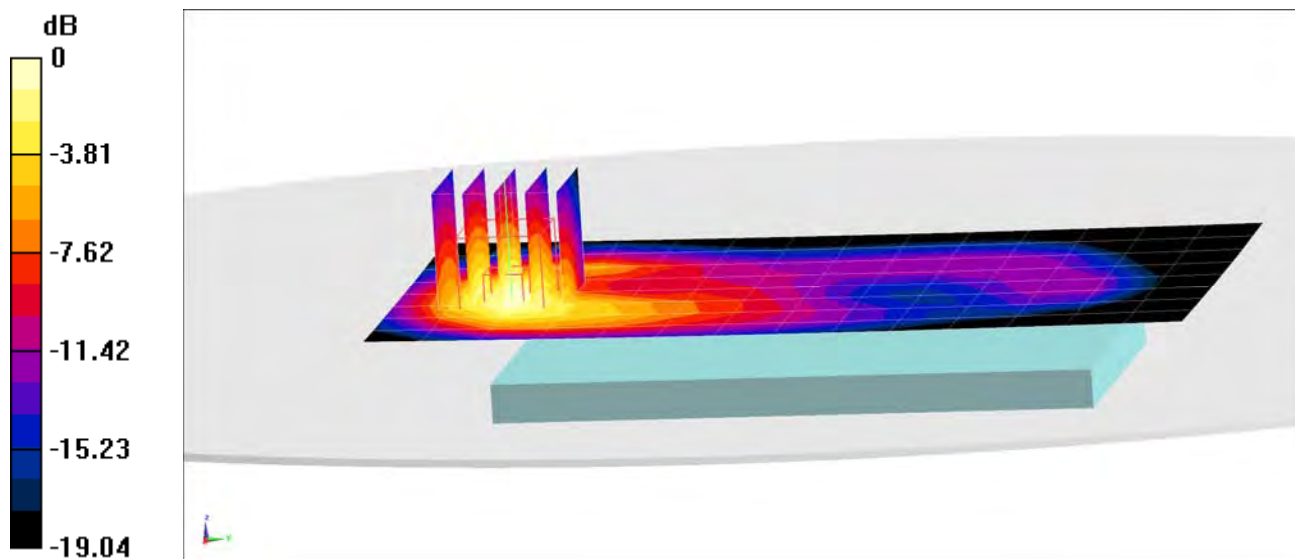
Test Date: 09-24-2014; Ambient Temp: 23.5°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(4.83, 4.83, 4.83); 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 4 (AWS), Body SAR, Front side, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 25.30 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR (1 g) = 0.782 W/kg



0 dB = 0.958 W/kg = -0.19 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-3

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; $\sigma = 1.527$ S/m; $\epsilon_r = 50.986$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 23.1°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3319; ConvF(4.67, 4.67, 4.67); Calibrated: 4/17/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/11/2014

Phantom: ELI left; Type: QDOVA002AA; Serial: TP:1202

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

Mode: LTE Band 2 (PCS), Body SAR, Back side, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

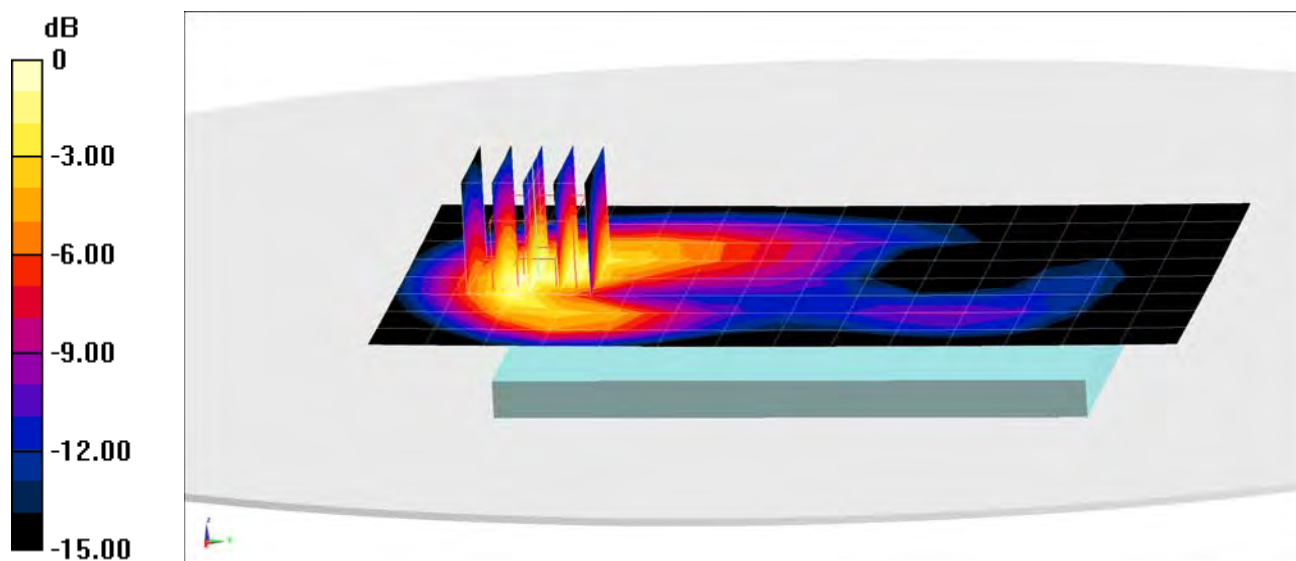
Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.89 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.606 W/kg

SAR (1 g) = 0.380 W/kg



0 dB = 0.455 W/kg = -3.42 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-3

Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.573 \text{ S/m}$; $\epsilon_r = 50.838$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 23.1°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3319; ConvF(4.67, 4.67, 4.67); Calibrated: 4/17/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/11/2014

Phantom: ELI left; Type: QDOVA002AA; Serial: TP:1202

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

Mode: LTE Band 2 (PCS), Body SAR, Bottom Edge, High.ch
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

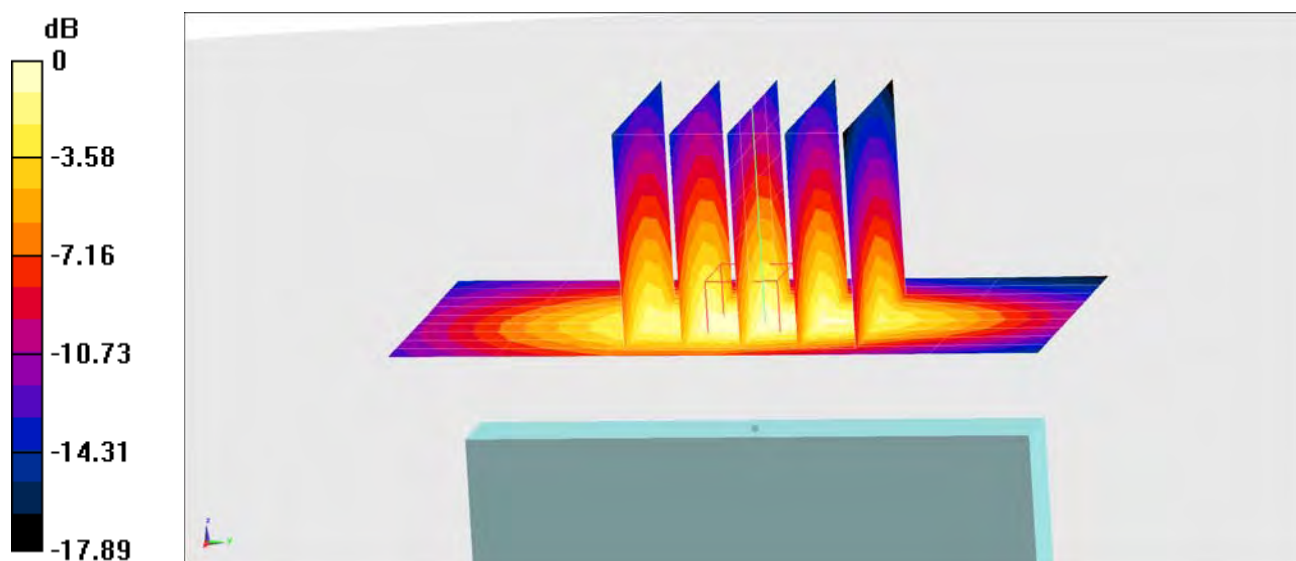
Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 23.79 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR (1 g) = 0.766 W/kg



0 dB = 0.936 W/kg = -0.29 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-1

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

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2412 \text{ MHz}$; $\sigma = 1.957 \text{ S/m}$; $\epsilon_r = 50.708$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-13-2014; Ambient Temp: 23.3°C; Tissue Temp: 22.2°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, Antenna 2, Body SAR, Ch 01, 1 Mbps, Back Side

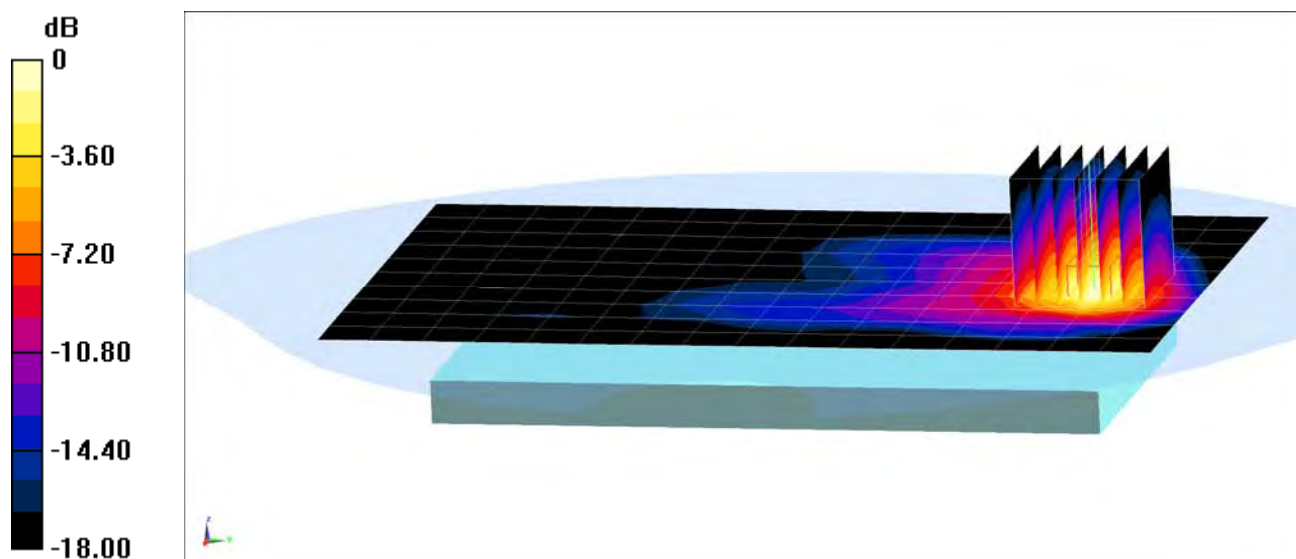
Area Scan (11x17x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 12.8 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.641 W/kg

SAR (1 g) = 0.306 W/kg



0 dB = 0.408 W/kg = -3.89 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, IEEE 802.11a; Frequency: 5765 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5765 \text{ MHz}$; $\sigma = 6.239 \text{ S/m}$; $\epsilon_r = 47.309$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.5°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(3.97, 3.97, 3.97); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

Mode: IEEE 802.11a, Antenna 1, 5.8 GHz, Body SAR, Ch 153, 6 Mbps, Back Side

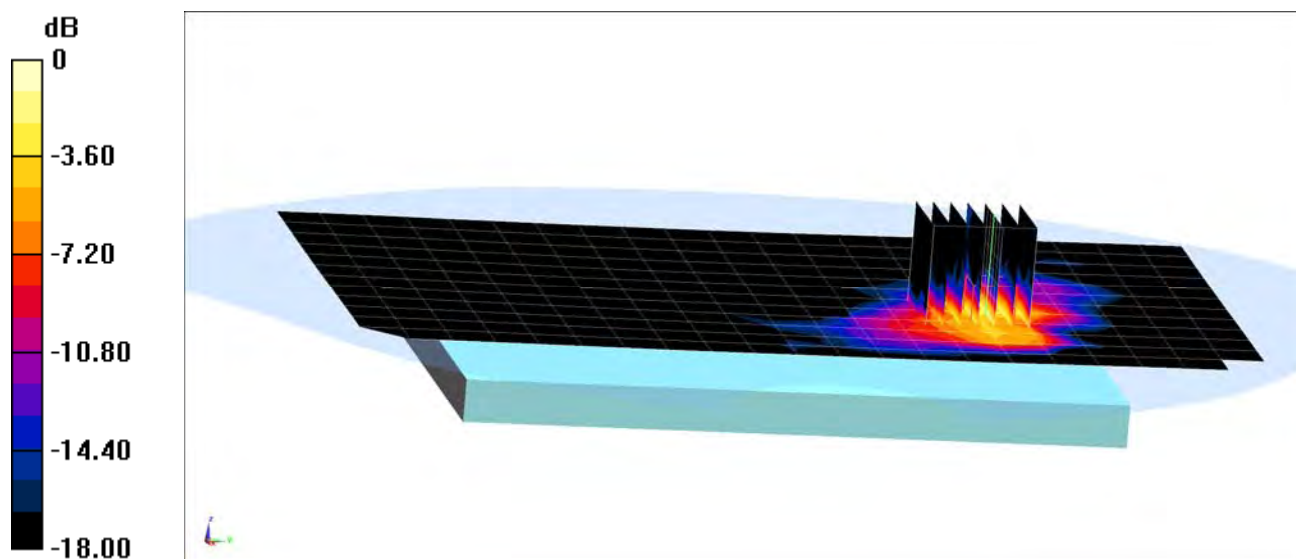
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 4.315 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.623 W/kg

SAR (1 g) = 0.140 W/kg



0 dB = 0.348 W/kg = -4.58 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, IEEE 802.11a; Frequency: 5660 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5660 \text{ MHz}$; $\sigma = 6.073 \text{ S/m}$; $\epsilon_r = 47.583$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN3589; ConvF(3.81, 3.81, 3.81); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

Mode: IEEE 802.11a, Antenna 1, 5.5 – 5.7 GHz, Body SAR, Ch 132, 6 Mbps, Back Side

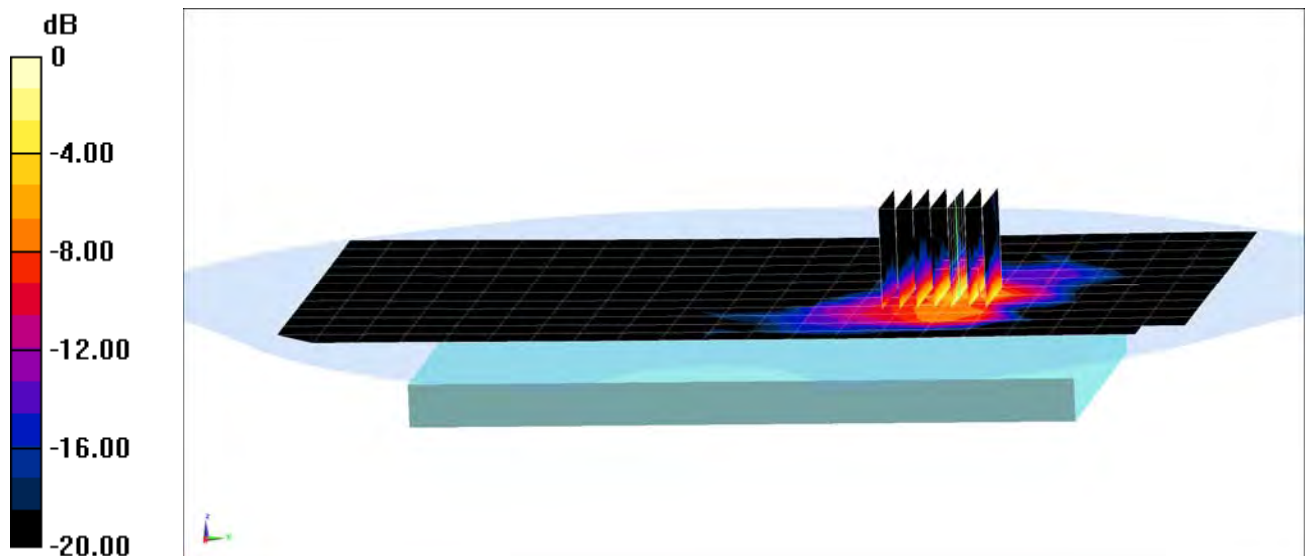
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 5.731 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR (1 g) = 0.237 W/kg



0 dB = 0.590 W/kg = -2.29 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, IEEE 802.11a; Frequency: 5765 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5765 \text{ MHz}$; $\sigma = 6.239 \text{ S/m}$; $\epsilon_r = 47.309$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.5°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(3.97, 3.97, 3.97); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

Mode: IEEE 802.11a, Antenna 1, 5.8 GHz, Hand SAR, Ch 153, 6 Mbps, Back Side

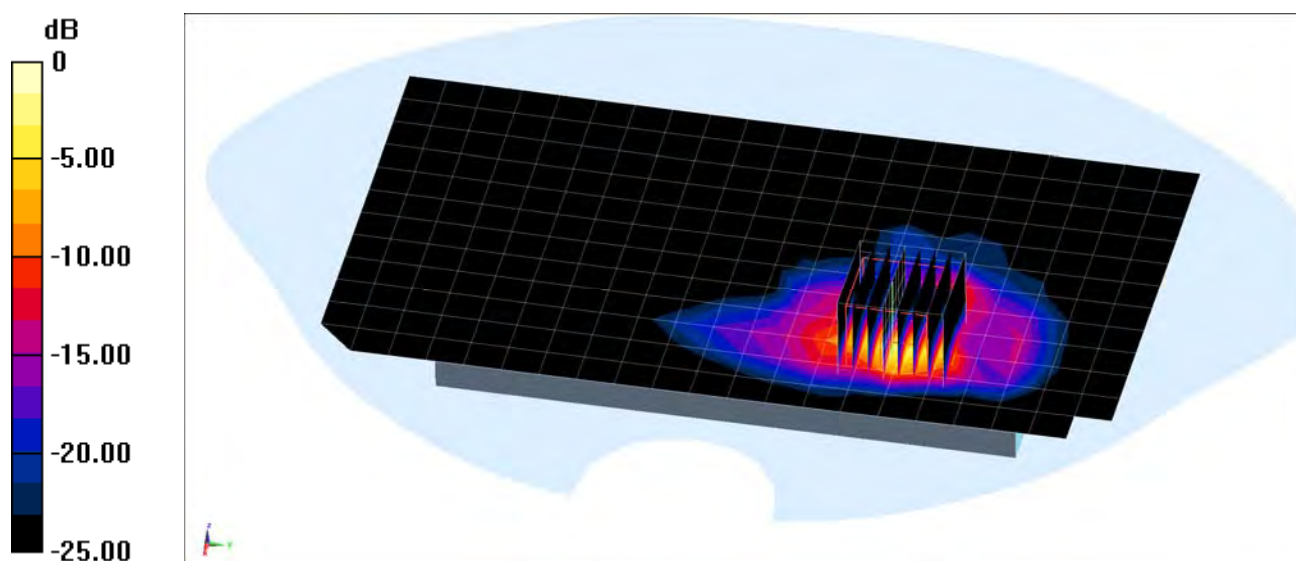
Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 14.79 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 11.2 W/kg

SAR (10 g) = 0.443 W/kg



0 dB = 5.06 W/kg = 7.04 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN915F; Type: Portable Handset; Serial: 0923-5

Communication System: UID 0, IEEE 802.11a; Frequency: 5660 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5660 \text{ MHz}$; $\sigma = 6.073 \text{ S/m}$; $\epsilon_r = 47.583$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN3589; ConvF(3.81, 3.81, 3.81); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

Mode: IEEE 802.11a, Antenna 1, 5.5 – 5.7 GHz, Hand SAR, Ch 132, 6 Mbps, Back Side

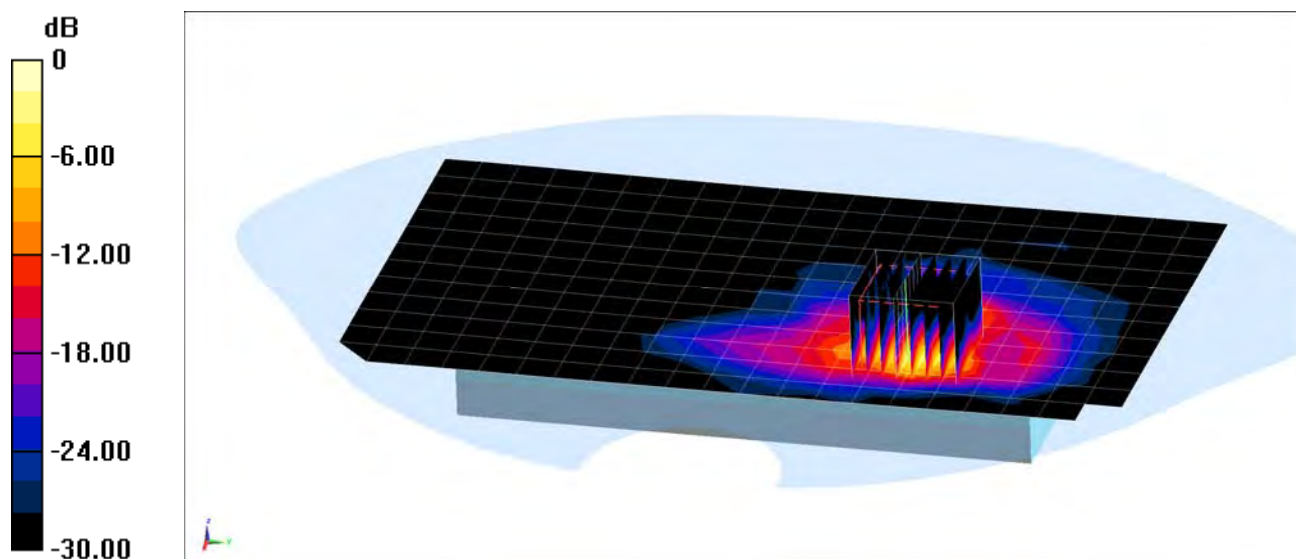
Area Scan (13x22x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Reference Value = 16.31 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 14.1 W/kg

SAR (10 g) = 0.553 W/kg



0 dB = 5.97 W/kg = 7.76 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

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:

$f = 835 \text{ MHz}$; $\sigma = 0.914 \text{ S/m}$; $\epsilon_r = 41.417$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-25-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.3°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: $dx=15\text{mm}$, $dy=15\text{mm}$

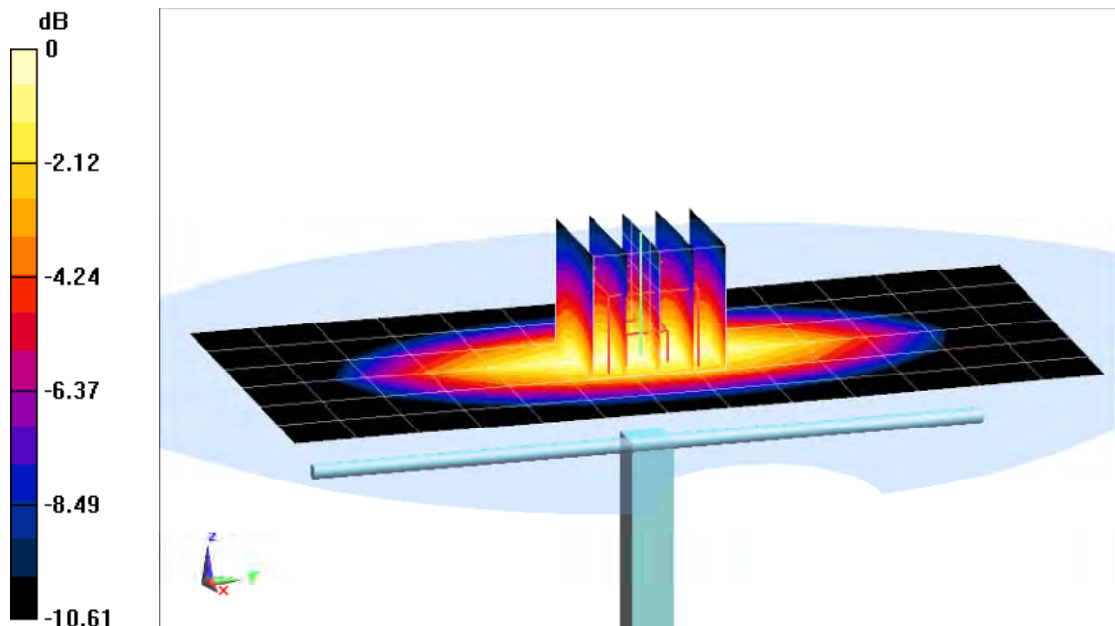
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 1.45 W/kg

SAR (1 g) = 0.971 W/kg

Deviation = 5.31%



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 Head Medium parameters used:

$f = 1750$ MHz; $\sigma = 1.34$ S/m; $\epsilon_r = 39.248$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.9°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

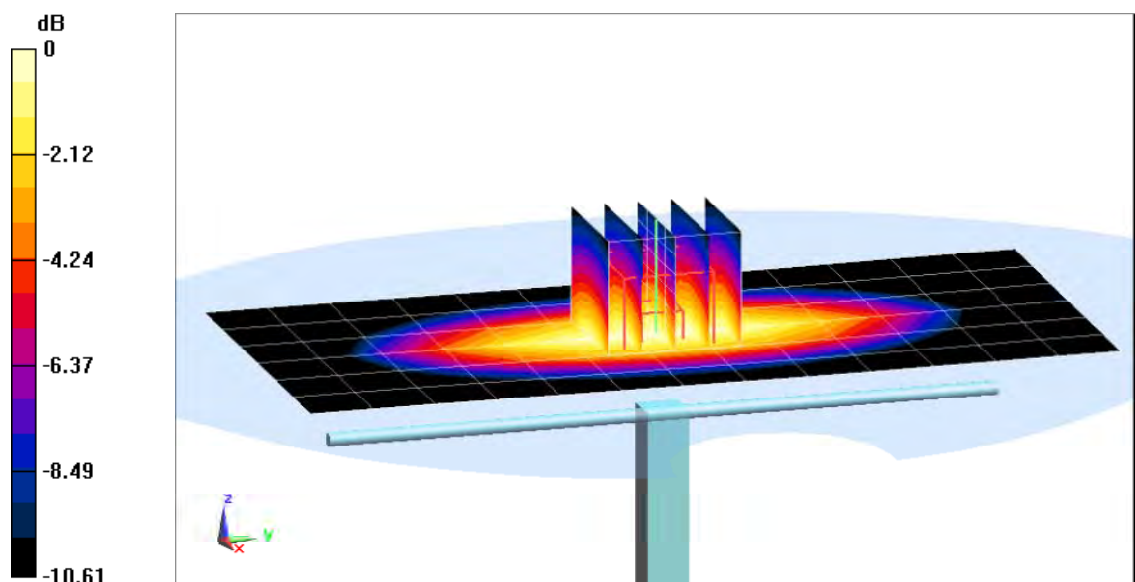
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 6.25 W/kg

SAR (1 g) = 3.39 W/kg

Deviation = -8.13%



0 dB = 3.74 W/kg = 5.73 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.428 \text{ S/m}$; $\epsilon_r = 39.208$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-26-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3287; ConvF(5.08, 5.08, 5.08); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

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: $dx=15\text{mm}$, $dy=15\text{mm}$

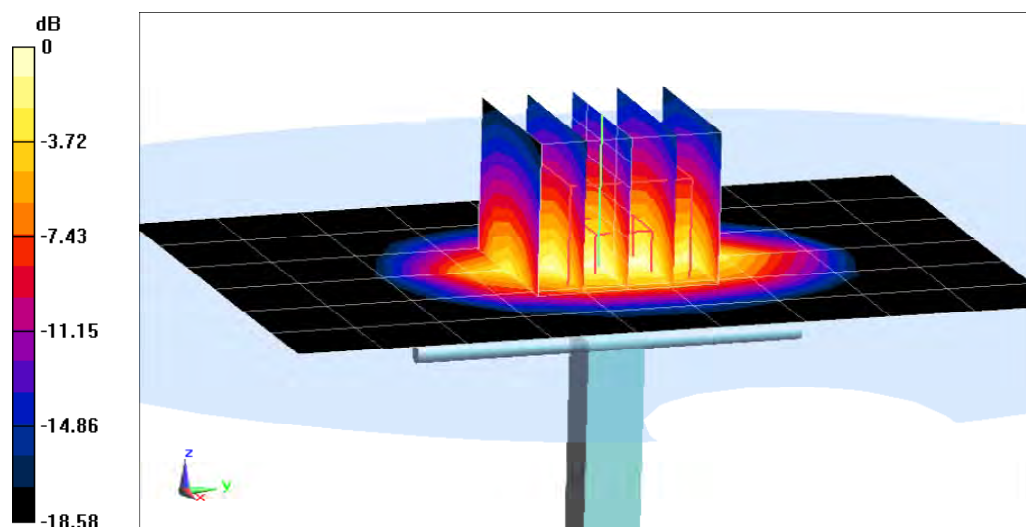
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 6.99 W/kg

SAR (1 g) = 3.85 W/kg

Deviation = -3.99%



0 dB = 4.69 W/kg = 6.71 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.447 \text{ S/m}$; $\epsilon_r = 39.373$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-07-2014; Ambient Temp: 23.6°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3258; ConvF(5.04, 5.04, 5.04); 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)

1900 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

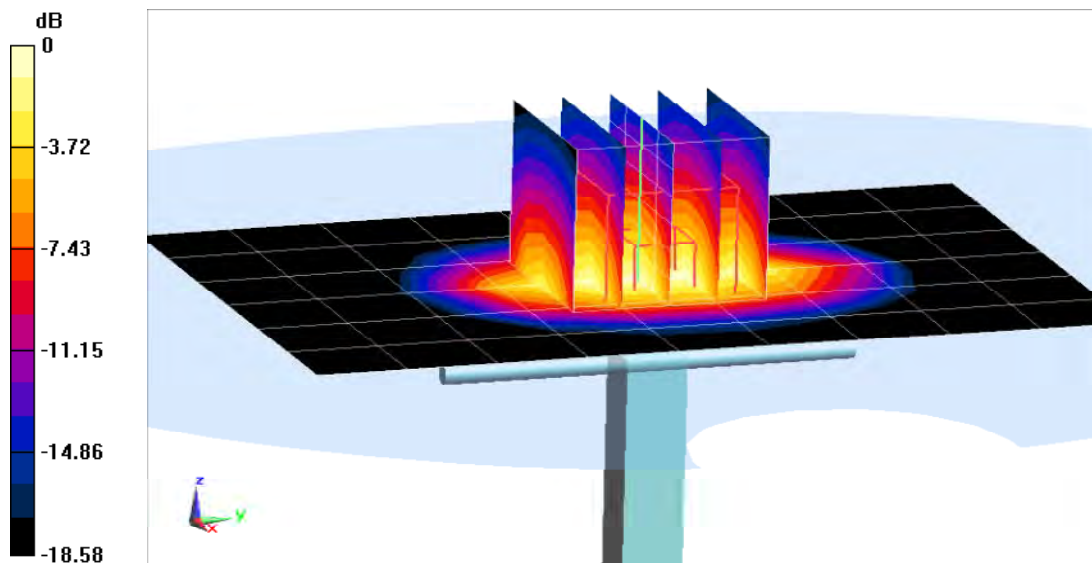
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.79 W/kg

SAR (1 g) = 4.26 W/kg

Deviation = 6.23%



0 dB = 4.75 W/kg = 6.77 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.826 \text{ S/m}$; $\epsilon_r = 40.866$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-01-2014; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3258; ConvF(4.52, 4.52, 4.52); 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)

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

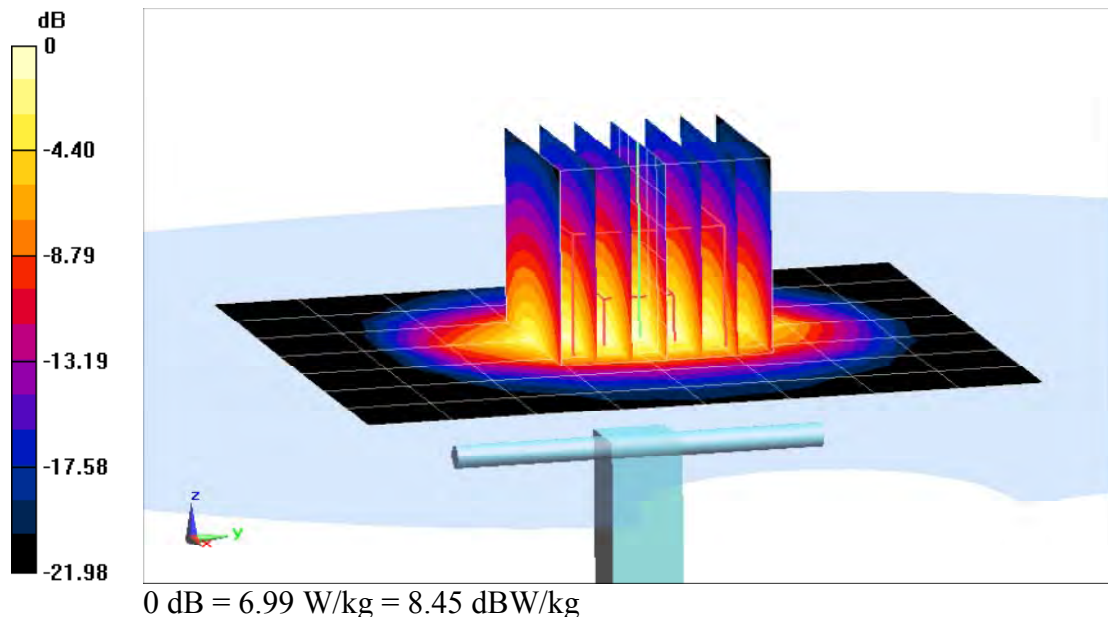
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 11.0 W/kg

SAR (1 g) = 5.39 W/kg

Deviation = 4.05%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5200 \text{ MHz}$; $\sigma = 4.51 \text{ S/m}$; $\epsilon_r = 36.178$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 21.7°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN3914; ConvF(4.99, 4.99, 4.99); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

5200 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

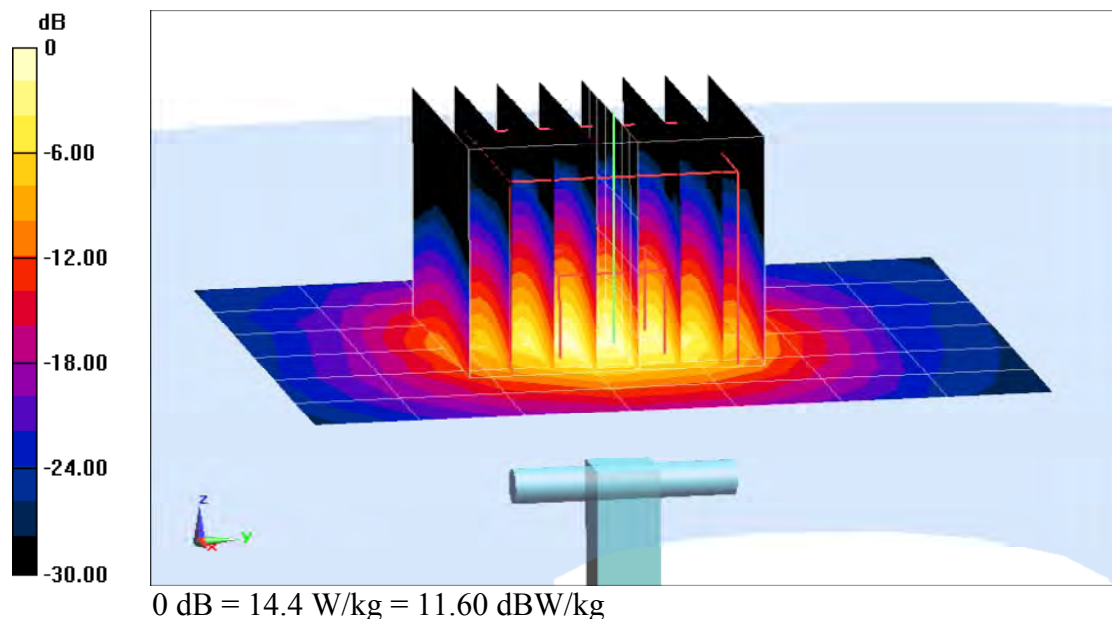
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 31.1 W/kg

SAR (1 g) = 7.21 W/kg

Deviation = -7.56%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5300 \text{ MHz}$; $\sigma = 4.615 \text{ S/m}$; $\epsilon_r = 36.041$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 21.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3914; ConvF(4.82, 4.82, 4.82); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

5300 MHz System Verification

Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

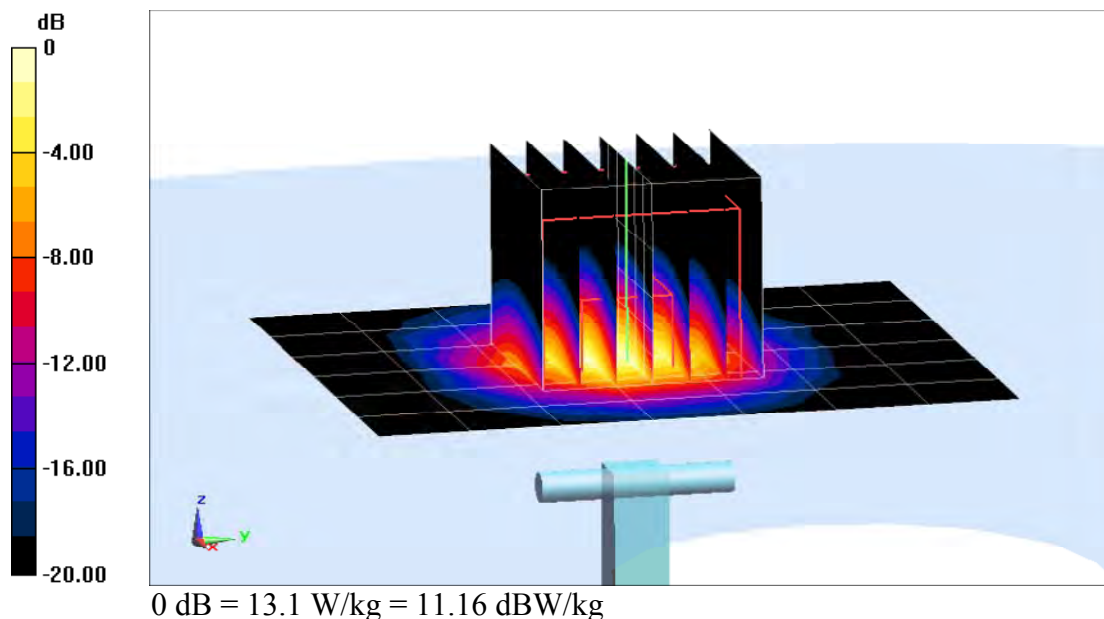
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 35.1 W/kg

SAR (1 g) = 7.9 W/kg

Deviation = -4.82%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 4.82 \text{ S/m}$; $\epsilon_r = 35.772$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 21.5°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN3914; ConvF(4.55, 4.55, 4.55); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

5500 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

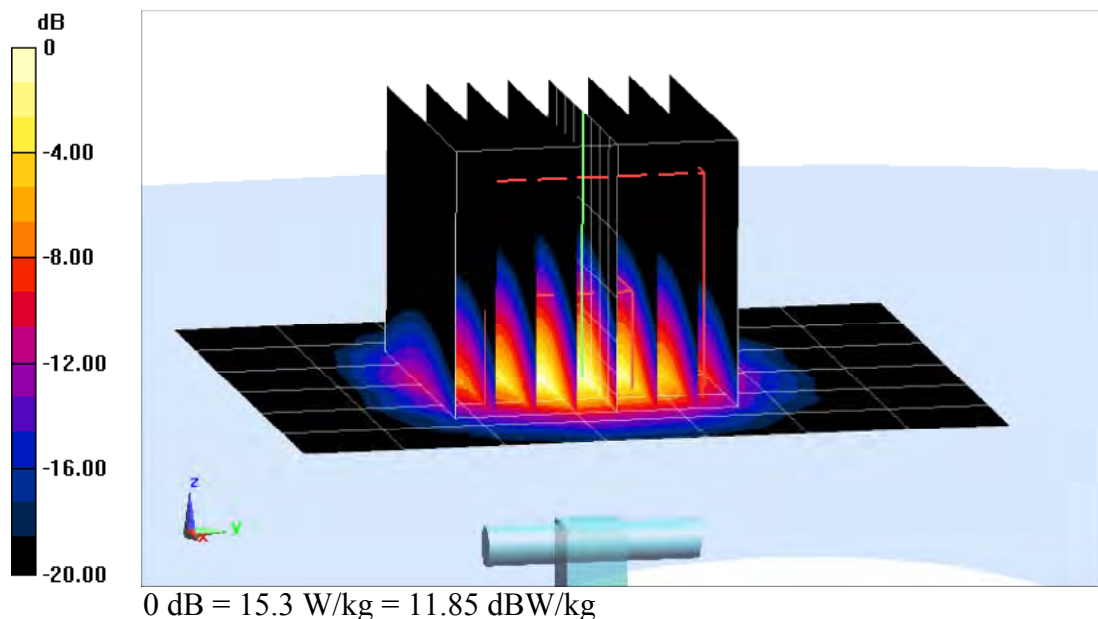
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 35.3 W/kg

SAR (1 g) = 7.92 W/kg

Deviation = -6.05%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 4.915 \text{ S/m}$; $\epsilon_r = 35.629$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 21.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3914; ConvF(4.37, 4.37, 4.37); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

5600 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

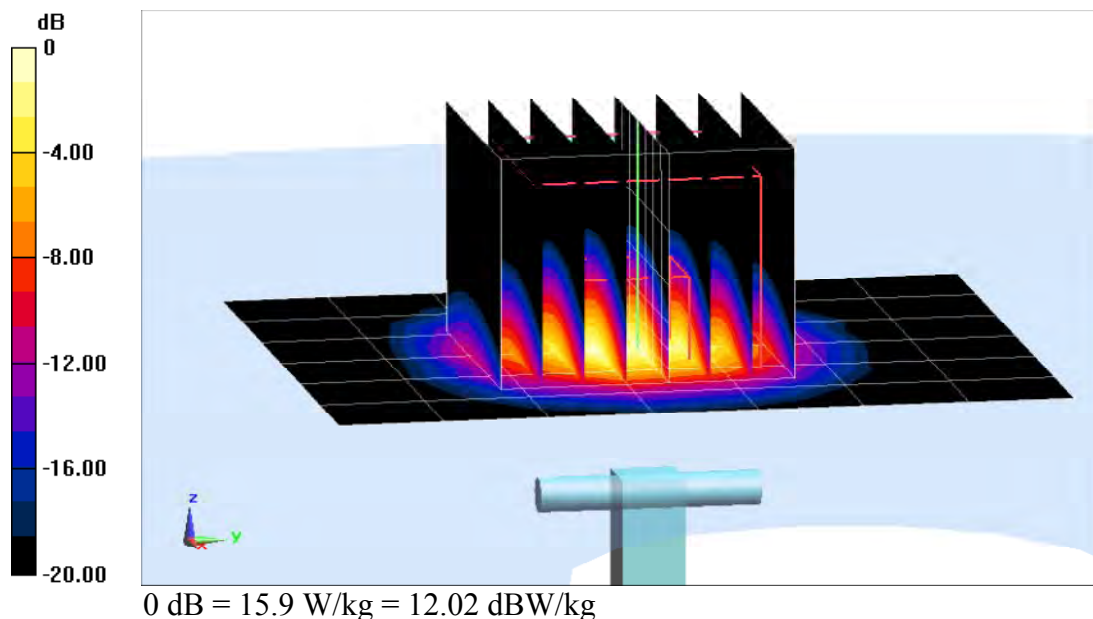
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 37.0 W/kg

SAR (1 g) = 8.02 W/kg

Deviation = -3.95%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 5.12 \text{ S/m}$; $\epsilon_r = 35.396$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-06-2014; Ambient Temp: 21.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3914; ConvF(4.52, 4.52, 4.52); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 11/19/2013

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

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

5800 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

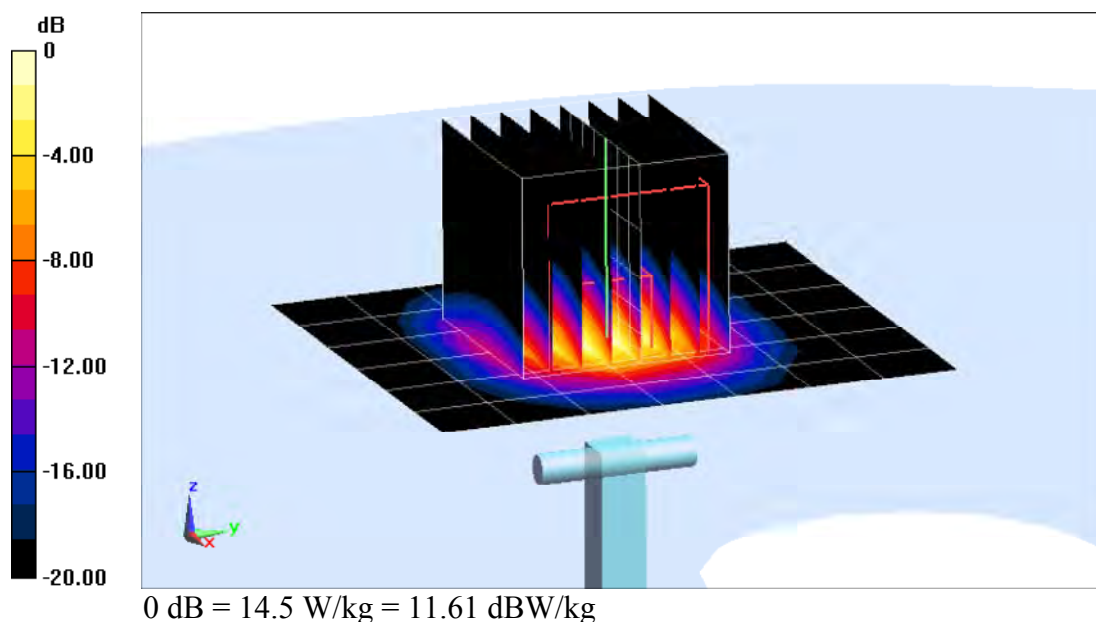
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 34.7 W/kg

SAR (1 g) = 7.3 W/kg

Deviation = -7.94%



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:

$f = 835 \text{ MHz}$; $\sigma = 1.001 \text{ S/m}$; $\epsilon_r = 52.819$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 09-24-2014; Ambient Temp: 23.6°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3263; ConvF(6.16, 6.16, 6.16); Calibrated: 5/15/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/14/2014

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

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

835 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

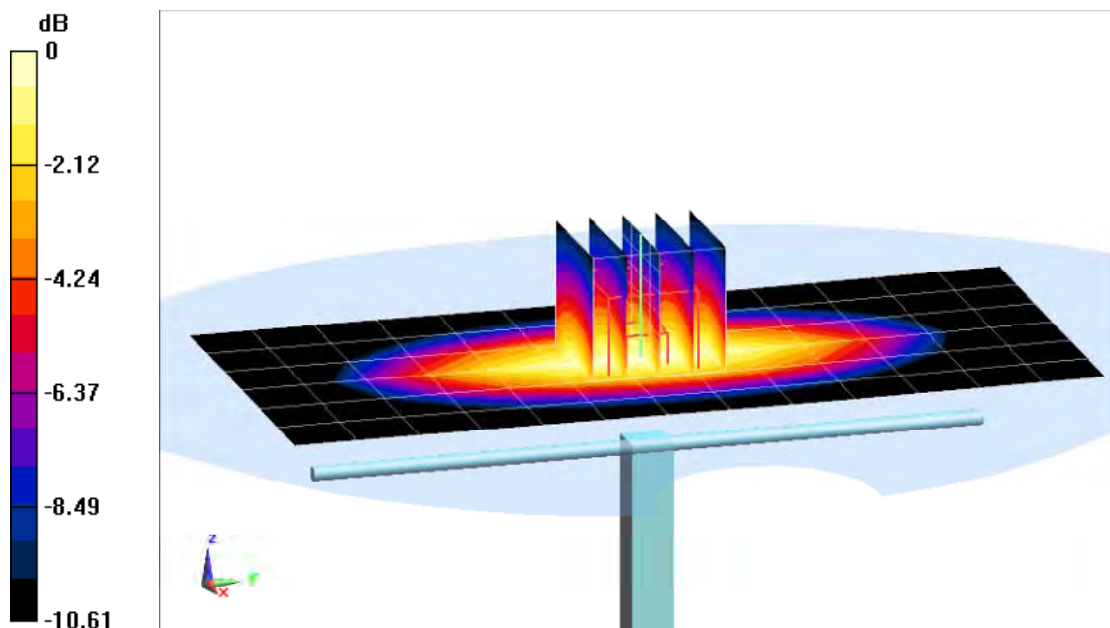
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 1.46 W/kg

SAR (1 g) = 0.984 W/kg

Deviation = 5.35%



0 dB = 1.12 W/kg = 0.48 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:

$f = 1750 \text{ MHz}$; $\sigma = 1.447 \text{ S/m}$; $\epsilon_r = 53.197$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-24-2014; Ambient Temp: 23.5°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3258; ConvF(4.83, 4.83, 4.83); 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)

1750 MHz System Verification

Area Scan (7x9x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

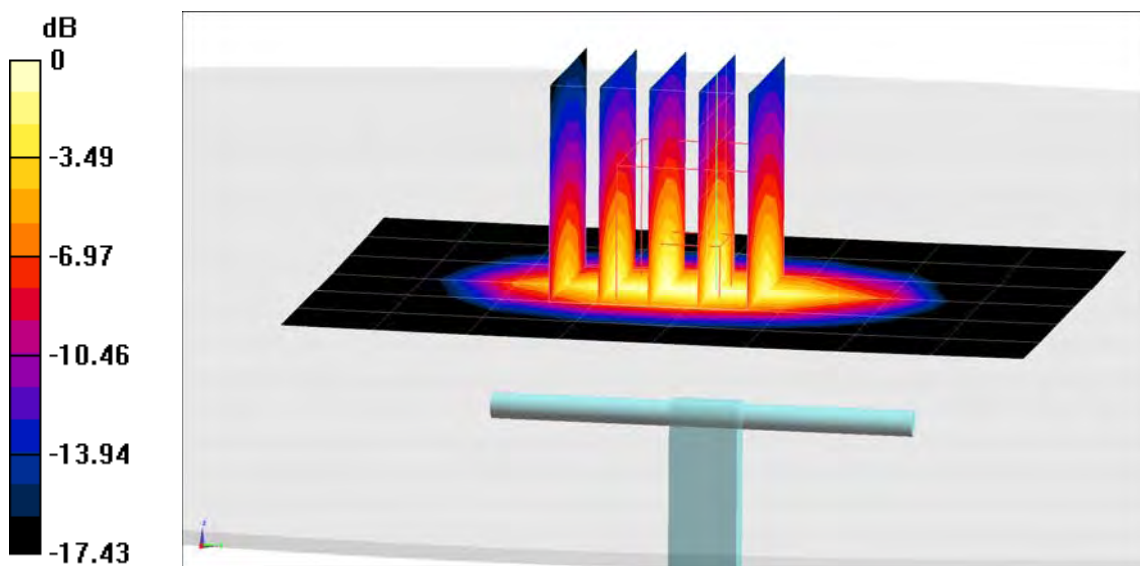
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 5.91 W/kg

SAR (1 g) = 3.46 W/kg

Deviation = -7.98%



0 dB = 4.28 W/kg = 6.31 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 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.527 \text{ S/m}$; $\epsilon_r = 50.83$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 09-23-2014; Ambient Temp: 23.8°C; Tissue Temp: 23.7°C

Probe: ES3DV3 - SN3287; ConvF(4.67, 4.67, 4.67); Calibrated: 11/20/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1408; Calibrated: 11/19/2013

Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1229

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

1900 MHz System Verification

Area Scan (7x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

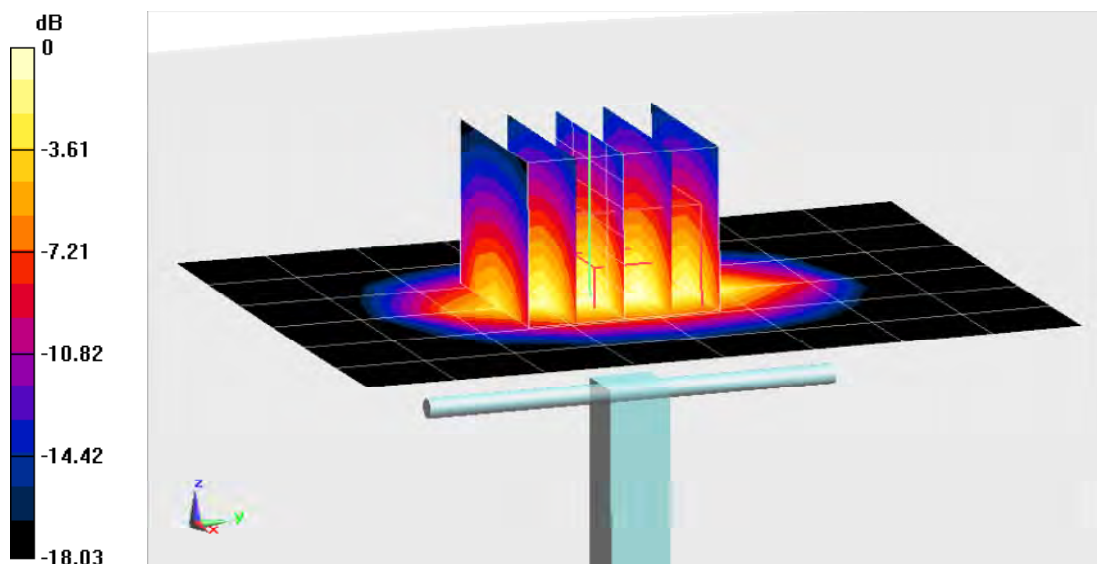
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.07 W/kg

SAR (1 g) = 3.96 W/kg

Deviation = -2.46%



0 dB = 4.97 W/kg = 6.96 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 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.569 \text{ S/m}$; $\epsilon_r = 50.816$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-09-2014; Ambient Temp: 22.6°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3319; ConvF(4.67, 4.67, 4.67); Calibrated: 4/17/2014;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/11/2014

Phantom: ELI left; Type: QDOVA002AA; Serial: TP:1202

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

1900 MHz System Verification

Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

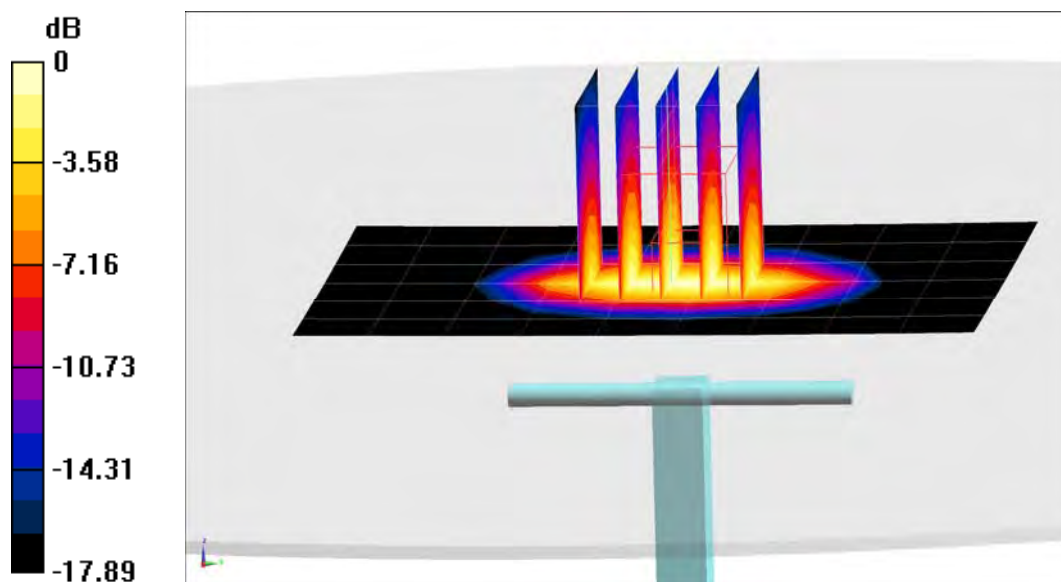
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 7.69 W/kg

SAR (1 g) = 4.33 W/kg

Deviation = 6.65%



0 dB = 5.46 W/kg = 7.37 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 2.009 \text{ S/m}$; $\epsilon_r = 50.556$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-13-2014; Ambient Temp: 23.3°C; Tissue Temp: 22.2°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: $dx=12\text{mm}$, $dy=12\text{mm}$

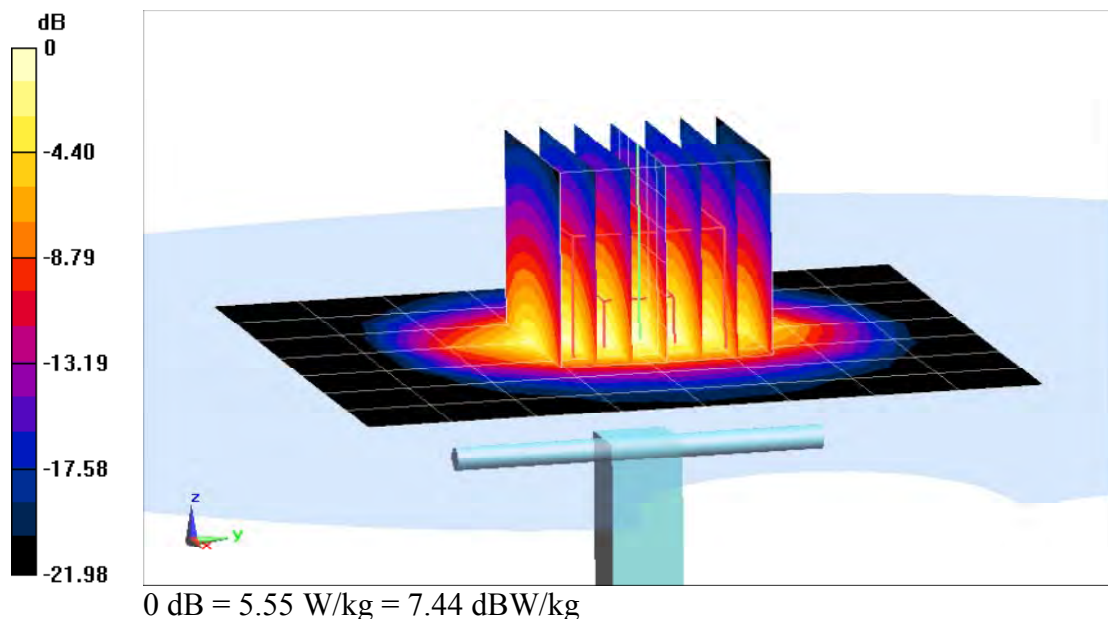
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 11.3 W/kg

SAR (1 g) = 5.28 W/kg

Deviation = 6.88%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5200 \text{ MHz}$; $\sigma = 5.358 \text{ S/m}$; $\epsilon_r = 48.671$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.5°C; Tissue Temp: 23.3°C

Probe: EX3DV4 - SN3589; ConvF(4.19, 4.19, 4.19); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

5200 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

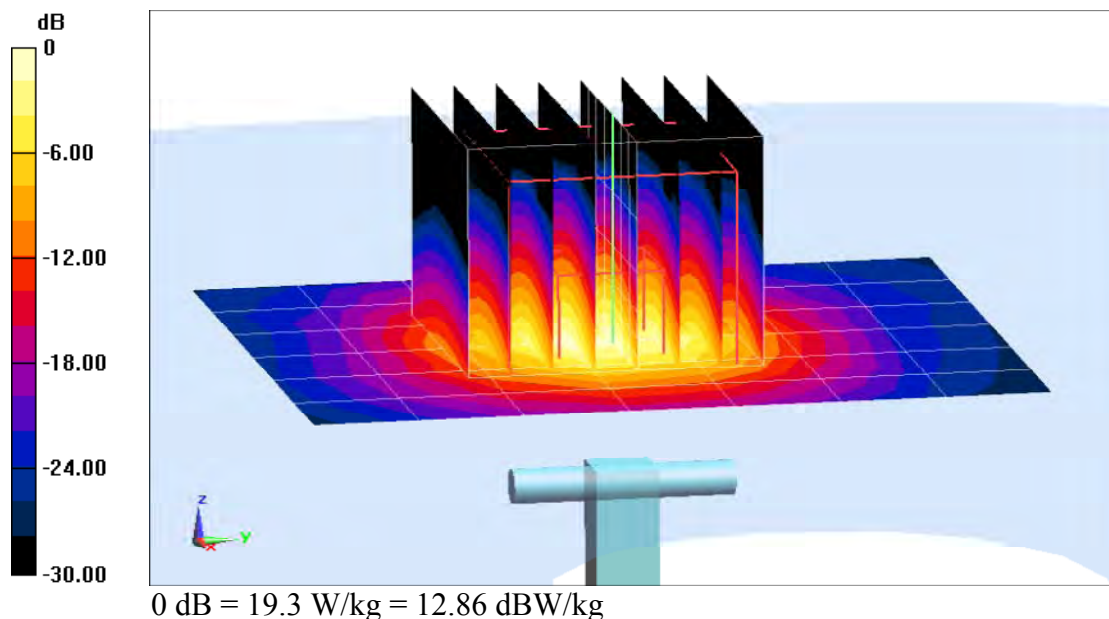
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 34.0 W/kg

SAR (1 g) = 7.94 W/kg; SAR (10 g) = 2.22 W/kg

Deviation (1 g) = 5.44%; Deviation (10 g) = 5.71%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5300 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5300 \text{ MHz}$; $\sigma = 5.508 \text{ S/m}$; $\epsilon_r = 48.466$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.5°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(3.98, 3.98, 3.98); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

5300 MHz System Verification

Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

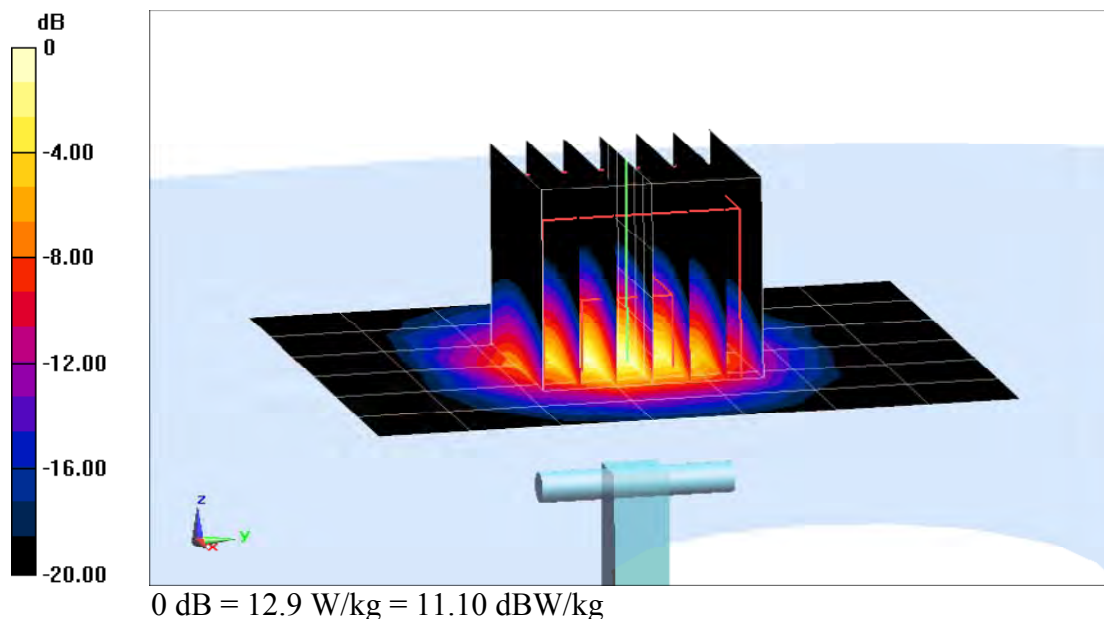
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 36.4 W/kg

SAR (1 g) = 8.18 W/kg; SAR (10 g) = 2.27 W/kg

Deviation (1 g) = 5.68%; Deviation (10 g) = 5.58%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 5.832 \text{ S/m}$; $\epsilon_r = 47.976$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.3°C; Tissue Temp: 23.3°C

Probe: EX3DV4 - SN3589; ConvF(3.76, 3.76, 3.76); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

5500 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

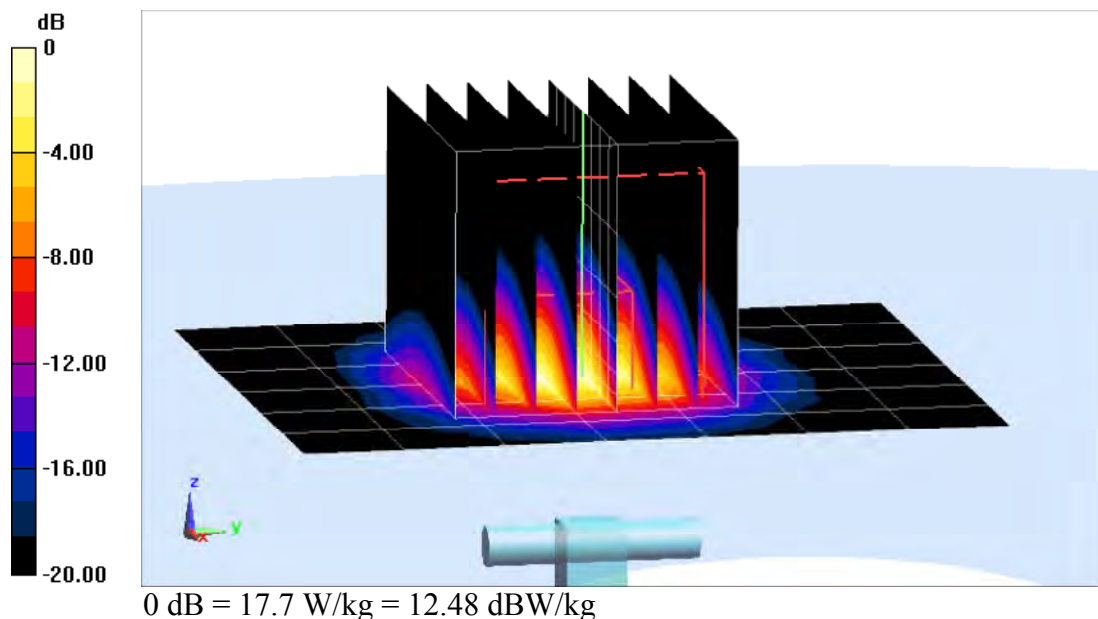
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 36.5 W/kg

SAR (1 g) = 7.99 W/kg; SAR (10 g) = 2.21 W/kg

Deviation (1 g) = 1.01%; Deviation (10 g) = 0.45%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5600 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 5.989 \text{ S/m}$; $\epsilon_r = 47.73$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.4°C; Tissue Temp: 23.2°C

Probe: EX3DV4 - SN3589; ConvF(3.81, 3.81, 3.81); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

5600 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

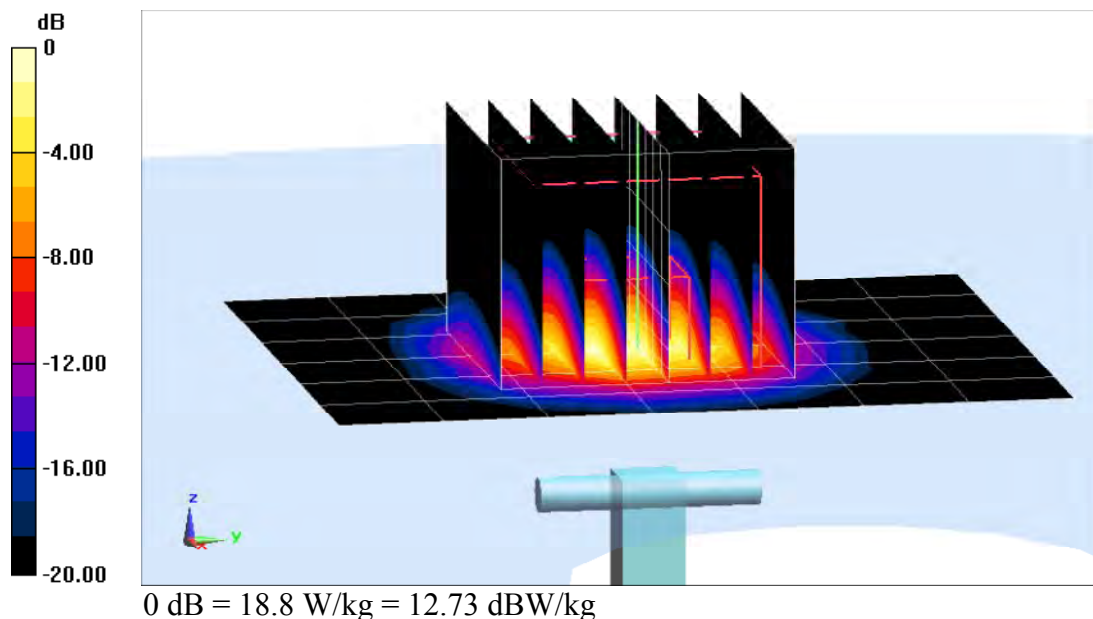
Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 39.5 W/kg

SAR (1 g) = 7.73 W/kg; SAR (10 g) = 2.14 W/kg

Deviation (1 g) = -3.62%; Deviation (10 g) = -3.60%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 6.291 \text{ S/m}$; $\epsilon_r = 47.23$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-02-2014; Ambient Temp: 22.5°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(3.97, 3.97, 3.97); Calibrated: 1/29/2014;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/17/2014

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

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

5800 MHz System Verification

Area Scan (7x7x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 20.0 dBm (100 mW)

Peak SAR (extrapolated) = 36.5 W/kg

SAR (1 g) = 7.3 W/kg; SAR (10 g) = 2 W/kg

Deviation (1 g) = -1.75%; Deviation (10 g) = -1.96%

