



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:

02/03/14 - 02/26/14

Test Site/Location:

PCTEST Lab, Columbia, MD, USA

Document Serial No.:

OY1402120397.A3L

FCC ID:

A3LSMG900M

APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

DUT Type:

Portable Handset

Application Type:

Certification

FCC Rule Part(s):

CFR §2.1093

Model(s):

SM-G900M

Equipment Class	Band & Mode	Tx Frequency	SAR		
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.16	0.37	0.44
PCE	UMTS 850	826.40 - 846.60 MHz	< 0.1	0.18	0.18
PCE	UMTS 1750	1712.4 - 1752.5 MHz	0.78	0.94	1.09
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.31	0.16	0.39
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.61	0.26	0.52
PCE	LTE Band 17	706.5 - 713.5 MHz	0.13	0.29	0.29
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.25	0.43	0.43
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.52	0.61	0.61
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.63	0.32	0.58
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.65	0.38	0.38
DTS	5.8 GHz WLAN	5745 - 5825 MHz	0.46	0.49	0.72
NII	5.2 GHz WLAN	5180 - 5240 MHz	0.64	0.12	
NII	5.3 GHz WLAN	5260 - 5320 MHz	0.55	0.21	
NII	5.5 GHz WLAN	5500 - 5700 MHz	0.44	0.63	
DSS/DTS	Bluetooth	2402 - 2480 MHz		N/A	
Simultaneous SAR per KDB 690783 D01v01r02:			1.24	1.58	1.44

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 1.7 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



FCC ID: A3LSMG900M	 SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 - 02/26/14	DUT Type: Portable Handset	Page 1 of 82

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	18
8	FCC MEASUREMENT PROCEDURES.....	19
9	RF CONDUCTED POWERS.....	23
10	SYSTEM VERIFICATION.....	42
11	SAR DATA SUMMARY	45
12	FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS.....	60
13	SAR MEASUREMENT VARIABILITY	76
14	EQUIPMENT LIST.....	77
15	MEASUREMENT UNCERTAINTIES	78
16	CONCLUSION.....	80
17	REFERENCES	81
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: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 2 of 82	

1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.5 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 17	Data	706.5 - 713.5 MHz
LTE Band 5 (Cell)	Data	824.7 - 848.3 MHz
LTE Band 4 (AWS)	Data	1710.7 - 1754.3 MHz
LTE Band 2 (PCS)	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

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
		Page 3 of 82

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 Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
GSM/GPRS/EDGE 850	Maximum	33.0	33.0	32.0	30.0	29.0	27.0	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	28.5	26.5	26.0	24.0	23.0
GSM/GPRS/EDGE 1900	Maximum	30.5	30.5	28.5	26.5	25.5	26.0	25.5	24.0	23.0
	Nominal	30.0	30.0	28.0	26.0	25.0	25.5	25.0	23.5	22.5

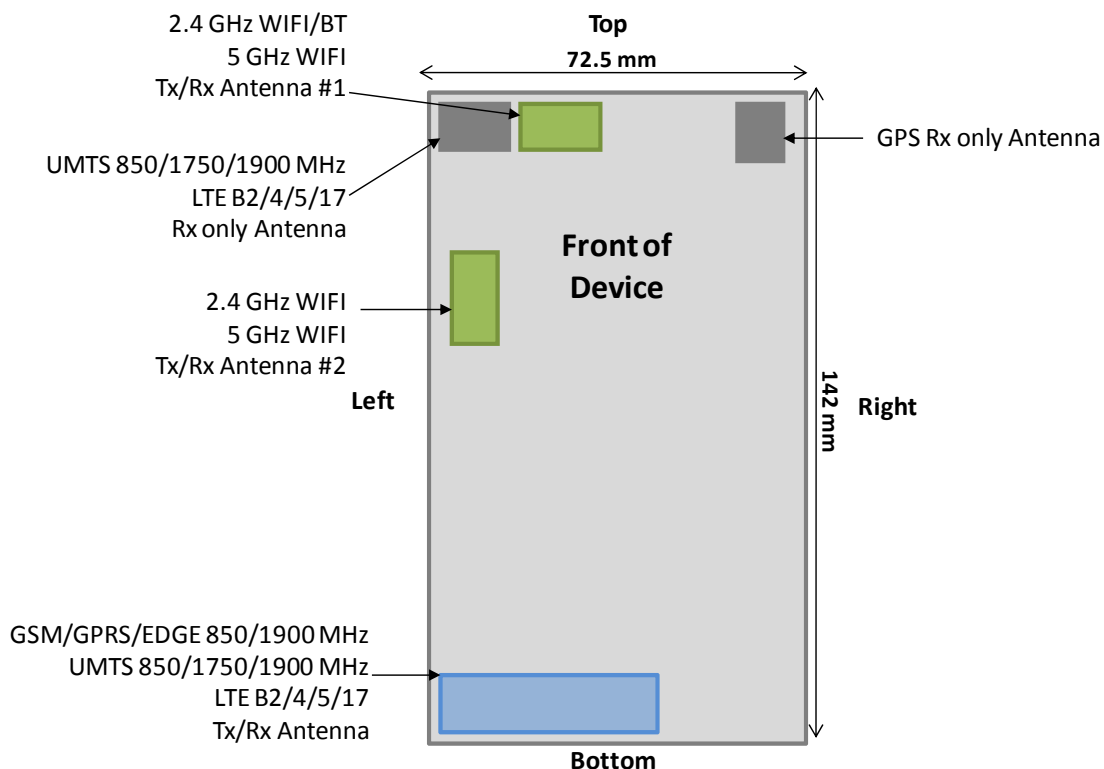
Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	23.5	23.5	23.5
	Nominal	23.0	23.0	23.0
UMTS Band 4 (1750 MHz)	Maximum	24.0	23.0	23.0
	Nominal	23.5	22.5	22.5
UMTS Band 2 (1900 MHz)	Maximum	23.0	23.0	23.0
	Nominal	22.5	22.5	22.5

Mode / Band		Modulated Average (dBm)
LTE Band 17	Maximum	23.5
	Nominal	23.0
LTE Band 5 (Cell)	Maximum	23.7
	Nominal	23.2
LTE Band 4 (AWS)	Maximum	22.0
	Nominal	21.5
LTE Band 2 (PCS)	Maximum	24.0
	Nominal	23.5

Mode / Band		Modulated Average (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	17.5
	Nominal	17.0
IEEE 802.11g (2.4 GHz)	Maximum	14.5
	Nominal	14.0
IEEE 802.11n (2.4 GHz)	Maximum	14.0
	Nominal	13.5
IEEE 802.11a (5 GHz)	Maximum	11.5
	Nominal	11.0
IEEE 802.11n (5 GHz - 20 MHz BW)	Maximum	11.5
	Nominal	11.0
IEEE 802.11n (5 GHz - 40 MHz BW)	Maximum	9.5
	Nominal	9.0
IEEE 802.11ac (5 GHz - 80 MHz BW)	Maximum	9.5
	Nominal	9.0
Bluetooth	Maximum	11.0
	Nominal	10.5
Bluetooth LE	Maximum	6.5
	Nominal	6.0

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 4 of 82

1.3 DUT Antenna Locations



Note: Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC Filing.

Figure 1-1
DUT Antenna Locations

Table 1-1
Mobile Hotspot Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	No	Yes
UMTS 1750	Yes	Yes	No	Yes	No	Yes
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
LTE Band 17	Yes	Yes	No	Yes	No	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	No	Yes
LTE Band 4 (AWS)	Yes	Yes	No	Yes	No	Yes
LTE Band 2 (PCS)	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN - Antenna #1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN - Antenna #2	Yes	Yes	No	No	No	Yes
2.4 GHz WLAN - MIMO	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN - Antenna #1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN - Antenna #2	Yes	Yes	No	No	No	Yes
5 GHz WLAN - MIMO	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for Wireless Router if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v01 guidance, page 2. When wireless router mode is enabled, all 5 GHz bands except 5.8 are disabled.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 5 of 82	

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-BG900BBE).

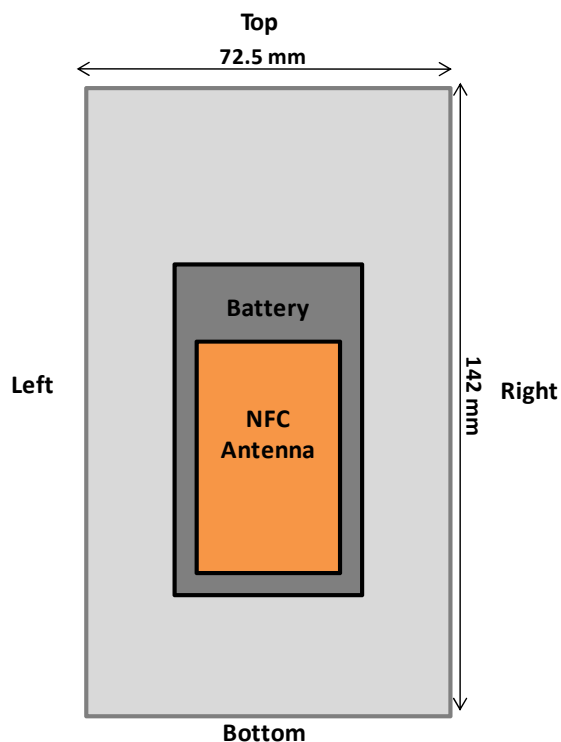


Figure 1-2
NFC Antenna Locations

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT	 Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 6 of 82

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.

This device supports 2x2 MIMO Tx for WLAN 802.11n/ac. Each WLAN antenna can transmit independently or together when operating with MIMO.

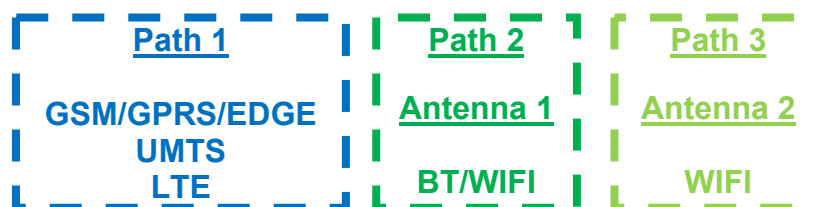


Figure 1-3
Simultaneous Transmission Paths

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Notes
1	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	
2	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	
3	GSM voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	
4	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	
5	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	
6	UMTS + 2.4 GHz Bluetooth	N/A	Yes	N/A	
7	LTE + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
8	LTE + 5 GHz Wi-Fi	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
9	LTE + 2.4 GHz Bluetooth	N/A	Yes*	N/A	*-Pre-installed VOIP applications are considered.
10	GPRS + 2.4 GHz Wi-Fi	N/A	N/A	Yes	
11	GPRS + 5 GHz Wi-Fi	N/A	N/A	Yes	

- 2.4 GHz WLAN, 2.4 GHz Bluetooth, and 5 GHz WLAN share the same antenna path and cannot transmit simultaneously
- GSM/GPRS/EDGE, LTE and UMTS 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, no simultaneous transmission scenarios involving WIFI direct are specified above.
- When wireless router mode is enabled, all 5 GHz bands except 5.8 are disabled.

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 7 of 82

1.6 SAR Test Exclusions Applied

(A) WIFI/BT

Since Wireless Router operations are not allowed by the chipset firmware using 5.2 - 5.7 GHz WIFI, only 2.4 and 5.8 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 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, Bluetooth SAR was not required; $[(13/10) * \sqrt{2.441}] = 2.0 < 3.0$. 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 SISO 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 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 was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.

(B) Licensed Transmitter(s)

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

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 8 of 82

1.7 Guidance Applied

- IEEE 1528-2003
- FCC KDB Publication 941225 D01-D06 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v01r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v05 (General SAR Guidance)
- FCC KDB Publication 865664 D01-D02 (SAR Measurements up to 6 GHz)
- April 2013 TCB Workshop Notes (IEEE 802.11ac)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)

1.8 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.

	Head Serial Number	Body-Worn Serial Number	Hotspot Serial Number
GSM/GPRS/EDGE 850	90DBA	90D53	90D53
UMTS 850	90DBA	90D4C	90D4C
UMTS 1750	90DBA	90D4D	90D4D
GSM/GPRS/EDGE 1900	90DBA	90DBA	90DBA
UMTS 1900	90D4C	90D4C	90D4C
LTE Band 17	90D53	00E6B	00E6B
LTE Band 5 (Cell)	90D53	90D53	90D53
LTE Band 4 (AWS)	90D4D	90D4D	90D4D
LTE Band 2 (PCS)	90D53	90D53	90D53
2.4 GHz WLAN - Antenna #1	F1185	140FA	140FA
2.4 GHz WLAN - Antenna #2	140FA	140FA	140FA
2.4 GHz WLAN - MIMO	140FA	140FA	140FA
5 GHz WLAN - Antenna #1	00F0F	14524	14524
5 GHz WLAN - Antenna #2	00F0F	15E70	15E70
5 GHz WLAN - MIMO	00F0F	14524	14524

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 9 of 82

2

LTE INFORMATION

LTE Information			
FCC ID	A3LSMG900M		
Form Factor	Portable Handset		
Frequency Range of each LTE transmission band	LTE Band 17 (706.5 - 713.5 MHz)		
	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 17: 5 MHz, 10 MHz		
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 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 17: 5 MHz	706.5 (23755)	710 (23790)	713.5 (23825)
LTE Band 17: 10 MHz	709 (23780)	710 (23790)	711 (23800)
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	3		
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 10 of 82	

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 11 of 82

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.

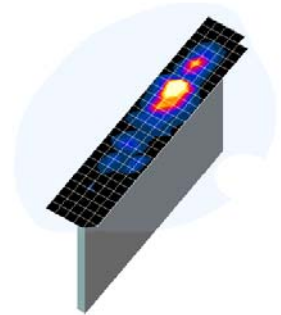


Figure 4-1
Sample SAR Area
Scan

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

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

*Also compliant to IEEE 1528-2013 Table 6

FCC ID: A3LSMG900M		SAR EVALUATION REPORT			Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset			Page 12 of 82

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].

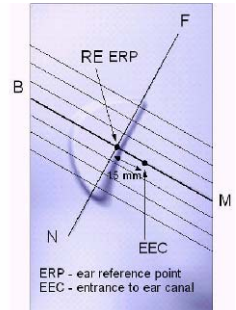


Figure 5-1
Close-Up Side view
of ERP

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

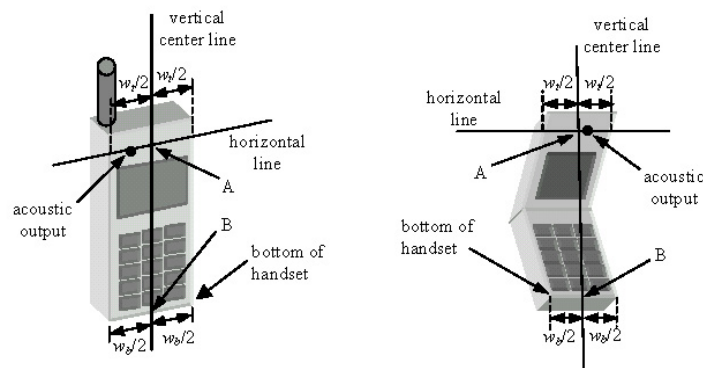


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 13 of 82

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.

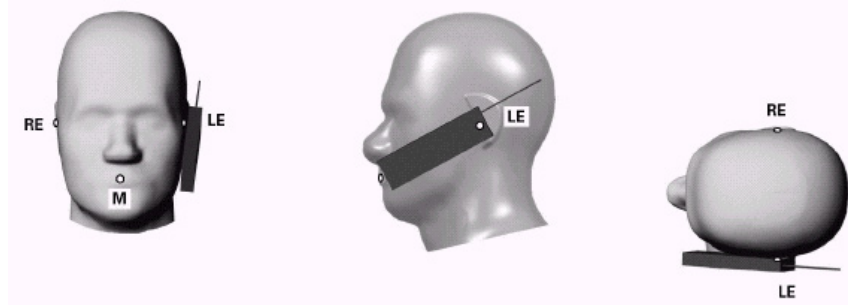


Figure 6-1 Front, Side and Top View of Cheek Position

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: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 14 of 82

6.5 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-5). 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.

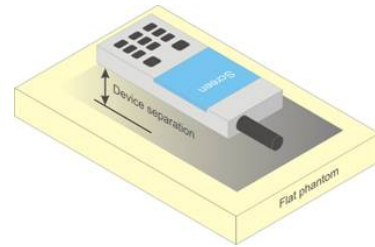


Figure 6-5
Sample Body-Worn Diagram

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.

6.6 Extremity Exposure Configurations

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

Per KDB Publication 44798 D01v05, Cell phones (handsets) are not normally designed to be used on extremities or operated in extremity only exposure conditions. The maximum output power levels of handsets generally do not require extremity SAR testing to show compliance. Therefore, extremity SAR was not evaluated for this device.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 16 of 82

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 17 of 82	

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: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 18 of 82	

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.

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.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 19 of 82

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_{ms} (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: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{ms} = \beta_{ms}/\beta_c = 30/15 \Leftrightarrow \beta_{ms} = 30/15 * \beta_c$.

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 $\Delta_{NACK} = 8$ ($A_{ms} = 30/15$) with $\beta_{ms} = 30/15 * \beta_c$, and $\Delta_{CQI} = 7$ ($A_{ms} = 24/15$) with $\beta_{ms} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{ms}/\beta_c = 24/15$. 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

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.

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 20 of 82

Sub-test	β_c	β_e	β_d (SF)	β_c/β_d	$\beta_w^{(1)}$	β_{sc}	β_{ul}	β_{ul} (SF)	β_{ul} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁶⁾ 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	$\beta_{sc} = 47/15$ $\beta_{sc} = 47/15$	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: $\Delta_{sc} = \Delta_{sc}^{(1)}$ and $\Delta_{sc} = 8 \Rightarrow \beta_{sc} = \beta_w/\beta_c = 30/15 \Rightarrow \beta_{sc} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_w/\beta_c = 24/15$. 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_{sc} can not be set directly; it is set by Absolute Grant Value.

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.

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:

- Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - The required channel and offset combination with the highest maximum output power is required for SAR.
 - 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.
 - 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.
- 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.
- 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.

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 21 of 82

- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

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.

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 GHz MIMO, 802.11n was evaluated. For 5 GHz MIMO, 802.11n 20 MHz bandwidth was evaluated since the maximum allowed output power was higher than 802.11ac.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 22 of 82

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 Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	32.92	32.94	31.80	29.87	28.72	26.87	26.26	24.38	23.05
	190	32.99	32.91	31.79	29.75	28.69	26.72	26.16	24.40	23.11
	251	32.84	33.00	31.68	29.71	28.73	26.68	26.15	24.29	23.10
GSM 1900	512	30.18	30.20	28.06	26.09	24.78	25.82	25.32	23.67	22.53
	661	30.12	30.32	28.09	26.27	24.84	25.90	25.20	23.69	22.52
	810	30.27	30.33	28.18	26.42	25.11	25.95	25.41	23.85	22.77
		Calculated Maximum Frame-Averaged Output Power								
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	23.89	23.91	25.78	25.61	25.71	17.84	20.24	20.12	20.04
	190	23.96	23.88	25.77	25.49	25.68	17.69	20.14	20.14	20.10
	251	23.81	23.97	25.66	25.45	25.72	17.65	20.13	20.03	20.09
GSM 1900	512	21.15	21.17	22.04	21.83	21.77	16.79	19.30	19.41	19.52
	661	21.09	21.29	22.07	22.01	21.83	16.87	19.18	19.43	19.51
	810	21.24	21.30	22.16	22.16	22.10	16.92	19.39	19.59	19.76
GSM 850	Frame Avg.Targets:	23.47	23.47	25.48	25.24	25.49	17.47	19.98	19.74	19.99
GSM 1900		20.97	20.97	21.98	21.74	21.99	16.47	18.98	19.24	19.49

Notes:

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

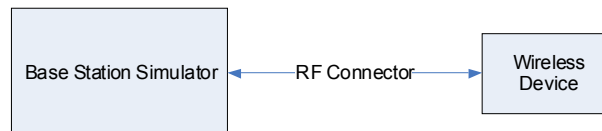


Figure 9-1
Power Measurement Setup

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 23 of 82

9.2 UMTS Conducted Powers

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1862	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.10	23.27	23.32	23.28	23.84	23.60	22.67	22.78	22.76	-
99		12.2 kbps AMR	23.09	23.26	23.31	23.27	23.86	23.63	22.68	22.70	22.75	-
6	HSDPA	Subtest 1	22.10	22.31	22.33	22.19	22.87	22.51	21.72	21.83	21.78	0
6		Subtest 2	22.16	22.35	22.34	22.25	22.82	22.59	21.74	21.84	21.81	0
6		Subtest 3	21.59	21.85	21.84	21.67	22.26	22.10	21.23	21.21	21.26	0.5
6		Subtest 4	21.69	21.86	21.83	21.68	22.34	22.09	21.22	21.20	21.29	0.5
6	HSUPA	Subtest 1	21.92	21.58	22.07	22.03	22.37	22.34	21.70	21.69	21.45	0
6		Subtest 2	20.71	20.93	21.24	21.17	21.48	21.53	20.70	20.78	20.54	2
6		Subtest 3	20.76	21.18	20.56	20.85	21.62	21.34	20.50	20.73	20.77	1
6		Subtest 4	21.49	21.31	21.18	21.13	21.70	21.65	20.61	20.82	21.12	2
6		Subtest 5	21.93	22.18	22.08	21.49	22.12	22.11	21.52	21.02	21.28	0

General Notes:

1. 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.
2. It is expected by the manufacturer that MPR for some HSPA subtests may be up to 1 dB more than specified by 3GPP, but also as low as 0 dB according to the chipset implementation in this model.

This device does not support DC-HSDPA.

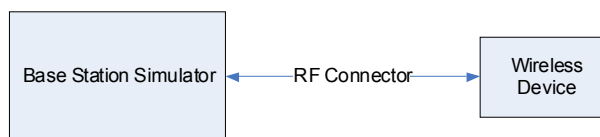


Figure 9-2
Power Measurement Setup

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 24 of 82

9.3 LTE Conducted Powers

9.3.1 LTE Band 17

Table 9-1
LTE Band 17 Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Mid	710.0	23790	10	QPSK	1	0	23.21	0	0
	710.0	23790	10	QPSK	1	25	23.31	0	0
	710.0	23790	10	QPSK	1	49	23.30	0	0
	710.0	23790	10	QPSK	25	0	22.41	1	0-1
	710.0	23790	10	QPSK	25	12	22.35	1	0-1
	710.0	23790	10	QPSK	25	25	22.33	1	0-1
	710.0	23790	10	QPSK	50	0	22.36	1	0-1
	710.0	23790	10	16QAM	1	0	22.50	1	0-1
	710.0	23790	10	16QAM	1	25	22.48	1	0-1
	710.0	23790	10	16QAM	1	49	22.45	1	0-1
	710.0	23790	10	16QAM	25	0	21.38	2	0-2
	710.0	23790	10	16QAM	25	12	21.38	2	0-2
	710.0	23790	10	16QAM	25	25	21.37	2	0-2
	710.0	23790	10	16QAM	50	0	21.35	2	0-2

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

Table 9-2
LTE Band 17 Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Mid	710.0	23790	5	QPSK	1	0	23.26	0	0
	710.0	23790	5	QPSK	1	12	23.32	0	0
	710.0	23790	5	QPSK	1	24	23.33	0	0
	710.0	23790	5	QPSK	12	0	22.37	1	0-1
	710.0	23790	5	QPSK	12	6	22.33	1	0-1
	710.0	23790	5	QPSK	12	13	22.31	1	0-1
	710.0	23790	5	QPSK	25	0	22.33	1	0-1
	710.0	23790	5	16-QAM	1	0	22.24	1	0-1
	710.0	23790	5	16-QAM	1	12	22.33	1	0-1
	710.0	23790	5	16-QAM	1	24	22.35	1	0-1
	710.0	23790	5	16-QAM	12	0	21.36	2	0-2
	710.0	23790	5	16-QAM	12	6	21.33	2	0-2
	710.0	23790	5	16-QAM	12	13	21.34	2	0-2
	710.0	23790	5	16-QAM	25	0	21.35	2	0-2

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 25 of 82

9.3.2

LTE Band 5 (Cell)

Table 9-3

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Mid	836.5	20525	10	QPSK	1	0	23.49	0	0
	836.5	20525	10	QPSK	1	25	23.55	0	0
	836.5	20525	10	QPSK	1	49	23.59	0	0
	836.5	20525	10	QPSK	25	0	22.48	1	0-1
	836.5	20525	10	QPSK	25	12	22.50	1	0-1
	836.5	20525	10	QPSK	25	25	22.63	1	0-1
	836.5	20525	10	QPSK	50	0	22.52	1	0-1
	836.5	20525	10	16QAM	1	0	22.46	1	0-1
	836.5	20525	10	16QAM	1	25	22.53	1	0-1
	836.5	20525	10	16QAM	1	49	22.56	1	0-1
	836.5	20525	10	16QAM	25	0	21.52	2	0-2
	836.5	20525	10	16QAM	25	12	21.57	2	0-2
	836.5	20525	10	16QAM	25	25	21.67	2	0-2
	836.5	20525	10	16QAM	50	0	21.57	2	0-2

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

Table 9-4

LTE Band 5 (Cell) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	826.5	20425	5	QPSK	1	0	23.61	0	0
	826.5	20425	5	QPSK	1	12	23.42	0	0
	826.5	20425	5	QPSK	1	24	23.57	0	0
	826.5	20425	5	QPSK	12	0	22.63	1	0-1
	826.5	20425	5	QPSK	12	6	22.52	1	0-1
	826.5	20425	5	QPSK	12	13	22.61	1	0-1
	826.5	20425	5	QPSK	25	0	22.58	1	0-1
	826.5	20425	5	16-QAM	1	0	22.63	1	0-1
	826.5	20425	5	16-QAM	1	12	22.50	1	0-1
	826.5	20425	5	16-QAM	1	24	22.63	1	0-1
	826.5	20425	5	16-QAM	12	0	21.67	2	0-2
	826.5	20425	5	16-QAM	12	6	21.53	2	0-2
	826.5	20425	5	16-QAM	12	13	21.60	2	0-2
	826.5	20425	5	16-QAM	25	0	21.62	2	0-2
Mid	836.5	20525	5	QPSK	1	0	23.52	0	0
	836.5	20525	5	QPSK	1	12	23.61	0	0
	836.5	20525	5	QPSK	1	24	23.65	0	0
	836.5	20525	5	QPSK	12	0	22.52	1	0-1
	836.5	20525	5	QPSK	12	6	22.50	1	0-1
	836.5	20525	5	QPSK	12	13	22.59	1	0-1
	836.5	20525	5	QPSK	25	0	22.56	1	0-1
	836.5	20525	5	16-QAM	1	0	22.52	1	0-1
	836.5	20525	5	16-QAM	1	12	22.64	1	0-1
	836.5	20525	5	16-QAM	1	24	22.70	1	0-1
	836.5	20525	5	16-QAM	12	0	21.60	2	0-2
	836.5	20525	5	16-QAM	12	6	21.57	2	0-2
	836.5	20525	5	16-QAM	12	13	21.66	2	0-2
	836.5	20525	5	16-QAM	25	0	21.53	2	0-2
High	846.5	20625	5	QPSK	1	0	23.67	0	0
	846.5	20625	5	QPSK	1	12	23.61	0	0
	846.5	20625	5	QPSK	1	24	23.62	0	0
	846.5	20625	5	QPSK	12	0	22.65	1	0-1
	846.5	20625	5	QPSK	12	6	22.66	1	0-1
	846.5	20625	5	QPSK	12	13	22.63	1	0-1
	846.5	20625	5	QPSK	25	0	22.63	1	0-1
	846.5	20625	5	16-QAM	1	0	22.65	1	0-1
	846.5	20625	5	16-QAM	1	12	22.65	1	0-1
	846.5	20625	5	16-QAM	1	24	22.70	1	0-1
	846.5	20625	5	16-QAM	12	0	21.66	2	0-2
	846.5	20625	5	16-QAM	12	6	21.67	2	0-2
	846.5	20625	5	16-QAM	12	13	21.63	2	0-2
	846.5	20625	5	16-QAM	25	0	21.66	2	0-2

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
		Page 26 of 82

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	825.5	20415	3	QPSK	1	0	23.64	0	0
	825.5	20415	3	QPSK	1	7	23.42	0	0
	825.5	20415	3	QPSK	1	14	23.53	0	0
	825.5	20415	3	QPSK	8	0	22.61	1	0-1
	825.5	20415	3	QPSK	8	4	22.48	1	0-1
	825.5	20415	3	QPSK	8	7	22.48	1	0-1
	825.5	20415	3	QPSK	15	0	22.56	1	0-1
	825.5	20415	3	16-QAM	1	0	22.70	1	0-1
	825.5	20415	3	16-QAM	1	7	22.47	1	0-1
	825.5	20415	3	16-QAM	1	14	22.50	1	0-1
	825.5	20415	3	16-QAM	8	0	21.54	2	0-2
	825.5	20415	3	16-QAM	8	4	21.44	2	0-2
	825.5	20415	3	16-QAM	8	7	21.44	2	0-2
	825.5	20415	3	16-QAM	15	0	21.62	2	0-2
	825.5	20415	3	16-QAM	15	0	21.62	2	0-2
Mid	836.5	20525	3	QPSK	1	0	23.57	0	0
	836.5	20525	3	QPSK	1	7	23.84	0	0
	836.5	20525	3	QPSK	1	14	23.88	0	0
	836.5	20525	3	QPSK	8	0	22.53	1	0-1
	836.5	20525	3	QPSK	8	4	22.59	1	0-1
	836.5	20525	3	QPSK	8	7	22.62	1	0-1
	836.5	20525	3	QPSK	15	0	22.57	1	0-1
	836.5	20525	3	16-QAM	1	0	22.64	1	0-1
	836.5	20525	3	16-QAM	1	7	22.68	1	0-1
	836.5	20525	3	16-QAM	1	14	22.70	1	0-1
	836.5	20525	3	16-QAM	8	0	21.46	2	0-2
	836.5	20525	3	16-QAM	8	4	21.53	2	0-2
	836.5	20525	3	16-QAM	8	7	21.53	2	0-2
	836.5	20525	3	16-QAM	15	0	21.49	2	0-2
	836.5	20525	3	16-QAM	15	0	21.49	2	0-2
High	847.5	20635	3	QPSK	1	0	23.65	0	0
	847.5	20635	3	QPSK	1	7	23.60	0	0
	847.5	20635	3	QPSK	1	14	23.62	0	0
	847.5	20635	3	QPSK	8	0	22.64	1	0-1
	847.5	20635	3	QPSK	8	4	22.65	1	0-1
	847.5	20635	3	QPSK	8	7	22.69	1	0-1
	847.5	20635	3	QPSK	15	0	22.64	1	0-1
	847.5	20635	3	16-QAM	1	0	22.59	1	0-1
	847.5	20635	3	16-QAM	1	7	22.58	1	0-1
	847.5	20635	3	16-QAM	1	14	22.59	1	0-1
	847.5	20635	3	16-QAM	8	0	21.56	2	0-2
	847.5	20635	3	16-QAM	8	4	21.59	2	0-2
	847.5	20635	3	16-QAM	8	7	21.60	2	0-2
	847.5	20635	3	16-QAM	15	0	21.68	2	0-2
	847.5	20635	3	16-QAM	15	0	21.68	2	0-2

Table 9-6
LTE Band 5 (Cell) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	824.7	20407	1.4	QPSK	1	0	23.70	0	0
	824.7	20407	1.4	QPSK	1	2	23.69	0	0
	824.7	20407	1.4	QPSK	1	5	23.68	0	0
	824.7	20407	1.4	QPSK	3	0	23.61	0	0
	824.7	20407	1.4	QPSK	3	2	23.58	0	0
	824.7	20407	1.4	QPSK	3	3	23.64	0	0
	824.7	20407	1.4	QPSK	6	0	22.70	1	0-1
	824.7	20407	1.4	16-QAM	1	0	22.49	1	0-1
	824.7	20407	1.4	16-QAM	1	2	22.45	1	0-1
	824.7	20407	1.4	16-QAM	1	5	22.39	1	0-1
	824.7	20407	1.4	16-QAM	3	0	22.58	1	0-1
	824.7	20407	1.4	16-QAM	3	2	22.62	1	0-1
	824.7	20407	1.4	16-QAM	3	3	22.65	1	0-1
	824.7	20407	1.4	16-QAM	6	0	21.69	2	0-2
	824.7	20407	1.4	16-QAM	6	0	21.69	2	0-2
Mid	836.5	20525	1.4	QPSK	1	0	23.67	0	0
	836.5	20525	1.4	QPSK	1	2	23.63	0	0
	836.5	20525	1.4	QPSK	1	5	23.65	0	0
	836.5	20525	1.4	QPSK	3	0	23.64	0	0
	836.5	20525	1.4	QPSK	3	2	23.61	0	0
	836.5	20525	1.4	QPSK	3	3	23.67	0	0
	836.5	20525	1.4	QPSK	6	0	22.70	1	0-1
	836.5	20525	1.4	16-QAM	1	0	22.53	1	0-1
	836.5	20525	1.4	16-QAM	1	2	22.43	1	0-1
	836.5	20525	1.4	16-QAM	1	5	22.50	1	0-1
	836.5	20525	1.4	16-QAM	3	0	22.64	1	0-1
	836.5	20525	1.4	16-QAM	3	2	22.59	1	0-1
	836.5	20525	1.4	16-QAM	3	3	22.62	1	0-1
	836.5	20525	1.4	16-QAM	6	0	21.67	2	0-2
	836.5	20525	1.4	16-QAM	6	0	21.67	2	0-2
High	848.3	20643	1.4	QPSK	1	0	23.67	0	0
	848.3	20643	1.4	QPSK	1	2	23.64	0	0
	848.3	20643	1.4	QPSK	1	5	23.64	0	0
	848.3	20643	1.4	QPSK	3	0	23.64	0	0
	848.3	20643	1.4	QPSK	3	2	23.65	0	0
	848.3	20643	1.4	QPSK	3	3	23.67	0	0
	848.3	20643	1.4	QPSK	6	0	22.66	1	0-1
	848.3	20643	1.4	16-QAM	1	0	22.65	1	0-1
	848.3	20643	1.4	16-QAM	1	2	22.66	1	0-1
	848.3	20643	1.4	16-QAM	1	5	22.69	1	0-1
	848.3	20643	1.4	16-QAM	3	0	22.60	1	0-1
	848.3	20643	1.4	16-QAM	3	2	22.63	1	0-1
	848.3	20643	1.4	16-QAM	3	3	22.64	1	0-1
	848.3	20643	1.4	16-QAM	6	0	21.65	2	0-2
	848.3	20643	1.4	16-QAM	6	0	21.65	2	0-2

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 27 of 82	

9.3.3

LTE Band 4

Table 9-7

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Mid	1732.5	20175	20	QPSK	1	0	21.87	0	0
	1732.5	20175	20	QPSK	1	50	21.94	0	0
	1732.5	20175	20	QPSK	1	99	21.91	0	0
	1732.5	20175	20	QPSK	50	0	20.93	1	0-1
	1732.5	20175	20	QPSK	50	25	20.89	1	0-1
	1732.5	20175	20	QPSK	50	50	20.88	1	0-1
	1732.5	20175	20	QPSK	100	0	20.84	1	0-1
	1732.5	20175	20	16QAM	1	0	20.72	1	0-1
	1732.5	20175	20	16QAM	1	50	20.93	1	0-1
	1732.5	20175	20	16QAM	1	99	20.71	1	0-1
	1732.5	20175	20	16QAM	50	0	19.77	2	0-2
	1732.5	20175	20	16QAM	50	25	19.85	2	0-2
	1732.5	20175	20	16QAM	50	50	19.90	2	0-2
	1732.5	20175	20	16QAM	100	0	19.85	2	0-2

Note: LTE Band 4 at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Table 9-8

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1717.5	20025	15	QPSK	1	0	21.40	0	0
	1717.5	20025	15	QPSK	1	36	21.49	0	0
	1717.5	20025	15	QPSK	1	74	21.73	0	0
	1717.5	20025	15	QPSK	36	0	20.23	1	0-1
	1717.5	20025	15	QPSK	36	18	20.41	1	0-1
	1717.5	20025	15	QPSK	36	37	20.53	1	0-1
	1717.5	20025	15	QPSK	75	0	20.38	1	0-1
	1717.5	20025	15	16QAM	1	0	20.23	1	0-1
	1717.5	20025	15	16QAM	1	36	20.27	1	0-1
	1717.5	20025	15	16QAM	1	74	20.52	1	0-1
	1717.5	20025	15	16QAM	36	0	19.27	2	0-2
	1717.5	20025	15	16QAM	36	18	19.36	2	0-2
	1717.5	20025	15	16QAM	36	37	19.48	2	0-2
	1717.5	20025	15	16QAM	75	0	19.44	2	0-2
	1732.5	20175	15	QPSK	1	0	21.78	0	0
Mid	1732.5	20175	15	QPSK	1	36	21.87	0	0
	1732.5	20175	15	QPSK	1	74	21.83	0	0
	1732.5	20175	15	QPSK	36	0	20.80	1	0-1
	1732.5	20175	15	QPSK	36	18	20.79	1	0-1
	1732.5	20175	15	QPSK	36	37	20.81	1	0-1
	1732.5	20175	15	QPSK	75	0	20.89	1	0-1
	1732.5	20175	15	16QAM	1	0	20.61	1	0-1
	1732.5	20175	15	16QAM	1	36	20.73	1	0-1
	1732.5	20175	15	16QAM	1	74	20.70	1	0-1
	1732.5	20175	15	16QAM	36	0	19.77	2	0-2
	1732.5	20175	15	16QAM	36	18	19.79	2	0-2
	1732.5	20175	15	16QAM	36	37	19.84	2	0-2
	1732.5	20175	15	16QAM	75	0	19.80	2	0-2
	1747.5	20325	15	QPSK	1	0	21.91	0	0
	1747.5	20325	15	QPSK	1	36	21.85	0	0
High	1747.5	20325	15	QPSK	1	74	21.72	0	0
	1747.5	20325	15	QPSK	36	0	20.79	1	0-1
	1747.5	20325	15	QPSK	36	18	20.75	1	0-1
	1747.5	20325	15	QPSK	36	37	20.72	1	0-1
	1747.5	20325	15	QPSK	75	0	20.71	1	0-1
	1747.5	20325	15	16QAM	1	0	20.76	1	0-1
	1747.5	20325	15	16QAM	1	36	20.68	1	0-1
	1747.5	20325	15	16QAM	1	74	20.52	1	0-1
	1747.5	20325	15	16QAM	36	0	19.76	2	0-2
	1747.5	20325	15	16QAM	36	18	19.79	2	0-2
	1747.5	20325	15	16QAM	36	37	19.70	2	0-2
	1747.5	20325	15	16QAM	75	0	19.69	2	0-2

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 28 of 82

Table 9-9

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1715	20000	10	QPSK	1	0	21.40	0	0
	1715	20000	10	QPSK	1	25	21.47	0	0
	1715	20000	10	QPSK	1	49	21.59	0	0
	1715	20000	10	QPSK	25	0	20.17	1	0-1
	1715	20000	10	QPSK	25	12	20.19	1	0-1
	1715	20000	10	QPSK	25	25	20.37	1	0-1
	1715	20000	10	QPSK	50	0	20.38	1	0-1
	1715	20000	10	16QAM	1	0	20.23	1	0-1
	1715	20000	10	16QAM	1	25	20.25	1	0-1
	1715	20000	10	16QAM	1	49	20.34	1	0-1
	1715	20000	10	16QAM	25	0	19.33	2	0-2
	1715	20000	10	16QAM	25	12	19.29	2	0-2
	1715	20000	10	16QAM	25	25	19.44	2	0-2
	1715	20000	10	16QAM	50	0	19.36	2	0-2
Mid	1732.5	20175	10	QPSK	1	0	21.83	0	0
	1732.5	20175	10	QPSK	1	25	21.93	0	0
	1732.5	20175	10	QPSK	1	49	21.87	0	0
	1732.5	20175	10	QPSK	25	0	20.80	1	0-1
	1732.5	20175	10	QPSK	25	12	20.86	1	0-1
	1732.5	20175	10	QPSK	25	25	20.81	1	0-1
	1732.5	20175	10	QPSK	50	0	20.88	1	0-1
	1732.5	20175	10	16QAM	1	0	20.58	1	0-1
	1732.5	20175	10	16QAM	1	25	20.72	1	0-1
	1732.5	20175	10	16QAM	1	49	20.68	1	0-1
	1732.5	20175	10	16QAM	25	0	19.86	2	0-2
	1732.5	20175	10	16QAM	25	12	19.85	2	0-2
	1732.5	20175	10	16QAM	25	25	19.88	2	0-2
	1732.5	20175	10	16QAM	50	0	19.84	2	0-2
High	1750	20350	10	QPSK	1	0	21.91	0	0
	1750	20350	10	QPSK	1	25	21.80	0	0
	1750	20350	10	QPSK	1	49	21.75	0	0
	1750	20350	10	QPSK	25	0	20.83	1	0-1
	1750	20350	10	QPSK	25	12	20.72	1	0-1
	1750	20350	10	QPSK	25	25	20.66	1	0-1
	1750	20350	10	QPSK	50	0	20.74	1	0-1
	1750	20350	10	16QAM	1	0	20.69	1	0-1
	1750	20350	10	16QAM	1	25	20.59	1	0-1
	1750	20350	10	16QAM	1	49	20.55	1	0-1
	1750	20350	10	16QAM	25	0	19.87	2	0-2
	1750	20350	10	16QAM	25	12	19.75	2	0-2
	1750	20350	10	16QAM	25	25	19.77	2	0-2
	1750	20350	10	16QAM	50	0	19.74	2	0-2

Table 9-10

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1712.5	19975	5	QPSK	1	0	21.44	0	0
	1712.5	19975	5	QPSK	1	12	21.37	0	0
	1712.5	19975	5	QPSK	1	24	21.41	0	0
	1712.5	19975	5	QPSK	12	0	20.17	1	0-1
	1712.5	19975	5	QPSK	12	6	20.16	1	0-1
	1712.5	19975	5	QPSK	12	13	20.22	1	0-1
	1712.5	19975	5	QPSK	25	0	20.22	1	0-1
	1712.5	19975	5	16-QAM	1	0	20.22	1	0-1
	1712.5	19975	5	16-QAM	1	12	20.10	1	0-1
	1712.5	19975	5	16-QAM	1	24	20.08	1	0-1
	1712.5	19975	5	16-QAM	12	0	19.27	2	0-2
	1712.5	19975	5	16-QAM	12	6	19.30	2	0-2
	1712.5	19975	5	16-QAM	12	13	19.30	2	0-2
	1712.5	19975	5	16-QAM	25	0	19.29	2	0-2
Mid	1732.5	20175	5	QPSK	1	0	21.96	0	0
	1732.5	20175	5	QPSK	1	12	21.95	0	0
	1732.5	20175	5	QPSK	1	24	21.99	0	0
	1732.5	20175	5	QPSK	12	0	20.84	1	0-1
	1732.5	20175	5	QPSK	12	6	20.84	1	0-1
	1732.5	20175	5	QPSK	12	13	20.80	1	0-1
	1732.5	20175	5	QPSK	25	0	20.86	1	0-1
	1732.5	20175	5	16-QAM	1	0	20.69	1	0-1
	1732.5	20175	5	16-QAM	1	12	20.73	1	0-1
	1732.5	20175	5	16-QAM	1	24	20.69	1	0-1
	1732.5	20175	5	16-QAM	12	0	19.87	2	0-2
	1732.5	20175	5	16-QAM	12	6	19.85	2	0-2
	1732.5	20175	5	16-QAM	12	13	19.86	2	0-2
	1732.5	20175	5	16-QAM	25	0	19.85	2	0-2
High	1752.5	20375	5	QPSK	1	0	21.81	0	0
	1752.5	20375	5	QPSK	1	12	21.82	0	0
	1752.5	20375	5	QPSK	1	24	21.74	0	0
	1752.5	20375	5	QPSK	12	0	20.71	1	0-1
	1752.5	20375	5	QPSK	12	6	20.64	1	0-1
	1752.5	20375	5	QPSK	12	13	20.56	1	0-1
	1752.5	20375	5	QPSK	25	0	20.63	1	0-1
	1752.5	20375	5	16-QAM	1	0	20.57	1	0-1
	1752.5	20375	5	16-QAM	1	12	20.60	1	0-1
	1752.5	20375	5	16-QAM	1	24	20.51	1	0-1
	1752.5	20375	5	16-QAM	12	0	19.78	2	0-2
	1752.5	20375	5	16-QAM	12	6	19.77	2	0-2
	1752.5	20375	5	16-QAM	12	13	19.66	2	0-2
	1752.5	20375	5	16-QAM	25	0	19.70	2	0-2

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 29 of 82

Table 9-11
LTE Band 4 (AWS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1711.5	19965	3	QPSK	1	0	21.44	0	0
	1711.5	19965	3	QPSK	1	7	21.36	0	0
	1711.5	19965	3	QPSK	1	14	21.39	0	0
	1711.5	19965	3	QPSK	8	0	20.33	1	0-1
	1711.5	19965	3	QPSK	8	4	20.16	1	0-1
	1711.5	19965	3	QPSK	8	7	20.15	1	0-1
	1711.5	19965	3	QPSK	15	0	20.23	1	0-1
	1711.5	19965	3	16-QAM	1	0	20.16	1	0-1
	1711.5	19965	3	16-QAM	1	7	20.08	1	0-1
	1711.5	19965	3	16-QAM	1	14	20.13	1	0-1
	1711.5	19965	3	16-QAM	8	0	19.37	2	0-2
	1711.5	19965	3	16-QAM	8	4	19.30	2	0-2
	1711.5	19965	3	16-QAM	8	7	19.31	2	0-2
	1711.5	19965	3	16-QAM	15	0	19.22	2	0-2
Mid	1732.5	20175	3	QPSK	1	0	21.96	0	0
	1732.5	20175	3	QPSK	1	7	21.96	0	0
	1732.5	20175	3	QPSK	1	14	21.94	0	0
	1732.5	20175	3	QPSK	8	0	20.83	1	0-1
	1732.5	20175	3	QPSK	8	4	20.85	1	0-1
	1732.5	20175	3	QPSK	8	7	20.85	1	0-1
	1732.5	20175	3	QPSK	15	0	20.88	1	0-1
	1732.5	20175	3	16-QAM	1	0	20.71	1	0-1
	1732.5	20175	3	16-QAM	1	7	20.72	1	0-1
	1732.5	20175	3	16-QAM	1	14	20.78	1	0-1
	1732.5	20175	3	16-QAM	8	0	19.85	2	0-2
	1732.5	20175	3	16-QAM	8	4	19.87	2	0-2
	1732.5	20175	3	16-QAM	8	7	19.85	2	0-2
	1732.5	20175	3	16-QAM	15	0	19.83	2	0-2
High	1753.5	20385	3	QPSK	1	0	21.85	0	0
	1753.5	20385	3	QPSK	1	7	21.79	0	0
	1753.5	20385	3	QPSK	1	14	21.78	0	0
	1753.5	20385	3	QPSK	8	0	20.72	1	0-1
	1753.5	20385	3	QPSK	8	4	20.57	1	0-1
	1753.5	20385	3	QPSK	8	7	20.57	1	0-1
	1753.5	20385	3	QPSK	15	0	20.65	1	0-1
	1753.5	20385	3	16-QAM	1	0	20.62	1	0-1
	1753.5	20385	3	16-QAM	1	7	20.55	1	0-1
	1753.5	20385	3	16-QAM	1	14	20.54	1	0-1
	1753.5	20385	3	16-QAM	8	0	19.79	2	0-2
	1753.5	20385	3	16-QAM	8	4	19.70	2	0-2
	1753.5	20385	3	16-QAM	8	7	19.72	2	0-2
	1753.5	20385	3	16-QAM	15	0	19.67	2	0-2

Table 9-12
LTE Band 4 (AWS) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1710.7	19957	1.4	QPSK	1	0	21.40	0	0
	1710.7	19957	1.4	QPSK	1	2	21.38	0	0
	1710.7	19957	1.4	QPSK	1	5	21.43	0	0
	1710.7	19957	1.4	QPSK	3	0	21.29	0	0
	1710.7	19957	1.4	QPSK	3	2	21.31	0	0
	1710.7	19957	1.4	QPSK	3	3	21.27	0	0
	1710.7	19957	1.4	QPSK	6	0	20.33	1	0-1
	1710.7	19957	1.4	16-QAM	1	0	20.20	1	0-1
	1710.7	19957	1.4	16-QAM	1	2	20.24	1	0-1
	1710.7	19957	1.4	16-QAM	1	5	20.22	1	0-1
	1710.7	19957	1.4	16-QAM	3	0	20.24	1	0-1
	1710.7	19957	1.4	16-QAM	3	2	20.25	1	0-1
	1710.7	19957	1.4	16-QAM	3	3	20.24	1	0-1
	1710.7	19957	1.4	16-QAM	6	0	19.22	2	0-2
Mid	1732.5	20175	1.4	QPSK	1	0	21.86	0	0
	1732.5	20175	1.4	QPSK	1	2	21.92	0	0
	1732.5	20175	1.4	QPSK	1	5	21.87	0	0
	1732.5	20175	1.4	QPSK	3	0	21.80	0	0
	1732.5	20175	1.4	QPSK	3	2	21.82	0	0
	1732.5	20175	1.4	QPSK	3	3	21.76	0	0
	1732.5	20175	1.4	QPSK	6	0	20.88	1	0-1
	1732.5	20175	1.4	16-QAM	1	0	20.77	1	0-1
	1732.5	20175	1.4	16-QAM	1	2	20.78	1	0-1
	1732.5	20175	1.4	16-QAM	1	5	20.79	1	0-1
	1732.5	20175	1.4	16-QAM	3	0	20.78	1	0-1
	1732.5	20175	1.4	16-QAM	3	2	20.79	1	0-1
	1732.5	20175	1.4	16-QAM	3	3	20.82	1	0-1
	1732.5	20175	1.4	16-QAM	6	0	19.74	2	0-2
High	1754.3	20393	1.4	QPSK	1	0	21.79	0	0
	1754.3	20393	1.4	QPSK	1	2	21.72	0	0
	1754.3	20393	1.4	QPSK	1	5	21.76	0	0
	1754.3	20393	1.4	QPSK	3	0	21.65	0	0
	1754.3	20393	1.4	QPSK	3	2	21.62	0	0
	1754.3	20393	1.4	QPSK	3	3	21.63	0	0
	1754.3	20393	1.4	QPSK	6	0	20.65	1	0-1
	1754.3	20393	1.4	16-QAM	1	0	20.61	1	0-1
	1754.3	20393	1.4	16-QAM	1	2	20.55	1	0-1
	1754.3	20393	1.4	16-QAM	1	5	20.58	1	0-1
	1754.3	20393	1.4	16-QAM	3	0	20.58	1	0-1
	1754.3	20393	1.4	16-QAM	3	2	20.56	1	0-1
	1754.3	20393	1.4	16-QAM	3	3	20.60	1	0-1
	1754.3	20393	1.4	16-QAM	6	0	19.64	2	0-2

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 30 of 82		

9.3.4

LTE Band 2

Table 9-13

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1860	18700	20	QPSK	1	0	23.12	0	0
	1860	18700	20	QPSK	1	50	23.70	0	0
	1860	18700	20	QPSK	1	99	23.61	0	0
	1860	18700	20	QPSK	50	0	22.68	1	0-1
	1860	18700	20	QPSK	50	25	22.73	1	0-1
	1860	18700	20	QPSK	50	50	22.80	1	0-1
	1860	18700	20	QPSK	100	0	22.73	1	0-1
	1860	18700	20	16QAM	1	0	22.27	1	0-1
	1860	18700	20	16QAM	1	50	22.96	1	0-1
	1860	18700	20	16QAM	1	99	22.90	1	0-1
	1860	18700	20	16QAM	50	0	21.47	2	0-2
	1860	18700	20	16QAM	50	25	21.70	2	0-2
	1860	18700	20	16QAM	50	50	21.63	2	0-2
	1860	18700	20	16QAM	100	0	21.71	2	0-2
	1880.0	18900	20	QPSK	1	0	23.74	0	0
	1880.0	18900	20	QPSK	1	50	23.84	0	0
	1880.0	18900	20	QPSK	1	99	23.56	0	0
Mid	1880.0	18900	20	QPSK	50	0	22.74	1	0-1
	1880.0	18900	20	QPSK	50	25	22.74	1	0-1
	1880.0	18900	20	QPSK	50	50	22.68	1	0-1
	1880.0	18900	20	QPSK	100	0	22.70	1	0-1
	1880.0	18900	20	16QAM	1	0	22.77	1	0-1
	1880.0	18900	20	16QAM	1	50	22.80	1	0-1
	1880.0	18900	20	16QAM	1	99	22.77	1	0-1
	1880.0	18900	20	16QAM	50	0	21.66	2	0-2
	1880.0	18900	20	16QAM	50	25	21.73	2	0-2
	1880.0	18900	20	16QAM	50	50	21.63	2	0-2
	1880.0	18900	20	16QAM	100	0	21.68	2	0-2
High	1900	19100	20	QPSK	1	0	23.20	0	0
	1900	19100	20	QPSK	1	50	23.34	0	0
	1900	19100	20	QPSK	1	99	23.00	0	0
	1900	19100	20	QPSK	50	0	22.55	1	0-1
	1900	19100	20	QPSK	50	25	22.55	1	0-1
	1900	19100	20	QPSK	50	50	22.24	1	0-1
	1900	19100	20	QPSK	100	0	22.46	1	0-1
	1900	19100	20	16QAM	1	0	22.38	1	0-1
	1900	19100	20	16QAM	1	50	22.31	1	0-1
	1900	19100	20	16QAM	1	99	22.00	1	0-1
	1900	19100	20	16QAM	50	0	21.61	2	0-2
	1900	19100	20	16QAM	50	25	21.59	2	0-2
	1900	19100	20	16QAM	50	50	21.25	2	0-2
	1900	19100	20	16QAM	100	0	21.42	2	0-2

Table 9-14

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

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1857.5	18675	15	QPSK	1	0	23.06	0	0
	1857.5	18675	15	QPSK	1	36	23.45	0	0
	1857.5	18675	15	QPSK	1	74	23.60	0	0
	1857.5	18675	15	QPSK	36	0	22.34	1	0-1
	1857.5	18675	15	QPSK	36	18	22.61	1	0-1
	1857.5	18675	15	QPSK	36	37	22.58	1	0-1
	1857.5	18675	15	QPSK	75	0	22.52	1	0-1
	1857.5	18675	15	16QAM	1	0	22.41	1	0-1
	1857.5	18675	15	16QAM	1	36	22.81	1	0-1
	1857.5	18675	15	16QAM	1	74	22.83	1	0-1
	1857.5	18675	15	16QAM	36	0	21.51	2	0-2
	1857.5	18675	15	16QAM	36	18	21.58	2	0-2
	1857.5	18675	15	16QAM	36	37	21.61	2	0-2
	1857.5	18675	15	16QAM	75	0	21.59	2	0-2
Mid	1880.0	18900	15	QPSK	1	0	23.37	0	0
	1880.0	18900	15	QPSK	1	36	23.48	0	0
	1880.0	18900	15	QPSK	1	74	23.45	0	0
	1880.0	18900	15	QPSK	36	0	22.57	1	0-1
	1880.0	18900	15	QPSK	36	18	22.54	1	0-1
	1880.0	18900	15	QPSK	36	37	22.49	1	0-1
	1880.0	18900	15	QPSK	75	0	22.64	1	0-1
	1880.0	18900	15	16QAM	1	0	22.70	1	0-1
	1880.0	18900	15	16QAM	1	36	22.78	1	0-1
	1880.0	18900	15	16QAM	1	74	22.74	1	0-1
	1880.0	18900	15	16QAM	36	0	21.48	2	0-2
	1880.0	18900	15	16QAM	36	18	21.51	2	0-2
	1880.0	18900	15	16QAM	36	37	21.54	2	0-2
	1880.0	18900	15	16QAM	75	0	21.57	2	0-2
High	1902.5	19125	15	QPSK	1	0	23.44	0	0
	1902.5	19125	15	QPSK	1	36	23.47	0	0
	1902.5	19125	15	QPSK	1	74	23.02	0	0
	1902.5	19125	15	QPSK	36	0	22.46	1	0-1
	1902.5	19125	15	QPSK	36	18	22.43	1	0-1
	1902.5	19125	15	QPSK	36	37	22.00	1	0-1
	1902.5	19125	15	QPSK	75	0	22.41	1	0-1
	1902.5	19125	15	16QAM	1	0	22.43	1	0-1
	1902.5	19125	15	16QAM	1	36	22.52	1	0-1
	1902.5	19125	15	16QAM	1	74	22.01	1	0-1
	1902.5	19125	15	16QAM	36	0	21.46	2	0-2
	1902.5	19125	15	16QAM	36	18	21.43	2	0-2
	1902.5	19125	15	16QAM	36	37	21.16	2	0-2
	1902.5	19125	15	16QAM	75	0	21.35	2	0-2

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 31 of 82

Table 9-15
LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1855	18650	10	QPSK	1	0	23.06	0	0
	1855	18650	10	QPSK	1	25	23.31	0	0
	1855	18650	10	QPSK	1	49	23.56	0	0
	1855	18650	10	QPSK	25	0	22.26	1	0-1
	1855	18650	10	QPSK	25	12	22.41	1	0-1
	1855	18650	10	QPSK	25	25	22.67	1	0-1
	1855	18650	10	QPSK	50	0	22.46	1	0-1
	1855	18650	10	16QAM	1	0	22.47	1	0-1
	1855	18650	10	16QAM	1	25	22.70	1	0-1
	1855	18650	10	16QAM	1	49	22.90	1	0-1
	1855	18650	10	16QAM	25	0	21.32	2	0-2
	1855	18650	10	16QAM	25	12	21.42	2	0-2
	1855	18650	10	16QAM	25	25	21.31	2	0-2
	1855	18650	10	16QAM	50	0	21.46	2	0-2
	1880.0	18900	10	QPSK	1	0	23.43	0	0
	1880.0	18900	10	QPSK	1	25	23.48	0	0
	1880.0	18900	10	QPSK	1	49	23.46	0	0
Mid	1880.0	18900	10	QPSK	25	0	22.49	1	0-1
	1880.0	18900	10	QPSK	25	12	22.59	1	0-1
	1880.0	18900	10	QPSK	25	25	22.61	1	0-1
	1880.0	18900	10	QPSK	50	0	22.56	1	0-1
	1880.0	18900	10	16QAM	1	0	22.50	1	0-1
	1880.0	18900	10	16QAM	1	25	22.54	1	0-1
	1880.0	18900	10	16QAM	1	49	22.45	1	0-1
	1880.0	18900	10	16QAM	25	0	21.50	2	0-2
	1880.0	18900	10	16QAM	25	12	21.53	2	0-2
	1880.0	18900	10	16QAM	25	25	21.59	2	0-2
	1880.0	18900	10	16QAM	50	0	21.49	2	0-2
High	1905	19150	10	QPSK	1	0	23.47	0	0
	1905	19150	10	QPSK	1	25	23.12	0	0
	1905	19150	10	QPSK	1	49	23.35	0	0
	1905	19150	10	QPSK	25	0	22.58	1	0-1
	1905	19150	10	QPSK	25	12	22.29	1	0-1
	1905	19150	10	QPSK	25	25	22.06	1	0-1
	1905	19150	10	QPSK	50	0	22.17	1	0-1
	1905	19150	10	16QAM	1	0	22.53	1	0-1
	1905	19150	10	16QAM	1	25	22.31	1	0-1
	1905	19150	10	16QAM	1	49	22.52	1	0-1
	1905	19150	10	16QAM	25	0	21.57	2	0-2
	1905	19150	10	16QAM	25	12	21.32	2	0-2
	1905	19150	10	16QAM	25	25	21.00	2	0-2
	1905	19150	10	16QAM	50	0	21.22	2	0-2

Table 9-16
LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1852.5	18625	5	QPSK	1	0	23.00	0	0
	1852.5	18625	5	QPSK	1	12	23.04	0	0
	1852.5	18625	5	QPSK	1	24	23.35	0	0
	1852.5	18625	5	QPSK	12	0	22.11	1	0-1
	1852.5	18625	5	QPSK	12	6	22.18	1	0-1
	1852.5	18625	5	QPSK	12	13	22.27	1	0-1
	1852.5	18625	5	QPSK	25	0	22.21	1	0-1
	1852.5	18625	5	16-QAM	1	0	22.17	1	0-1
	1852.5	18625	5	16-QAM	1	12	22.30	1	0-1
	1852.5	18625	5	16-QAM	1	24	22.52	1	0-1
	1852.5	18625	5	16-QAM	12	0	21.22	2	0-2
	1852.5	18625	5	16-QAM	12	6	21.28	2	0-2
	1852.5	18625	5	16-QAM	12	13	21.50	2	0-2
	1852.5	18625	5	16-QAM	25	0	21.22	2	0-2
Mid	1880.0	18900	5	QPSK	1	0	23.42	0	0
	1880.0	18900	5	QPSK	1	12	23.47	0	0
	1880.0	18900	5	QPSK	1	24	23.41	0	0
	1880.0	18900	5	QPSK	12	0	22.56	1	0-1
	1880.0	18900	5	QPSK	12	6	22.56	1	0-1
	1880.0	18900	5	QPSK	12	13	22.60	1	0-1
	1880.0	18900	5	QPSK	25	0	22.68	1	0-1
	1880.0	18900	5	16-QAM	1	0	22.64	1	0-1
	1880.0	18900	5	16-QAM	1	12	22.69	1	0-1
	1880.0	18900	5	16-QAM	1	24	22.65	1	0-1
	1880.0	18900	5	16-QAM	12	0	21.46	2	0-2
	1880.0	18900	5	16-QAM	12	6	21.48	2	0-2
High	1907.5	19175	5	QPSK	1	0	23.12	0	0
	1907.5	19175	5	QPSK	1	12	23.00	0	0
	1907.5	19175	5	QPSK	1	24	23.01	0	0
	1907.5	19175	5	QPSK	12	0	22.03	1	0-1
	1907.5	19175	5	QPSK	12	6	22.06	1	0-1
	1907.5	19175	5	QPSK	12	13	22.02	1	0-1
	1907.5	19175	5	QPSK	25	0	22.02	1	0-1
	1907.5	19175	5	16-QAM	1	0	22.20	1	0-1
	1907.5	19175	5	16-QAM	1	12	22.03	1	0-1
	1907.5	19175	5	16-QAM	1	24	22.06	1	0-1
	1907.5	19175	5	16-QAM	12	0	21.03	2	0-2
	1907.5	19175	5	16-QAM	12	6	21.05	2	0-2
	1907.5	19175	5	16-QAM	12	13	21.00	2	0-2
	1907.5	19175	5	16-QAM	25	0	21.04	2	0-2

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 32 of 82	

Table 9-17
LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1851.5	18615	3	QPSK	1	0	23.00	0	0
	1851.5	18615	3	QPSK	1	7	23.05	0	0
	1851.5	18615	3	QPSK	1	14	23.14	0	0
	1851.5	18615	3	QPSK	8	0	22.12	1	0-1
	1851.5	18615	3	QPSK	8	4	22.17	1	0-1
	1851.5	18615	3	QPSK	8	7	22.17	1	0-1
	1851.5	18615	3	QPSK	15	0	22.17	1	0-1
	1851.5	18615	3	16-QAM	1	0	22.25	1	0-1
	1851.5	18615	3	16-QAM	1	7	22.31	1	0-1
	1851.5	18615	3	16-QAM	1	14	22.40	1	0-1
	1851.5	18615	3	16-QAM	8	0	21.17	2	0-2
	1851.5	18615	3	16-QAM	8	4	21.23	2	0-2
	1851.5	18615	3	16-QAM	8	7	21.28	2	0-2
	1851.5	18615	3	16-QAM	15	0	21.12	2	0-2
	1880.0	18900	3	QPSK	1	0	23.58	0	0
Mid	1880.0	18900	3	QPSK	1	7	23.61	0	0
	1880.0	18900	3	QPSK	1	14	23.55	0	0
	1880.0	18900	3	QPSK	8	0	22.52	1	0-1
	1880.0	18900	3	QPSK	8	4	22.54	1	0-1
	1880.0	18900	3	QPSK	8	7	22.50	1	0-1
	1880.0	18900	3	QPSK	15	0	22.57	1	0-1
	1880.0	18900	3	16-QAM	1	0	22.68	1	0-1
	1880.0	18900	3	16-QAM	1	7	22.64	1	0-1
	1880.0	18900	3	16-QAM	1	14	22.58	1	0-1
	1880.0	18900	3	16-QAM	8	0	21.46	2	0-2
	1880.0	18900	3	16-QAM	8	4	21.42	2	0-2
	1880.0	18900	3	16-QAM	8	7	21.45	2	0-2
	1880.0	18900	3	16-QAM	15	0	21.49	2	0-2
	1908.5	19185	3	QPSK	1	0	23.10	0	0
	1908.5	19185	3	QPSK	1	7	23.05	0	0
High	1908.5	19185	3	QPSK	1	14	23.02	0	0
	1908.5	19185	3	QPSK	8	0	22.06	1	0-1
	1908.5	19185	3	QPSK	8	4	22.04	1	0-1
	1908.5	19185	3	QPSK	8	7	22.01	1	0-1
	1908.5	19185	3	QPSK	15	0	22.02	1	0-1
	1908.5	19185	3	16-QAM	1	0	22.08	1	0-1
	1908.5	19185	3	16-QAM	1	7	22.12	1	0-1
	1908.5	19185	3	16-QAM	1	14	22.03	1	0-1
	1908.5	19185	3	16-QAM	8	0	21.02	2	0-2
	1908.5	19185	3	16-QAM	8	4	21.04	2	0-2
	1908.5	19185	3	16-QAM	8	7	21.03	2	0-2
	1908.5	19185	3	16-QAM	15	0	21.00	2	0-2

Table 9-18
LTE Band 2 (PCS) Conducted Powers – 1.4 MHz Bandwidth

	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
Low	1850.7	18607	1.4	QPSK	1	0	23.05	0	0
	1850.7	18607	1.4	QPSK	1	2	23.00	0	0
	1850.7	18607	1.4	QPSK	1	5	23.03	0	0
	1850.7	18607	1.4	QPSK	3	0	23.00	0	0
	1850.7	18607	1.4	QPSK	3	2	23.08	0	0
	1850.7	18607	1.4	QPSK	3	3	23.02	0	0
	1850.7	18607	1.4	QPSK	6	0	22.09	1	0-1
	1850.7	18607	1.4	16-QAM	1	0	22.07	1	0-1
	1850.7	18607	1.4	16-QAM	1	2	22.21	1	0-1
	1850.7	18607	1.4	16-QAM	1	5	22.21	1	0-1
	1850.7	18607	1.4	16-QAM	3	0	22.03	1	0-1
	1850.7	18607	1.4	16-QAM	3	2	22.08	1	0-1
	1850.7	18607	1.4	16-QAM	3	3	22.05	1	0-1
	1850.7	18607	1.4	16-QAM	6	0	21.07	2	0-2
Mid	1880.0	18900	1.4	QPSK	1	0	23.61	0	0
	1880.0	18900	1.4	QPSK	1	2	23.68	0	0
	1880.0	18900	1.4	QPSK	1	5	23.58	0	0
	1880.0	18900	1.4	QPSK	3	0	23.54	0	0
	1880.0	18900	1.4	QPSK	3	2	23.50	0	0
	1880.0	18900	1.4	QPSK	3	3	23.60	0	0
	1880.0	18900	1.4	QPSK	6	0	22.58	1	0-1
	1880.0	18900	1.4	16-QAM	1	0	22.64	1	0-1
	1880.0	18900	1.4	16-QAM	1	2	22.66	1	0-1
	1880.0	18900	1.4	16-QAM	1	5	22.66	1	0-1
	1880.0	18900	1.4	16-QAM	3	0	22.48	1	0-1
	1880.0	18900	1.4	16-QAM	3	2	22.51	1	0-1
	1880.0	18900	1.4	16-QAM	3	3	22.52	1	0-1
	1880.0	18900	1.4	16-QAM	6	0	21.52	2	0-2
High	1909.3	19193	1.4	QPSK	1	0	23.10	0	0
	1909.3	19193	1.4	QPSK	1	2	23.05	0	0
	1909.3	19193	1.4	QPSK	1	5	23.00	0	0
	1909.3	19193	1.4	QPSK	3	0	23.02	0	0
	1909.3	19193	1.4	QPSK	3	2	23.04	0	0
	1909.3	19193	1.4	QPSK	3	3	23.12	0	0
	1909.3	19193	1.4	QPSK	6	0	22.01	1	0-1
	1909.3	19193	1.4	16-QAM	1	0	22.05	1	0-1
	1909.3	19193	1.4	16-QAM	1	2	22.09	1	0-1
	1909.3	19193	1.4	16-QAM	1	5	22.00	1	0-1
	1909.3	19193	1.4	16-QAM	3	0	22.10	1	0-1
	1909.3	19193	1.4	16-QAM	3	2	22.02	1	0-1
	1909.3	19193	1.4	16-QAM	3	3	22.00	1	0-1
	1909.3	19193	1.4	16-QAM	6	0	21.05	2	0-2

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 33 of 82		

9.4 Antenna 1 WLAN Conducted Powers

Table 9-19
IEEE 802.11b Average RF Power Antenna 1

Mode	Freq	Channel	802.11b (2.4 GHz) Conducted Power [dBm]			
			Data Rate [Mbps]			
	[MHz]		1	2	5.5	11
802.11b	2412	1*	16.84	16.95	17.05	17.04
802.11b	2437	6*	16.36	16.60	16.61	16.59
802.11b	2462	11*	16.36	16.55	16.63	16.61

Table 9-20
IEEE 802.11g Average RF Power Antenna 1

Mode	Freq	Channel	802.11g (2.4 GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
	[MHz]		6	9	12	18	24	36	48	54
802.11g	2412	1	13.34	13.46	13.49	13.34	13.48	13.44	13.51	13.33
802.11g	2437	6	14.22	14.18	14.33	14.28	14.48	14.41	14.49	14.34
802.11g	2462	11	14.12	14.13	14.22	14.10	14.27	14.28	14.38	14.22

Table 9-21
IEEE 802.11n Average RF Power Antenna 1

Mode	Freq	Channel	802.11n (2.4 GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
	[MHz]		6.5	13	20	26	39	52	58	65
802.11n	2412	1	13.40	13.27	13.33	13.52	13.49	13.51	13.61	13.42
802.11n	2437	6	13.20	13.22	13.23	13.48	13.52	13.45	13.52	13.49
802.11n	2462	11	12.92	12.99	13.06	13.34	13.31	13.29	13.25	13.27

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 34 of 82

Table 9-22
IEEE 802.11a Average RF Power Antenna 1

Mode	Freq [MHz]	Channel	802.11a (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11a	5180	36*	11.14	11.14	11.30	11.30	11.35	11.27	11.37	11.23
802.11a	5200	40	11.17	11.15	11.37	11.26	11.41	11.30	11.43	11.35
802.11a	5220	44	11.20	11.20	11.36	11.39	11.44	11.33	11.41	11.30
802.11a	5240	48*	11.14	11.20	11.31	11.30	11.33	11.31	11.28	11.15
802.11a	5260	52*	11.36	11.37	11.45	11.40	11.49	11.46	11.41	11.33
802.11a	5280	56	11.34	11.38	11.41	11.39	11.39	11.49	11.41	11.35
802.11a	5300	60	11.26	11.22	11.28	11.32	11.33	11.44	11.30	11.16
802.11a	5320	64*	11.24	11.31	11.25	11.32	11.44	11.37	11.29	11.17
802.11a	5500	100	10.64	10.70	10.70	10.51	10.88	10.79	10.87	10.64
802.11a	5520	104*	10.62	10.74	10.70	10.50	10.85	10.80	10.83	10.61
802.11a	5540	108	10.96	11.03	10.99	10.83	11.13	11.20	11.21	10.97
802.11a	5560	112	11.01	11.07	11.10	10.89	11.32	11.13	11.24	11.06
802.11a	5580	116*	11.10	11.23	11.16	11.02	11.30	11.31	11.42	11.05
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	11.34	11.44	11.39	11.10	11.49	11.43	11.46	11.33
802.11a	5680	136*	11.42	11.46	11.41	11.21	11.43	11.47	11.42	11.36
802.11a	5700	140	11.24	11.24	11.21	11.13	11.49	11.44	11.47	11.17
802.11a	5745	149*	10.76	10.85	10.93	10.81	11.00	10.94	10.86	10.86
802.11a	5765	153	10.68	10.79	10.79	10.71	10.96	10.88	10.80	10.76
802.11a	5785	157*	10.55	10.57	10.74	10.65	10.72	10.72	10.66	10.70
802.11a	5805	161	10.50	10.61	10.74	10.61	10.67	10.59	10.60	10.59
802.11a	5825	165*	10.45	10.59	10.66	10.51	10.63	10.60	10.49	10.54

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 than the default channels, these “required channels” are considered for SAR testing instead of the default channels.

Table 9-23
IEEE 802.11n Average RF Power – 20 MHz Bandwidth Antenna 1

Mode	Freq [MHz]	Channel	20MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6.5	13	19.5	26	39	52	58.5	65
802.11n	5180	36	10.86	10.83	10.83	10.94	10.99	11.06	11.07	11.09
802.11n	5200	40	10.83	10.77	10.75	10.89	10.99	11.05	11.04	11.06
802.11n	5220	44	11.12	11.11	11.14	11.20	11.28	11.30	11.35	11.32
802.11n	5240	48	11.01	10.96	10.97	11.07	11.20	11.27	11.18	11.21
802.11n	5260	52	11.05	11.05	11.24	10.71	10.78	10.90	10.78	10.80
802.11n	5280	56	10.51	10.56	10.69	10.27	10.32	10.37	10.25	10.22
802.11n	5300	60	10.46	10.51	10.58	10.17	10.19	10.37	10.25	10.28
802.11n	5320	64	10.35	10.42	10.47	9.96	10.13	10.14	10.07	10.14
802.11n	5500	100	10.80	10.66	10.60	11.00	10.90	11.00	11.08	11.00
802.11n	5520	104	10.83	10.70	10.56	10.99	10.92	10.96	11.03	10.98
802.11n	5540	108	11.01	10.88	10.85	11.24	11.11	11.30	11.32	11.26
802.11n	5560	112	11.16	11.06	10.98	11.31	11.22	11.44	11.49	11.43
802.11n	5580	116	11.19	11.03	11.02	11.41	11.33	11.37	11.49	11.35
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	11.10	10.93	10.92	11.22	11.26	11.32	11.34	11.25
802.11n	5680	136	11.01	10.89	10.75	11.17	11.06	11.21	11.24	11.24
802.11n	5700	140	10.83	10.70	10.65	10.94	10.89	11.01	11.19	10.98
802.11n	5745	149	10.33	10.26	10.25	10.54	10.49	10.51	10.54	10.57
802.11n	5765	153	10.20	10.16	10.12	10.38	10.33	10.32	10.43	10.41
802.11n	5785	157	10.10	10.00	10.04	10.35	10.18	10.23	10.37	10.32
802.11n	5805	161	10.07	9.97	9.95	10.28	10.24	10.27	10.31	10.29
802.11n	5825	165	10.04	9.95	9.95	10.24	10.18	10.17	10.22	10.27

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 35 of 82	

Table 9-24
IEEE 802.11n Average RF Power – 40 MHz Bandwidth Antenna 1

Mode	Freq [MHz]	Channel	40MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			13.5	27	40.5	54	81	108	121.5	135
802.11n	5190	38	9.38	9.28	9.22	9.18	9.22	9.27	9.35	9.40
802.11n	5230	46	9.19	9.07	9.12	8.99	8.99	9.04	9.13	9.23
802.11n	5270	54	9.25	9.03	9.09	9.31	9.24	9.27	9.33	9.25
802.11n	5310	62	8.89	8.62	8.68	8.98	8.83	8.91	8.89	8.82
802.11n	5510	102	8.34	8.37	8.37	8.43	8.45	8.51	8.64	8.58
802.11n	5550	110	8.51	8.57	8.55	8.61	8.54	8.69	8.80	8.72
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	8.75	8.77	8.80	8.79	8.82	8.99	9.06	9.02
802.11n	5755	151	8.90	8.77	8.72	8.89	8.93	9.05	8.98	8.86
802.11n	5795	159	8.21	8.07	8.05	8.23	8.19	8.29	8.29	8.18

Table 9-25
IEEE 802.11ac Average RF Power – 80 MHz Bandwidth Antenna 1

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
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac	5210	42	8.62	8.81	8.81	8.86	8.70	8.80	8.76	8.81	8.70	8.75
802.11ac	5290	58	8.95	8.90	9.13	9.19	9.14	9.15	9.10	9.18	9.08	9.11
802.11ac	5530	106	8.49	8.44	8.42	8.73	8.68	8.55	8.73	8.71	8.72	8.69
802.11ac	5775	155	8.49	8.41	8.43	8.73	8.72	8.65	8.60	8.73	8.70	8.68

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

- For 2.4 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11b were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.
- For 5 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11a were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11n) 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 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 was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.
- 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.

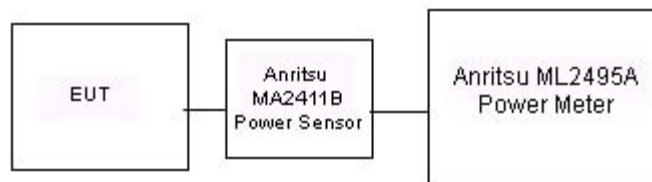


Figure 9-3
Power Measurement Setup for Bandwidths < 50 MHz

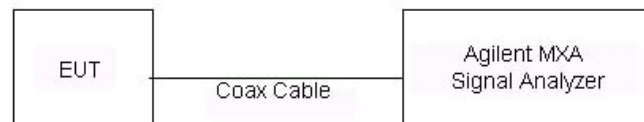


Figure 9-4
Power Measurement Setup for Bandwidths > 50 MHz

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 36 of 82

9.5 Antenna 2 WLAN Conducted Powers

Table 9-26
IEEE 802.11b Average RF Power Antenna 2

Mode	Freq	Channel	802.11b (2.4 GHz) Conducted Power [dBm]			
			Data Rate [Mbps]			
	[MHz]		1	2	5.5	11
802.11b	2412	1*	16.97	17.06	17.12	17.15
802.11b	2437	6*	16.87	16.96	17.02	17.05
802.11b	2462	11*	16.76	16.85	16.91	16.94

Table 9-27
IEEE 802.11g Average RF Power Antenna 2

Mode	Freq	Channel	802.11g (2.4 GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
	[MHz]		6	9	12	18	24	36	48	54
802.11g	2412	1	14.08	14.06	14.01	13.94	14.29	14.18	14.10	14.32
802.11g	2437	6	14.04	14.14	13.92	14.05	14.24	14.09	14.11	14.16
802.11g	2462	11	14.01	14.00	13.93	13.92	14.23	13.98	14.01	14.18

Table 9-28
IEEE 802.11n Average RF Power Antenna 2

Mode	Freq	Channel	802.11n (2.4 GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
	[MHz]		6.5	13	20	26	39	52	58	65
802.11n	2412	1	13.13	13.20	13.10	13.30	13.41	13.29	13.39	13.32
802.11n	2437	6	13.19	13.12	13.11	13.31	13.38	13.24	13.35	13.26
802.11n	2462	11	13.15	13.05	13.00	13.22	13.23	13.15	13.28	13.21

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 37 of 82

Table 9-29
IEEE 802.11a Average RF Power Antenna 2

Mode	Freq [MHz]	Channel	802.11a (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11a	5180	36*	11.03	11.05	10.85	11.07	10.59	10.55	10.48	10.75
802.11a	5200	40	11.01	11.03	10.75	11.03	10.51	10.60	10.54	10.58
802.11a	5220	44	11.08	11.12	10.99	11.23	10.68	10.63	10.46	10.54
802.11a	5240	48*	10.91	10.93	10.81	11.16	10.51	10.49	10.47	10.54
802.11a	5260	52*	11.16	11.28	11.06	11.15	10.52	10.49	10.59	10.55
802.11a	5280	56	11.12	11.26	11.18	11.21	10.62	10.59	10.50	10.63
802.11a	5300	60	11.14	11.16	11.08	11.15	10.61	10.54	10.29	10.43
802.11a	5320	64*	11.04	11.22	11.13	11.09	10.46	10.50	10.49	10.61
802.11a	5500	100	11.18	11.30	11.24	11.26	10.68	10.74	10.54	10.63
802.11a	5520	104*	11.23	11.24	11.32	11.39	10.76	10.72	10.77	10.87
802.11a	5540	108	11.26	11.20	11.18	11.24	10.71	10.65	10.57	10.80
802.11a	5560	112	11.18	11.23	11.28	11.25	10.67	10.70	10.63	10.64
802.11a	5580	116*	11.09	11.10	11.12	11.18	10.67	10.62	10.52	10.61
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	11.06	11.09	11.14	11.17	10.48	10.45	10.41	10.51
802.11a	5680	136*	11.07	11.11	11.06	11.10	10.56	10.49	10.43	10.50
802.11a	5700	140	11.05	11.08	11.06	11.13	10.47	10.46	10.39	10.56
802.11a	5745	149*	10.81	10.86	10.74	10.85	11.04	11.02	10.90	11.01
802.11a	5765	153	10.90	10.99	10.92	10.90	11.13	11.09	11.00	11.13
802.11a	5785	157*	10.78	10.73	10.68	10.80	11.01	10.92	10.92	11.08
802.11a	5805	161	10.76	10.83	10.71	10.74	10.98	11.00	10.98	10.99
802.11a	5825	165*	10.58	10.57	10.43	10.63	10.75	10.81	10.80	10.79

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 than the default channels, these “required channels” are considered for SAR testing instead of the default channels.

Table 9-30
IEEE 802.11n Average RF Power – 20 MHz Bandwidth Antenna 2

Mode	Freq [MHz]	Channel	20MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			6.5	13	19.5	26	39	52	58.5	65
802.11n	5180	36	10.96	10.88	10.89	11.12	11.10	11.05	11.05	11.01
802.11n	5200	40	11.07	10.93	10.97	11.15	11.31	11.15	11.11	11.18
802.11n	5220	44	10.83	10.77	10.76	11.05	11.03	10.99	11.02	10.90
802.11n	5240	48	10.94	10.89	10.99	11.26	11.29	11.18	11.27	11.28
802.11n	5260	52	11.14	11.13	11.18	10.52	10.47	10.52	10.53	10.54
802.11n	5280	56	11.21	11.26	11.25	10.56	10.63	10.53	10.64	10.61
802.11n	5300	60	10.98	11.01	11.04	10.42	10.41	10.34	10.35	10.31
802.11n	5320	64	11.02	11.00	11.10	10.41	10.53	10.48	10.47	10.49
802.11n	5500	100	11.19	11.19	11.22	10.64	10.62	10.54	10.67	10.59
802.11n	5520	104	11.13	11.24	11.18	10.63	10.61	10.52	10.65	10.59
802.11n	5540	108	11.12	11.01	11.04	10.57	10.51	10.43	10.64	10.49
802.11n	5560	112	11.01	11.09	11.10	10.52	10.57	10.40	10.46	10.46
802.11n	5580	116	11.07	10.92	10.85	10.36	10.30	10.34	10.42	10.28
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	11.19	11.07	11.21	10.61	10.63	10.61	10.56	10.57
802.11n	5680	136	10.82	10.75	10.81	10.34	10.36	10.24	10.28	10.10
802.11n	5700	140	10.87	10.89	10.88	10.34	10.28	10.27	10.29	10.23
802.11n	5745	149	10.89	10.76	10.73	11.05	11.06	10.98	11.06	11.03
802.11n	5765	153	10.76	10.81	10.79	11.00	10.99	10.88	10.91	10.90
802.11n	5785	157	10.67	10.74	10.73	10.98	11.01	10.98	11.01	10.89
802.11n	5805	161	10.65	10.66	10.55	10.84	10.88	10.93	10.91	10.81
802.11n	5825	165	10.58	10.59	10.70	10.94	10.93	10.78	10.86	10.87

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 38 of 82	

Table 9-31
IEEE 802.11n Average RF Power – 40 MHz Bandwidth Antenna 2

Mode	Freq [MHz]	Channel	40MHz BW 802.11n (5GHz) Conducted Power [dBm]							
			Data Rate [Mbps]							
			13.5	27	40.5	54	81	108	121.5	135
802.11n	5190	38	8.91	9.02	9.01	8.44	8.40	8.28	8.30	8.29
802.11n	5230	46	8.95	8.98	9.06	8.38	8.47	8.36	8.48	8.34
802.11n	5270	54	9.03	9.05	9.05	9.32	9.35	9.29	9.34	9.36
802.11n	5310	62	9.06	9.21	9.31	9.33	9.42	9.37	9.43	9.37
802.11n	5510	102	9.13	9.17	9.21	9.44	9.45	9.42	9.48	9.44
802.11n	5550	110	9.19	9.32	9.27	9.48	9.49	9.46	9.43	9.45
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	9.04	9.07	9.01	9.20	9.16	9.23	9.28	9.31
802.11n	5755	151	8.84	8.93	8.92	8.14	8.26	8.17	8.27	8.19
802.11n	5795	159	8.69	8.82	8.73	8.02	7.98	7.98	8.12	8.00

Table 9-32
IEEE 802.11ac Average RF Power – 80 MHz Bandwidth Antenna 2

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
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac	5210	42	8.61	8.62	8.66	8.02	7.93	8.03	8.03	8.05	8.00	8.25
802.11ac	5290	58	8.76	8.64	8.67	8.03	8.24	8.07	8.09	8.04	8.09	8.14
802.11ac	5530	106	8.87	8.91	8.76	8.39	8.18	8.20	8.21	8.18	8.19	8.28
802.11ac	5775	155	8.81	8.61	8.68	8.18	8.39	8.30	8.37	8.39	8.37	8.31

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

- For 2.4 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11b were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11g/n) were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of IEEE 802.11b mode.
- For 5 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11a were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11n) 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 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 was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.
- 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.

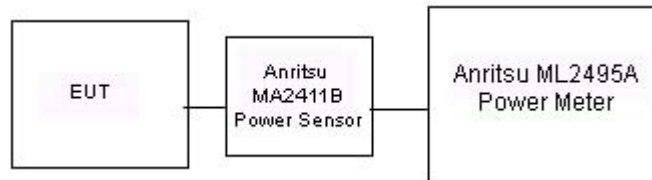


Figure 9-5
Power Measurement Setup for Bandwidths < 50 MHz

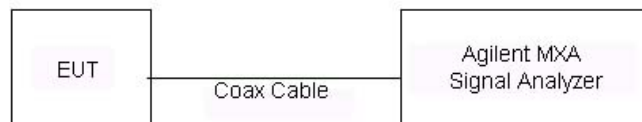


Figure 9-6
Power Measurement Setup for Bandwidths > 50 MHz

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 39 of 82	

9.6 MIMO WLAN Conducted Powers

Per KDB 662911 D01v02r01, the individual spectra for each 2x2 MIMO WIFI Antenna were summed mathematically in linear power units for the MIMO output power measurements.

Table 9-33
IEEE 802.11n Average RF Power MIMO

Mode	Freq [MHz]	Channel	802.11n (2.4 GHz) Conducted Power [dBm]
			Data Rate [Mbps]
			13
802.11n	2412	1	13.06
802.11n	2437	6	13.89
802.11n	2462	11	13.79

Table 9-34
IEEE 802.11n Average RF Power – 20 MHz Bandwidth MIMO

Mode	Freq [MHz]	Channel	20MHz BW 802.11n (5GHz) Conducted Power [dBm]
			Data Rate [Mbps]
			13
802.11n	5180	36*	10.82
802.11n	5200	40	10.88
802.11n	5220	44	10.92
802.11n	5240	48*	10.87
802.11n	5260	52*	10.76
802.11n	5280	56	10.82
802.11n	5300	60	10.77
802.11n	5320	64*	10.59
802.11n	5500	100	10.72
802.11n	5520	104*	10.75
802.11n	5540	108	10.73
802.11n	5560	112	10.72
802.11n	5580	116*	10.58
802.11n	5600	120	N/A
802.11n	5620	124*	N/A
802.11n	5640	128	N/A
802.11n	5660	132	10.52
802.11n	5680	136*	10.43
802.11n	5700	140	10.45
802.11n	5745	149*	10.40
802.11n	5765	153	10.27
802.11n	5785	157*	10.25
802.11n	5805	161	10.28
802.11n	5825	165*	10.24

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

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 40 of 82

Table 9-35
IEEE 802.11n Average RF Power – 40 MHz Bandwidth MIMO

Mode	Freq	Channel	40MHz BW 802.11n (5GHz) Conducted Power [dBm]
			Data Rate [Mbps]
	[MHz]		27
802.11n	5190	38	8.60
802.11n	5230	46	8.58
802.11n	5270	54	8.28
802.11n	5310	62	8.36
802.11n	5510	102	8.37
802.11n	5550	110	8.39
802.11n	5590	118	N/A
802.11n	5630	126	N/A
802.11n	5670	134	8.18
802.11n	5755	151	9.00
802.11n	5795	159	8.94

Table 9-36
IEEE 802.11ac Average RF Power – 80 MHz Bandwidth MIMO

Mode	Freq [MHz]	Channel	80MHz BW 802.11ac (5GHz) Conducted Power [dBm]
			Data Rate [Mbps]
			58.5
802.11ac	5210	42	8.57
802.11ac	5290	58	9.24
802.11ac	5530	106	9.37
802.11ac	5775	155	8.87

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

- For 2.4 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11n were selected for SAR evaluation.
- For 5 GHz, highest average RF output power channel for the lowest data rate for IEEE 802.11n were selected for SAR evaluation.
- 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.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 41 of 82

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
02/17/2014	740H	22.6	710	0.894	43.792	0.890	42.149	0.45%	3.90%
			725	0.904	43.648	0.891	42.071	1.46%	3.75%
			740	0.920	43.468	0.893	41.994	3.02%	3.51%
			755	0.933	43.196	0.894	41.916	4.36%	3.05%
02/14/2014	835H	24.2	820	0.884	40.992	0.899	41.578	-1.67%	-1.41%
			835	0.896	40.791	0.900	41.500	-0.44%	-1.71%
			850	0.911	40.628	0.916	41.500	-0.55%	-2.10%
02/13/2014	1750H	22.4	1710	1.324	38.698	1.348	40.142	-1.78%	-3.60%
			1750	1.359	38.427	1.371	40.079	-0.88%	-4.12%
			1790	1.406	38.356	1.394	40.016	0.86%	-4.15%
02/26/2014	1750H	21.7	1710	1.378	39.724	1.348	40.142	2.23%	-1.04%
			1750	1.419	39.554	1.371	40.079	3.50%	-1.31%
			1790	1.458	39.372	1.394	40.016	4.59%	-1.61%
02/14/2014	1900H	23.0	1850	1.341	38.513	1.400	40.000	-4.21%	-3.72%
			1880	1.370	38.396	1.400	40.000	-2.14%	-4.01%
			1910	1.401	38.281	1.400	40.000	0.07%	-4.30%
02/06/2014	2450H	21.4	2401	1.782	38.220	1.756	39.287	1.48%	-2.72%
			2450	1.832	38.027	1.800	39.200	1.78%	-2.99%
			2499	1.890	37.837	1.853	39.138	2.00%	-3.32%
02/12/2014	5200H - 5800H	22.8	5200	4.520	37.219	4.655	35.986	-2.90%	3.43%
			5220	4.530	37.142	4.676	35.963	-3.12%	3.28%
			5260	4.564	37.084	4.717	35.917	-3.24%	3.25%
			5280	4.594	37.096	4.737	35.894	-3.02%	3.35%
			5300	4.624	37.071	4.758	35.871	-2.82%	3.35%
			5500	4.782	36.840	4.963	35.643	-3.65%	3.36%
			5520	4.831	36.733	4.983	35.620	-3.05%	3.12%
			5540	4.885	36.698	5.004	35.597	-2.38%	3.09%
			5600	4.885	36.817	5.065	35.529	-3.55%	3.63%
			5680	5.026	36.611	5.147	35.437	-2.35%	3.31%
			5745	5.033	36.506	5.214	35.363	-3.47%	3.23%
			5765	5.079	36.360	5.234	35.340	-2.96%	2.89%
			5785	5.133	36.466	5.255	35.317	-2.32%	3.25%
			5800	5.178	36.537	5.270	35.300	-1.75%	3.50%
			5805	5.182	36.540	5.275	35.294	-1.76%	3.53%

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 42 of 82

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
02/14/2014	740B	21.1	710	0.927	55.295	0.960	55.804	-3.44%	-0.91%
			725	0.940	55.194	0.961	55.629	-2.19%	-0.78%
			740	0.956	55.018	0.963	55.570	-0.73%	-0.99%
			755	0.968	54.825	0.964	55.512	0.41%	-1.24%
02/13/2014	835B	20.3	820	0.931	53.171	0.969	55.258	-3.92%	-3.78%
			835	0.945	52.996	0.970	55.200	-2.58%	-3.99%
			850	0.960	52.845	0.988	55.154	-2.83%	-4.19%
02/13/2014	1750B	22.3	1710	1.481	52.610	1.463	53.537	1.23%	-1.73%
			1750	1.524	52.407	1.488	53.432	2.42%	-1.92%
			1790	1.573	52.322	1.514	53.326	3.90%	-1.88%
02/24/2014	1750B	23.0	1710	1.433	51.708	1.463	53.537	-2.05%	-3.42%
			1750	1.476	51.565	1.488	53.432	-0.81%	-3.49%
			1790	1.524	51.460	1.514	53.326	0.66%	-3.50%
02/26/2014	1750B	22.6	1710	1.481	52.850	1.463	53.537	1.23%	-1.28%
			1750	1.528	52.730	1.488	53.432	2.69%	-1.31%
			1790	1.568	52.574	1.514	53.326	3.57%	-1.41%
02/13/2014	1900B	24.1	1850	1.456	53.000	1.520	53.300	-4.21%	-0.56%
			1880	1.489	52.930	1.520	53.300	-2.04%	-0.69%
			1910	1.522	52.832	1.520	53.300	0.13%	-0.88%
02/03/2014	2450B	22.8	2401	1.971	51.560	1.903	52.765	3.57%	-2.28%
			2450	2.039	51.366	1.950	52.700	4.56%	-2.53%
			2499	2.099	51.177	2.019	52.638	3.96%	-2.78%
			5200	5.168	47.598	5.299	49.014	-2.47%	-2.89%
02/03/2014	5200B-5800B	22.6	5220	5.189	47.462	5.323	48.987	-2.52%	-3.11%
			5260	5.259	47.183	5.369	48.933	-2.05%	-3.58%
			5280	5.313	47.205	5.393	48.906	-1.48%	-3.48%
			5300	5.352	47.314	5.416	48.879	-1.18%	-3.20%
			5500	5.579	46.639	5.650	48.607	-1.26%	-4.05%
			5520	5.640	46.533	5.673	48.580	-0.58%	-4.21%
			5540	5.696	46.550	5.696	48.553	0.00%	-4.13%
			5580	5.764	46.751	5.743	48.499	0.37%	-3.60%
			5600	5.749	46.646	5.766	48.471	-0.29%	-3.77%
			5680	5.927	46.381	5.860	48.363	1.14%	-4.10%
			5745	5.965	46.140	5.936	48.275	0.49%	-4.42%
			5765	5.986	45.986	5.959	48.248	0.45%	-4.69%
			5785	6.049	45.975	5.982	48.220	1.12%	-4.66%
			5800	6.097	46.032	6.000	48.200	1.62%	-4.50%
02/09/2014	5800B	22.5	5805	6.109	46.051	6.006	48.193	1.71%	-4.44%
			5745	6.102	46.334	5.936	48.275	2.80%	-4.02%
			5765	6.128	46.297	5.959	48.248	2.84%	-4.04%
			5785	6.148	46.266	5.982	48.220	2.77%	-4.05%
			5800	6.172	46.231	6.000	48.200	2.87%	-4.09%
02/09/2014	5800B	22.5	5805	6.177	46.187	6.006	48.193	2.85%	-4.16%

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

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 43 of 82	

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

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} (%)
B	750	HEAD	02/17/2014	23.2	22.6	0.100	1054	3288	0.856	8.500	8.560	0.71%
H	835	HEAD	02/14/2014	24.5	23.5	0.100	4d119	3318	0.925	9.680	9.250	-4.44%
B	1750	HEAD	02/13/2014	24.0	22.4	0.100	1008	3288	3.440	36.800	34.400	-6.52%
C	1750	HEAD	02/26/2014	19.1	21.1	0.100	1008	3263	3.920	36.800	39.200	6.52%
D	1900	HEAD	02/14/2014	23.2	23.0	0.100	5d149	3022	3.750	40.400	37.500	-7.18%
K	2450	HEAD	02/06/2014	24.3	21.4	0.100	719	3333	5.320	53.200	53.200	0.00%
E	5200	HEAD	02/12/2014	24.0	23.0	0.040	1057	3914	3.040	78.000	76.000	-2.56%
E	5300	HEAD	02/12/2014	24.0	23.0	0.040	1057	3914	3.200	83.000	80.000	-3.61%
E	5500	HEAD	02/12/2014	24.4	23.1	0.040	1057	3914	3.160	84.300	79.000	-6.29%
E	5600	HEAD	02/12/2014	24.5	23.1	0.040	1057	3914	3.180	83.500	79.500	-4.79%
E	5800	HEAD	02/12/2014	24.4	23.1	0.040	1057	3914	2.900	79.300	72.500	-8.58%
C	750	BODY	02/14/2014	21.7	20.8	0.100	1054	3263	0.852	8.720	8.520	-2.29%
C	835	BODY	02/13/2014	24.4	19.9	0.100	4d133	3263	0.926	9.610	9.260	-3.64%
B	1750	BODY	02/13/2014	24.1	22.3	0.100	1008	3288	3.700	38.200	37.000	-3.14%
G	1750	BODY	02/24/2014	24.5	23.0	0.100	1051	3209	3.570	37.800	35.700	-5.56%
B	1750	BODY	02/26/2014	23.4	22.6	0.100	1008	3288	3.820	38.200	38.200	0.00%
I	1900	BODY	02/13/2014	24.5	24.1	0.100	5d149	3319	3.760	40.500	37.600	-7.16%
G	2450	BODY	02/03/2014	24.4	22.8	0.100	719	3209	5.050	51.700	50.500	-2.32%
E	5200	BODY	02/03/2014	24.5	22.6	0.040	1120	3914	3.110	76.600	77.750	1.50%
E	5300	BODY	02/03/2014	24.4	22.6	0.040	1120	3914	3.260	76.800	81.500	6.12%
E	5500	BODY	02/03/2014	24.3	22.6	0.040	1120	3914	3.270	79.800	81.750	2.44%
E	5600	BODY	02/03/2014	24.5	22.5	0.040	1120	3914	3.380	80.700	84.500	4.71%
E	5800	BODY	02/03/2014	24.5	22.7	0.040	1120	3914	3.050	75.500	76.250	0.99%
E	5800	BODY	02/09/2014	24.5	23.3	0.100	1120	3914	6.940	75.500	69.400	-8.08%

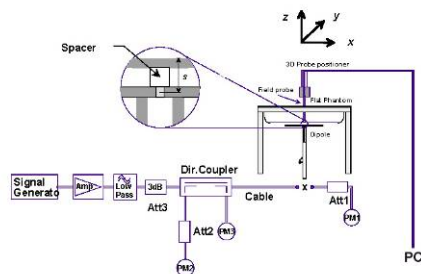


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 44 of 82

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	33.0	32.99	0.04	Right	Cheek	90DBA	1:8.3	0.135	1.002	0.135	
836.60	190	GSM 850	GSM	33.0	32.99	-0.10	Right	Tilt	90DBA	1:8.3	0.079	1.002	0.079	
836.60	190	GSM 850	GSM	33.0	32.99	-0.01	Left	Cheek	90DBA	1:8.3	0.160	1.002	0.160	A1
836.60	190	GSM 850	GSM	33.0	32.99	0.03	Left	Tilt	90DBA	1:8.3	0.105	1.002	0.105	
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	23.27	0.13	Right	Cheek	90DBA	1:1	0.059	1.054	0.062	
836.60	4183	UMTS 850	RMC	23.5	23.27	0.01	Right	Tilt	90DBA	1:1	0.040	1.054	0.042	
836.60	4183	UMTS 850	RMC	23.5	23.27	0.08	Left	Cheek	90DBA	1:1	0.080	1.054	0.084	A2
836.60	4183	UMTS 850	RMC	23.5	23.27	0.04	Left	Tilt	90DBA	1:1	0.051	1.054	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 11-3
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	-0.03	Right	Cheek	90DBA	1:1	0.438	1.038	0.455	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	-0.07	Right	Tilt	90DBA	1:1	0.352	1.038	0.365	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.03	Left	Cheek	90DBA	1:1	0.750	1.038	0.779	A3
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.03	Left	Tilt	90DBA	1:1	0.306	1.038	0.318	
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: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 45 of 82

Table 11-4
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	30.5	30.12	-0.01	Right	Cheek	90DBA	1:8.3	0.139	1.091	0.152	
1880.00	661	GSM 1900	GSM	30.5	30.12	0.16	Right	Tilt	90DBA	1:8.3	0.092	1.091	0.100	
1880.00	661	GSM 1900	GSM	30.5	30.12	-0.01	Left	Cheek	90DBA	1:8.3	0.281	1.091	0.307	A4
1880.00	661	GSM 1900	GSM	30.5	30.12	0.02	Left	Tilt	90DBA	1:8.3	0.107	1.091	0.117	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	-0.06	Right	Cheek	90D4C	1:1	0.281	1.052	0.296	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.02	Right	Tilt	90D4C	1:1	0.178	1.052	0.187	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.01	Left	Cheek	90D4C	1:1	0.577	1.052	0.607	A5
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.09	Left	Tilt	90D4C	1:1	0.200	1.052	0.210	
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 17 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)		
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	-0.09	0	Right	Cheek	QPSK	1	25	90D53	1:1	0.094	1.045	0.098	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	0.19	1	Right	Cheek	QPSK	25	0	90D53	1:1	0.070	1.021	0.071	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	-0.02	0	Right	Tilt	QPSK	1	25	90D53	1:1	0.048	1.045	0.050	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	0.18	1	Right	Tilt	QPSK	25	0	90D53	1:1	0.037	1.021	0.038	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	0.08	0	Left	Cheek	QPSK	1	25	90D53	1:1	0.121	1.045	0.126	A6
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	-0.16	1	Left	Cheek	QPSK	25	0	90D53	1:1	0.097	1.021	0.099	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	0.04	0	Left	Tilt	QPSK	1	25	90D53	1:1	0.054	1.045	0.056	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	0.10	1	Left	Tilt	QPSK	25	0	90D53	1:1	0.045	1.021	0.046	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 46 of 82

Table 11-7
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)	(W/kg)			
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.04	0	Right	Cheek	QPSK	1	49	90D53	1:1	0.199	1.026	0.204	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.05	1	Right	Cheek	QPSK	25	25	90D53	1:1	0.148	1.016	0.150	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.05	0	Right	Tilt	QPSK	1	49	90D53	1:1	0.123	1.026	0.126	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.06	1	Right	Tilt	QPSK	25	25	90D53	1:1	0.090	1.016	0.091	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.02	0	Left	Cheek	QPSK	1	49	90D53	1:1	0.242	1.026	0.248	A7
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	-0.02	1	Left	Cheek	QPSK	25	25	90D53	1:1	0.184	1.016	0.187	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.08	0	Left	Tilt	QPSK	1	49	90D53	1:1	0.140	1.026	0.144	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.03	1	Left	Tilt	QPSK	25	25	90D53	1:1	0.113	1.016	0.115	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-8
LTE Band 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	22.0	21.94	0.00	0	Right	Cheek	QPSK	1	50	90D4D	1:1	0.257	1.014	0.261	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	-0.12	1	Right	Cheek	QPSK	50	0	90D4D	1:1	0.194	1.016	0.197	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.04	0	Right	Tilt	QPSK	1	50	90D4D	1:1	0.191	1.014	0.194	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.03	1	Right	Tilt	QPSK	50	0	90D4D	1:1	0.154	1.016	0.156	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	-0.13	0	Left	Cheek	QPSK	1	50	90D4D	1:1	0.513	1.014	0.520	A8
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	-0.10	1	Left	Cheek	QPSK	50	0	90D4D	1:1	0.410	1.016	0.417	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.04	0	Left	Tilt	QPSK	1	50	90D4D	1:1	0.199	1.014	0.202	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.02	1	Left	Tilt	QPSK	50	0	90D4D	1:1	0.163	1.016	0.166	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-9
LTE Band 2 (PCS) Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #	
MHz	Ch.														(W/kg)	(W/kg)			
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	-0.10	0	Right	Cheek	QPSK	1	50	90D53	1:1	0.296	1.038	0.307	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	0.02	1	Right	Cheek	QPSK	50	50	90D53	1:1	0.208	1.047	0.218	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.05	0	Right	Tilt	QPSK	1	50	90D53	1:1	0.218	1.038	0.226	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	0.00	1	Right	Tilt	QPSK	50	50	90D53	1:1	0.164	1.047	0.172	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.01	0	Left	Cheek	QPSK	1	50	90D53	1:1	0.604	1.038	0.627	A9
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	-0.03	1	Left	Cheek	QPSK	50	50	90D53	1:1	0.476	1.047	0.498	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.09	0	Left	Tilt	QPSK	1	50	90D53	1:1	0.226	1.038	0.235	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	0.03	1	Left	Tilt	QPSK	50	50	90D53	1:1	0.181	1.047	0.190	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Head										
Spatial Peak									1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population									averaged over 1 gram										

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 47 of 82

Table 11-10
DTS Head SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	-0.01	Right	Cheek	F1185	1	1:1	0.557	1.164	0.648	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	0.01	Right	Tilt	F1185	1	1:1	0.558	1.164	0.650	A10
2412	1	IEEE 802.11b	DSSS	17.5	16.84	0.16	Left	Cheek	F1185	1	1:1	0.355	1.164	0.413	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	0.14	Left	Tilt	F1185	1	1:1	0.370	1.164	0.431	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	-0.02	Right	Cheek	00F0F	6	1:1	0.187	1.186	0.222	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	-0.03	Right	Tilt	00F0F	6	1:1	0.198	1.186	0.235	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	-0.14	Left	Cheek	00F0F	6	1:1	0.241	1.186	0.286	
5775	155	IEEE 802.11ac	OFDM	9.5	8.49	-0.17	Left	Cheek	00F0F	29.3	1:1	0.116	1.262	0.146	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	0.03	Left	Tilt	00F0F	6	1:1	0.158	1.186	0.187	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-11
NII Head SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maxim um Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5200	40	IEEE 802.11a	OFDM	11.5	11.17	0.01	Right	Cheek	00F0F	6	1:1	0.501	1.079	0.541	
5220	44	IEEE 802.11a	OFDM	11.5	11.20	0.01	Right	Cheek	00F0F	6	1:1	0.495	1.072	0.531	
5200	40	IEEE 802.11a	OFDM	11.5	11.17	0.07	Right	Tilt	00F0F	6	1:1	0.593	1.079	0.640	
5220	44	IEEE 802.11a	OFDM	11.5	11.20	-0.09	Right	Tilt	00F0F	6	1:1	0.594	1.072	0.637	A12
5210	42	IEEE 802.11ac	OFDM	9.5	8.62	0.17	Right	Tilt	00F0F	29.3	1:1	0.474	1.225	0.581	
5200	40	IEEE 802.11a	OFDM	11.5	11.17	-0.09	Left	Cheek	00F0F	6	1:1	0.427	1.079	0.461	
5220	44	IEEE 802.11a	OFDM	11.5	11.20	-0.02	Left	Cheek	00F0F	6	1:1	0.421	1.072	0.451	
5200	40	IEEE 802.11a	OFDM	11.5	11.17	0.14	Left	Tilt	00F0F	6	1:1	0.522	1.079	0.563	
5220	44	IEEE 802.11a	OFDM	11.5	11.20	0.04	Left	Tilt	00F0F	6	1:1	0.505	1.072	0.541	
5260	52	IEEE 802.11a	OFDM	11.5	11.36	0.02	Right	Cheek	00F0F	6	1:1	0.441	1.033	0.456	
5300	60	IEEE 802.11a	OFDM	11.5	11.26	0.01	Right	Cheek	00F0F	6	1:1	0.426	1.057	0.450	
5260	52	IEEE 802.11a	OFDM	11.5	11.36	-0.07	Right	Tilt	00F0F	6	1:1	0.516	1.033	0.533	
5300	60	IEEE 802.11a	OFDM	11.5	11.26	0.14	Right	Tilt	00F0F	6	1:1	0.522	1.057	0.552	
5290	58	IEEE 802.11ac	OFDM	9.5	8.95	0.07	Right	Tilt	00F0F	29.3	1:1	0.408	1.135	0.463	
5260	52	IEEE 802.11a	OFDM	11.5	11.36	-0.05	Left	Cheek	00F0F	6	1:1	0.363	1.033	0.375	
5260	52	IEEE 802.11a	OFDM	11.5	11.36	-0.04	Left	Tilt	00F0F	6	1:1	0.451	1.033	0.466	
5300	60	IEEE 802.11a	OFDM	11.5	11.26	0.03	Left	Tilt	00F0F	6	1:1	0.463	1.057	0.489	
5680	136	IEEE 802.11a	OFDM	11.5	11.42	0.03	Right	Cheek	00F0F	6	1:1	0.318	1.019	0.324	
5680	136	IEEE 802.11a	OFDM	11.5	11.42	-0.02	Right	Tilt	00F0F	6	1:1	0.360	1.019	0.367	
5680	136	IEEE 802.11a	OFDM	11.5	11.42	-0.07	Left	Cheek	00F0F	6	1:1	0.356	1.019	0.363	
5680	136	IEEE 802.11a	OFDM	11.5	11.42	-0.06	Left	Tilt	00F0F	6	1:1	0.428	1.019	0.436	
5530	106	IEEE 802.11ac	OFDM	9.5	8.49	0.12	Left	Tilt	00F0F	29.3	1:1	0.221	1.262	0.279	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 48 of 82

Table 11-12
DTS Head SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.03	Right	Cheek	140FA	1	1:1	0.274	1.130	0.310	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.08	Right	Tilt	140FA	1	1:1	0.085	1.130	0.096	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.00	Left	Cheek	140FA	1	1:1	0.104	1.130	0.118	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.08	Left	Tilt	140FA	1	1:1	0.079	1.130	0.089	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.06	Right	Cheek	00F0F	6	1:1	0.386	1.148	0.443	
5785	157	IEEE 802.11a	OFDM	11.5	10.78	-0.04	Right	Cheek	00F0F	6	1:1	0.385	1.180	0.454	
5805	161	IEEE 802.11a	OFDM	11.5	10.76	0.15	Right	Cheek	00F0F	6	1:1	0.387	1.186	0.459	A11
5775	155	IEEE 802.11ac	OFDM	9.5	8.81	0.08	Right	Cheek	00F0F	29.3	1:1	0.193	1.172	0.226	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.08	Right	Tilt	00F0F	6	1:1	0.153	1.148	0.176	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.07	Left	Cheek	00F0F	6	1:1	0.198	1.148	0.227	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.02	Left	Tilt	00F0F	6	1:1	0.117	1.148	0.134	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-13
NII Head SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5220	44	IEEE 802.11a	OFDM	11.5	11.08	-0.07	Right	Cheek	00F0F	6	1:1	0.209	1.102	0.230	
5210	42	IEEE 802.11ac	OFDM	9.5	8.61	0.19	Right	Cheek	00F0F	29.3	1:1	0.070	1.227	0.086	
5220	44	IEEE 802.11a	OFDM	11.5	11.08	0.08	Right	Tilt	00F0F	6	1:1	0.029	1.102	0.032	
5220	44	IEEE 802.11a	OFDM	11.5	11.08	0.00	Left	Cheek	00F0F	6	1:1	0.061	1.102	0.067	
5220	44	IEEE 802.11a	OFDM	11.5	11.08	-0.05	Left	Tilt	00F0F	6	1:1	0.021	1.102	0.023	
5260	52	IEEE 802.11a	OFDM	11.5	11.16	0.03	Right	Cheek	00F0F	6	1:1	0.150	1.081	0.162	
5290	58	IEEE 802.11ac	OFDM	9.5	8.76	0.02	Right	Cheek	00F0F	29.3	1:1	0.069	1.186	0.082	
5260	52	IEEE 802.11a	OFDM	11.5	11.16	0.05	Right	Tilt	00F0F	6	1:1	0.022	1.081	0.024	
5260	52	IEEE 802.11a	OFDM	11.5	11.16	0.04	Left	Cheek	00F0F	6	1:1	0.045	1.081	0.049	
5260	52	IEEE 802.11a	OFDM	11.5	11.16	0.02	Left	Tilt	00F0F	6	1:1	0.021	1.081	0.023	
5540	108	IEEE 802.11a	OFDM	11.5	11.26	0.04	Right	Cheek	00F0F	6	1:1	0.192	1.057	0.203	
5530	106	IEEE 802.11ac	OFDM	9.5	8.87	-0.06	Right	Cheek	00F0F	29.3	1:1	0.109	1.156	0.126	
5540	108	IEEE 802.11a	OFDM	11.5	11.26	0.08	Right	Tilt	00F0F	6	1:1	0.036	1.057	0.038	
5540	108	IEEE 802.11a	OFDM	11.5	11.26	0.05	Left	Cheek	00F0F	6	1:1	0.091	1.057	0.096	
5540	108	IEEE 802.11a	OFDM	11.5	11.26	0.04	Left	Tilt	00F0F	6	1:1	0.047	1.057	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 49 of 82

Table 11-14
DTS Head SAR MIMO

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.06	Right	Cheek	140FA	13	1:1	0.153	1.026	0.157	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.01	Right	Tilt	140FA	13	1:1	0.061	1.026	0.063	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.08	Left	Cheek	140FA	13	1:1	0.058	1.026	0.060	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	-0.05	Left	Tilt	140FA	13	1:1	0.050	1.026	0.051	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.06	Right	Cheek	00F0F	13	1:1	0.166	1.288	0.214	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	-0.01	Right	Tilt	00F0F	13	1:1	0.177	1.288	0.228	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.09	Left	Cheek	00F0F	13	1:1	0.204	1.288	0.263	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.04	Left	Tilt	00F0F	13	1:1	0.128	1.288	0.165	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-15
NII Head SAR Antenna MIMO

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5220	44	IEEE 802.11n	OFDM	11.5	10.92	-0.19	Right	Cheek	00F0F	13	1:1	0.321	1.143	0.367	
5200	40	IEEE 802.11n	OFDM	11.5	10.88	0.01	Right	Tilt	00F0F	13	1:1	0.405	1.153	0.467	
5220	44	IEEE 802.11n	OFDM	11.5	10.92	0.15	Right	Tilt	00F0F	13	1:1	0.377	1.143	0.431	
5220	44	IEEE 802.11n	OFDM	11.5	10.92	0.18	Left	Cheek	00F0F	13	1:1	0.252	1.143	0.288	
5220	44	IEEE 802.11n	OFDM	11.5	10.92	0.04	Left	Tilt	00F0F	13	1:1	0.401	1.143	0.458	
5280	56	IEEE 802.11n	OFDM	11.5	10.82	0.06	Right	Cheek	00F0F	13	1:1	0.301	1.169	0.352	
5280	56	IEEE 802.11n	OFDM	11.5	10.82	0.02	Right	Tilt	00F0F	13	1:1	0.345	1.169	0.403	
5280	56	IEEE 802.11n	OFDM	11.5	10.82	0.01	Left	Cheek	00F0F	13	1:1	0.235	1.169	0.275	
5280	56	IEEE 802.11n	OFDM	11.5	10.82	0.09	Left	Tilt	00F0F	13	1:1	0.276	1.169	0.323	
5520	104	IEEE 802.11n	OFDM	11.5	10.75	0.14	Right	Cheek	00F0F	13	1:1	0.253	1.189	0.301	
5520	104	IEEE 802.11n	OFDM	11.5	10.75	0.17	Right	Tilt	00F0F	13	1:1	0.225	1.189	0.268	
5520	104	IEEE 802.11n	OFDM	11.5	10.75	0.02	Left	Cheek	00F0F	13	1:1	0.154	1.189	0.183	
5520	104	IEEE 802.11n	OFDM	11.5	10.75	-0.02	Left	Tilt	00F0F	13	1:1	0.234	1.189	0.278	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 50 of 82

11.2 Standalone Body-Worn SAR Data

Table 11-16
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	Duty Cycle	Side	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.0	32.99	0.02	10 mm	90D53	1:8.3	back	0.366	1.002	0.367	A13
836.60	4183	UMTS 850	RMC	23.5	23.27	-0.01	10 mm	90D4C	1:1	back	0.175	1.054	0.184	A15
1712.40	1312	UMTS 1750	RMC	24.0	23.28	0.01	10 mm	90D4D	1:1	back	0.800	1.180	0.944	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.01	10 mm	90D4D	1:1	back	0.870	1.038	0.903	A16
1752.50	1862	UMTS 1750	RMC	24.0	23.60	0.04	10 mm	90D4D	1:1	back	0.777	1.096	0.852	
1880.00	661	GSM 1900	GSM	30.5	30.12	-0.04	10 mm	90DBA	1:8.3	back	0.143	1.091	0.156	A18
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.01	10 mm	90D4C	1:1	back	0.245	1.052	0.258	A20
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 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)		
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	-0.01	0	00E6B	QPSK	1	25	10 mm	back	1:1	0.276	1.045	0.288	A22
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	-0.01	1	00E6B	QPSK	25	0	10 mm	back	1:1	0.209	1.021	0.213	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.04	0	90D53	QPSK	1	49	10 mm	back	1:1	0.415	1.026	0.426	A23
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	-0.03	1	90D53	QPSK	25	25	10 mm	back	1:1	0.327	1.016	0.332	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.01	0	90D4D	QPSK	1	50	10 mm	back	1:1	0.600	1.014	0.608	A24
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.02	1	90D4D	QPSK	50	0	10 mm	back	1:1	0.473	1.016	0.481	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.08	0	90D53	QPSK	1	50	10 mm	back	1:1	0.311	1.038	0.323	A25
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	0.05	1	90D53	QPSK	50	50	10 mm	back	1:1	0.211	1.047	0.221	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Body										
Spatial Peak									1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population									averaged over 1 gram										

Table 11-18
DTS Body-Worn SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	-0.09	10 mm	140FA	1	back	1:1	0.081	1.164	0.094	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	-0.10	10 mm	14524	6	back	1:1	0.409	1.186	0.485	A28
5765	153	IEEE 802.11a	OFDM	11.5	10.68	-0.03	10 mm	14524	6	back	1:1	0.383	1.208	0.463	
5805	161	IEEE 802.11a	OFDM	11.5	10.50	0.12	10 mm	14524	6	back	1:1	0.392	1.259	0.494	
5775	155	IEEE 802.11ac	OFDM	9.5	8.49	-0.03	10 mm	14524	29.3	back	1:1	0.167	1.262	0.211	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 51 of 82

Table 11-19
NII Body-Worn SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5220	44	IEEE 802.11a	OFDM	11.5	11.20	-0.01	10 mm	14524	6	back	1:1	0.049	1.072	0.053	
5210	42	IEEE 802.11ac	OFDM	9.5	8.62	-0.09	10 mm	14524	29.3	back	1:1	0.037	1.225	0.045	
5260	52	IEEE 802.11a	OFDM	11.5	11.36	0.04	10 mm	14524	6	back	1:1	0.139	1.033	0.144	
5290	58	IEEE 802.11ac	OFDM	9.5	8.95	-0.03	10 mm	14524	29.3	back	1:1	0.071	1.135	0.081	
5540	108	IEEE 802.11a	OFDM	11.5	10.96	-0.01	10 mm	14524	6	back	1:1	0.558	1.132	0.632	A30
5580	116	IEEE 802.11a	OFDM	11.5	11.10	0.12	10 mm	14524	6	back	1:1	0.491	1.096	0.538	
5680	136	IEEE 802.11a	OFDM	11.5	11.42	-0.12	10 mm	14524	6	back	1:1	0.389	1.019	0.396	
5530	106	IEEE 802.11ac	OFDM	9.5	8.49	0.15	10 mm	14524	29.3	back	1:1	0.237	1.262	0.299	
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 11-20
DTS Body-Worn SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	-0.11	10 mm	104FA	1	back	1:1	0.336	1.130	0.380	A27
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.10	10 mm	15E70	6	back	1:1	0.287	1.148	0.329	
5775	155	IEEE 802.11ac	OFDM	9.5	8.81	0.04	10 mm	15E70	29.3	back	1:1	0.128	1.172	0.150	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-21
NII Body-Worn SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5220	44	IEEE 802.11a	OFDM	11.5	11.08	-0.01	10 mm	15E70	6	back	1:1	0.107	1.102	0.118	
5210	42	IEEE 802.11ac	OFDM	9.5	8.61	0.00	10 mm	15E70	29.3	back	1:1	0.056	1.227	0.069	
5260	52	IEEE 802.11a	OFDM	11.5	11.16	-0.04	10 mm	15E70	6	back	1:1	0.195	1.081	0.211	
5290	58	IEEE 802.11ac	OFDM	9.5	8.76	0.02	10 mm	15E70	29.3	back	1:1	0.074	1.186	0.088	
5540	108	IEEE 802.11a	OFDM	11.5	11.26	0.03	10 mm	15E70	6	back	1:1	0.303	1.057	0.320	
5530	106	IEEE 802.11ac	OFDM	9.5	8.87	-0.03	10 mm	15E70	29.3	back	1:1	0.099	1.156	0.114	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 52 of 82

Table 11-22
DTS Body-Worn SAR MIMO

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maxiumum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.03	10 mm	140FA	13	back	1:1	0.227	1.026	0.233	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.16	10 mm	14524	13	back	1:1	0.218	1.288	0.281	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-23
NII Body-Worn SAR MIMO

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
5220	44	IEEE 802.11n	OFDM	11.5	10.92	0.07	10 mm	14524	13	back	1:1	0.066	1.143	0.075	
5280	56	IEEE 802.11n	OFDM	11.5	10.82	0.09	10 mm	14524	13	back	1:1	0.059	1.169	0.069	
5520	104	IEEE 802.11n	OFDM	11.5	10.75	0.06	10 mm	14524	13	back	1:1	0.076	1.189	0.090	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 53 of 82

11.3 Standalone Wireless Router SAR Data

Table 11-24
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	29.0	28.69	-0.09	10 mm	90D53	4	1:2.076	back	0.413	1.074	0.444	A14
836.60	190	GSM 850	GPRS	29.0	28.69	0.01	10 mm	90D53	4	1:2.076	front	0.314	1.074	0.337	
836.60	190	GSM 850	GPRS	29.0	28.69	-0.17	10 mm	90D53	4	1:2.076	bottom	0.033	1.074	0.035	
836.60	190	GSM 850	GPRS	29.0	28.69	0.09	10 mm	90D53	4	1:2.076	left	0.291	1.074	0.313	
836.60	4183	UMTS 850	RMC	23.5	23.27	-0.01	10 mm	90D4C	N/A	1:1	back	0.175	1.054	0.184	A15
836.60	4183	UMTS 850	RMC	23.5	23.27	0.00	10 mm	90D4C	N/A	1:1	front	0.142	1.054	0.150	
836.60	4183	UMTS 850	RMC	23.5	23.27	-0.02	10 mm	90D4C	N/A	1:1	bottom	0.013	1.054	0.014	
836.60	4183	UMTS 850	RMC	23.5	23.27	0.01	10 mm	90D4C	N/A	1:1	left	0.154	1.054	0.162	
1712.40	1312	UMTS 1750	RMC	24.0	23.28	0.01	10 mm	90D4D	N/A	1:1	back	0.800	1.180	0.944	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.01	10 mm	90D4D	N/A	1:1	back	0.870	1.038	0.903	
1752.50	1862	UMTS 1750	RMC	24.0	23.60	0.04	10 mm	90D4D	N/A	1:1	back	0.777	1.096	0.852	
1712.40	1312	UMTS 1750	RMC	24.0	23.28	-0.03	10 mm	90D4D	N/A	1:1	front	0.838	1.180	0.989	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	-0.03	10 mm	90D4D	N/A	1:1	front	1.030	1.038	1.069	A17
1752.50	1862	UMTS 1750	RMC	24.0	23.60	0.03	10 mm	90D4D	N/A	1:1	front	0.997	1.096	1.093	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.00	10 mm	90D4D	N/A	1:1	bottom	0.662	1.038	0.687	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	0.06	10 mm	90D4D	N/A	1:1	left	0.518	1.038	0.538	
1732.40	1412	UMTS 1750	RMC	24.0	23.84	-0.03	10 mm	90D4D	N/A	1:1	front	0.956	1.038	0.992	
1880.00	661	GSM 1900	GPRS	25.5	24.84	0.07	10 mm	90DBA	4	1:2.076	back	0.187	1.164	0.218	
1880.00	661	GSM 1900	GPRS	25.5	24.84	0.02	10 mm	90DBA	4	1:2.076	front	0.335	1.164	0.390	A19
1880.00	661	GSM 1900	GPRS	25.5	24.84	-0.01	10 mm	90DBA	4	1:2.076	bottom	0.299	1.164	0.348	
1880.00	661	GSM 1900	GPRS	25.5	24.84	0.06	10 mm	90DBA	4	1:2.076	left	0.295	1.164	0.343	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.01	10 mm	90D4C	N/A	1:1	back	0.245	1.052	0.258	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.00	10 mm	90D4C	N/A	1:1	front	0.493	1.052	0.519	A21
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.03	10 mm	90D4C	N/A	1:1	bottom	0.431	1.052	0.453	
1880.00	9400	UMTS 1900	RMC	23.0	22.78	0.01	10 mm	90D4C	N/A	1:1	left	0.404	1.052	0.425	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT															
Spatial Peak							Body								
Uncontrolled Exposure/General Population							1.6 W/kg (mW/g)								
							averaged over 1 gram								

Note: Blue entry indicates variability measurement

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 54 of 82

Table 11-25
LTE Band 17 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)			
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	-0.01	0	00E6B	QPSK	1	25	10 mm	back	1:1	0.276	1.045	0.288	A22
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	-0.01	1	00E6B	QPSK	25	0	10 mm	back	1:1	0.209	1.021	0.213	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	0.00	0	00E6B	QPSK	1	25	10 mm	front	1:1	0.210	1.045	0.219	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	-0.02	1	00E6B	QPSK	25	0	10 mm	front	1:1	0.160	1.021	0.163	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	-0.01	0	00E6B	QPSK	1	25	10 mm	bottom	1:1	0.026	1.045	0.027	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	0.09	1	00E6B	QPSK	25	0	10 mm	bottom	1:1	0.020	1.021	0.020	
710.00	23790	Mid	LTE Band 17	10	23.5	23.31	0.01	0	00E6B	QPSK	1	25	10 mm	left	1:1	0.130	1.045	0.136	
710.00	23790	Mid	LTE Band 17	10	22.5	22.41	0.03	1	00E6B	QPSK	25	0	10 mm	left	1:1	0.097	1.021	0.099	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-26
LTE Band 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)	(W/kg)		
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	0.04	0	90D53	QPSK	1	49	10 mm	back	1:1	0.415	1.026	0.426	A23
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	-0.03	1	90D53	QPSK	25	25	10 mm	back	1:1	0.327	1.016	0.332	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	-0.01	0	90D53	QPSK	1	49	10 mm	front	1:1	0.346	1.026	0.355	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.00	1	90D53	QPSK	25	25	10 mm	front	1:1	0.272	1.016	0.276	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	-0.07	0	90D53	QPSK	1	49	10 mm	bottom	1:1	0.037	1.026	0.038	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.01	1	90D53	QPSK	25	25	10 mm	bottom	1:1	0.029	1.016	0.029	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.7	23.59	-0.03	0	90D53	QPSK	1	49	10 mm	left	1:1	0.314	1.026	0.322	
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.7	22.63	0.00	1	90D53	QPSK	25	25	10 mm	left	1:1	0.246	1.016	0.250	
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 11-27
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) (W/kg)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.01	0	90D4D	QPSK	1	50	10 mm	back	1:1	0.600	1.014	0.608	A24
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.02	1	90D4D	QPSK	50	0	10 mm	back	1:1	0.473	1.016	0.481	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.00	0	90D4D	QPSK	1	50	10 mm	front	1:1	0.565	1.014	0.573	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.00	1	90D4D	QPSK	50	0	10 mm	front	1:1	0.449	1.016	0.456	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.00	0	90D4D	QPSK	1	50	10 mm	bottom	1:1	0.518	1.014	0.525	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	-0.05	1	90D4D	QPSK	50	0	10 mm	bottom	1:1	0.442	1.016	0.449	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.0	21.94	0.03	0	90D4D	QPSK	1	50	10 mm	left	1:1	0.347	1.014	0.352	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	21.0	20.93	0.00	1	90D4D	QPSK	50	0	10 mm	left	1:1	0.275	1.016	0.279	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 55 of 82

Table 11-28
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)		
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.08	0	90D53	QPSK	1	50	10 mm	back	1:1	0.311	1.038	0.323	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	0.05	1	90D53	QPSK	50	50	10 mm	back	1:1	0.211	1.047	0.221	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	-0.06	0	90D53	QPSK	1	50	10 mm	front	1:1	0.562	1.038	0.583	A26
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	-0.04	1	90D53	QPSK	50	50	10 mm	front	1:1	0.392	1.047	0.410	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	0.10	0	90D53	QPSK	1	50	10 mm	bottom	1:1	0.493	1.038	0.512	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	-0.01	1	90D53	QPSK	50	50	10 mm	bottom	1:1	0.344	1.047	0.360	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.0	23.84	-0.02	0	90D53	QPSK	1	50	10 mm	left	1:1	0.429	1.038	0.445	
1860.00	18700	Low	LTE Band 2 (PCS)	20	23.0	22.80	-0.01	1	90D53	QPSK	50	50	10 mm	left	1:1	0.310	1.047	0.325	
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 11-29
WLAN Hotspot SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	-0.09	10 mm	140FA	1	back	1:1	0.081	1.164	0.094	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	-0.04	10 mm	140FA	1	front	1:1	0.057	1.164	0.066	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	0.12	10 mm	140FA	1	top	1:1	0.050	1.164	0.058	
2412	1	IEEE 802.11b	DSSS	17.5	16.84	0.03	10 mm	140FA	1	left	1:1	0.025	1.164	0.029	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	-0.10	10 mm	14524	6	back	1:1	0.409	1.186	0.485	
5765	153	IEEE 802.11a	OFDM	11.5	10.68	-0.03	10 mm	14524	6	back	1:1	0.383	1.208	0.463	
5805	161	IEEE 802.11a	OFDM	11.5	10.50	0.12	10 mm	14524	6	back	1:1	0.392	1.259	0.494	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	0.04	10 mm	14524	6	front	1:1	0.163	1.186	0.193	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	0.13	10 mm	14524	6	top	1:1	0.559	1.186	0.663	
5765	153	IEEE 802.11a	OFDM	11.5	10.68	0.19	10 mm	14524	6	top	1:1	0.545	1.208	0.658	
5805	161	IEEE 802.11a	OFDM	11.5	10.50	0.05	10 mm	14524	6	top	1:1	0.569	1.259	0.716	A29
5775	155	IEEE 802.11ac	OFDM	9.5	8.49	0.04	10 mm	14524	29.3	top	1:1	0.312	1.262	0.394	
5745	149	IEEE 802.11a	OFDM	11.5	10.76	0.16	10 mm	14524	6	left	1:1	0.033	1.186	0.039	
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: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 56 of 82

**Table 11-30
WLAN Hotspot SAR Antenna 2**

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	-0.11	10 mm	104FA	1	back	1:1	0.336	1.130	0.380	A27
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.00	10 mm	104FA	1	front	1:1	0.186	1.130	0.210	
2412	1	IEEE 802.11b	DSSS	17.5	16.97	0.01	10 mm	104FA	1	left	1:1	0.238	1.130	0.269	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.10	10 mm	15E70	6	back	1:1	0.287	1.148	0.329	
5775	155	IEEE 802.11ac	OFDM	9.5	8.81	0.04	10 mm	15E70	29.3	back	1:1	0.128	1.172	0.150	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.00	10 mm	15E70	6	front	1:1	0.078	1.148	0.090	
5765	153	IEEE 802.11a	OFDM	11.5	10.90	0.02	10 mm	15E70	6	left	1:1	0.173	1.148	0.199	
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 11-31
WLAN Hotspot SAR MIMO**

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaled SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.03	10 mm	140FA	13	back	1:1	0.227	1.026	0.233	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.13	10 mm	140FA	13	front	1:1	0.153	1.026	0.157	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.03	10 mm	140FA	13	top	1:1	0.062	1.026	0.064	
2437	6	IEEE 802.11n	OFDM	14.0	13.89	0.06	10 mm	140FA	13	left	1:1	0.209	1.026	0.214	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.16	10 mm	14524	13	back	1:1	0.218	1.288	0.281	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	-0.01	10 mm	14524	13	front	1:1	0.031	1.288	0.040	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.05	10 mm	14524	13	top	1:1	0.096	1.288	0.124	
5745	149	IEEE 802.11n	OFDM	11.5	10.40	0.07	10 mm	14524	13	left	1:1	0.060	1.288	0.077	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

11.4 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. A specialized battery with NFC antenna was used for all 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.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 57 of 82

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 SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01 v01, variability SAR tests were performed when the measured SAR results for a frequency band were greater than 0.8 W/kg. 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 6.7 for more details).

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 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 was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v02. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D01v05, when the reported (scaled) SAR measured at the middle channel > 0.8 W/kg then testing at the other channels is required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel must be used.

LTE Notes:

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

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 58 of 82

WLAN Notes:

1. Justification for reduced test configurations for SISO WIFI antenna channels per KDB Publication 248227 D01v01r02 and October 2012 FCC/TCB Meeting Notes for 2.4 GHz WIFI: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11b. Other IEEE 802.11 modes (including 802.11g/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 SISO WIFI channels per KDB Publication 248227 D01v01r02 and October 2012 FCC/TCB Meeting Notes for 5 GHz WIFI: Highest average RF output power channel for the lowest data rate was selected for SAR evaluation in 802.11a. Other IEEE 802.11 modes (including 802.11n 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 KDB 248227, SAR for MIMO was measured with both transmitting simultaneously and was evaluated independently of SISO operation. For 2.4 GHz MIMO, 802.11n was evaluated and for 5 GHz MIMO, 802.11n 20 MHz bandwidth was evaluated.
4. Per April 2013 TCB Workshop notes, full SAR tests for 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 was evaluated for the highest IEEE 802.11a position in each 5 GHz band and exposure condition.
5. WIFI transmission was verified using an uncalibrated spectrum analyzer.
6. When the maximum extrapolated peak SAR of the zoom scan for the maximum output channel is >1.6 W/kg or the reported 1g averaged SAR is >0.8 W/kg, SAR testing on other default channels was required.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 59 of 82	

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	2441	11.00	10	0.271

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.

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 60 of 82	

12.3 Head SAR Simultaneous Transmission Analysis

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.648	0.783	Head SAR	Right Cheek	0.062	0.648	0.710
	Right Tilt	0.079	0.650	0.729		Right Tilt	0.042	0.650	0.692
	Left Cheek	0.160	0.413	0.573		Left Cheek	0.084	0.413	0.497
	Left Tilt	0.105	0.431	0.536		Left Tilt	0.054	0.431	0.485
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.648	1.103	Head SAR	Right Cheek	0.152	0.648	0.800
	Right Tilt	0.365	0.650	1.015		Right Tilt	0.100	0.650	0.750
	Left Cheek	0.779	0.413	1.192		Left Cheek	0.307	0.413	0.720
	Left Tilt	0.318	0.431	0.749		Left Tilt	0.117	0.431	0.548
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.648	0.944	Head SAR	Right Cheek	0.098	0.648	0.746
	Right Tilt	0.187	0.650	0.837		Right Tilt	0.050	0.650	0.700
	Left Cheek	0.607	0.413	1.020		Left Cheek	0.126	0.413	0.539
	Left Tilt	0.210	0.431	0.641		Left Tilt	0.056	0.431	0.487
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.648	0.852	Head SAR	Right Cheek	0.261	0.648	0.909
	Right Tilt	0.126	0.650	0.776		Right Tilt	0.194	0.650	0.844
	Left Cheek	0.248	0.413	0.661		Left Cheek	0.520	0.413	0.933
	Left Tilt	0.144	0.431	0.575		Left Tilt	0.202	0.431	0.633
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)					
Head SAR	Right Cheek	0.307	0.648	0.955					
	Right Tilt	0.226	0.650	0.876					
	Left Cheek	0.627	0.413	1.040					
	Left Tilt	0.235	0.431	0.666					

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 61 of 82	

Table 12-3
Simultaneous Transmission Scenario with 5 GHz WLAN (Held to Ear) Antenna 1

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.541	0.676	Head SAR	Right Cheek	0.062	0.541	0.603
	Right Tilt	0.079	0.640	0.719		Right Tilt	0.042	0.640	0.682
	Left Cheek	0.160	0.461	0.621		Left Cheek	0.084	0.461	0.545
	Left Tilt	0.105	0.563	0.668		Left Tilt	0.054	0.563	0.617
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.541	0.996	Head SAR	Right Cheek	0.152	0.541	0.693
	Right Tilt	0.365	0.640	1.005		Right Tilt	0.100	0.640	0.740
	Left Cheek	0.779	0.461	1.240		Left Cheek	0.307	0.461	0.768
	Left Tilt	0.318	0.563	0.881		Left Tilt	0.117	0.563	0.680
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.541	0.837	Head SAR	Right Cheek	0.098	0.541	0.639
	Right Tilt	0.187	0.640	0.827		Right Tilt	0.050	0.640	0.690
	Left Cheek	0.607	0.461	1.068		Left Cheek	0.126	0.461	0.587
	Left Tilt	0.210	0.563	0.773		Left Tilt	0.056	0.563	0.619
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.541	0.745	Head SAR	Right Cheek	0.261	0.541	0.802
	Right Tilt	0.126	0.640	0.766		Right Tilt	0.194	0.640	0.834
	Left Cheek	0.248	0.461	0.709		Left Cheek	0.520	0.461	0.981
	Left Tilt	0.144	0.563	0.707		Left Tilt	0.202	0.563	0.765
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.307	0.541	0.848			
			Right Tilt	0.226	0.640	0.866			
			Left Cheek	0.627	0.461	1.088			
			Left Tilt	0.235	0.563	0.798			

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 62 of 82	

Table 12-4
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear) Antenna 2

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.310	0.445	Head SAR	Right Cheek	0.062	0.310	0.372
	Right Tilt	0.079	0.096	0.175		Right Tilt	0.042	0.096	0.138
	Left Cheek	0.160	0.118	0.278		Left Cheek	0.084	0.118	0.202
	Left Tilt	0.105	0.089	0.194		Left Tilt	0.054	0.089	0.143
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.310	0.765	Head SAR	Right Cheek	0.152	0.310	0.462
	Right Tilt	0.365	0.096	0.461		Right Tilt	0.100	0.096	0.196
	Left Cheek	0.779	0.118	0.897		Left Cheek	0.307	0.118	0.425
	Left Tilt	0.318	0.089	0.407		Left Tilt	0.117	0.089	0.206
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.310	0.606	Head SAR	Right Cheek	0.098	0.310	0.408
	Right Tilt	0.187	0.096	0.283		Right Tilt	0.050	0.096	0.146
	Left Cheek	0.607	0.118	0.725		Left Cheek	0.126	0.118	0.244
	Left Tilt	0.210	0.089	0.299		Left Tilt	0.056	0.089	0.145
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.310	0.514	Head SAR	Right Cheek	0.261	0.310	0.571
	Right Tilt	0.126	0.096	0.222		Right Tilt	0.194	0.096	0.290
	Left Cheek	0.248	0.118	0.366		Left Cheek	0.520	0.118	0.638
	Left Tilt	0.144	0.089	0.233		Left Tilt	0.202	0.089	0.291
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.307	0.310	0.617			
			Right Tilt	0.226	0.096	0.322			
			Left Cheek	0.627	0.118	0.745			
			Left Tilt	0.235	0.089	0.324			

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 63 of 82		

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.459	0.594	Head SAR	Right Cheek	0.062	0.459	0.521
	Right Tilt	0.079	0.176	0.255		Right Tilt	0.042	0.176	0.218
	Left Cheek	0.160	0.227	0.387		Left Cheek	0.084	0.227	0.311
	Left Tilt	0.105	0.134	0.239		Left Tilt	0.054	0.134	0.188
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.459	0.914	Head SAR	Right Cheek	0.152	0.459	0.611
	Right Tilt	0.365	0.176	0.541		Right Tilt	0.100	0.176	0.276
	Left Cheek	0.779	0.227	1.006		Left Cheek	0.307	0.227	0.534
	Left Tilt	0.318	0.134	0.452		Left Tilt	0.117	0.134	0.251
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.459	0.755	Head SAR	Right Cheek	0.098	0.459	0.557
	Right Tilt	0.187	0.176	0.363		Right Tilt	0.050	0.176	0.226
	Left Cheek	0.607	0.227	0.834		Left Cheek	0.126	0.227	0.353
	Left Tilt	0.210	0.134	0.344		Left Tilt	0.056	0.134	0.190
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.459	0.663	Head SAR	Right Cheek	0.261	0.459	0.720
	Right Tilt	0.126	0.176	0.302		Right Tilt	0.194	0.176	0.370
	Left Cheek	0.248	0.227	0.475		Left Cheek	0.520	0.227	0.747
	Left Tilt	0.144	0.134	0.278		Left Tilt	0.202	0.134	0.336
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.307	0.459	0.766			
			Right Tilt	0.226	0.176	0.402			
			Left Cheek	0.627	0.227	0.854			
			Left Tilt	0.235	0.134	0.369			

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 64 of 82	

Table 12-6
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear) MIMO

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.157	0.292	Head SAR	Right Cheek	0.062	0.157	0.219
	Right Tilt	0.079	0.063	0.142		Right Tilt	0.042	0.063	0.105
	Left Cheek	0.160	0.060	0.220		Left Cheek	0.084	0.060	0.144
	Left Tilt	0.105	0.051	0.156		Left Tilt	0.054	0.051	0.105
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.157	0.612	Head SAR	Right Cheek	0.152	0.157	0.309
	Right Tilt	0.365	0.063	0.428		Right Tilt	0.100	0.063	0.163
	Left Cheek	0.779	0.060	0.839		Left Cheek	0.307	0.060	0.367
	Left Tilt	0.318	0.051	0.369		Left Tilt	0.117	0.051	0.168
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.157	0.453	Head SAR	Right Cheek	0.098	0.157	0.255
	Right Tilt	0.187	0.063	0.250		Right Tilt	0.050	0.063	0.113
	Left Cheek	0.607	0.060	0.667		Left Cheek	0.126	0.060	0.186
	Left Tilt	0.210	0.051	0.261		Left Tilt	0.056	0.051	0.107
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.157	0.361	Head SAR	Right Cheek	0.261	0.157	0.418
	Right Tilt	0.126	0.063	0.189		Right Tilt	0.194	0.063	0.257
	Left Cheek	0.248	0.060	0.308		Left Cheek	0.520	0.060	0.580
	Left Tilt	0.144	0.051	0.195		Left Tilt	0.202	0.051	0.253
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.307	0.157	0.464			
			Right Tilt	0.226	0.063	0.289			
			Left Cheek	0.627	0.060	0.687			
			Left Tilt	0.235	0.051	0.286			

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 65 of 82		

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.135	0.367	0.502	Head SAR	Right Cheek	0.062	0.367	0.429
	Right Tilt	0.079	0.467	0.546		Right Tilt	0.042	0.467	0.509
	Left Cheek	0.160	0.288	0.448		Left Cheek	0.084	0.288	0.372
	Left Tilt	0.105	0.458	0.563		Left Tilt	0.054	0.458	0.512
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.455	0.367	0.822	Head SAR	Right Cheek	0.152	0.367	0.519
	Right Tilt	0.365	0.467	0.832		Right Tilt	0.100	0.467	0.567
	Left Cheek	0.779	0.288	1.067		Left Cheek	0.307	0.288	0.595
	Left Tilt	0.318	0.458	0.776		Left Tilt	0.117	0.458	0.575
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.296	0.367	0.663	Head SAR	Right Cheek	0.098	0.367	0.465
	Right Tilt	0.187	0.467	0.654		Right Tilt	0.050	0.467	0.517
	Left Cheek	0.607	0.288	0.895		Left Cheek	0.126	0.288	0.414
	Left Tilt	0.210	0.458	0.668		Left Tilt	0.056	0.458	0.514
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.204	0.367	0.571	Head SAR	Right Cheek	0.261	0.367	0.628
	Right Tilt	0.126	0.467	0.593		Right Tilt	0.194	0.467	0.661
	Left Cheek	0.248	0.288	0.536		Left Cheek	0.520	0.288	0.808
	Left Tilt	0.144	0.458	0.602		Left Tilt	0.202	0.458	0.660
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Head SAR	Right Cheek	0.307	0.367	0.674			
			Right Tilt	0.226	0.467	0.693			
			Left Cheek	0.627	0.288	0.915			
			Left Tilt	0.235	0.458	0.693			

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 66 of 82	

12.4 Body-Worn Simultaneous Transmission Analysis

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.094	0.461
Back Side	UMTS 850	0.184	0.094	0.278
Back Side	UMTS 1750	0.944	0.094	1.038
Back Side	GSM 1900	0.156	0.094	0.250
Back Side	UMTS 1900	0.258	0.094	0.352
Back Side	LTE Band 17	0.288	0.094	0.382
Back Side	LTE Band 5 (Cell)	0.426	0.094	0.520
Back Side	LTE Band 4 (AWS)	0.608	0.094	0.702
Back Side	LTE Band 2 (PCS)	0.323	0.094	0.417

Table 12-9
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm) Antenna 1

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.632	0.999
Back Side	UMTS 850	0.184	0.632	0.816
Back Side	UMTS 1750	0.944	0.632	1.576
Back Side	GSM 1900	0.156	0.632	0.788
Back Side	UMTS 1900	0.258	0.632	0.890
Back Side	LTE Band 17	0.288	0.632	0.920
Back Side	LTE Band 5 (Cell)	0.426	0.632	1.058
Back Side	LTE Band 4 (AWS)	0.608	0.632	1.240
Back Side	LTE Band 2 (PCS)	0.323	0.632	0.955

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

Table 12-10
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm) Antenna 1

Configuration	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.271	0.638
Back Side	UMTS 850	0.184	0.271	0.455
Back Side	UMTS 1750	0.944	0.271	1.215
Back Side	GSM 1900	0.156	0.271	0.427
Back Side	UMTS 1900	0.258	0.271	0.529
Back Side	LTE Band 17	0.288	0.271	0.559
Back Side	LTE Band 5 (Cell)	0.426	0.271	0.697
Back Side	LTE Band 4 (AWS)	0.608	0.271	0.879
Back Side	LTE Band 2 (PCS)	0.323	0.271	0.594

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 67 of 82

Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm) Antenna 2

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.380	0.747
Back Side	UMTS 850	0.184	0.380	0.564
Back Side	UMTS 1750	0.944	0.380	1.324
Back Side	GSM 1900	0.156	0.380	0.536
Back Side	UMTS 1900	0.258	0.380	0.638
Back Side	LTE Band 17	0.288	0.380	0.668
Back Side	LTE Band 5 (Cell)	0.426	0.380	0.806
Back Side	LTE Band 4 (AWS)	0.608	0.380	0.988
Back Side	LTE Band 2 (PCS)	0.323	0.380	0.703

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

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.329	0.696
Back Side	UMTS 850	0.184	0.329	0.513
Back Side	UMTS 1750	0.944	0.329	1.273
Back Side	GSM 1900	0.156	0.329	0.485
Back Side	UMTS 1900	0.258	0.329	0.587
Back Side	LTE Band 17	0.288	0.329	0.617
Back Side	LTE Band 5 (Cell)	0.426	0.329	0.755
Back Side	LTE Band 4 (AWS)	0.608	0.329	0.937
Back Side	LTE Band 2 (PCS)	0.323	0.329	0.652

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm) MIMO

Configuration	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.233	0.600
Back Side	UMTS 850	0.184	0.233	0.417
Back Side	UMTS 1750	0.944	0.233	1.177
Back Side	GSM 1900	0.156	0.233	0.389
Back Side	UMTS 1900	0.258	0.233	0.491
Back Side	LTE Band 17	0.288	0.233	0.521
Back Side	LTE Band 5 (Cell)	0.426	0.233	0.659
Back Side	LTE Band 4 (AWS)	0.608	0.233	0.841
Back Side	LTE Band 2 (PCS)	0.323	0.233	0.556

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 68 of 82	

Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm) MIMO

Configuration	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Back Side	GSM 850	0.367	0.281	0.648
Back Side	UMTS 850	0.184	0.281	0.465
Back Side	UMTS 1750	0.944	0.281	1.225
Back Side	GSM 1900	0.156	0.281	0.437
Back Side	UMTS 1900	0.258	0.281	0.539
Back Side	LTE Band 17	0.288	0.281	0.569
Back Side	LTE Band 5 (Cell)	0.426	0.281	0.707
Back Side	LTE Band 4 (AWS)	0.608	0.281	0.889
Back Side	LTE Band 2 (PCS)	0.323	0.281	0.604

Note: The worst case 5 GHz WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has WIFI Direct capability. Therefore, the summations above represent the absolute worst cases for simultaneous transmission with 5 GHz WLAN.

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 69 of 82	

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 (2.4 GHz Hotspot at 1.0 cm) Antenna 1

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.094	0.538	Body SAR	Back	0.184	0.094	0.278
	Front	0.337	0.066	0.403		Front	0.150	0.066	0.216
	Top	-	0.058	0.058		Top	-	0.058	0.058
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.029	0.342		Left	0.162	0.029	0.191
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.094	1.038	Body SAR	Back	0.218	0.094	0.312
	Front	1.093	0.066	1.159		Front	0.390	0.066	0.456
	Top	-	0.058	0.058		Top	-	0.058	0.058
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.029	0.567		Left	0.343	0.029	0.372
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.094	0.352	Body SAR	Back	0.288	0.094	0.382
	Front	0.519	0.066	0.585		Front	0.219	0.066	0.285
	Top	-	0.058	0.058		Top	-	0.058	0.058
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.029	0.454		Left	0.136	0.029	0.165
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.094	0.520	Body SAR	Back	0.608	0.094	0.702
	Front	0.355	0.066	0.421		Front	0.573	0.066	0.639
	Top	-	0.058	0.058		Top	-	0.058	0.058
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.029	0.351		Left	0.352	0.029	0.381
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.323	0.094	0.417					
	Front	0.583	0.066	0.649					
	Top	-	0.058	0.058					
	Bottom	0.512	-	0.512					
	Right	-	-	0.000					
	Left	0.445	0.029	0.474					

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 70 of 82	

Table 12-16
Simultaneous Transmission Scenario (5.8 GHz Hotspot at 1.0 cm) Antenna 1

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.494	0.938	Body SAR	Back	0.184	0.494	0.678
	Front	0.337	0.193	0.530		Front	0.150	0.193	0.343
	Top	-	0.716	0.716		Top	-	0.716	0.716
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.039	0.352		Left	0.162	0.039	0.201
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.494	1.438	Body SAR	Back	0.218	0.494	0.712
	Front	1.093	0.193	1.286		Front	0.390	0.193	0.583
	Top	-	0.716	0.716		Top	-	0.716	0.716
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.039	0.577		Left	0.343	0.039	0.382
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.494	0.752	Body SAR	Back	0.288	0.494	0.782
	Front	0.519	0.193	0.712		Front	0.219	0.193	0.412
	Top	-	0.716	0.716		Top	-	0.716	0.716
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.039	0.464		Left	0.136	0.039	0.175
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.494	0.920	Body SAR	Back	0.608	0.494	1.102
	Front	0.355	0.193	0.548		Front	0.573	0.193	0.766
	Top	-	0.716	0.716		Top	-	0.716	0.716
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.039	0.361		Left	0.352	0.039	0.391
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
Body SAR		Back	0.323	0.494	0.817				
		Front	0.583	0.193	0.776				
		Top	-	0.716	0.716				
		Bottom	0.512	-	0.512				
		Right	-	-	0.000				
		Left	0.445	0.039	0.484				

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 71 of 82		

Table 12-17
Simultaneous Transmission Scenario (2.4 GHz Hotspot at 1.0 cm) Antenna 2

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.380	0.824	Body SAR	Back	0.184	0.380	0.564
	Front	0.337	0.210	0.547		Front	0.150	0.210	0.360
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.269	0.582		Left	0.162	0.269	0.431
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.380	1.324	Body SAR	Back	0.218	0.380	0.598
	Front	1.093	0.210	1.303		Front	0.390	0.210	0.600
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.269	0.807		Left	0.343	0.269	0.612
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.380	0.638	Body SAR	Back	0.288	0.380	0.668
	Front	0.519	0.210	0.729		Front	0.219	0.210	0.429
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.269	0.694		Left	0.136	0.269	0.405
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.380	0.806	Body SAR	Back	0.608	0.380	0.988
	Front	0.355	0.210	0.565		Front	0.573	0.210	0.783
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.269	0.591		Left	0.352	0.269	0.621
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
Body SAR		Back	0.323	0.380	0.703				
		Front	0.583	0.210	0.793				
		Top	-	-	0.000				
		Bottom	0.512	-	0.512				
		Right	-	-	0.000				
		Left	0.445	0.269	0.714				

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 72 of 82		

Table 12-18
Simultaneous Transmission Scenario (5.8 GHz Hotspot at 1.0 cm) Antenna 2

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.329	0.773	Body SAR	Back	0.184	0.329	0.513
	Front	0.337	0.090	0.427		Front	0.150	0.090	0.240
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.199	0.512		Left	0.162	0.199	0.361
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.329	1.273	Body SAR	Back	0.218	0.329	0.547
	Front	1.093	0.090	1.183		Front	0.390	0.090	0.480
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.199	0.737		Left	0.343	0.199	0.542
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.329	0.587	Body SAR	Back	0.288	0.329	0.617
	Front	0.519	0.090	0.609		Front	0.219	0.090	0.309
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.199	0.624		Left	0.136	0.199	0.335
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.329	0.755	Body SAR	Back	0.608	0.329	0.937
	Front	0.355	0.090	0.445		Front	0.573	0.090	0.663
	Top	-	-	0.000		Top	-	-	0.000
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.199	0.521		Left	0.352	0.199	0.551
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
Body SAR		Back	0.323	0.329	0.652				
		Front	0.583	0.090	0.673				
		Top	-	-	0.000				
		Bottom	0.512	-	0.512				
		Right	-	-	0.000				
		Left	0.445	0.199	0.644				

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 73 of 82		

Table 12-19
Simultaneous Transmission Scenario (2.4 GHz Hotspot at 1.0 cm) MIMO

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.233	0.677	Body SAR	Back	0.184	0.233	0.417
	Front	0.337	0.157	0.494		Front	0.150	0.157	0.307
	Top	-	0.064	0.064		Top	-	0.064	0.064
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.214	0.527		Left	0.162	0.214	0.376
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.233	1.177	Body SAR	Back	0.218	0.233	0.451
	Front	1.093	0.157	1.250		Front	0.390	0.157	0.547
	Top	-	0.064	0.064		Top	-	0.064	0.064
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.214	0.752		Left	0.343	0.214	0.557
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.233	0.491	Body SAR	Back	0.288	0.233	0.521
	Front	0.519	0.157	0.676		Front	0.219	0.157	0.376
	Top	-	0.064	0.064		Top	-	0.064	0.064
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.214	0.639		Left	0.136	0.214	0.350
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.233	0.659	Body SAR	Back	0.608	0.233	0.841
	Front	0.355	0.157	0.512		Front	0.573	0.157	0.730
	Top	-	0.064	0.064		Top	-	0.064	0.064
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.214	0.536		Left	0.352	0.214	0.566
		Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)			
		Body SAR	Back	0.323	0.233	0.556			
			Front	0.583	0.157	0.740			
			Top	-	0.064	0.064			
			Bottom	0.512	-	0.512			
			Right	-	-	0.000			
			Left	0.445	0.214	0.659			

FCC ID: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 74 of 82		

Table 12-20
Simultaneous Transmission Scenario (5.8 GHz Hotspot at 1.0 cm) MIMO

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.444	0.281	0.725	Body SAR	Back	0.184	0.281	0.465
	Front	0.337	0.040	0.377		Front	0.150	0.040	0.190
	Top	-	0.124	0.124		Top	-	0.124	0.124
	Bottom	0.035	-	0.035		Bottom	0.014	-	0.014
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.313	0.077	0.390		Left	0.162	0.077	0.239
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.944	0.281	1.225	Body SAR	Back	0.218	0.281	0.499
	Front	1.093	0.040	1.133		Front	0.390	0.040	0.430
	Top	-	0.124	0.124		Top	-	0.124	0.124
	Bottom	0.687	-	0.687		Bottom	0.348	-	0.348
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.538	0.077	0.615		Left	0.343	0.077	0.420
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 17 SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.258	0.281	0.539	Body SAR	Back	0.288	0.281	0.569
	Front	0.519	0.040	0.559		Front	0.219	0.040	0.259
	Top	-	0.124	0.124		Top	-	0.124	0.124
	Bottom	0.453	-	0.453		Bottom	0.027	-	0.027
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.425	0.077	0.502		Left	0.136	0.077	0.213
Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.426	0.281	0.707	Body SAR	Back	0.608	0.281	0.889
	Front	0.355	0.040	0.395		Front	0.573	0.040	0.613
	Top	-	0.124	0.124		Top	-	0.124	0.124
	Bottom	0.038	-	0.038		Bottom	0.525	-	0.525
	Right	-	-	0.000		Right	-	-	0.000
	Left	0.322	0.077	0.399		Left	0.352	0.077	0.429
Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5.8 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)					
Body SAR	Back	0.323	0.281	0.604					
	Front	0.583	0.040	0.623					
	Top	-	0.124	0.124					
	Bottom	0.512	-	0.512					
	Right	-	-	0.000					
	Left	0.445	0.077	0.522					

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: A3LSMG900M	 SAR EVALUATION REPORT 	Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset
Page 75 of 82		

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 (~ 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

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1732.40	1412	UMTS 1750	RMC	front	10 mm	1.030	0.956	1.08	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram							

13.2 Measurement Uncertainty

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 76 of 82	

14 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85047A	S-Parameter Test Set	N/A	N/A	N/A	2904A00579
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8648D	(9kHz-4GHz) Signal Generator	4/17/2013	Annual	4/17/2014	3629U00687
Agilent	8753E	(30kHz-6GHz) Network Analyzer	4/16/2013	Annual	4/16/2014	JP38020182
Agilent	8753E	(30kHz-6GHz) Network Analyzer	7/23/2013	Annual	7/23/2014	US37390350
Agilent	8753ES	S-Parameter Network Analyzer	10/29/2013	Annual	10/29/2014	US39170122
Agilent	E5515C	Wireless Communications Test Set	5/9/2013	Biennial	5/9/2015	GB43304447
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/16/2013	Annual	4/16/2014	MY45470194
Agilent	N5182A	MXG Vector Signal Generator	10/28/2013	Annual	10/28/2014	US46240505
Agilent	N9020A	MXA Signal Analyzer	10/29/2013	Annual	10/29/2014	US46470561
Amplifier Research	551G4	5W, 800MHz-4.2GHz	CBT	N/A	CBT	21910
Anritsu	MA24106A	USB Power Sensor	1/3/2014	Annual	1/3/2015	1344554
Anritsu	MA24106A	USB Power Sensor	1/3/2014	Annual	1/3/2015	1344557
Anritsu	MA2411B	Pulse Power Sensor	11/14/2013	Annual	11/14/2014	1126066
Anritsu	MA2481A	Power Sensor	10/30/2013	Annual	10/30/2014	5605
Anritsu	ML2495A	Power Meter	10/31/2013	Annual	10/31/2014	1039008
Anritsu	MT8820C	Radio Communication Analyzer	12/12/2013	Annual	12/12/2014	6200901190
COMTECH	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M155A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Fisher Scientific	15-07BJ	Long Stem Thermometer	1/7/2013	Biennial	1/7/2015	130018243
Gigatronix	80701A	(0.05-18GHz) Power Sensor	10/30/2013	Annual	10/30/2014	1833460
Gigatronix	8651A	Universal Power Meter	10/30/2013	Annual	10/30/2014	8650319
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-53W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	5/3/2013	Annual	5/3/2014	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	9/23/2013	Annual	9/23/2014	109892
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	10/16/2013	Annual	10/16/2014	100976
Rohde & Schwarz	NRVD	Dual Channel Power Meter	10/12/2012	Biennial	10/12/2014	101695
Rohde & Schwarz	NRVS	Single Channel Power Meter	10/31/2013	Annual	10/31/2014	835360/0079
Rohde & Schwarz	NRV-Z32	Peak Power Sensor	10/12/2012	Biennial	10/12/2014	836019/013
Rohde & Schwarz	SME06	Signal Generator	10/30/2013	Annual	10/30/2014	832026
Rohde & Schwarz	SMI003B	Signal Generator	4/17/2013	Annual	4/17/2014	DE22759
Seekonk	NC-100	Torque Wrench (8" lb)	11/29/2011	Triennial	11/29/2014	21053
SPEAG	D1750V2	1750 MHz SAR Dipole	4/30/2013	Annual	4/30/2014	1051
SPEAG	D1765V2	1765 MHz SAR Dipole	5/14/2013	Annual	5/14/2014	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	7/22/2013	Annual	7/22/2014	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/23/2013	Annual	8/23/2014	719
SPEAG	D5GHZV2	5 GHz SAR Dipole	1/27/2014	Annual	1/27/2015	1057
SPEAG	D5GHZV2	5 GHz SAR Dipole	2/14/2013	Annual	2/14/2014	1120
SPEAG	D750V3	750 MHz Dipole	3/18/2013	Annual	3/18/2014	1054
SPEAG	D835V2	835 MHz SAR Dipole	4/25/2013	Annual	4/25/2014	4d119
SPEAG	D835V2	835 MHz SAR Dipole	7/17/2013	Annual	7/17/2014	4d133
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/13/2013	Annual	5/13/2014	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2013	Annual	9/17/2014	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/19/2013	Annual	11/19/2014	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/21/2013	Annual	8/21/2014	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/8/2013	Annual	3/8/2014	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/22/2013	Annual	4/22/2014	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/22/2013	Annual	4/22/2014	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/19/2013	Annual	11/19/2014	1408
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/14/2013	Annual	5/14/2014	1070
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	8/18/2013	Annual	8/18/2014	1008
SPEAG	ES3DV2	SAR Probe	8/22/2013	Annual	8/22/2014	3022
SPEAG	ES3DV3	SAR Probe	3/15/2013	Annual	3/15/2014	3209
SPEAG	ES3DV3	SAR Probe	5/16/2013	Annual	5/16/2014	3263
SPEAG	ES3DV3	SAR Probe	9/23/2013	Annual	9/23/2014	3288
SPEAG	ES3DV3	SAR Probe	4/29/2013	Annual	4/29/2014	3318
SPEAG	ES3DV3	SAR Probe	4/29/2013	Annual	4/29/2014	3319
SPEAG	ES3DV3	SAR Probe	11/22/2013	Annual	11/22/2014	3333
SPEAG	EX3DV4	SAR Probe	10/23/2013	Annual	10/23/2014	3914
Tektronix	RSA6114A	Real Time Spectrum Analyzer	4/17/2013	Annual	4/17/2014	B010177
VWR	23226-658	Long Stem Thermometer	3/30/2012	Biennial	3/30/2014	122179874
VWR	36934-158	Wall-Mounted Thermometer	8/8/2013	Annual	8/8/2014	130258636

Note:

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

FCC ID: A3LSMG900M		SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 77 of 82

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
Expanded Uncertainty (95% CONFIDENCE LEVEL)							k=2	24.2	23.5

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 78 of 82	

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	6.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)							RSS	12.4	12.0
Expanded Uncertainty (95% CONFIDENCE LEVEL)							k=2	24.7	24.0

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

FCC ID: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 79 of 82	

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: A3LSMG900M	 PCTEST ENGINEERING LABORATORY, INC.	SAR EVALUATION REPORT		Reviewed by: Quality Manager
Document S/N: 0Y1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset		Page 80 of 82

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 Body Due to Wireless Communications Devices.
- [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: A3LSMG900M	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 81 of 82

- [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: A3LSMG900M	 SAR EVALUATION REPORT 		Reviewed by: Quality Manager
Document S/N: OY1402120397.A3L	Test Dates: 02/03/14 – 02/26/14	DUT Type: Portable Handset	Page 82 of 82

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.898 \text{ S/m}$; $\epsilon_r = 40.774$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3318; ConvF(6.33, 6.33, 6.33); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 4/22/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

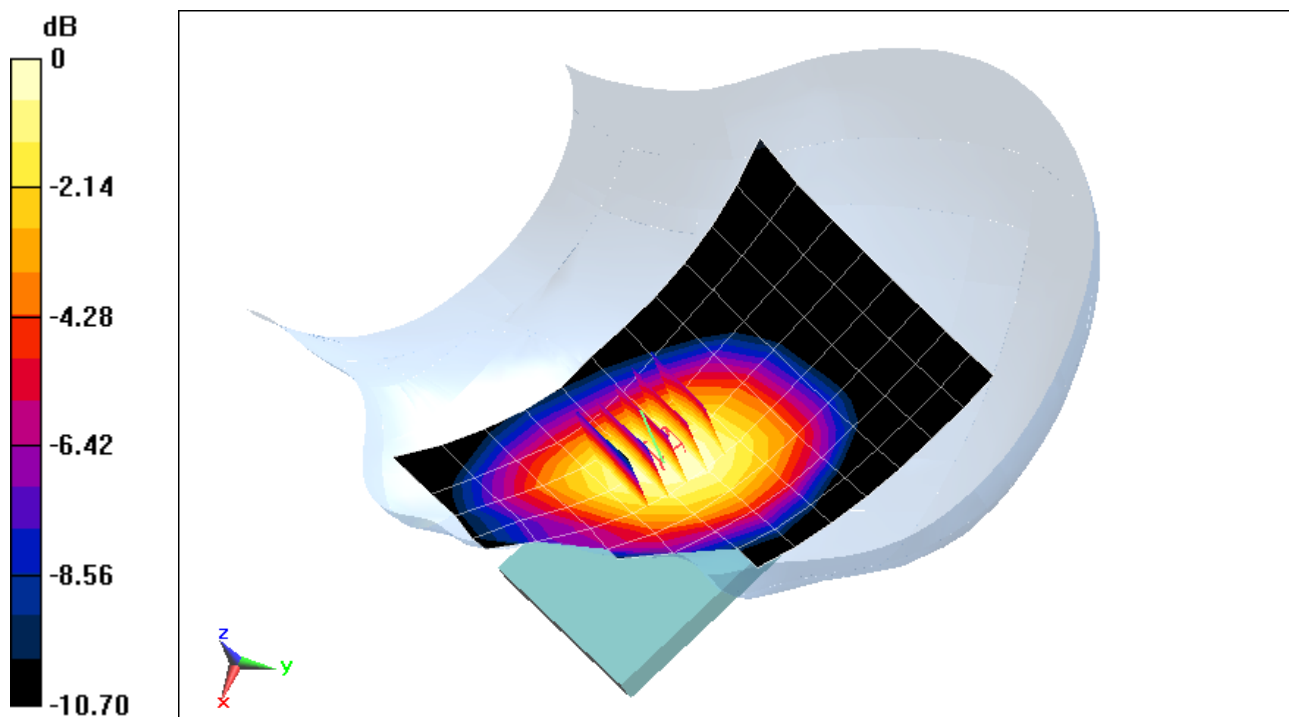
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.479 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.207 W/kg

SAR(1 g) = 0.160 W/kg



0 dB = 0.165 W/kg = -7.83 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.898 \text{ S/m}$; $\epsilon_r = 40.774$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3318; ConvF(6.33, 6.33, 6.33); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 4/22/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

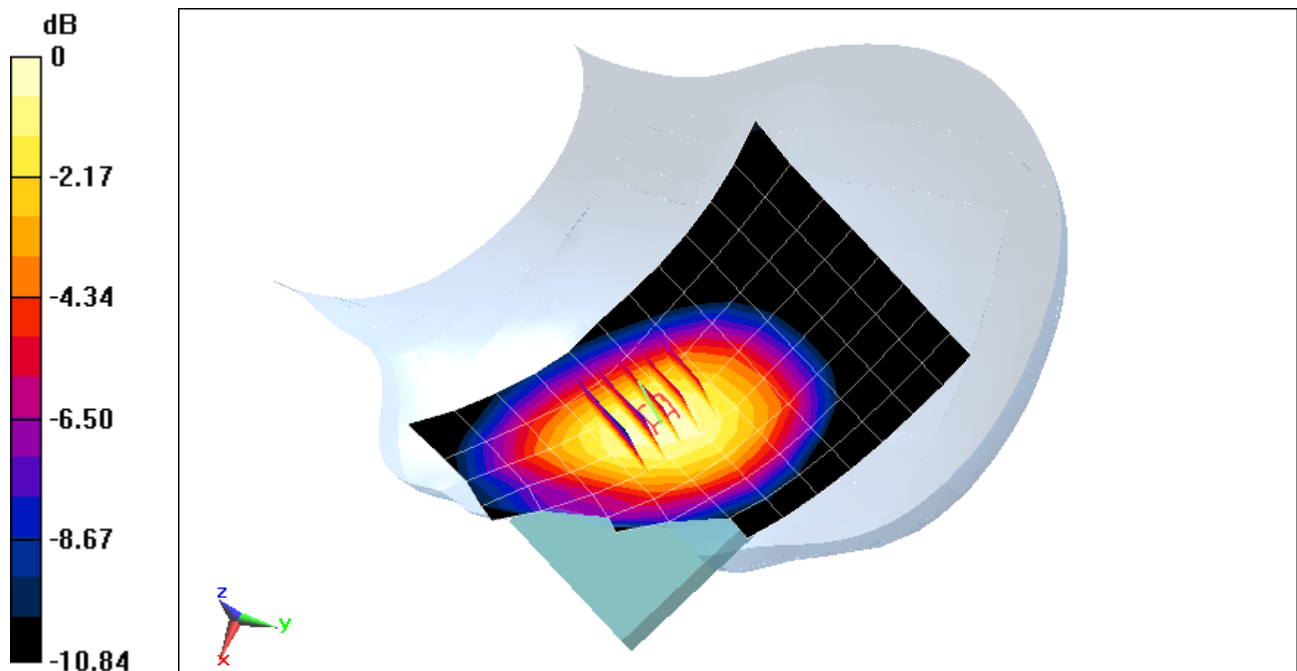
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 9.441 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.102 W/kg

SAR(1 g) = 0.080 W/kg



0 dB = 0.0832 W/kg = -10.80 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 1750 Head Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$; $\sigma = 1.401 \text{ S/m}$; $\epsilon_r = 39.629$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-26-2014; Ambient Temp: 19.1°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3263; ConvF(5.3, 5.3, 5.3); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

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

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.8 (7028)

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

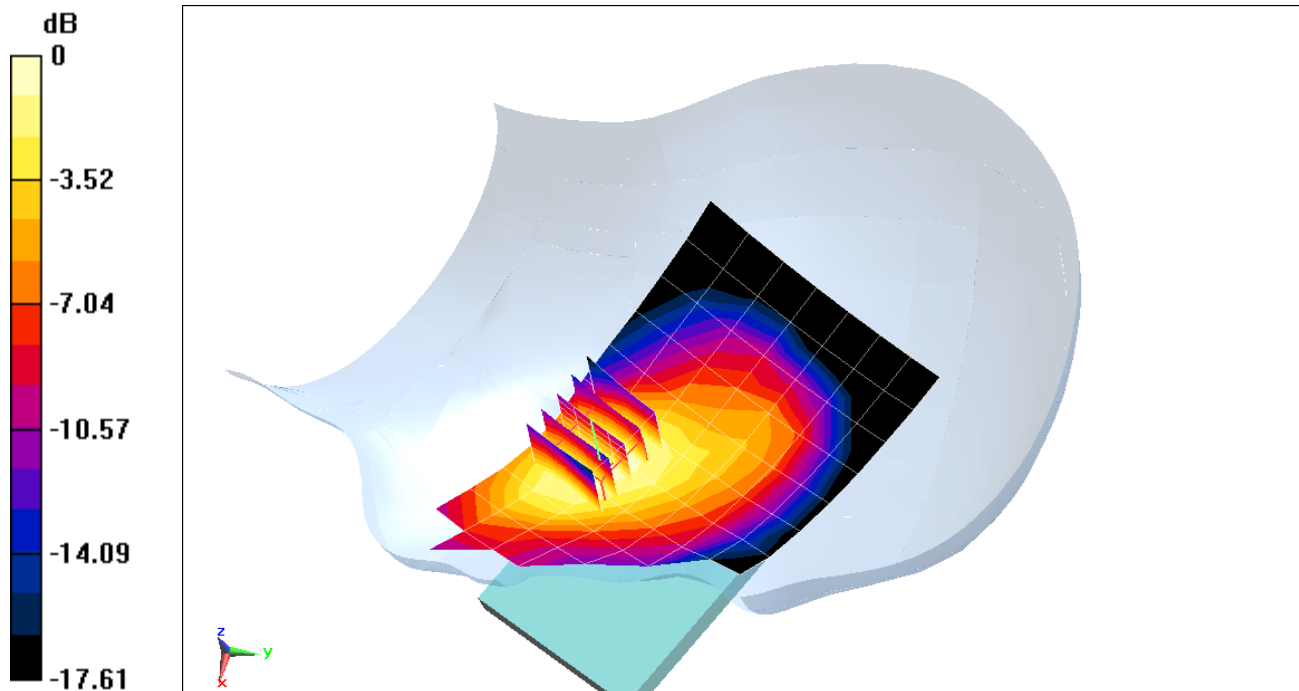
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 23.372 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.750 W/kg



0 dB = 0.811 W/kg = -0.91 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.37 \text{ S/m}$; $\epsilon_r = 38.396$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 23.2°C; Tissue Temp: 23.0°C

Probe: ES3DV2 - SN3022; ConvF(5.03, 5.03, 5.03); Calibrated: 8/22/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 8/21/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

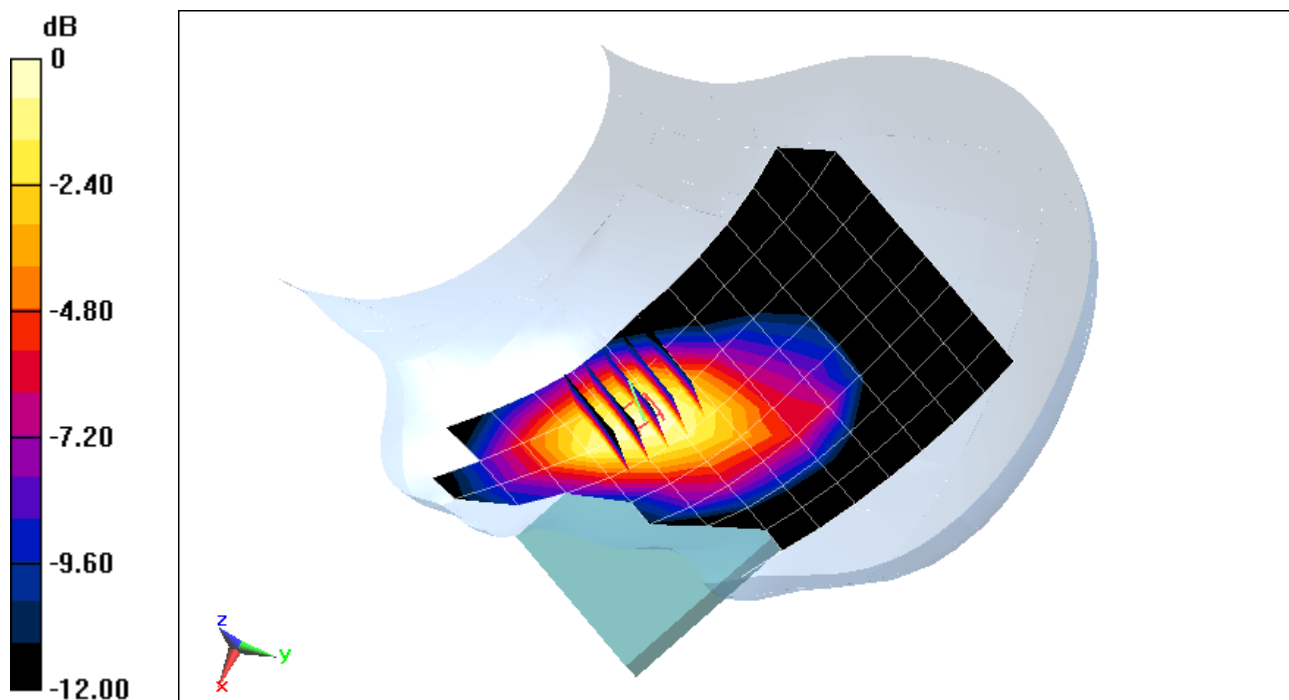
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 14.700 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.423 W/kg

SAR(1 g) = 0.281 W/kg



0 dB = 0.302 W/kg = -5.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4C

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.37 \text{ S/m}$; $\epsilon_r = 38.396$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 23.2°C; Tissue Temp: 23.0°C

Probe: ES3DV2 - SN3022; ConvF(5.03, 5.03, 5.03); Calibrated: 8/22/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 8/21/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

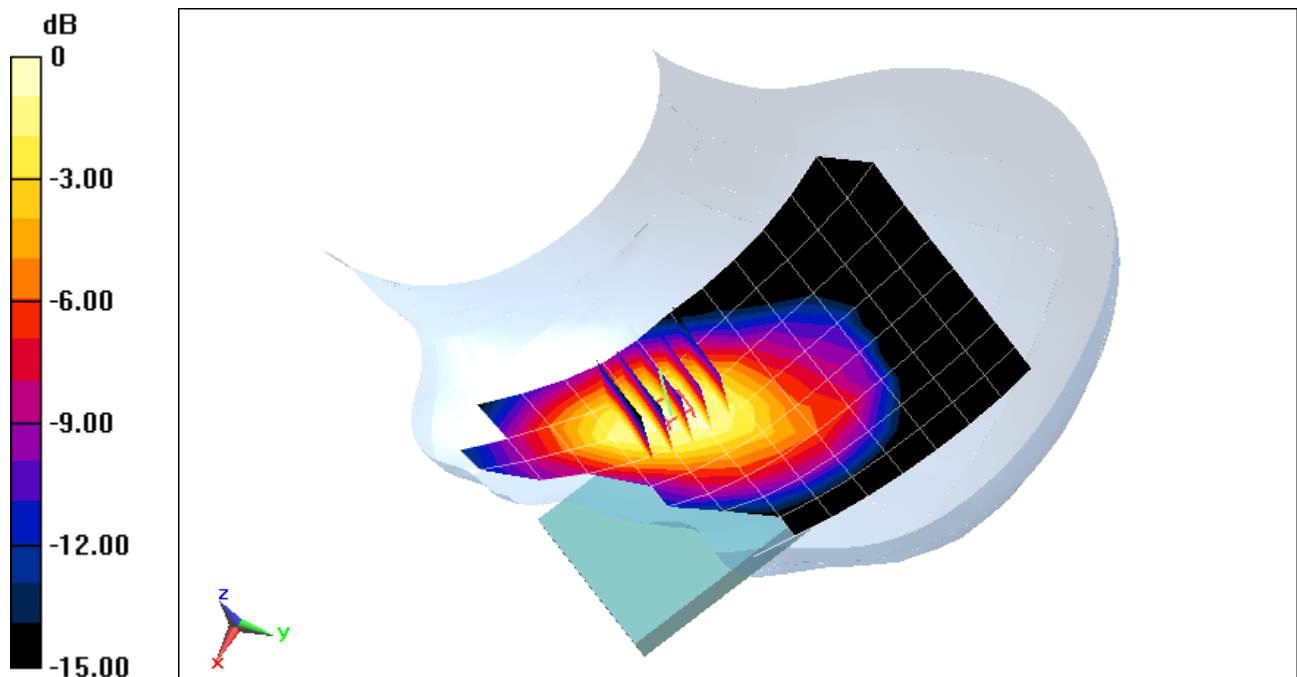
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 20.981 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.883 W/kg

SAR(1 g) = 0.577 W/kg



0 dB = 0.627 W/kg = -2.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

Communication System: UID 0, LTE BAND 17; Frequency: 710 MHz; Duty Cycle: 1:1

Medium: 740 Head Medium parameters used:

$f = 710 \text{ MHz}$; $\sigma = 0.894 \text{ S/m}$; $\epsilon_r = 43.792$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-17-2014; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3288; ConvF(6.56, 6.56, 6.56); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM Sub Dasy B; Type: SAM 5.0; Serial: TP-1626

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 17, Left Head, Cheek, Mid.ch

10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

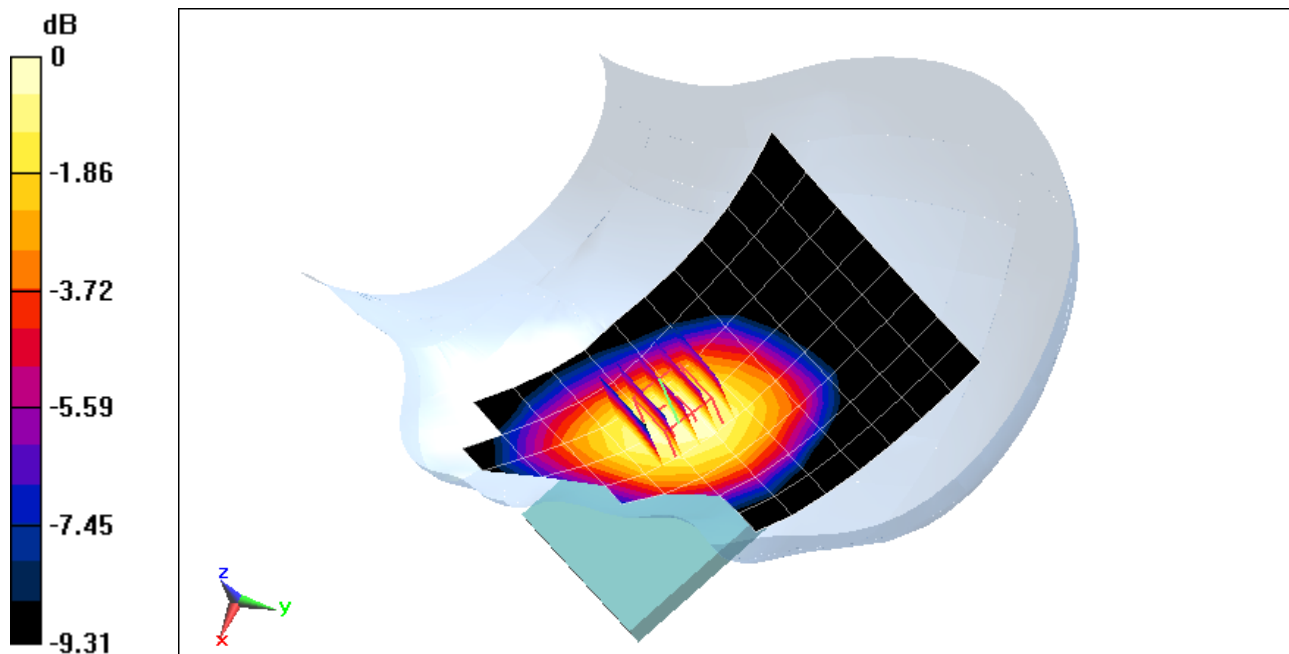
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 12.347 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.146 W/kg

SAR(1 g) = 0.121 W/kg



0 dB = 0.127 W/kg = -8.96 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

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

Medium: 835 Head Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$; $\sigma = 0.898 \text{ S/m}$; $\epsilon_r = 40.775$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3318; ConvF(6.33, 6.33, 6.33); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 4/22/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 5 (Cell.), Left Head, Cheek, Mid.ch

10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset

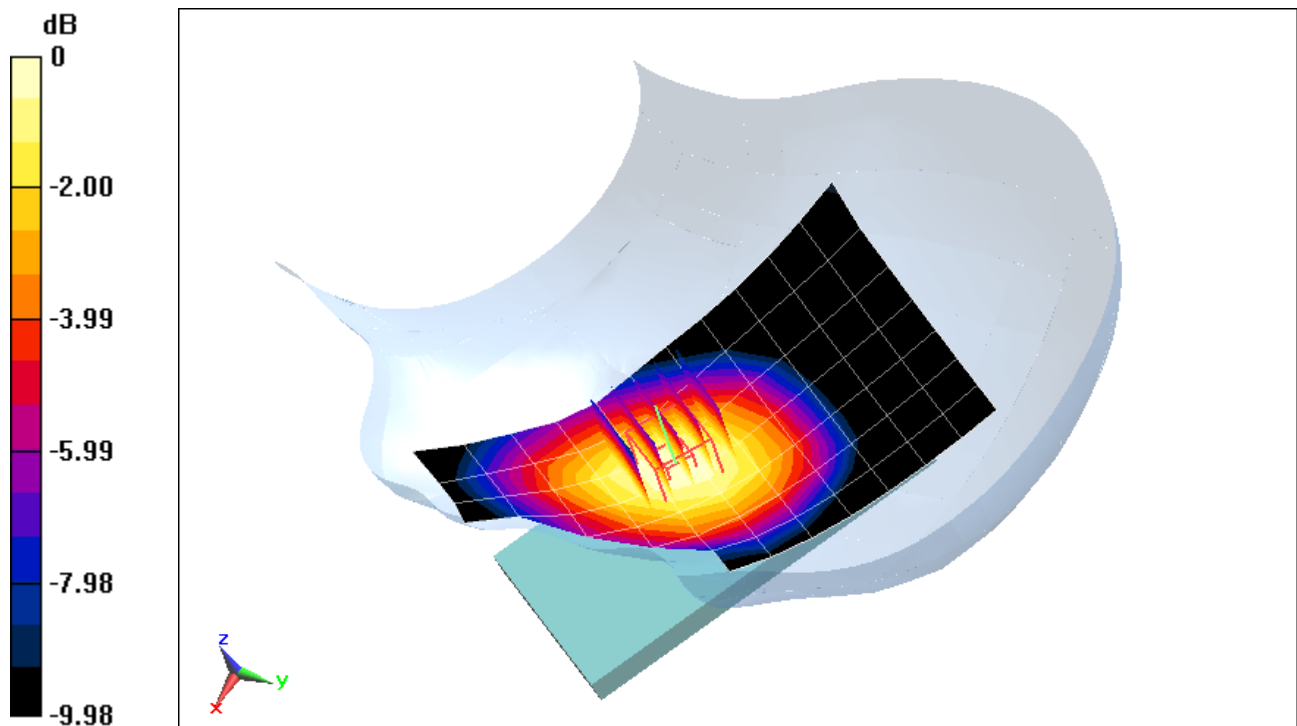
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 17.734 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.242 W/kg



0 dB = 0.255 W/kg = -5.93 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4D

Communication System: UID 0, LTE RF; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: 1750 Head Medium parameters used (interpolated):

$f = 1732.5 \text{ MHz}$; $\sigma = 1.344 \text{ S/m}$; $\epsilon_r = 38.546$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-13-2014; Ambient Temp: 24.0°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3288; ConvF(5.67, 5.67, 5.67); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM Sub Dasy B; Type: SAM 5.0; Serial: TP-1626

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 4 (AWS), Left Head, Cheek, Mid.ch

20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

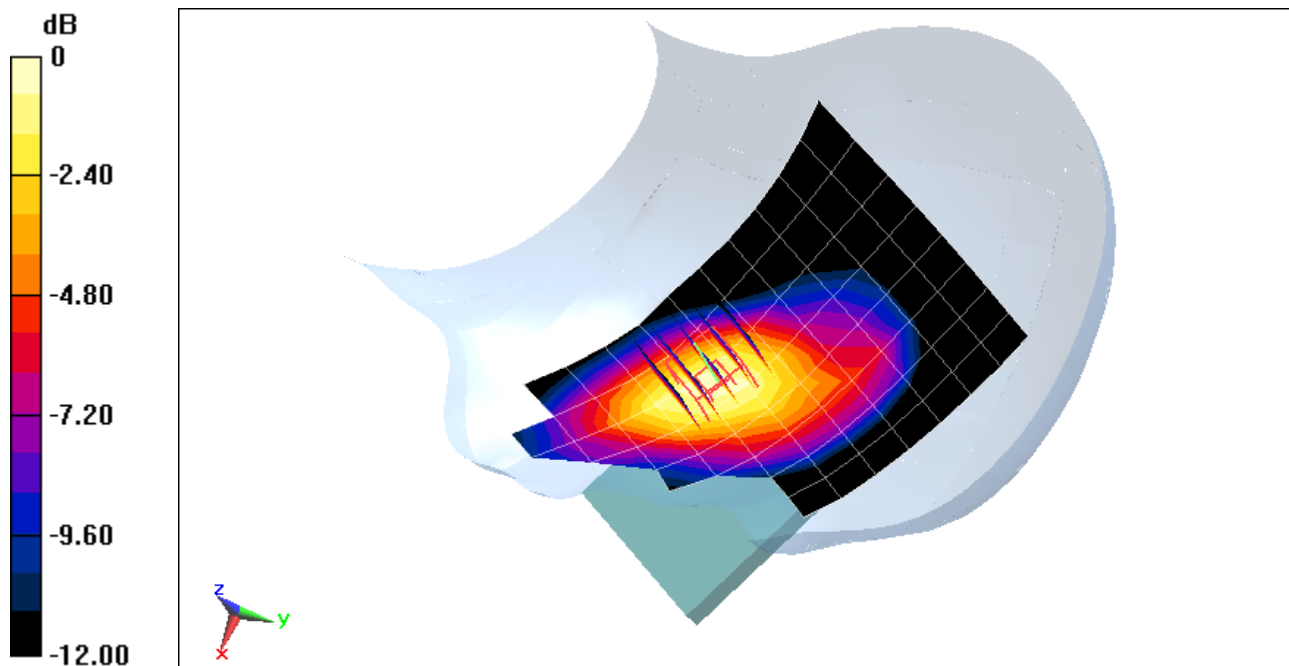
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.111 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.754 W/kg

SAR(1 g) = 0.513 W/kg



0 dB = 0.554 W/kg = -2.56 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

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

Medium: 1900 Head Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.37 \text{ S/m}$; $\epsilon_r = 38.396$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 02-14-2014; Ambient Temp: 23.2°C; Tissue Temp: 23.0°C

Probe: ES3DV2 - SN3022; ConvF(5.03, 5.03, 5.03); Calibrated: 8/22/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 8/21/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 2 (PCS), Left Head, Cheek, Mid.ch

20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

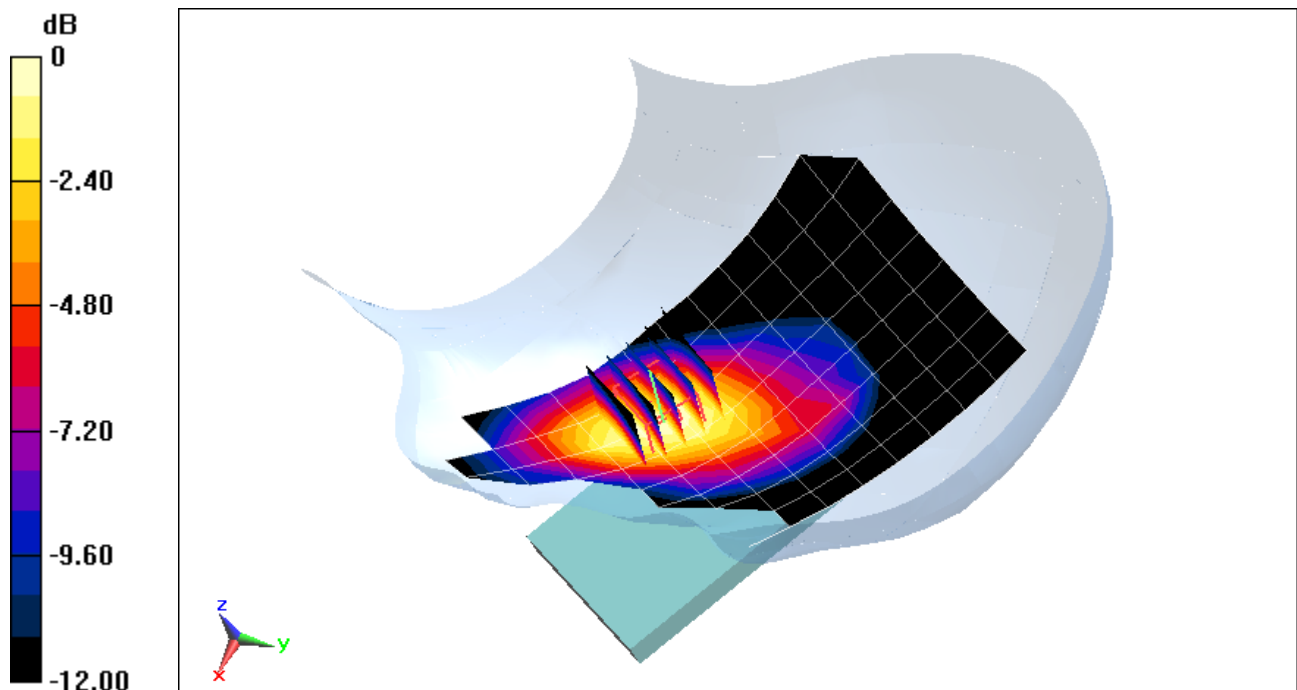
Area Scan (9x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 23.358 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.917 W/kg

SAR(1 g) = 0.604 W/kg



0 dB = 0.655 W/kg = -1.84 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: F1185

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

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

$f = 2412 \text{ MHz}$; $\sigma = 1.793 \text{ S/m}$; $\epsilon_r = 38.177$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 02-06-2014; Ambient Temp: 24.3°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3333; ConvF(4.42, 4.42, 4.42); Calibrated: 11/22/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

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

Phantom: SAM (20deg probe tilt) with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11b, Right Head, Tilt, Ch 1, 1 Mbps, Antenna 1

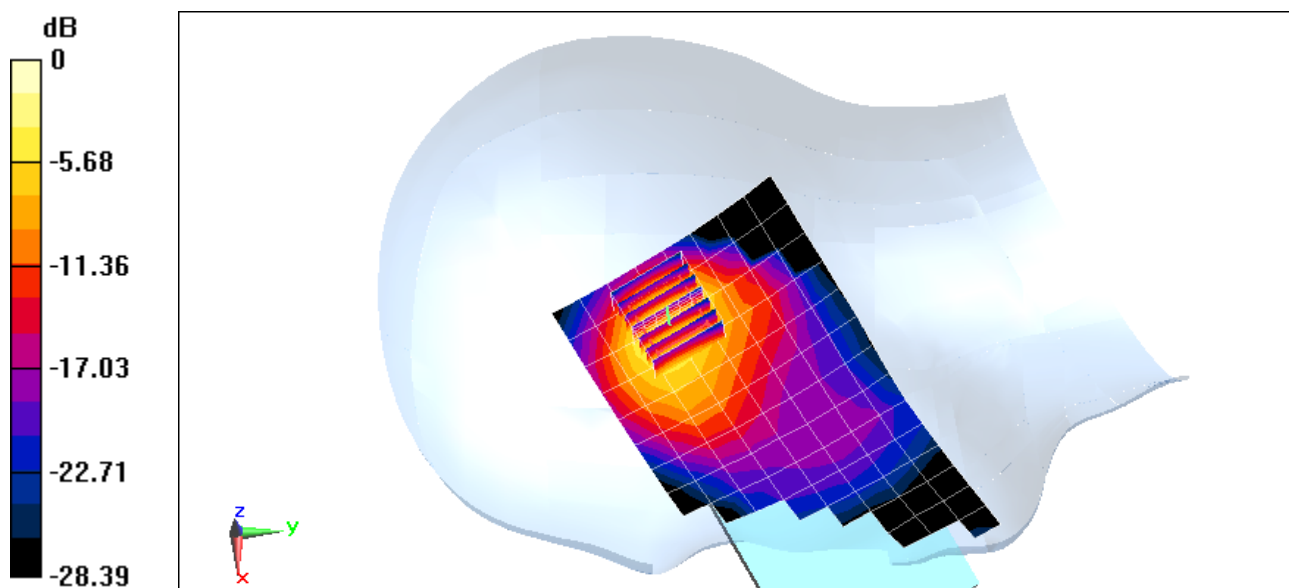
Area Scan (9x16x1): Measurement grid: $dx=12\text{mm}$, $dy=12\text{mm}$

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

Reference Value = 19.554 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.558 W/kg



0 dB = 0.759 W/kg = -1.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 00F0F

Communication System: UID 0, IEEE 802.11a; Frequency: 5805 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head, Medium parameters used:

$f = 5805 \text{ MHz}$; $\sigma = 5.182 \text{ S/m}$; $\epsilon_r = 36.540$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 02-12-2014; Ambient Temp: 24.4°C; Tissue Temp: 23.1°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 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11a, 5.8 GHz, Right Head, Cheek, Ch 161, 6 Mbps, Antenna 2

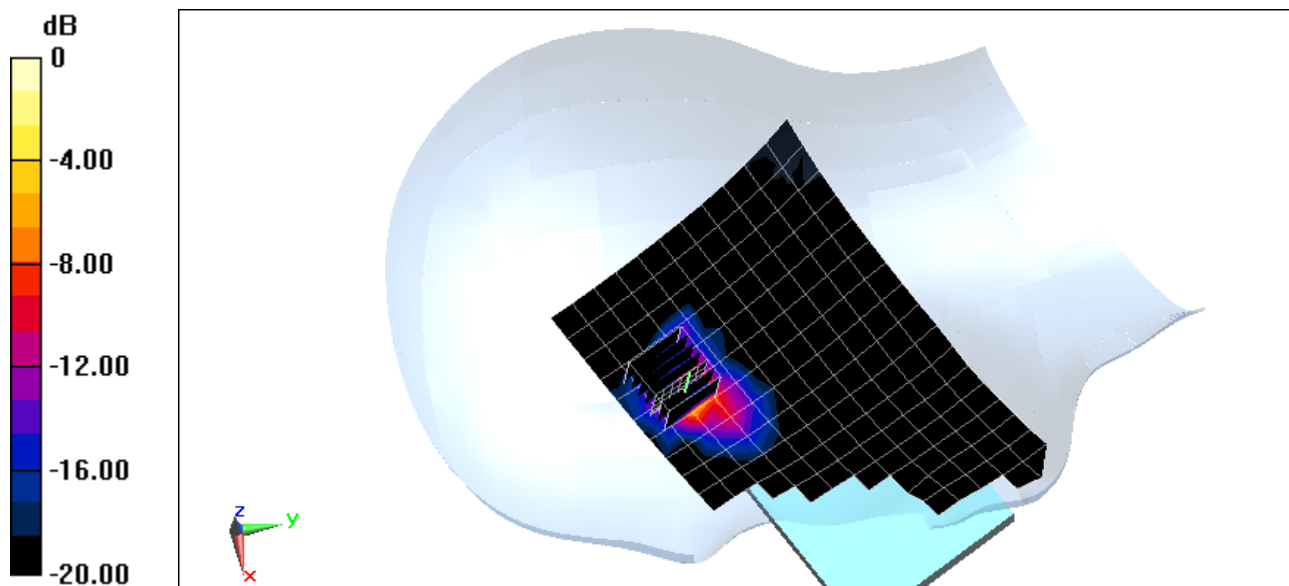
Area Scan (12x19x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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 = 8.140 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 2.18 W/kg

SAR(1 g) = 0.387 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 00F0F

Communication System: UID 0, IEEE 802.11a; Frequency: 5220 MHz; Duty Cycle: 1:1

Medium: 5 GHz Head, Medium parameters used:

$f = 5220 \text{ MHz}$; $\sigma = 4.53 \text{ S/m}$; $\epsilon_r = 37.142$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 02-12-2014; Ambient Temp: 24.0°C; Tissue Temp: 23.0°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 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11a, 5.2 GHz, Right Head, Tilt, Ch 44, 6 Mbps, Antenna 1

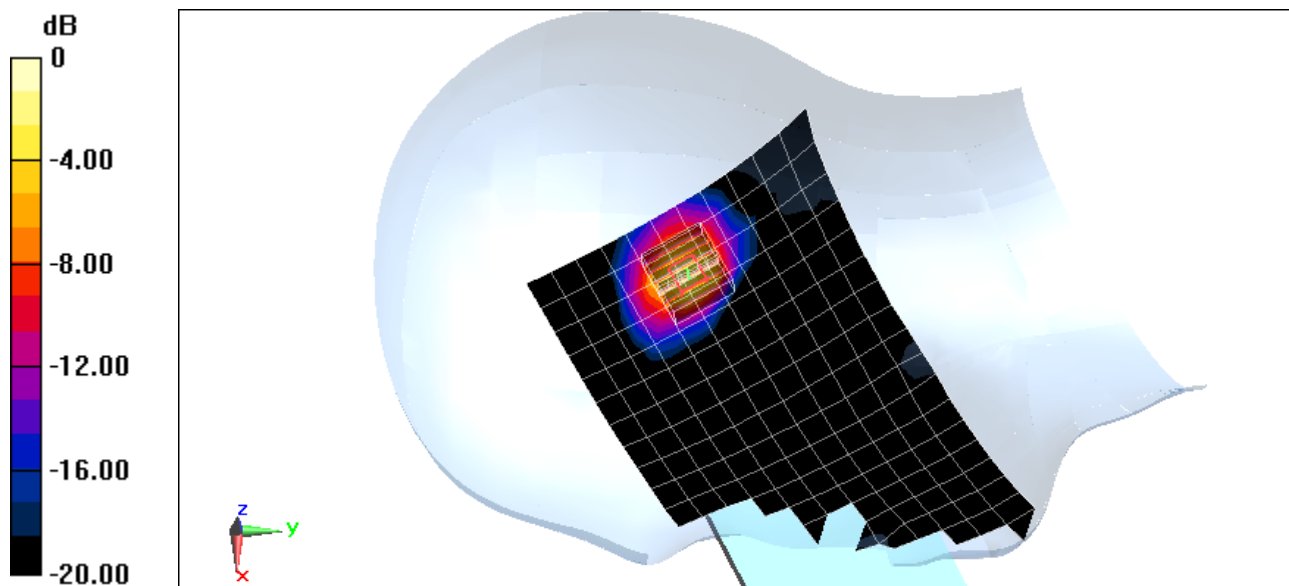
Area Scan (12x19x1): Measurement grid: dx=10mm, dy=10mm

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

Reference Value = 10.972 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 2.46 W/kg

SAR(1 g) = 0.594 W/kg



0 dB = 1.49 W/kg = 1.73 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

Communication System: UID 0, GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 52.98$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.4°C; Tissue Temp: 19.9°C

Probe: ES3DV3 - SN3263; ConvF(6.29, 6.29, 6.29); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

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

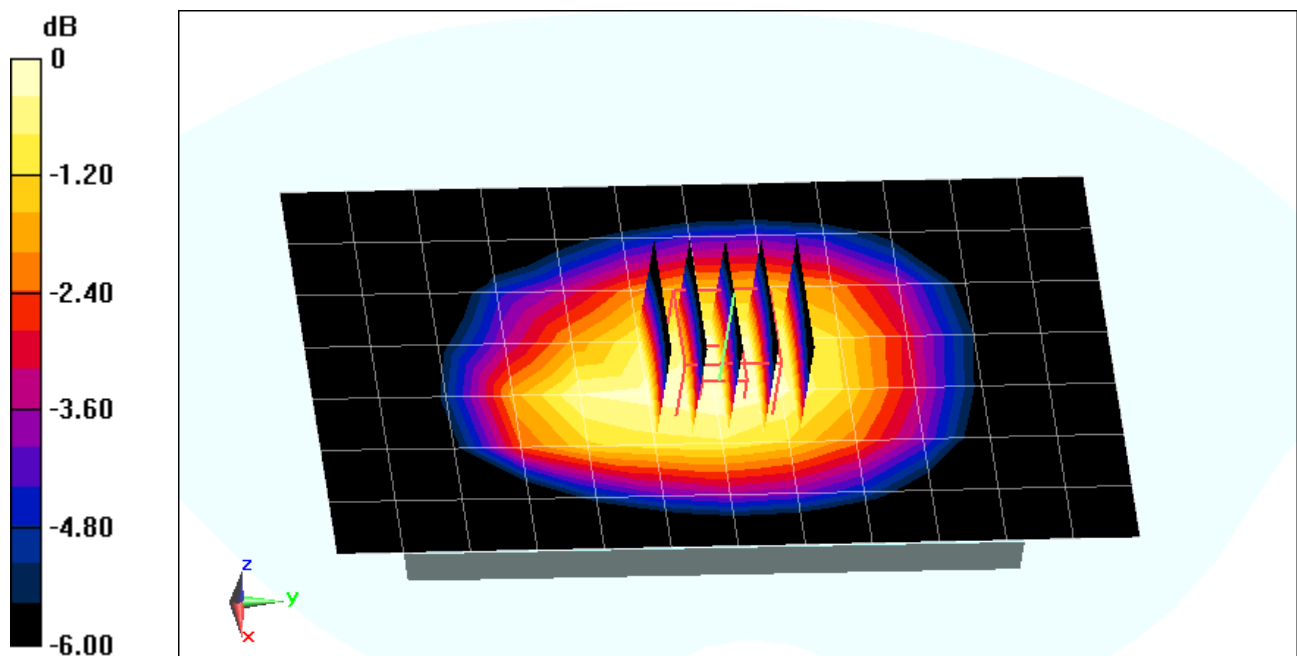
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 20.418 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.366 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

Communication System: UID 0, GSM850 GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 52.98$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.4°C; Tissue Temp: 19.9°C

Probe: ES3DV3 - SN3263; ConvF(6.29, 6.29, 6.29); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

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

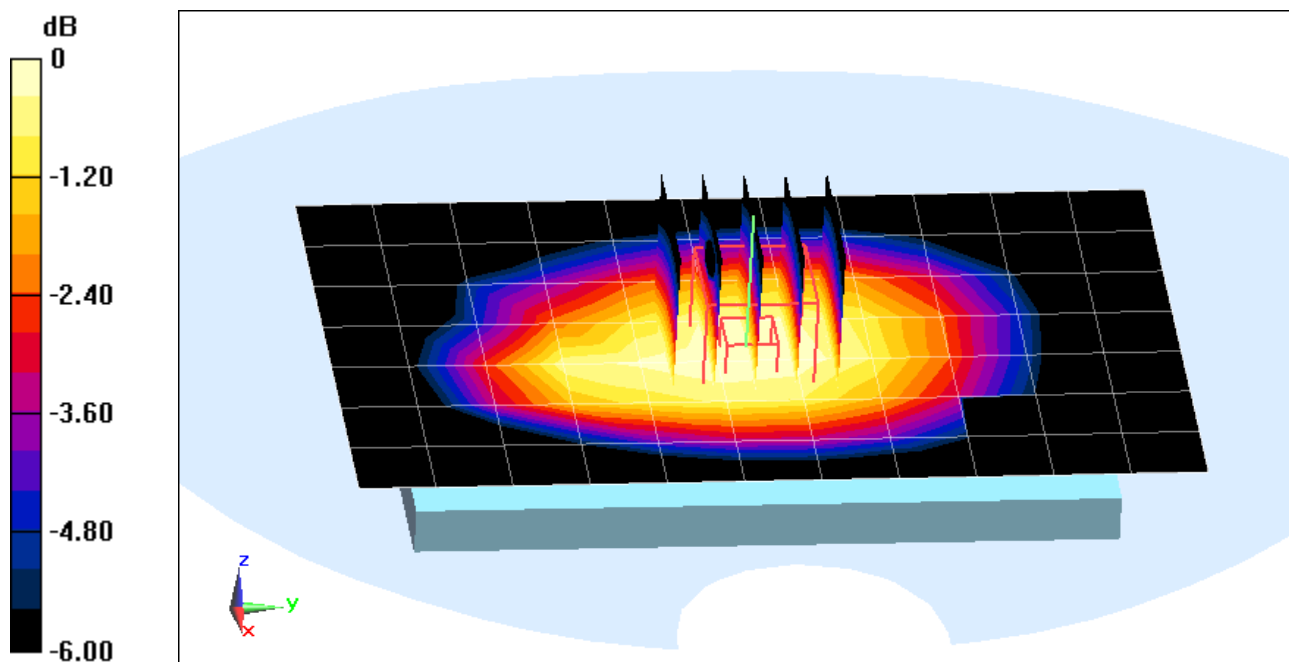
Area Scan (8x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.735 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.514 W/kg

SAR(1 g) = 0.413 W/kg



0 dB = 0.430 W/kg = -3.67 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4C

Communication System: UID 0, UMTS850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.947 \text{ S/m}$; $\epsilon_r = 52.98$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.4°C; Tissue Temp: 19.9°C

Probe: ES3DV3 - SN3263; ConvF(6.29, 6.29, 6.29); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

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

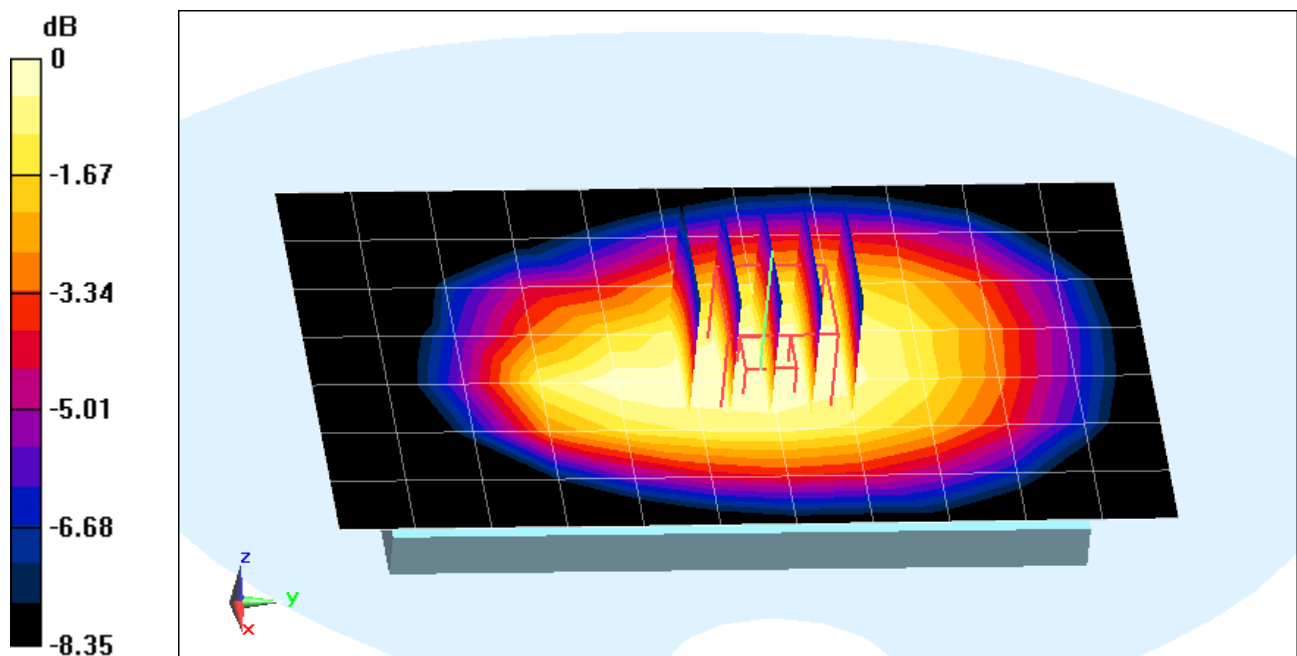
Area Scan (8x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 14.228 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.175 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4D

Communication System: UID 0, UMTS; Frequency: 1730.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1730.4 \text{ MHz}$; $\sigma = 1.455 \text{ S/m}$; $\epsilon_r = 51.635$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-24-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3209; ConvF(5.03, 5.03, 5.03); Calibrated: 3/15/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/8/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.8 (7028)

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

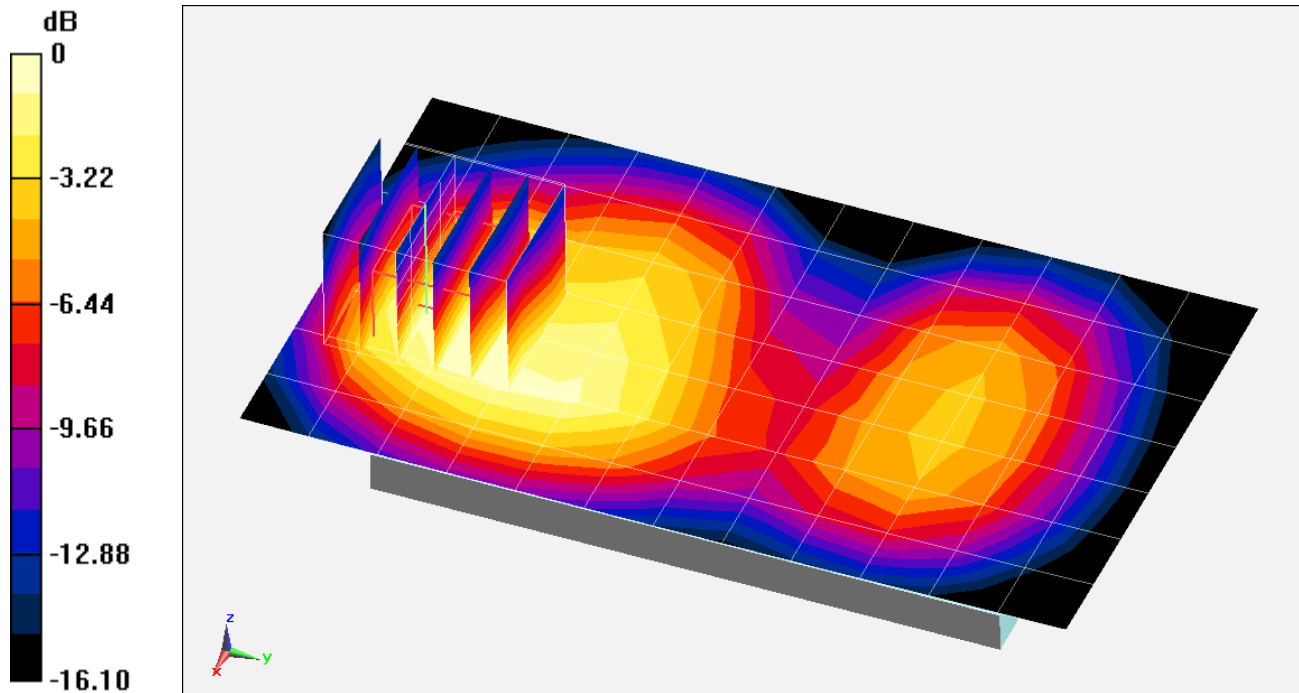
Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 28.481 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 0.870 W/kg



0 dB = 0.970 W/kg = -0.13 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4D

Communication System: UID 0, UMTS; Frequency: 1730.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1730.4$ MHz; $\sigma = 1.455$ S/m; $\epsilon_r = 51.635$; $\rho = 1000$ kg/m³

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-24-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3209; ConvF(5.03, 5.03, 5.03); Calibrated: 3/15/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/8/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.8 (7028)

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

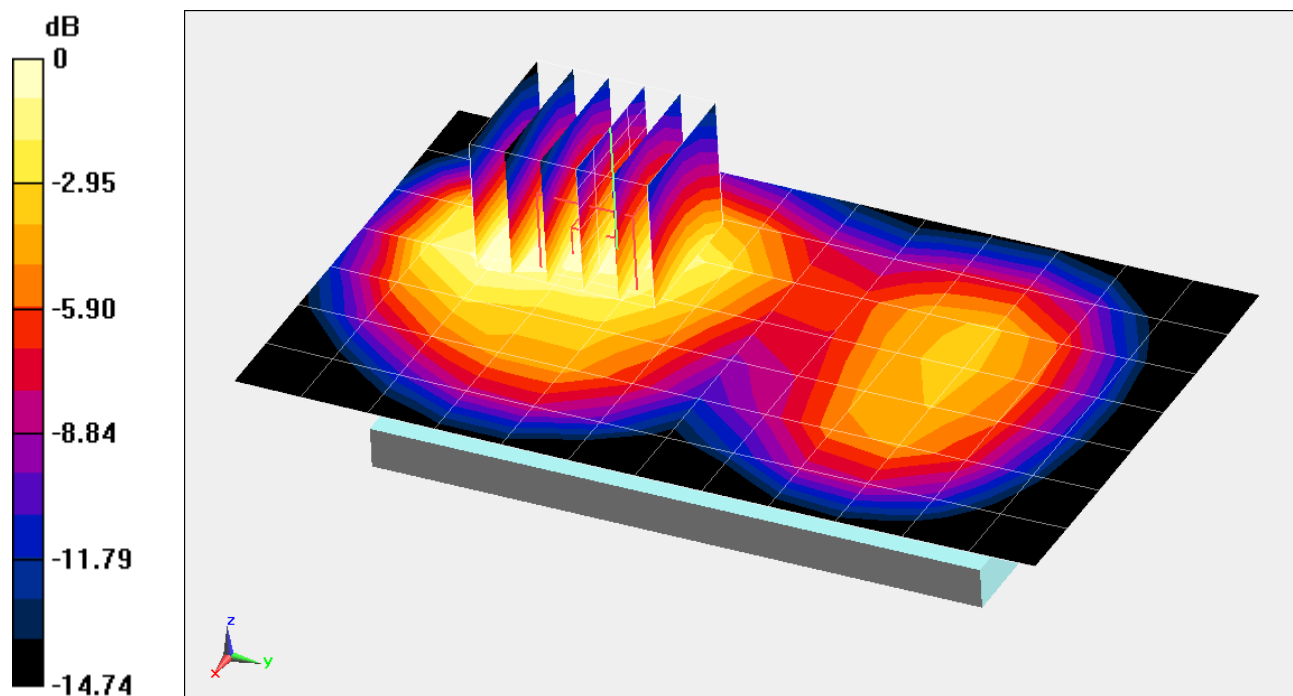
Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 28.235 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 1.03 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

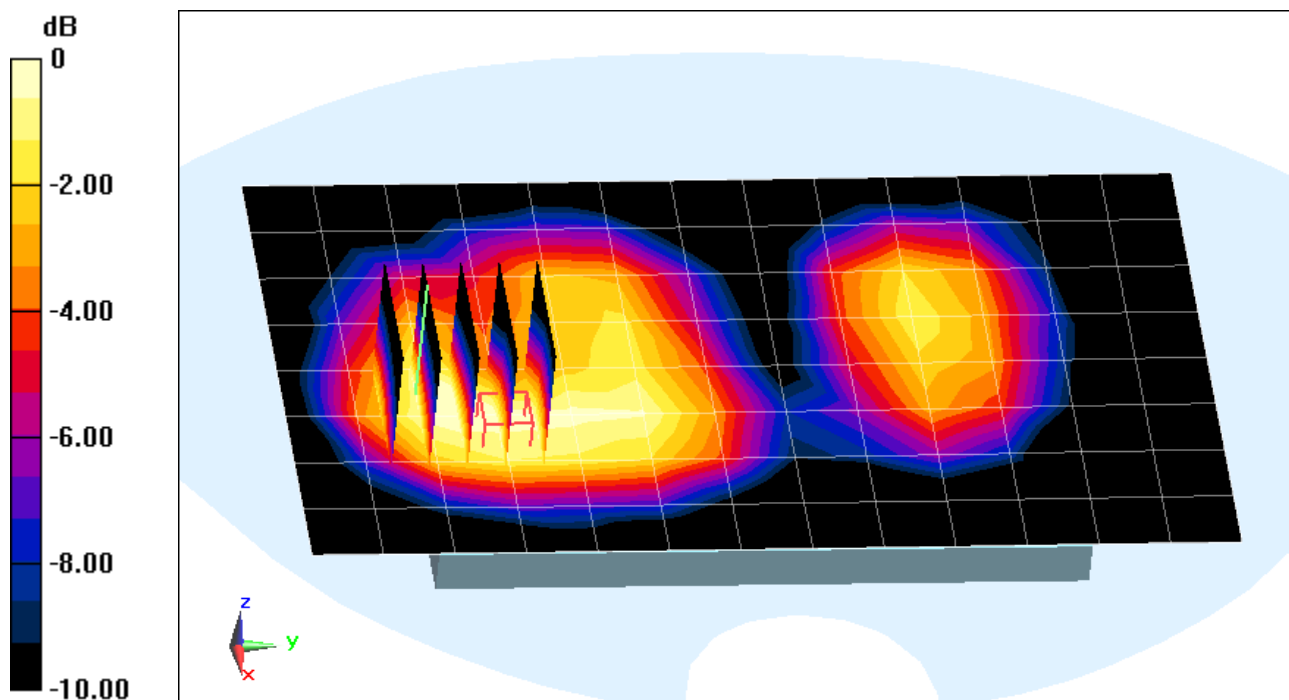
Area Scan (9x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.152 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.250 W/kg

SAR(1 g) = 0.143 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90DBA

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

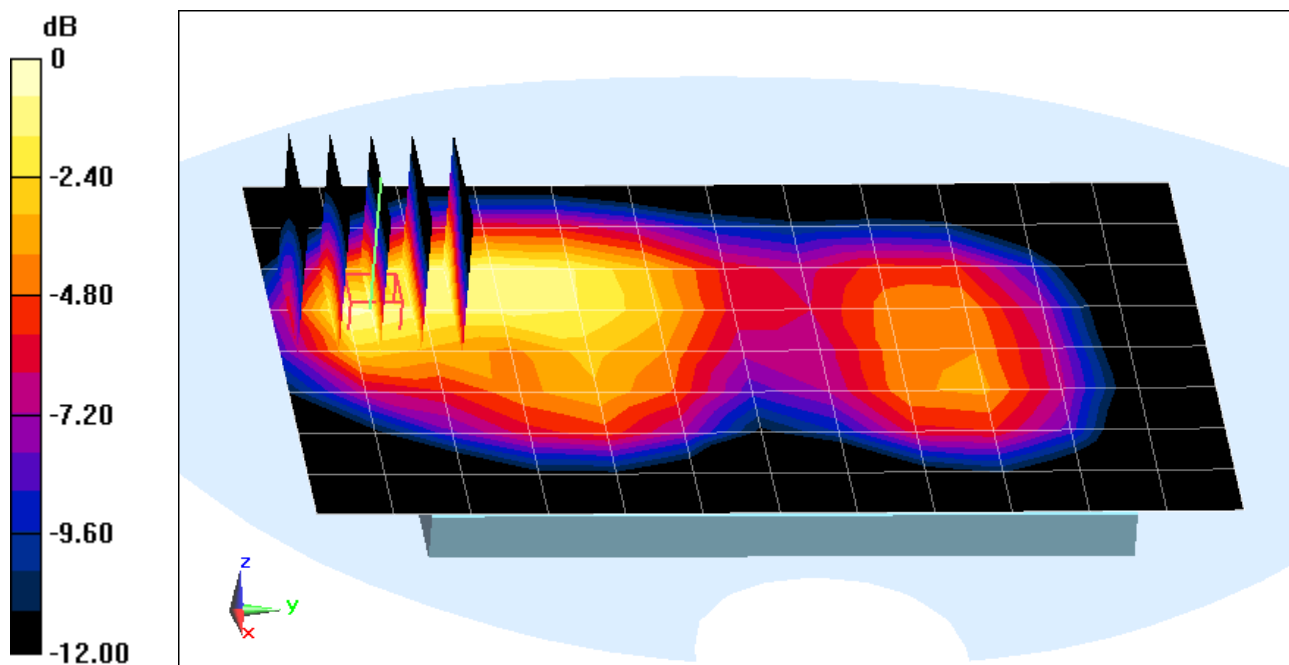
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 15.396 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.615 W/kg

SAR(1 g) = 0.335 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4C

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

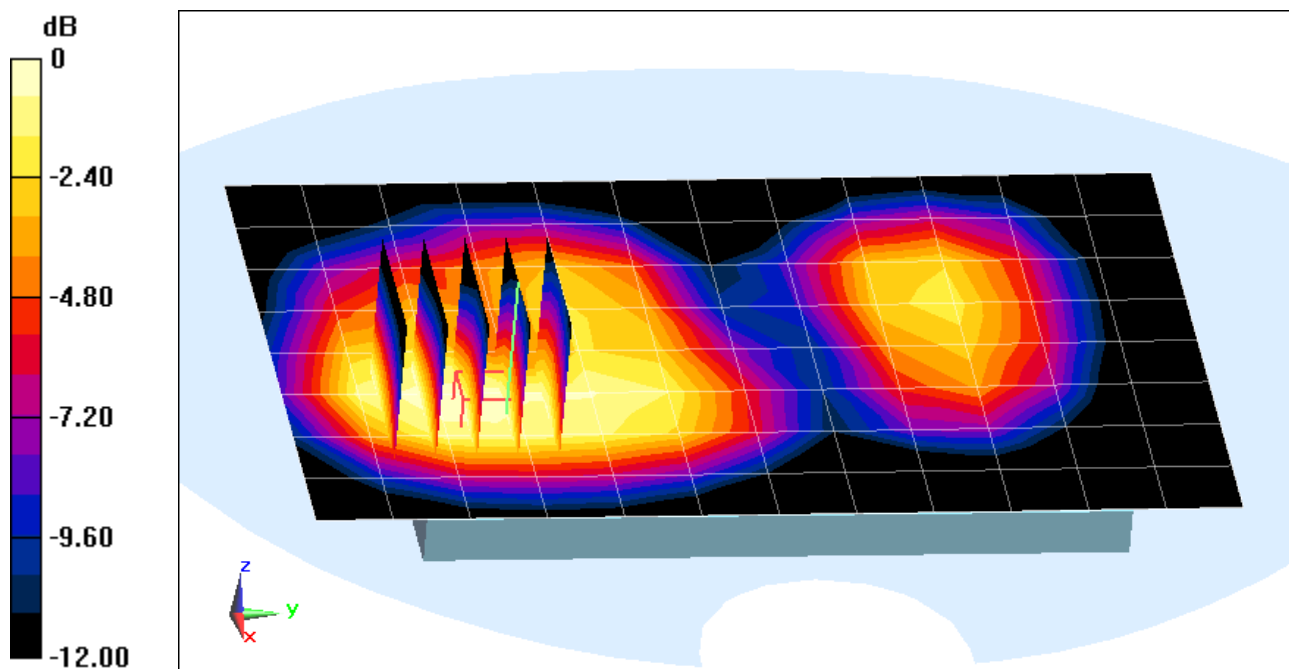
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 13.228 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.245 W/kg



0 dB = 0.263 W/kg = -5.80 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4C

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

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

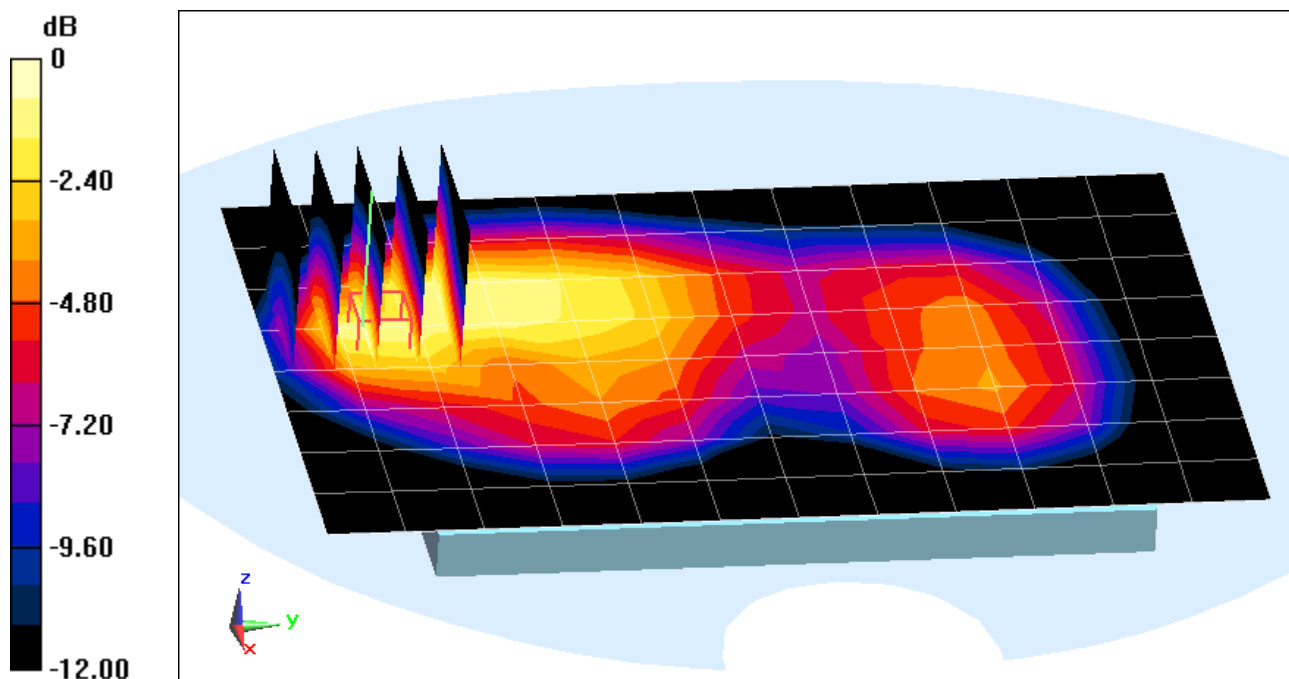
Area Scan (9x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 17.569 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.921 W/kg

SAR(1 g) = 0.493 W/kg



0 dB = 0.536 W/kg = -2.71 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 00E6B

Communication System: UID 0, LTE BAND 17; Frequency: 710 MHz; Duty Cycle: 1:1

Medium: 740 Body Medium parameters used:

$f = 710 \text{ MHz}$; $\sigma = 0.927 \text{ S/m}$; $\epsilon_r = 55.295$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-14-2014; Ambient Temp: 21.7°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3263; ConvF(6.37, 6.37, 6.37); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 17, Body SAR, Back side, Mid.ch

10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

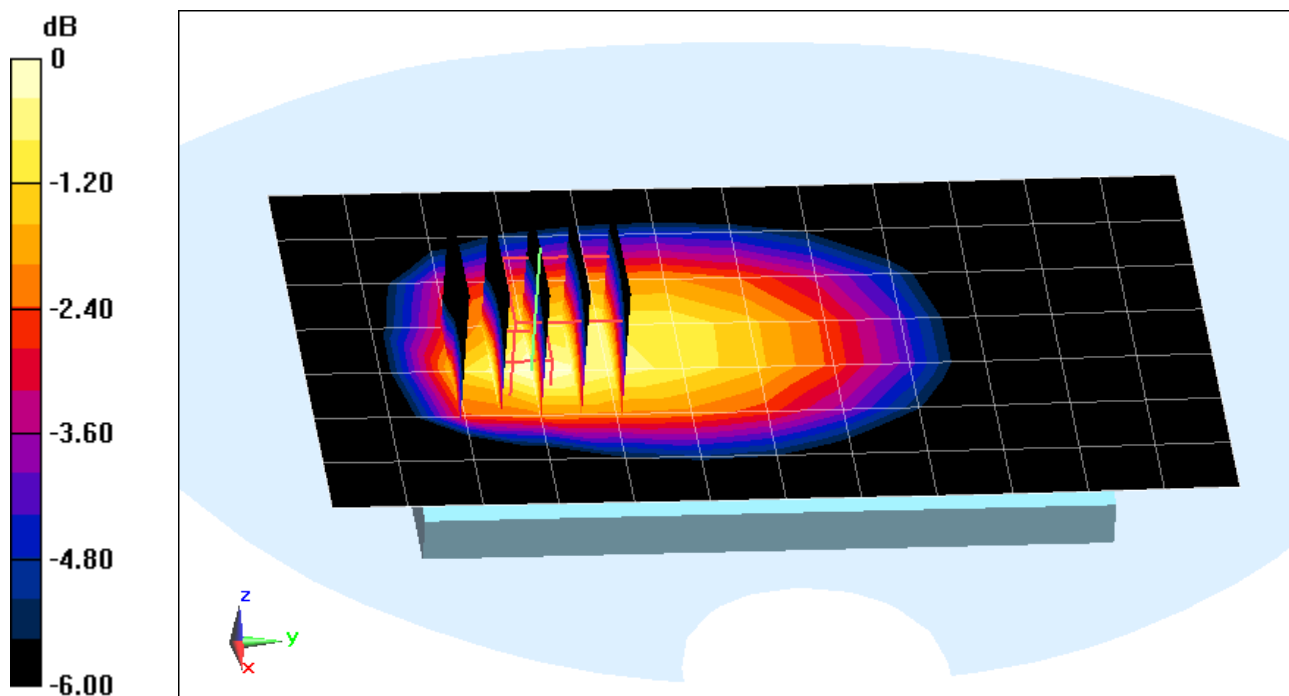
Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.186 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.382 W/kg

SAR(1 g) = 0.276 W/kg



0 dB = 0.294 W/kg = -5.32 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$; $\sigma = 0.946 \text{ S/m}$; $\epsilon_r = 52.981$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.4°C; Tissue Temp: 19.9°C

Probe: ES3DV3 - SN3263; ConvF(6.29, 6.29, 6.29); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 5 (Cell), Body SAR, Back side, Mid.ch

10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset

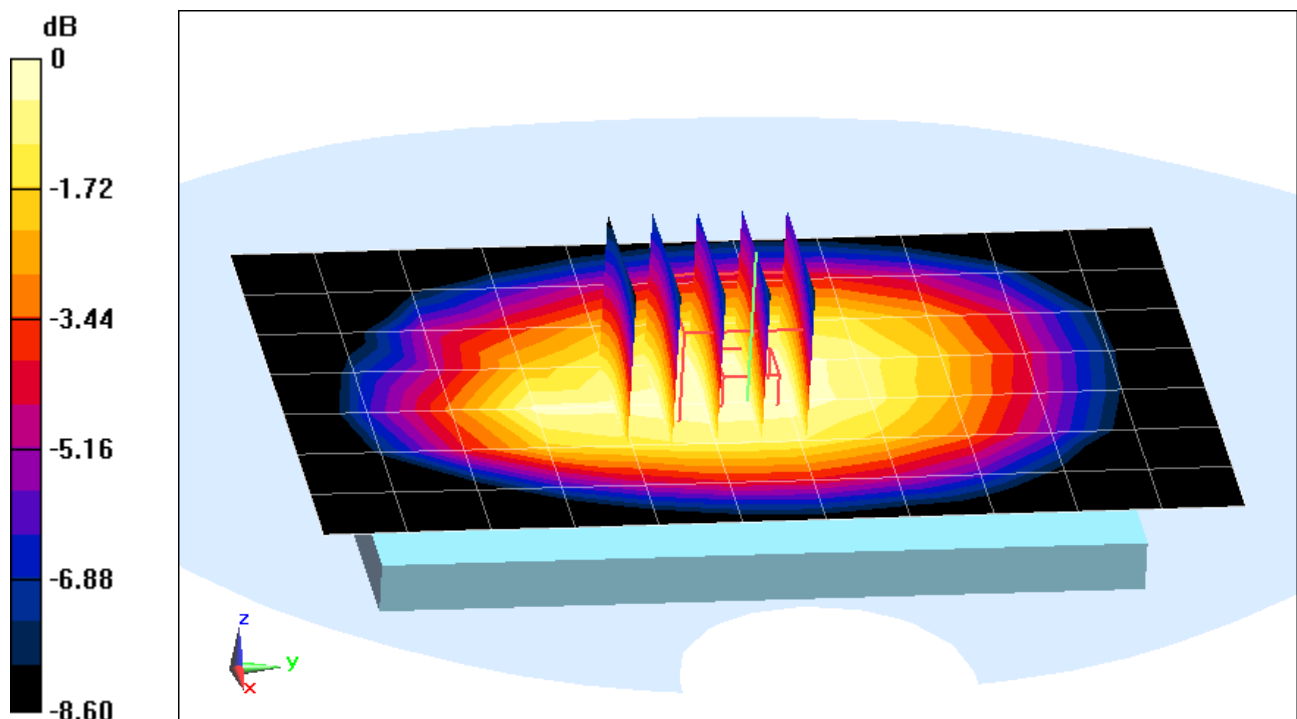
Area Scan (8x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.519 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.515 W/kg

SAR(1 g) = 0.415 W/kg



0 dB = 0.434 W/kg = -3.63 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D4D

Communication System: UID 0, LTE RF; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.5 \text{ MHz}$; $\sigma = 1.505 \text{ S/m}$; $\epsilon_r = 52.496$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.1°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3288; ConvF(5.1, 5.1, 5.1); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 4 (AWS), Body SAR, Back side, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

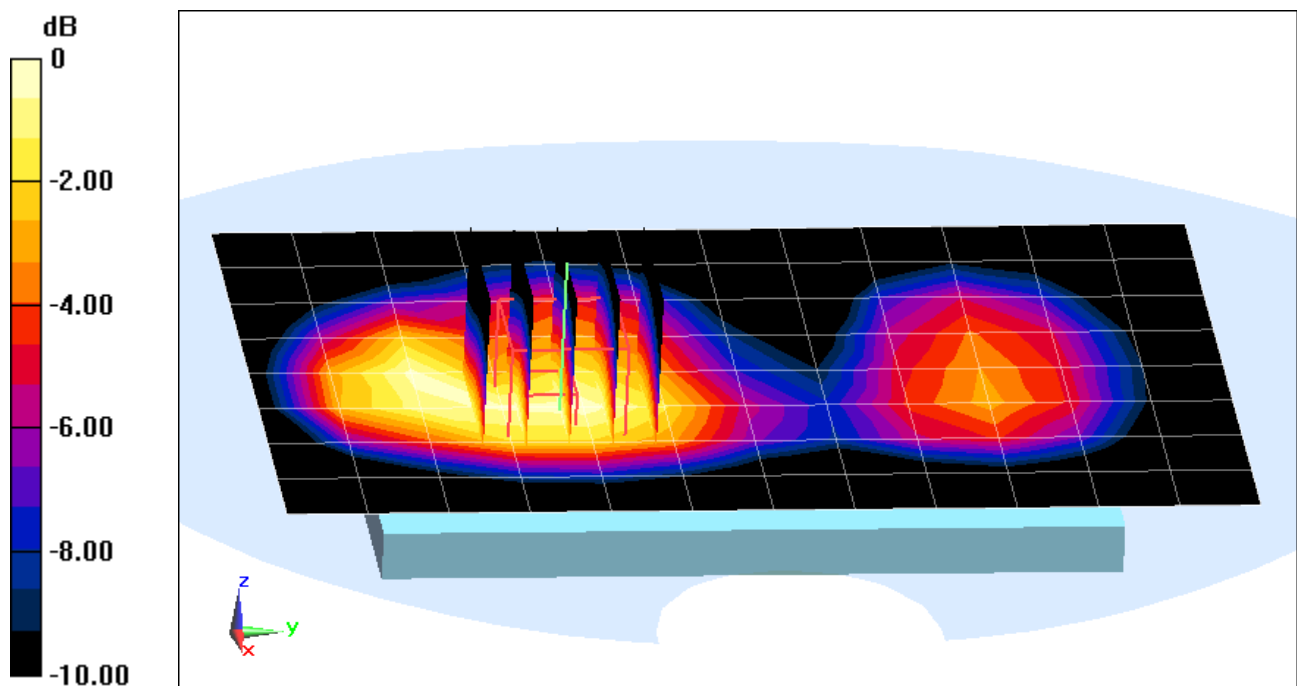
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 20.627 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.915 W/kg

SAR(1 g) = 0.600 W/kg



0 dB = 0.642 W/kg = -1.92 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 2 (PCS), Body SAR, Back side, Mid.ch

20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

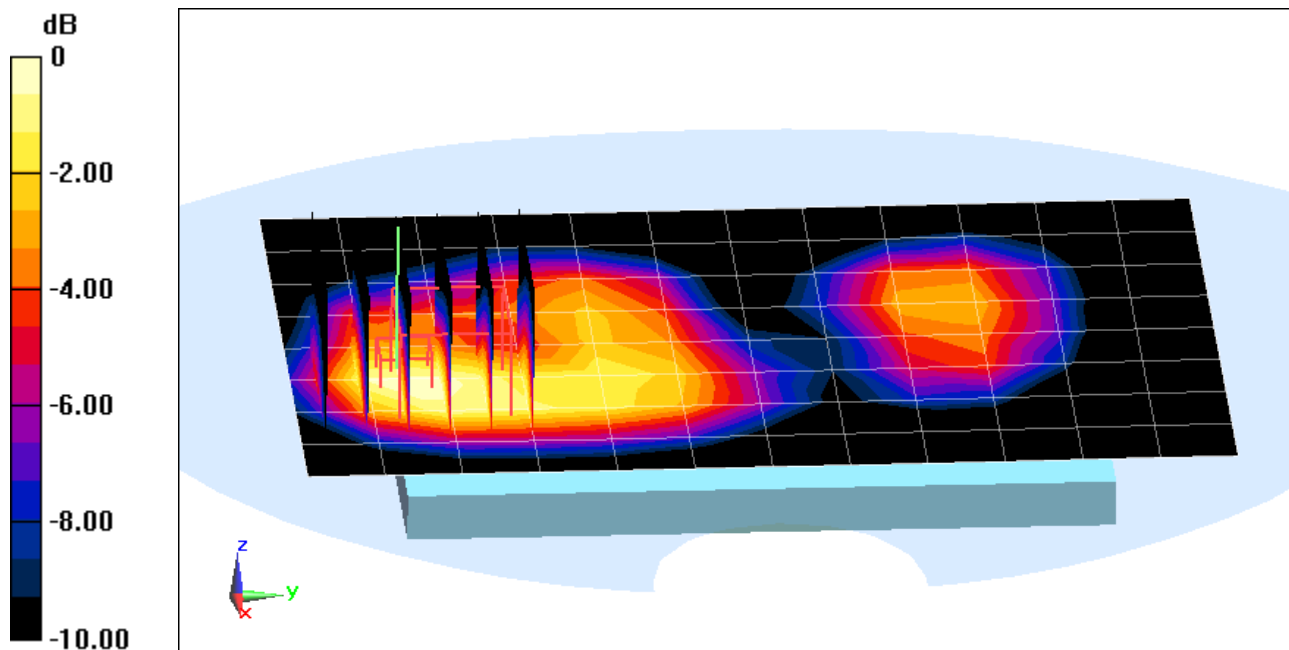
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 15.073 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.567 W/kg

SAR(1 g) = 0.311 W/kg



0 dB = 0.336 W/kg = -4.74 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 90D53

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

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.489 \text{ S/m}$; $\epsilon_r = 52.93$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: LTE Band 2 (PCS), Body SAR, Front side, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

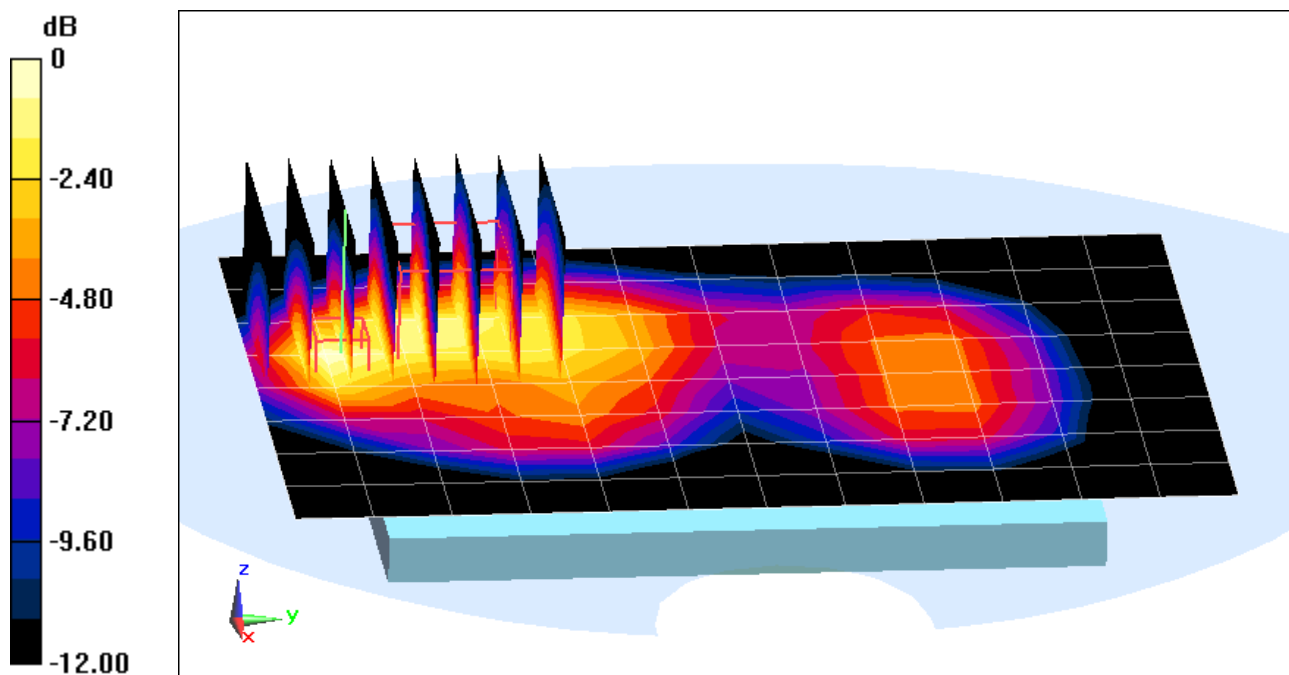
Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (6x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.988 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.562 W/kg



0 dB = 0.626 W/kg = -2.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 140FA

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

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

$f = 2412 \text{ MHz}$; $\sigma = 1.986 \text{ S/m}$; $\epsilon_r = 51.516$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3209; ConvF(4.34, 4.34, 4.34); Calibrated: 3/15/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/8/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11b, Body SAR, Ch 01, 1 Mbps, Back Side, Antenna 2

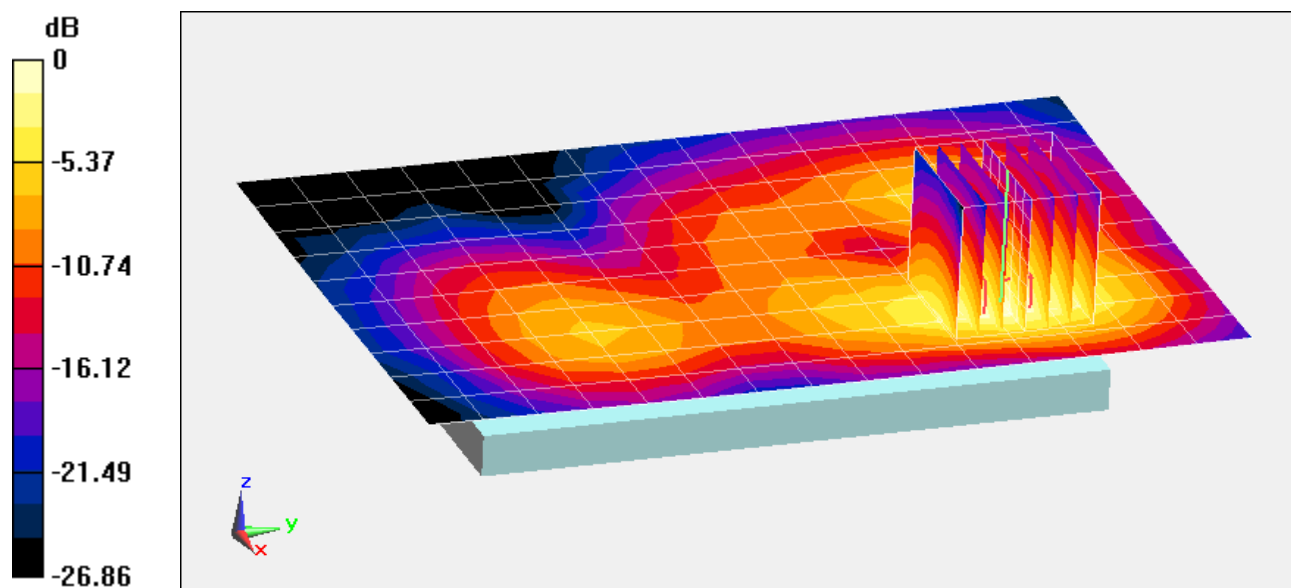
Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 12.752 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.662 W/kg

SAR(1 g) = 0.336 W/kg



0 dB = 0.430 W/kg = -3.67 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 14524

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

Medium: 5 GHz Body, Medium parameters used:

$f = 5745 \text{ MHz}$; $\sigma = 5.965 \text{ S/m}$; $\epsilon_r = 46.14$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3914; ConvF(4.14, 4.14, 4.14); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11a, 5.8 GHz, Body SAR, Ch 149, 6 Mbps, Back Side, Antenna 1

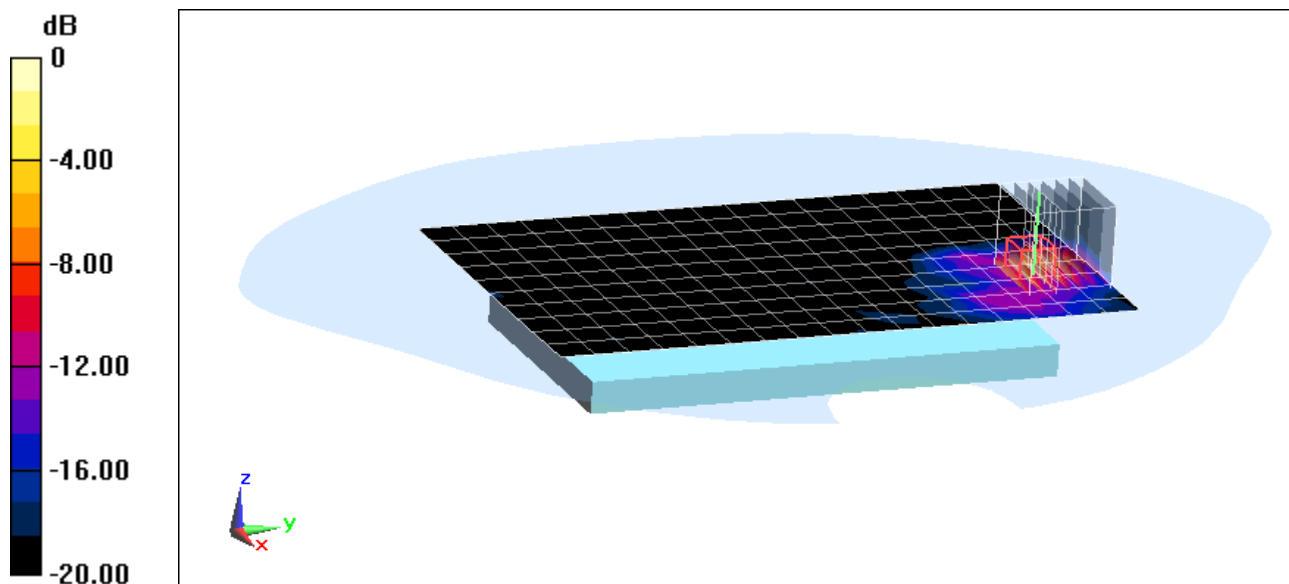
Area Scan (11x18x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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 = 6.092 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 0.409 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 14524

Communication System: UID 0, IEEE 802.11a; Frequency: 5805 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5805 \text{ MHz}$; $\sigma = 6.177 \text{ S/m}$; $\epsilon_r = 46.187$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.3°C

Probe: EX3DV4 - SN3914; ConvF(4.14, 4.14, 4.14); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11a, 5.8 GHz, Body SAR, Ch 161, 6 Mbps, Top Side, Antenna 1

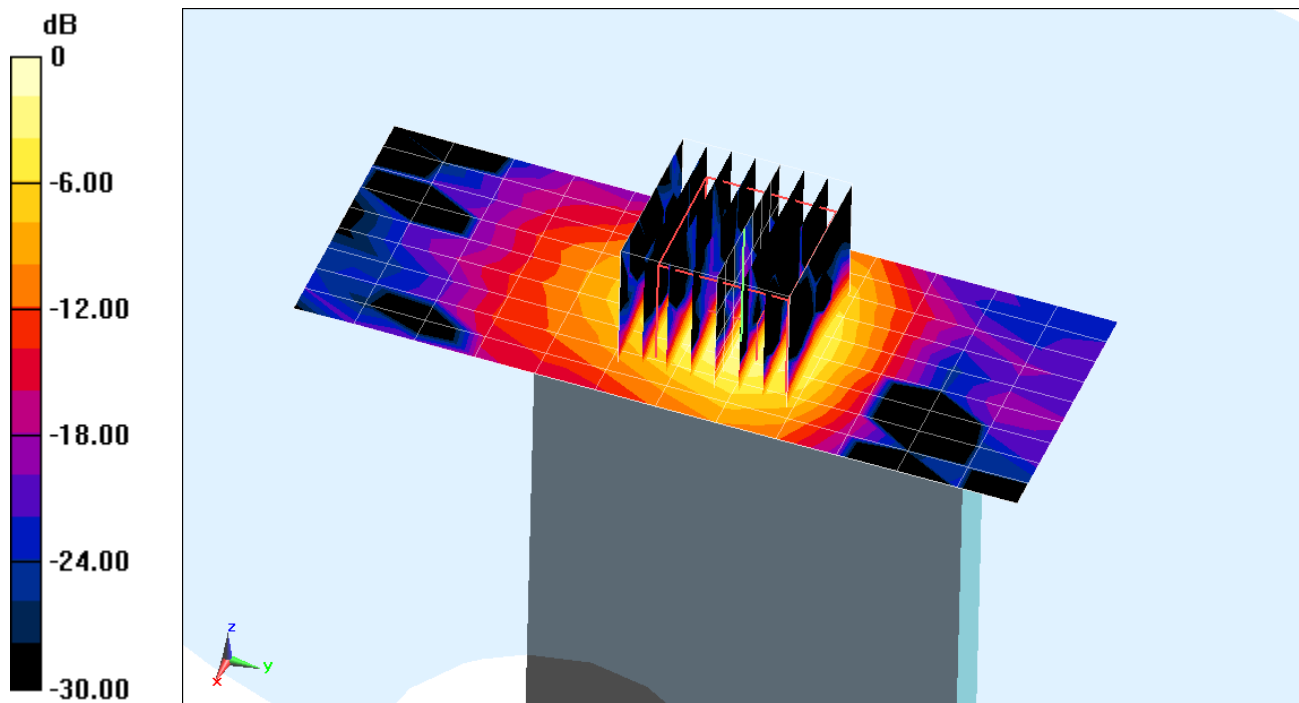
Area Scan (10x13x1): Measurement grid: $dx=5\text{mm}$, $dy=10\text{mm}$

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

Reference Value = 9.289 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.57 W/kg

SAR(1 g) = 0.569 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG900M; Type: Portable Handset; Serial: 14524

Communication System: UID 0, IEEE 802.11a; Frequency: 5540 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body, Medium parameters used:

$f = 5540 \text{ MHz}$; $\sigma = 5.696 \text{ S/m}$; $\epsilon_r = 46.55$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(4.07, 4.07, 4.07); Calibrated: 10/23/2013;

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Mode: IEEE 802.11a, 5.5 GHz, Body SAR, Ch 108, 6 Mbps, Back Side, Antenna 1

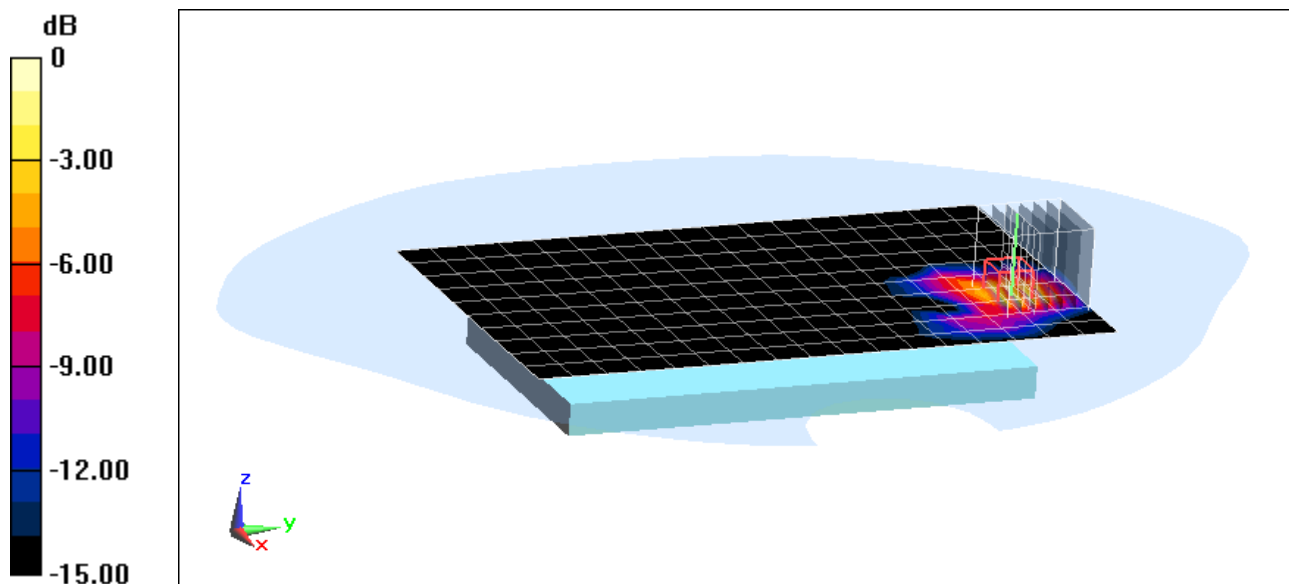
Area Scan (11x18x1): Measurement grid: dx=10mm, dy=10mm

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

Reference Value = 7.275 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 2.43 W/kg

SAR(1 g) = 0.558 W/kg



0 dB = 1.39 W/kg = 1.43 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1054

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 740 Head Medium parameters used (interpolated):

$f = 750 \text{ MHz}$; $\sigma = 0.929 \text{ S/m}$; $\epsilon_r = 43.287$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-17-2014; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3288; ConvF(6.56, 6.56, 6.56); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM Sub Dasy B; Type: SAM 5.0; Serial: TP-1626

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

750 MHz System Verification

Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

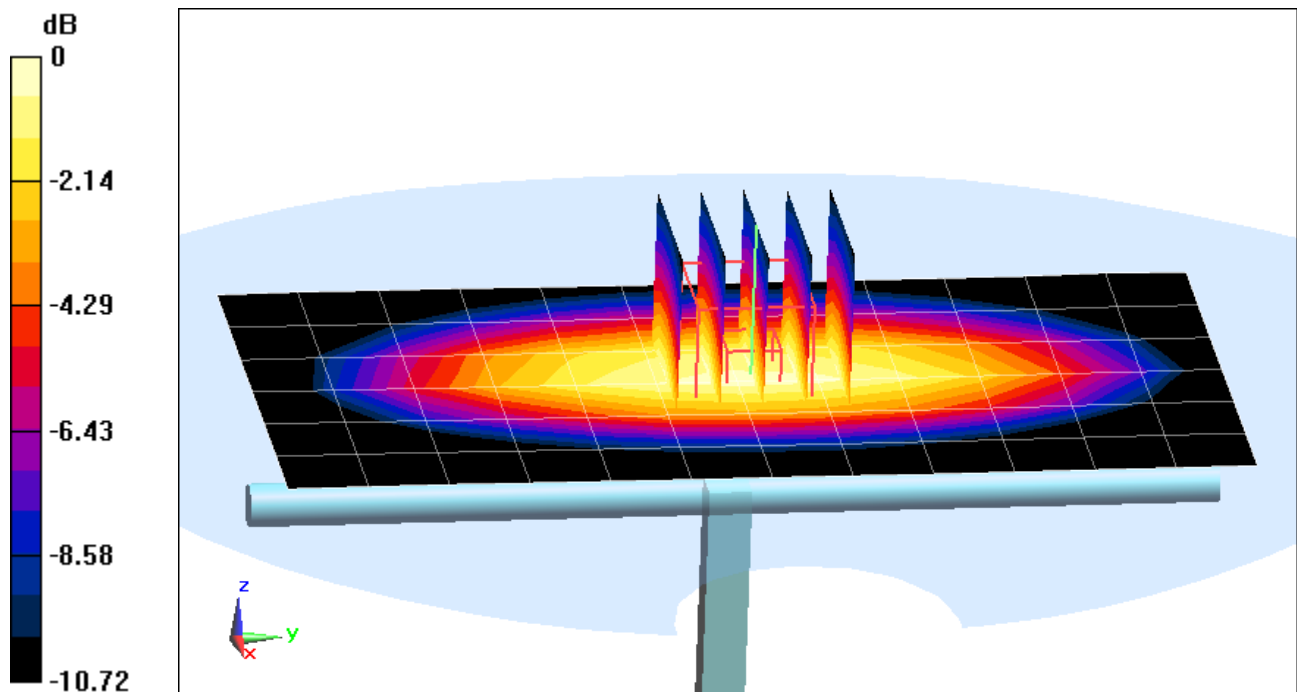
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.856 W/kg

Deviation = 0.71 %



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:

$f = 835 \text{ MHz}$; $\sigma = 0.896 \text{ S/m}$; $\epsilon_r = 40.791$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-14-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3318; ConvF(6.33, 6.33, 6.33); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1364; Calibrated: 4/22/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

835 MHz System Verification

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

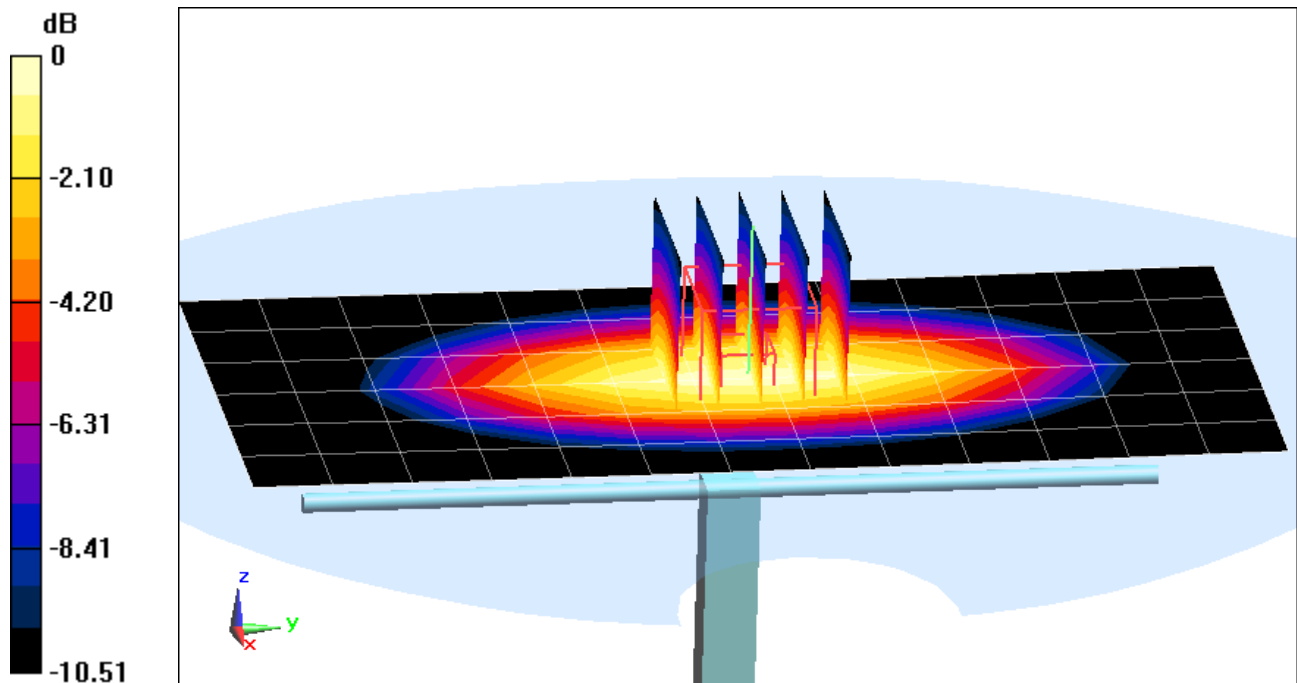
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.925 W/kg

Deviation = -4.44 %



0 dB = 0.999 W/kg = -0.00 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: 1008

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.359 \text{ S/m}$; $\epsilon_r = 38.427$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.0°C; Tissue Temp: 22.4°C

Probe: ES3DV3 - SN3288; ConvF(5.67, 5.67, 5.67); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM Sub Dasy B; Type: SAM 5.0; Serial: TP-1626

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

1750 MHz System Verification

Area Scan (6x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

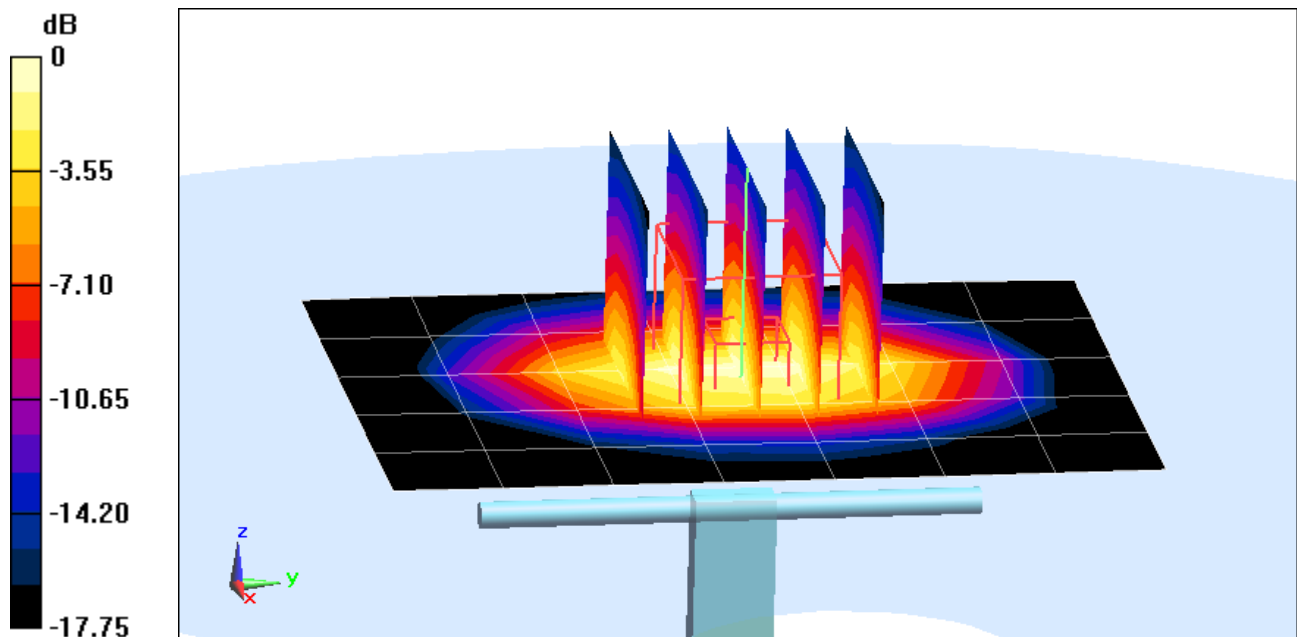
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 6.31 W/kg

SAR(1 g) = 3.44 W/kg

Deviation = -6.52 %



0 dB = 3.79 W/kg = 5.79 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: 1008

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.419 \text{ S/m}$; $\epsilon_r = 39.554$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-26-2014; Ambient Temp: 19.1°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3263; ConvF(5.3, 5.3, 5.3); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

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

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.8 (7028)

1750 MHz System Verification

Area Scan (6x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

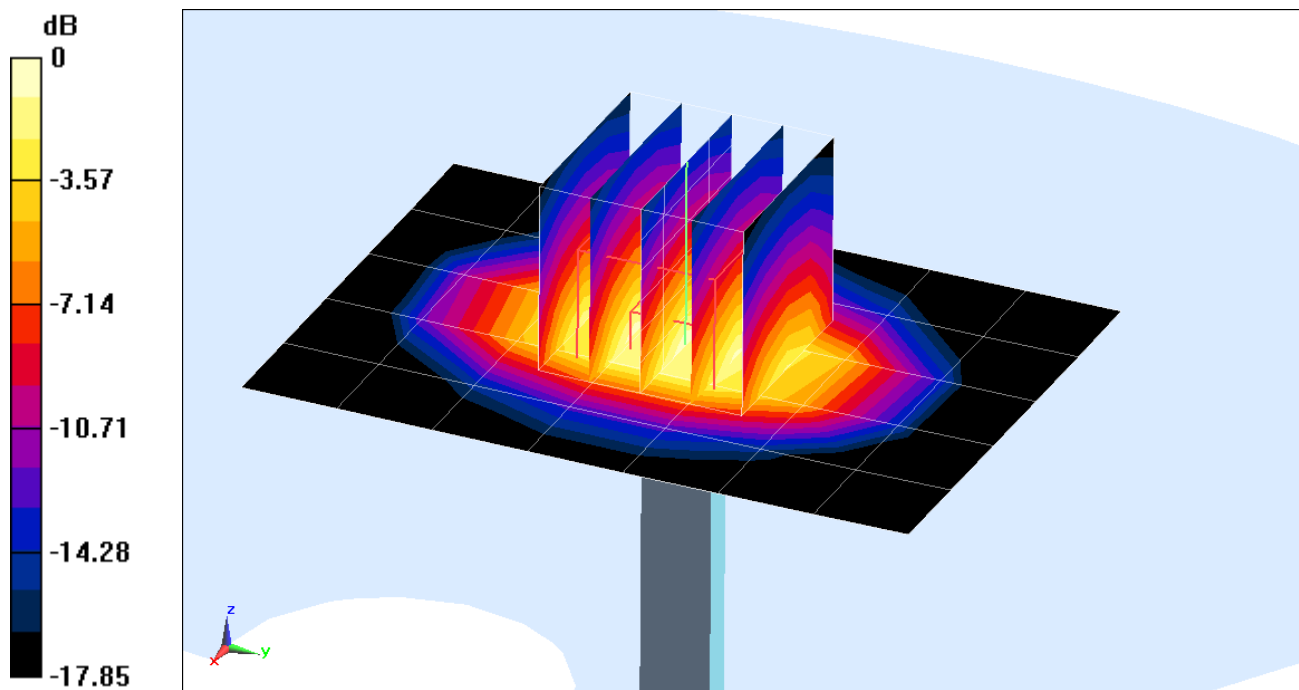
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 7.27 W/kg

SAR(1 g) = 3.92 W/kg

Deviation = 6.52%



0 dB = 4.38 W/kg = 6.41 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: 1900MHz SAR Dipole ; Type: D1900V2; Serial: 5d149

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

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.391 \text{ S/m}$; $\epsilon_r = 38.319$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-14-2014; Ambient Temp: 23.2°C; Tissue Temp: 23.0°C

Probe: ES3DV2 - SN3022; ConvF(5.03, 5.03, 5.03); Calibrated: 8/22/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 8/21/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

1900 MHz System Verification

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

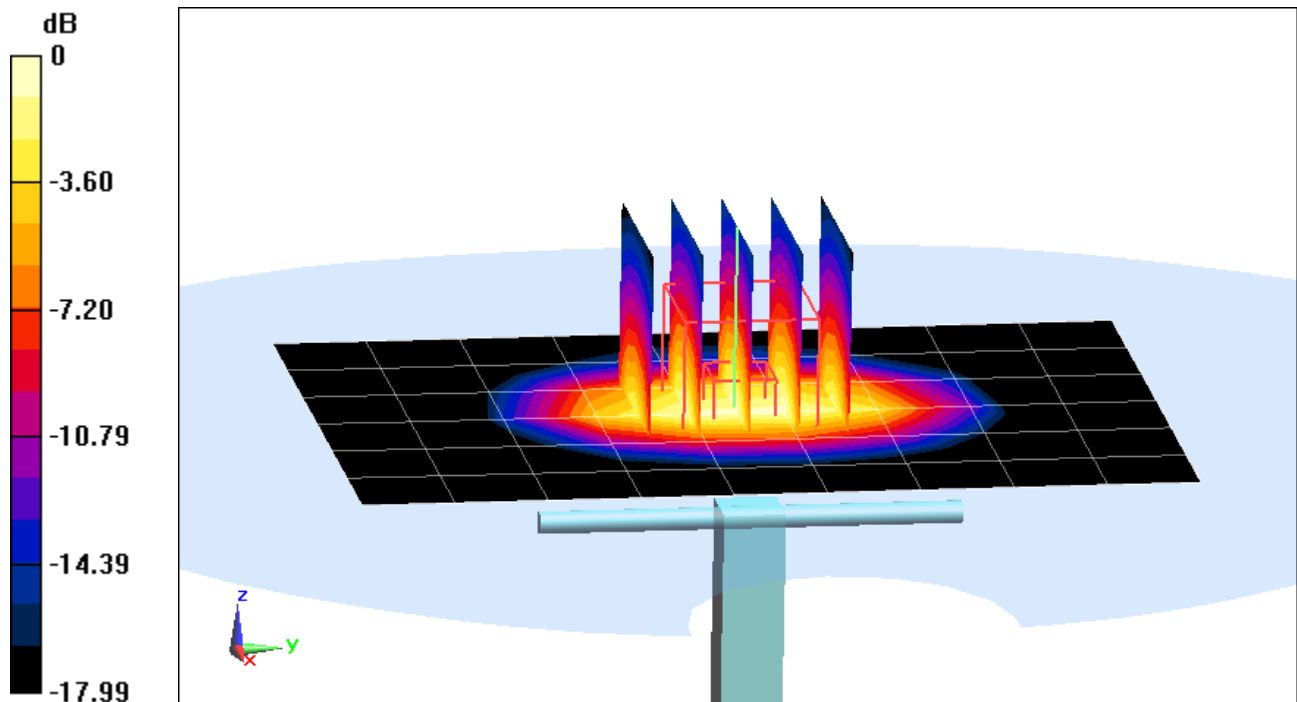
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 6.94 W/kg

SAR(1 g) = 3.75 W/kg

Deviation = -7.18 %



0 dB = 4.21 W/kg = 6.24 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

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

Medium: 2450 Head, Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.832 \text{ S/m}$; $\epsilon_r = 38.027$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-06-2014; Ambient Temp: 24.3°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3333; ConvF(4.42, 4.42, 4.42); Calibrated: 11/22/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

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

Phantom: SAM (20deg probe tilt) with CRP v4.0; Type: QD000P40CD; Serial: TP:1797

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

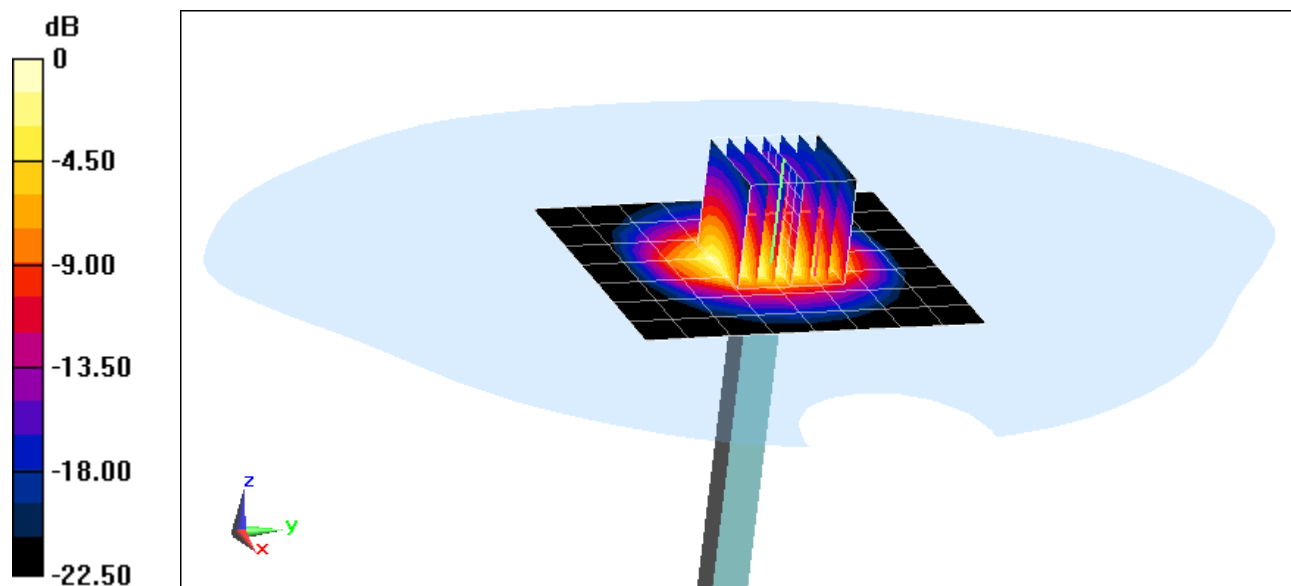
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 10.9 W/kg

SAR(1 g) = 5.32 W/kg

Deviation = 0.00%



0 dB = 6.86 W/kg = 8.36 dBW/kg

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:

$f = 5200 \text{ MHz}$; $\sigma = 4.52 \text{ S/m}$; $\epsilon_r = 37.219$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-12-2014; Ambient Temp: 24.0°C; Tissue Temp: 23.0°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 (7); SEMCAD X Version 14.6.10 (7164)

5200 MHz System Verification

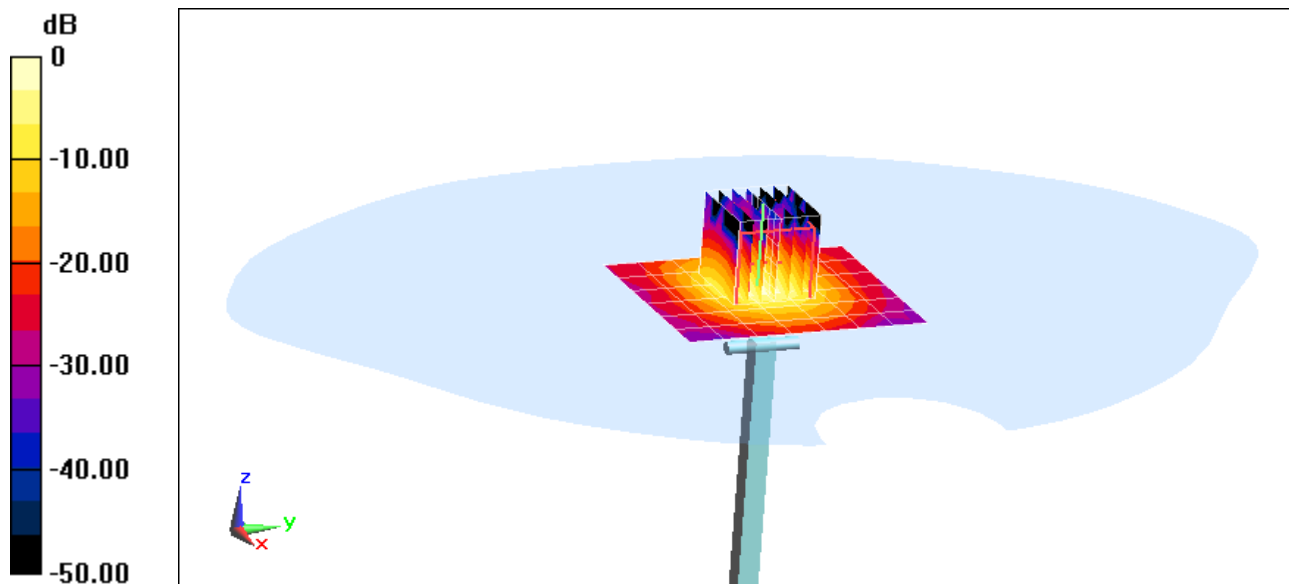
Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 3.04 W/kg

Deviation = -2.56%



0 dB = 6.83 W/kg = 8.34 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR 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:

$f = 5300 \text{ MHz}$; $\sigma = 4.624 \text{ S/m}$; $\epsilon_r = 37.071$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-12-2014; Ambient Temp: 24.0°C; Tissue Temp: 23.0°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 (7); SEMCAD X Version 14.6.10 (7164)

5300 MHz System Verification

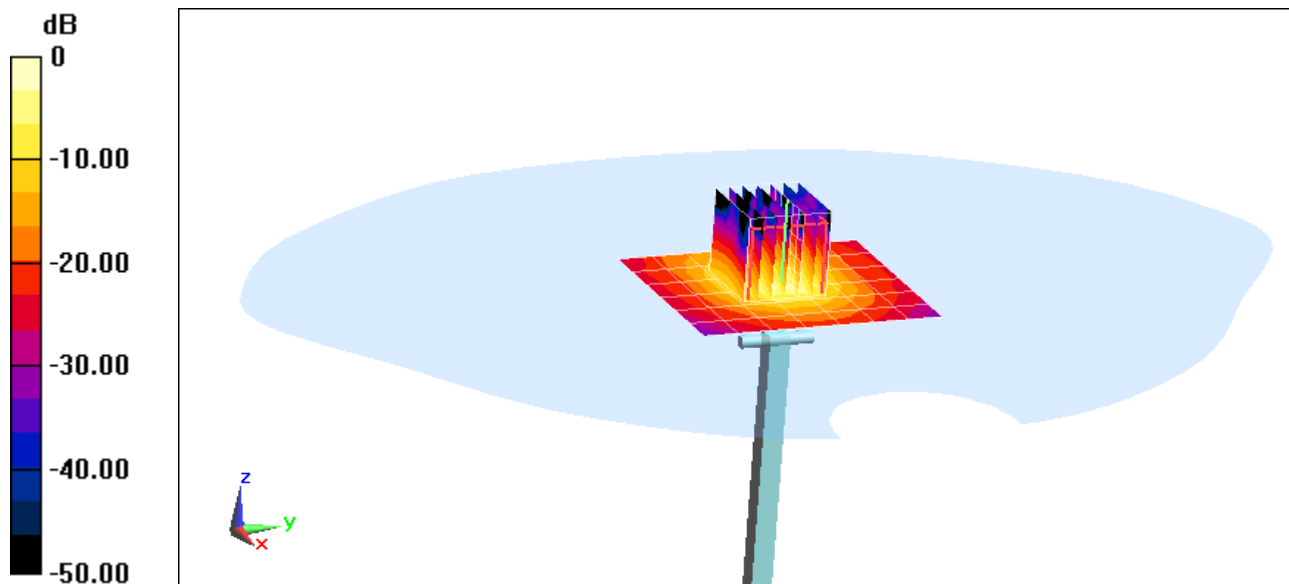
Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 14.0 W/kg

SAR(1 g) = 3.2 W/kg

Deviation = -3.61%



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:

$f = 5500 \text{ MHz}$; $\sigma = 4.782 \text{ S/m}$; $\epsilon_r = 36.84$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-12-2014; Ambient Temp: 24.4°C; Tissue Temp: 23.1°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 (7); SEMCAD X Version 14.6.10 (7164)

5500 MHz System Verification

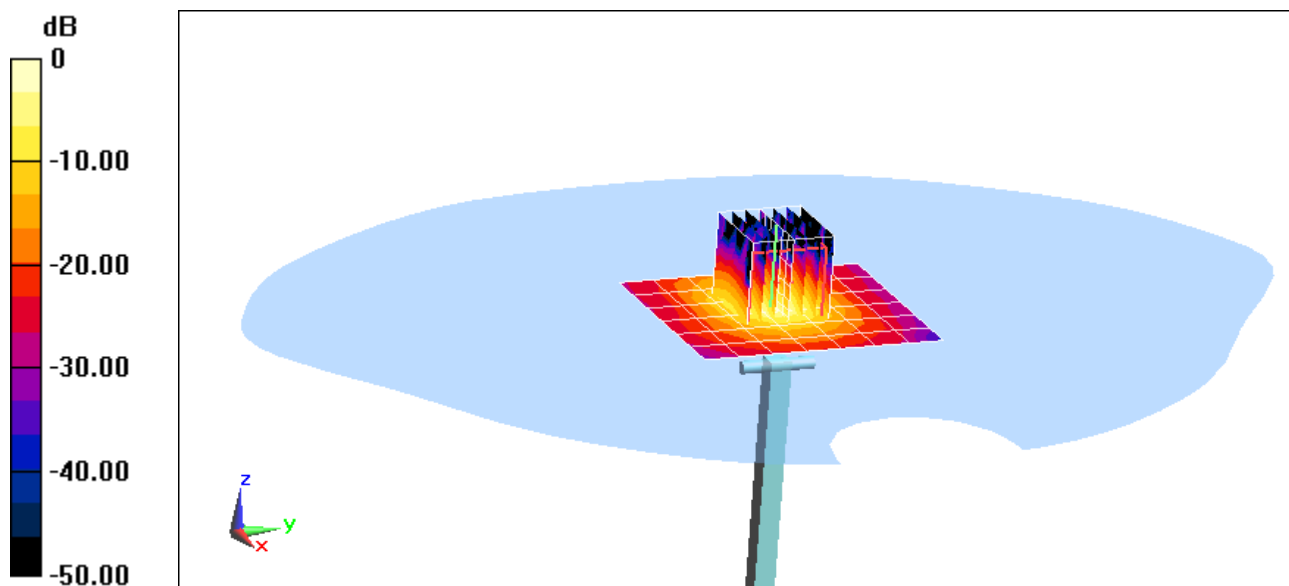
Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 14.0 W/kg

SAR(1 g) = 3.16 W/kg

Deviation = -6.29%



0 dB = 8.21 W/kg = 9.14 dBW/kg

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:

$f = 5600 \text{ MHz}$; $\sigma = 4.885 \text{ S/m}$; $\epsilon_r = 36.817$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-12-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.1°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 (7); SEMCAD X Version 14.6.10 (7164)

5600 MHz System Verification

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

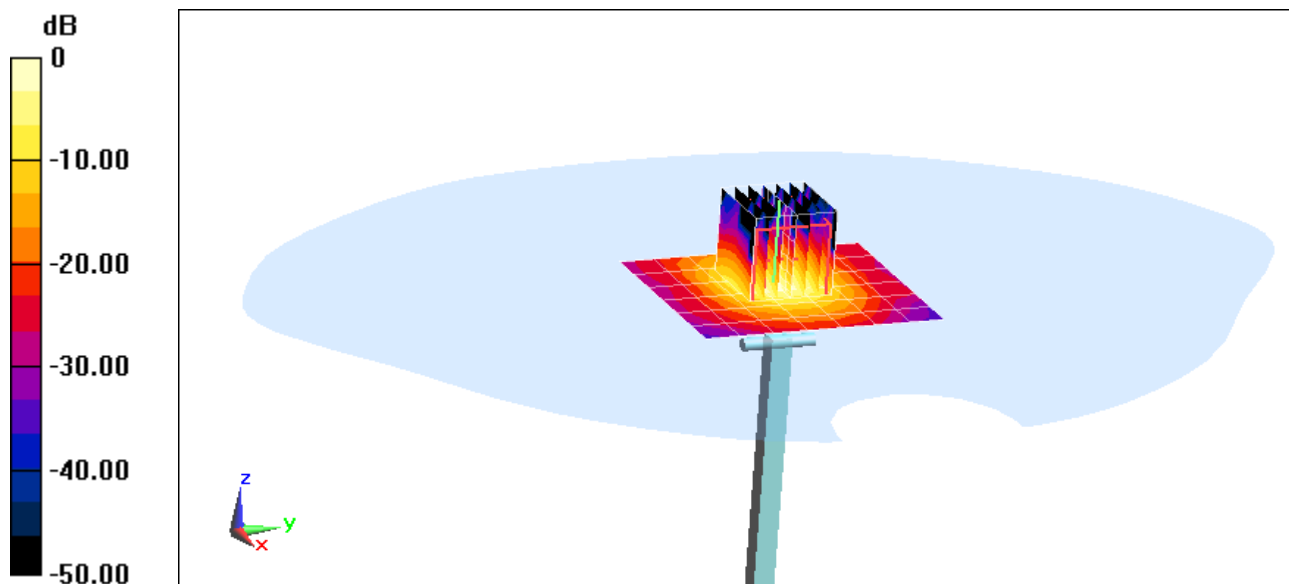
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4

Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 14.5 W/kg

SAR(1 g) = 3.18 W/kg

Deviation = -4.79%



0 dB = 8.35 W/kg = 9.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head, Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 5.178 \text{ S/m}$; $\epsilon_r = 36.537$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-12-2014; Ambient Temp: 24.4°C; Tissue Temp: 23.1°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 (7); SEMCAD X Version 14.6.10 (7164)

5800 MHz System Verification

Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm

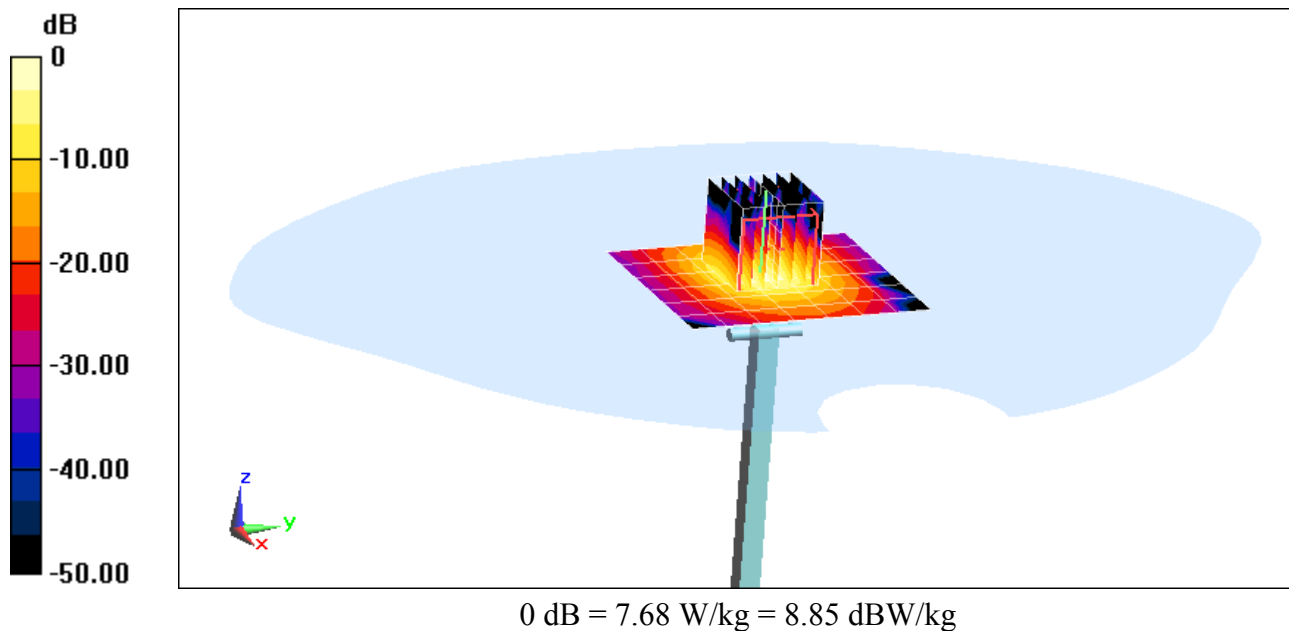
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm, Graded Ratio=1.4

Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 13.8 W/kg

SAR(1 g) = 2.9 W/kg

Deviation = -8.58%



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1054

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 740 Body Medium parameters used (interpolated):

$f = 750 \text{ MHz}$; $\sigma = 0.964 \text{ S/m}$; $\epsilon_r = 54.889$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-14-2014; Ambient Temp: 21.7°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3263; ConvF(6.37, 6.37, 6.37); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

750 MHz System Verification

Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

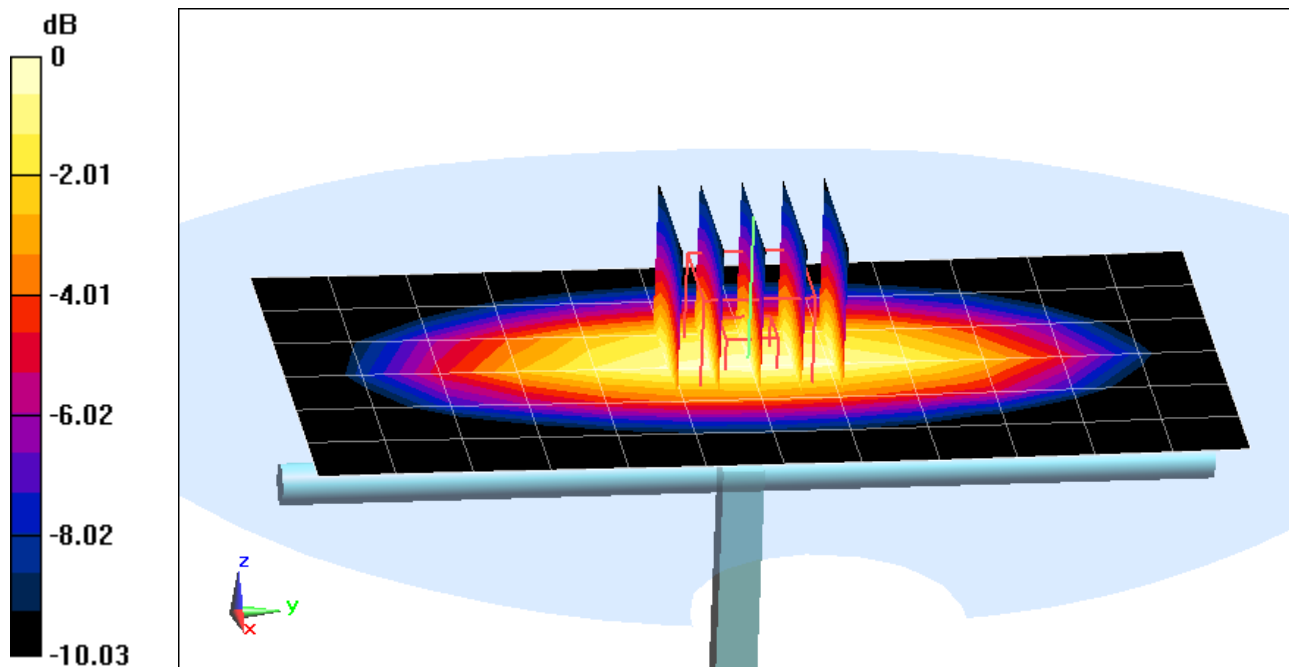
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.852 W/kg

Deviation = -2.29 %



0 dB = 0.924 W/kg = -0.34 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.945 \text{ S/m}$; $\epsilon_r = 52.996$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-13-2014; Ambient Temp: 24.4°C; Tissue Temp: 19.9°C

Probe: ES3DV3 - SN3263; ConvF(6.29, 6.29, 6.29); Calibrated: 5/16/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/13/2013

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

835 MHz System Verification

Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

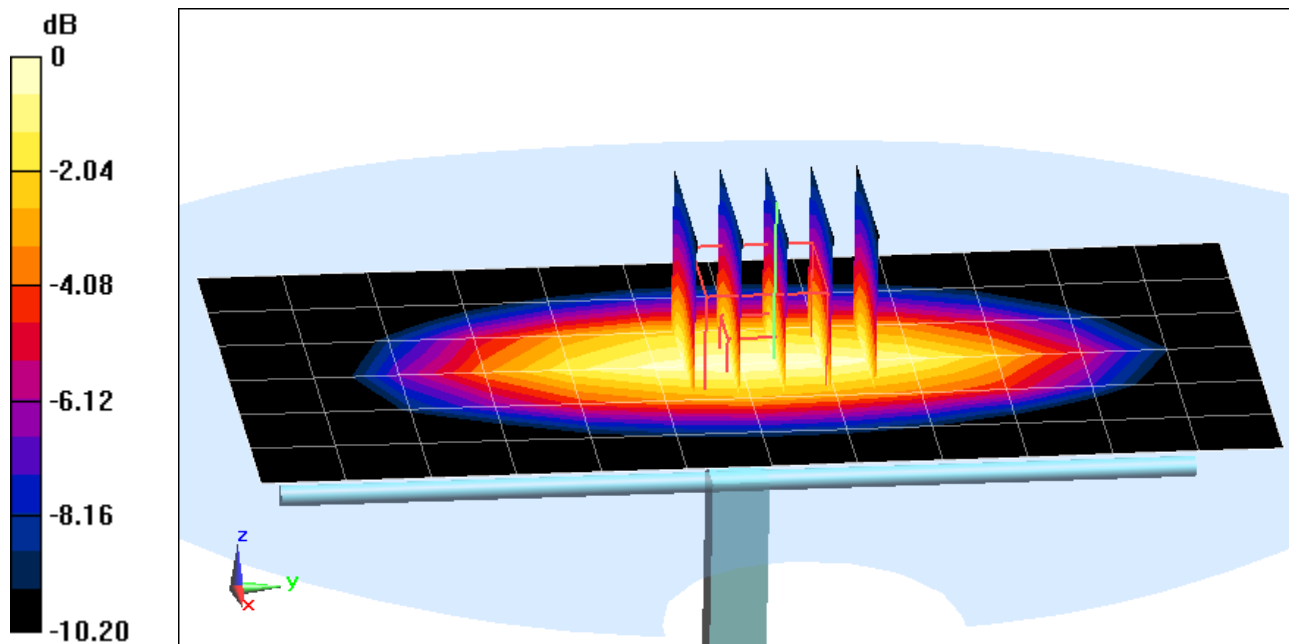
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.926 W/kg

Deviation = -3.64 %



0 dB = 0.995 W/kg = -0.02 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1765 MHz; Type: D1765V2; Serial: 1008

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.524 \text{ S/m}$; $\epsilon_r = 52.407$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.1°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3288; ConvF(5.1, 5.1, 5.1); Calibrated: 9/23/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1323; Calibrated: 9/17/2013

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.10 (7164)

1750 MHz System Verification

Area Scan (6x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

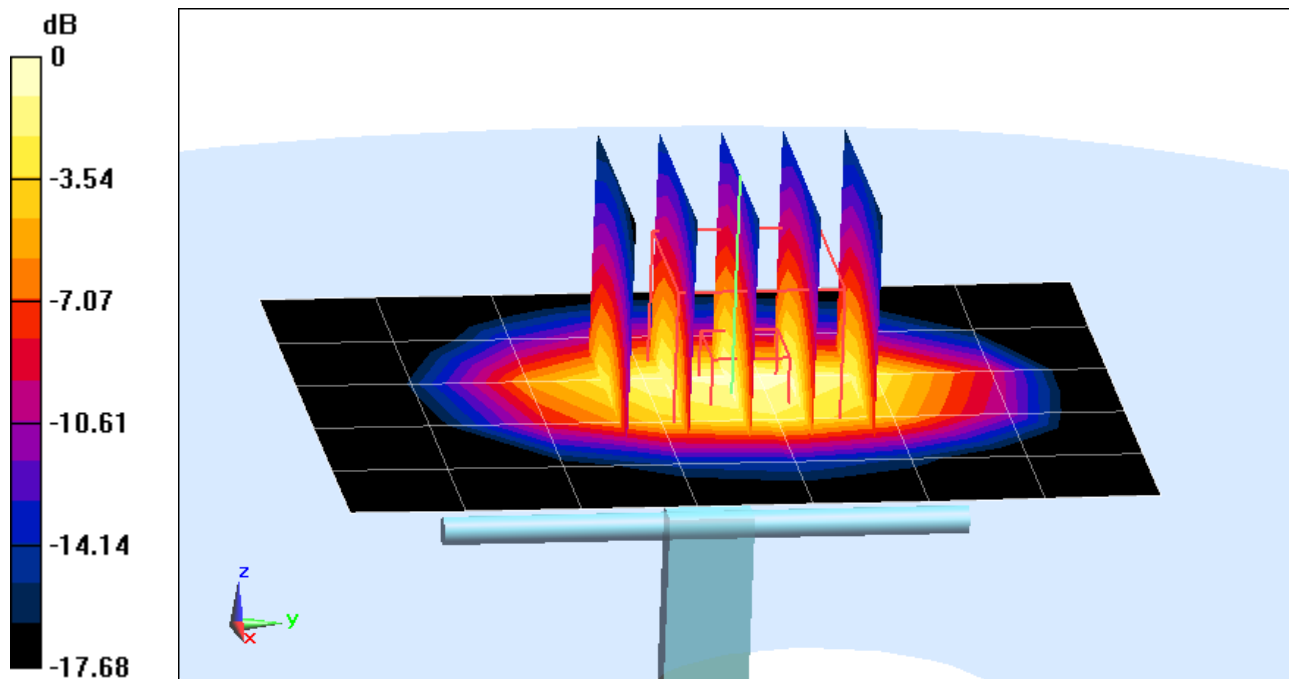
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 6.80 W/kg

SAR(1 g) = 3.7 W/kg

Deviation = -3.14 %



0 dB = 4.07 W/kg = 6.10 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used:

$f = 1750 \text{ MHz}$; $\sigma = 1.476 \text{ S/m}$; $\epsilon_r = 51.565$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-24-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3209; ConvF(5.03, 5.03, 5.03); Calibrated: 3/15/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/8/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.8 (7028)

1750 MHz System Verification

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

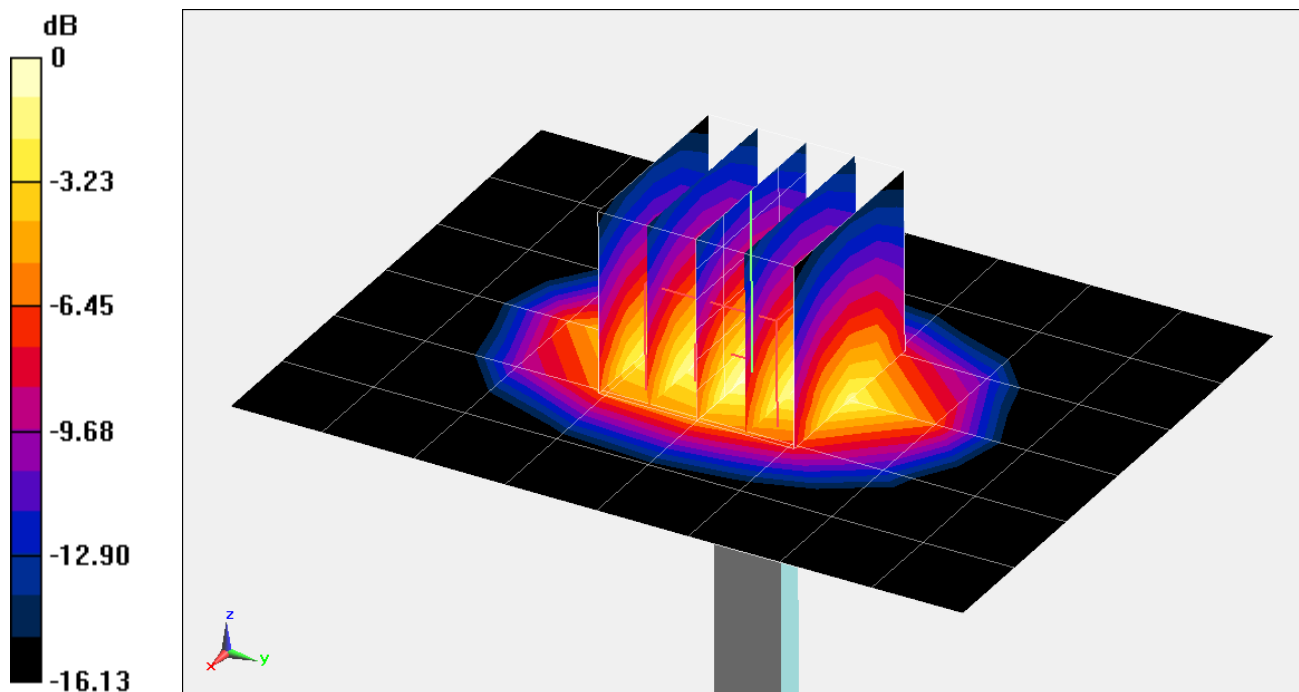
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 6.29 W/kg

SAR(1 g) = 3.57 W/kg

Deviation = -5.56%



0 dB = 3.99 W/kg = 6.01 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

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

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.511 \text{ S/m}$; $\epsilon_r = 52.865$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-13-2014; Ambient Temp: 24.5°C; Tissue Temp: 24.1°C

Probe: ES3DV3 - SN3319; ConvF(4.85, 4.85, 4.85); Calibrated: 4/29/2013;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 4/22/2013

Phantom: SAM front; Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

1900 MHz System Verification

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

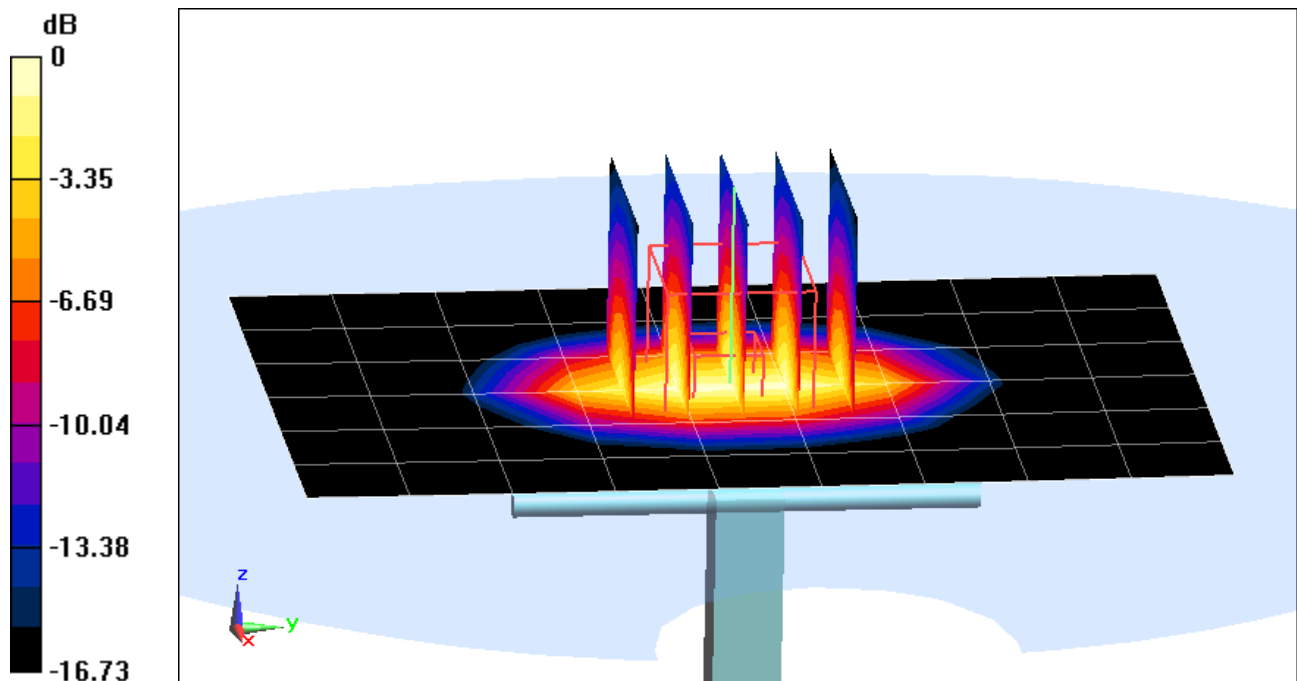
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 6.66 W/kg

SAR(1 g) = 3.76 W/kg

Deviation = -7.16 %



0 dB = 4.24 W/kg = 6.27 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

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

Medium: 2450 Body, Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 2.039 \text{ S/m}$; $\epsilon_r = 51.366$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014 ; Ambient Temp: 24.4°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3209; ConvF(4.34, 4.34, 4.34); Calibrated: 3/15/2013;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 3/8/2013

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

2450 MHz System Verification

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm

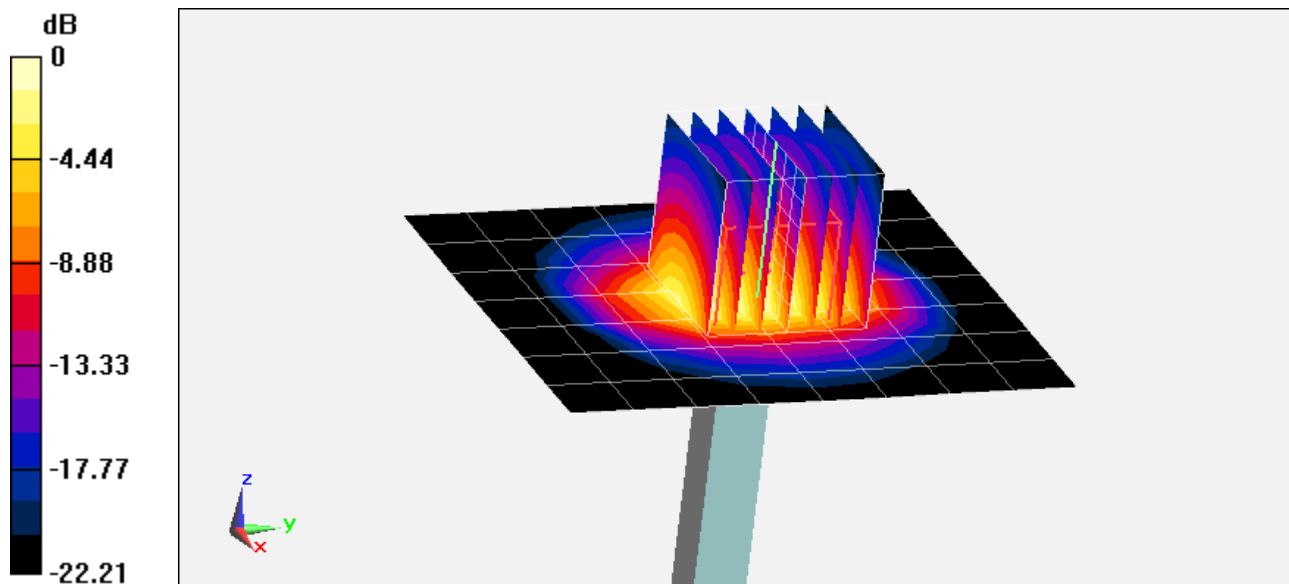
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 10.6 W/kg

SAR(1 g) = 5.05 W/kg

Deviation = -2.32%



0 dB = 6.63 W/kg = 8.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body, Medium parameters used:

$f = 5200 \text{ MHz}$; $\sigma = 5.168 \text{ S/m}$; $\epsilon_r = 47.598$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.6°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

5200 MHz System Verification

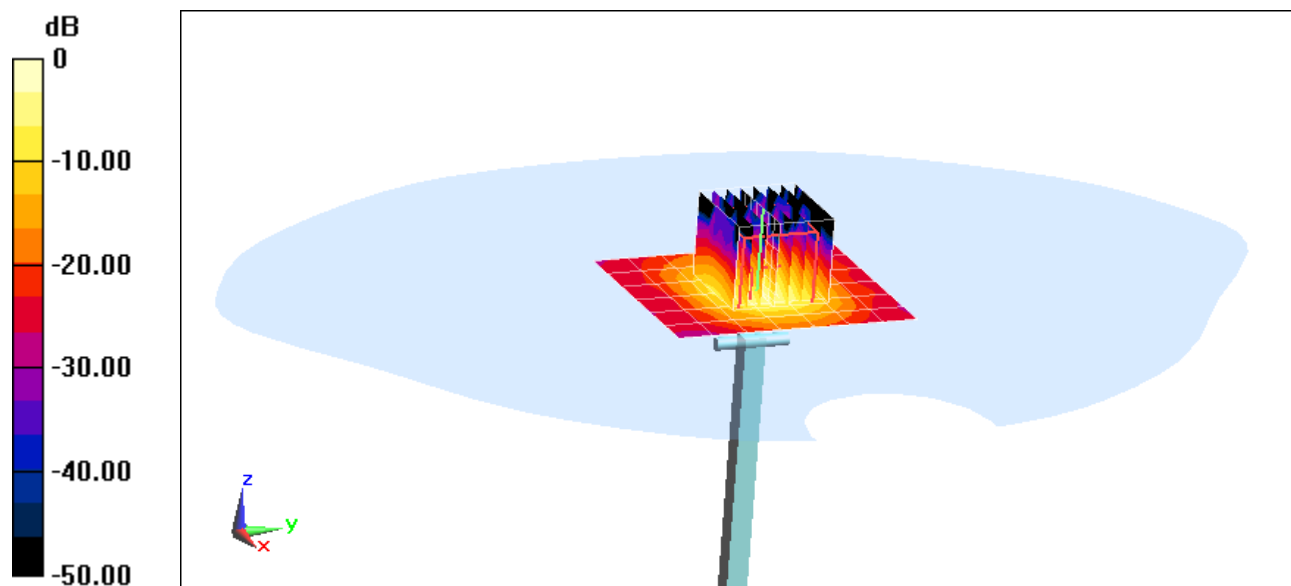
Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 13.2 W/kg

SAR(1 g) = 3.11 W/kg

Deviation = 1.50%



0 dB = 7.88 W/kg = 8.97 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body, Medium parameters used:

$f = 5300 \text{ MHz}$; $\sigma = 5.352 \text{ S/m}$; $\epsilon_r = 47.314$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(4.32, 4.32, 4.32); Calibrated: 10/23/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

5300 MHz System Verification

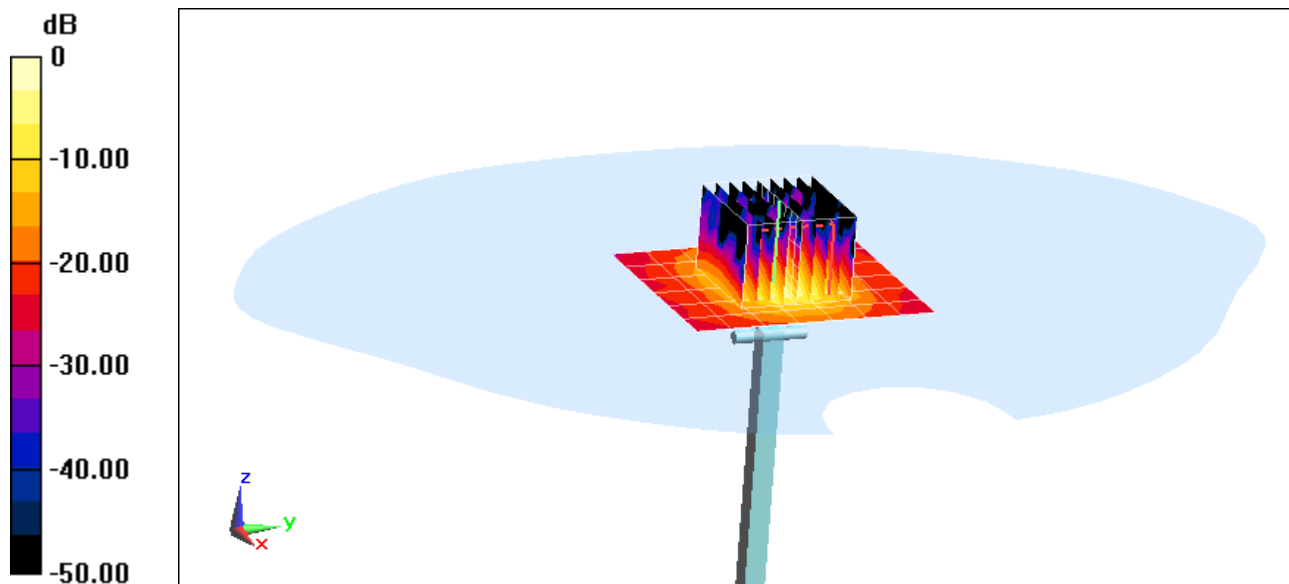
Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Zoom Scan (9x9x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 14.4 W/kg

SAR(1 g) = 3.26 W/kg

Deviation = 6.12%



0 dB = 8.34 W/kg = 9.21 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body, Medium parameters used:

$f = 5500 \text{ MHz}$; $\sigma = 5.579 \text{ S/m}$; $\epsilon_r = 46.639$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(4.07, 4.07, 4.07); Calibrated: 10/23/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

5500 MHz System Verification

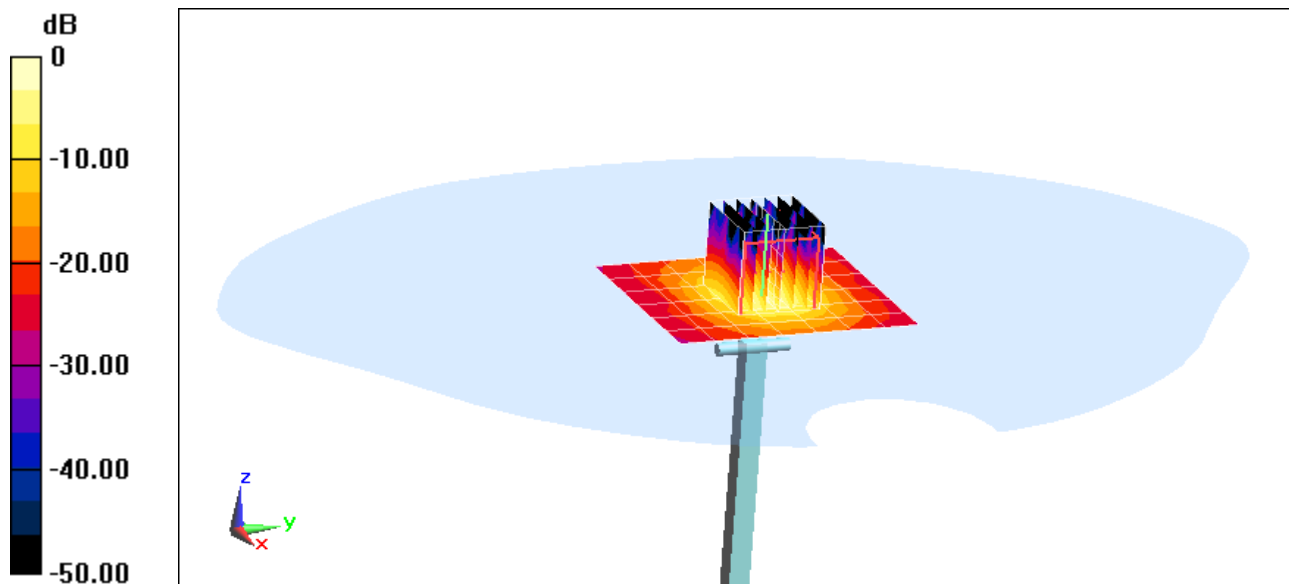
Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power = 16 dBm (40 mW)

Peak SAR (extrapolated) = 15.3 W/kg

SAR(1 g) = 3.27 W/kg

Deviation = 2.44%



PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body, Medium parameters used:

$f = 5600 \text{ MHz}$; $\sigma = 5.749 \text{ S/m}$; $\epsilon_r = 46.646$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2014; Ambient Temp: 24.5°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(3.97, 3.97, 3.97); Calibrated: 10/23/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

5600 MHz System Verification

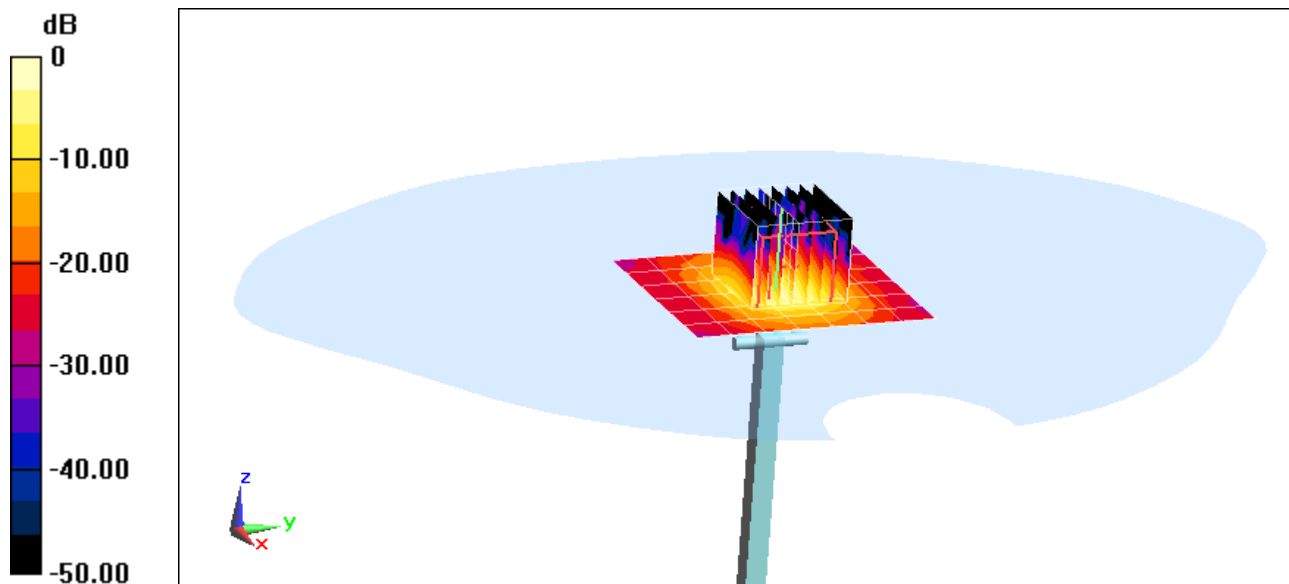
Area Scan (7x8x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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 = 16 dBm (40 mW)

Peak SAR (extrapolated) = 16.2 W/kg

SAR(1 g) = 3.38 W/kg

Deviation = 4.71%



0 dB = 8.93 W/kg = 9.51 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body, Medium parameters used:

$f = 5800 \text{ MHz}$; $\sigma = 6.172 \text{ S/m}$; $\epsilon_r = 46.231$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2014; Ambient Temp: 24.5°C; Tissue Temp: 23.3°C

Probe: EX3DV4 - SN3914; ConvF(4.14, 4.14, 4.14); Calibrated: 10/23/2013;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

5800 MHz System Verification

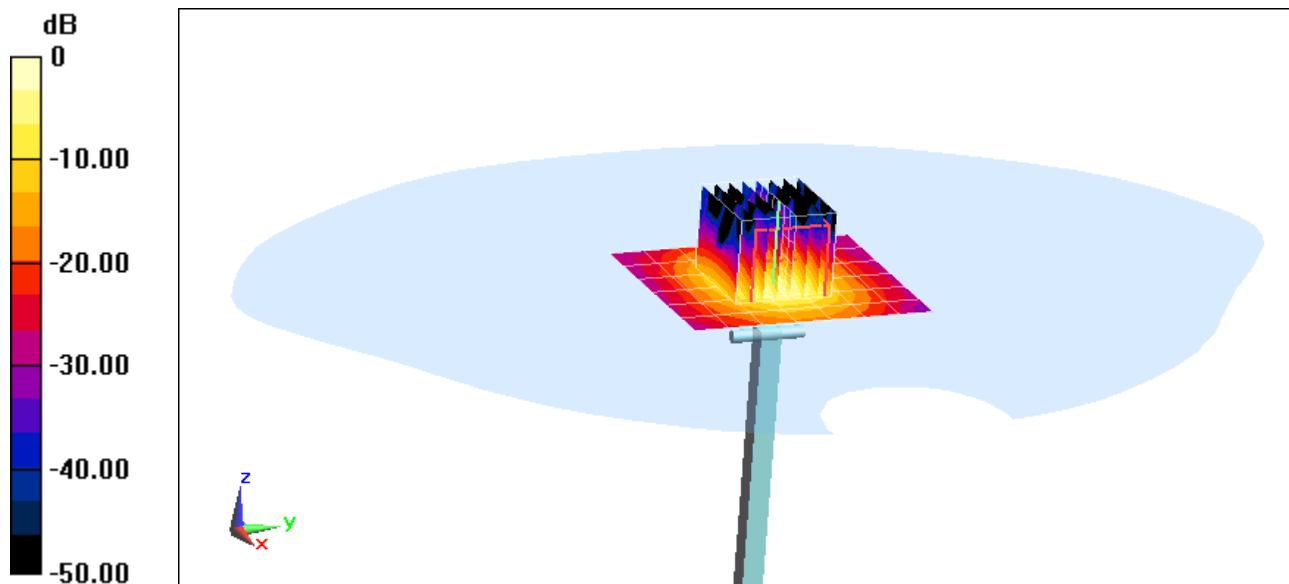
Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Input Power = 20 dBm (100 mW)

Peak SAR (extrapolated) = 34.4 W/kg

SAR(1 g) = 6.94 W/kg

Deviation = -8.08%



0 dB = 18.7 W/kg = 12.72 dBW/kg