

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2

Motorola Solutions, Inc
EME Test Laboratory
 8000 West Sunrise Blvd
 Fort Lauderdale, FL. 33322

Date of Report: 12/11/2014
Report Revision: A

Responsible Engineer: Deanna Zakharia (Plantation Lab Director EME Test Lab)
Report Author: Tan Kai Yan (EME Engineer)
Date/s Tested: 10/01/14 – 10/15/14
Manufacturer/Location: Motorola Solutions, Inc, Penang
Sector/Group/Div.: EMS
Date submitted for test: 09/12/14
DUT Description: RDU4100+ UHF BRUS 10CH Non-Display, Removable Antenna, 4.0 Watts, Black, Li-Ion; & RDU4160+ UHF BRUS 16CH Display, Removable Antenna 4.0 Watts, Black, Li-Ion
Test TX mode(s): TDMA (PTT)
Max. Power output: 4.2 W
Nominal Power: 4.0 W
Tx Frequency Bands: 438-470 MHz
Signaling type: FM
Model(s) Tested: PMUE4599A & PMUE4618A
Model(s) Certified: PMUE4599A & PMUE4618A
Serial Number(s): 11 & 6
Classification: Occupational/Controlled
FCC ID: AZ489FT4923; (438-470 MHz)
IC : 109U-89FT4923 ; (450-470 MHz)

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8 W/kg averaged over 1 gram per the requirements of 47 CFR 2.1093(d). The 10 grams result is not applicable to FCC filing. The test results clearly demonstrate compliance with ICNIRP (1998) Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz), Health Physics 74, 494-522 RF Exposure limits of 10 W/kg averaged over 10grams of contiguous tissue.

Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 4.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola Solutions Inc EME Laboratory. I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements. This reporting format is consistent with the suggested guidelines of the TIA TSB-150 December 2004. The results and statements contained in this report pertain only to the device(s) evaluated.

Deanna Zakharia
Deanna Zakharia
EMS EME Lab Senior Resource Manager,
Laboratory Director
Approval Date: 12/12/2014

Certification Date: 10/23/2014
Certification No.: L1141010P & L1141011P

Appendix D

System Verification Check Scans

Motorola Solutions, Inc. EME Laboratory

Date/Time: 10/1/2014 1:45:55 PM

Robot#: DASY5-FL-2 | Run#: ErC-SYSP-450H-141001-05
 Dipole Model# D450V3
 Phantom#: OVAL1020
 Tissue Temp: 21.7 (C)
 Serial#: 1077
 Test Freq: 450 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.021 dB
 Adjusted SAR (1W): 4.80 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.9$ S/m; $\epsilon_r = 45.6$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3163, , Frequency: 450 MHz, ConvF(6.51, 6.51, 6.51); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

Below 2 GHz-Rev.1/System Performance Check/Dipole Area Scan 2 (5x9x1): Measurement

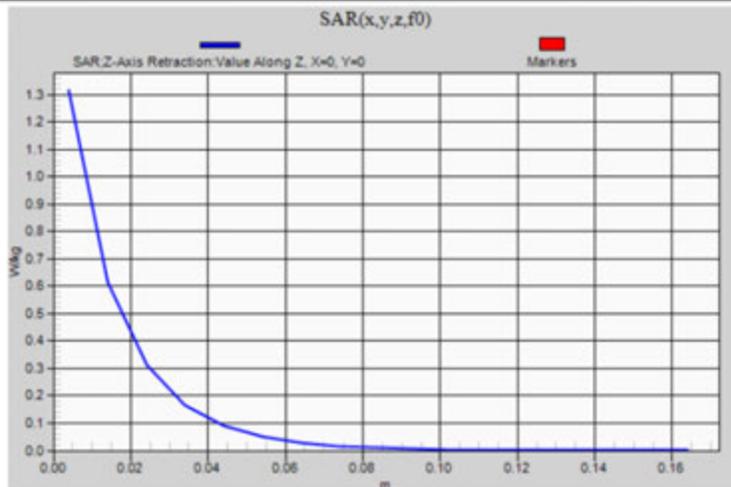
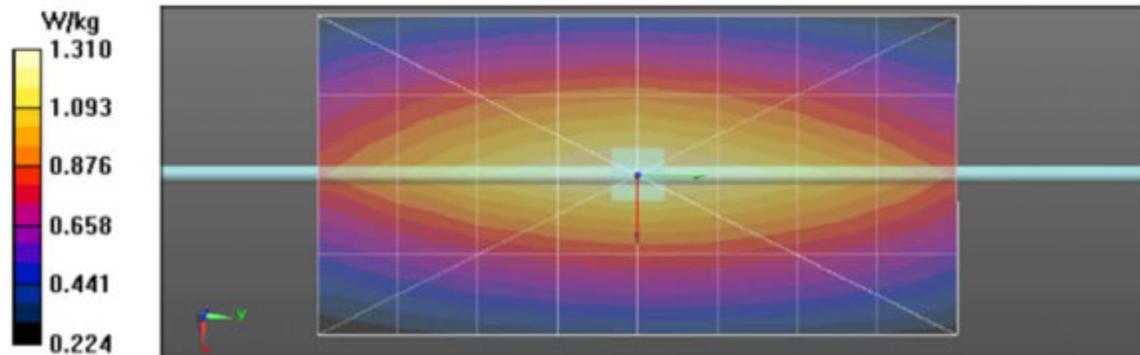
grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 1.31 W/kg

Below 2 GHz-Rev.1/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 38.62 V/m; Power Drift = -0.01 dB
 Peak SAR (extrapolated) = 1.81 W/kg
 SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.808 W/kg (SAR corrected for target medium)

Below 2 GHz-Rev.1/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 1.32 W/kg



Motorola Solutions, Inc. EME Laboratory

Date/Time: 10/15/2014 9:14:10 AM

Robot#: DASY5-FL-2 | Run#: AvG-SYSP-450B-141015-01
 Dipole Model#: D450V3
 Phantom#: OVAL1019
 Tissue Temp: 22.8 (C)
 Serial#: 1077
 Test Freq: 450 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.014 dB
 Adjusted SAR (1W): 4.4 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.98$ S/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3163, , Frequency: 450 MHz, ConvF(7.19, 7.19, 7.19); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

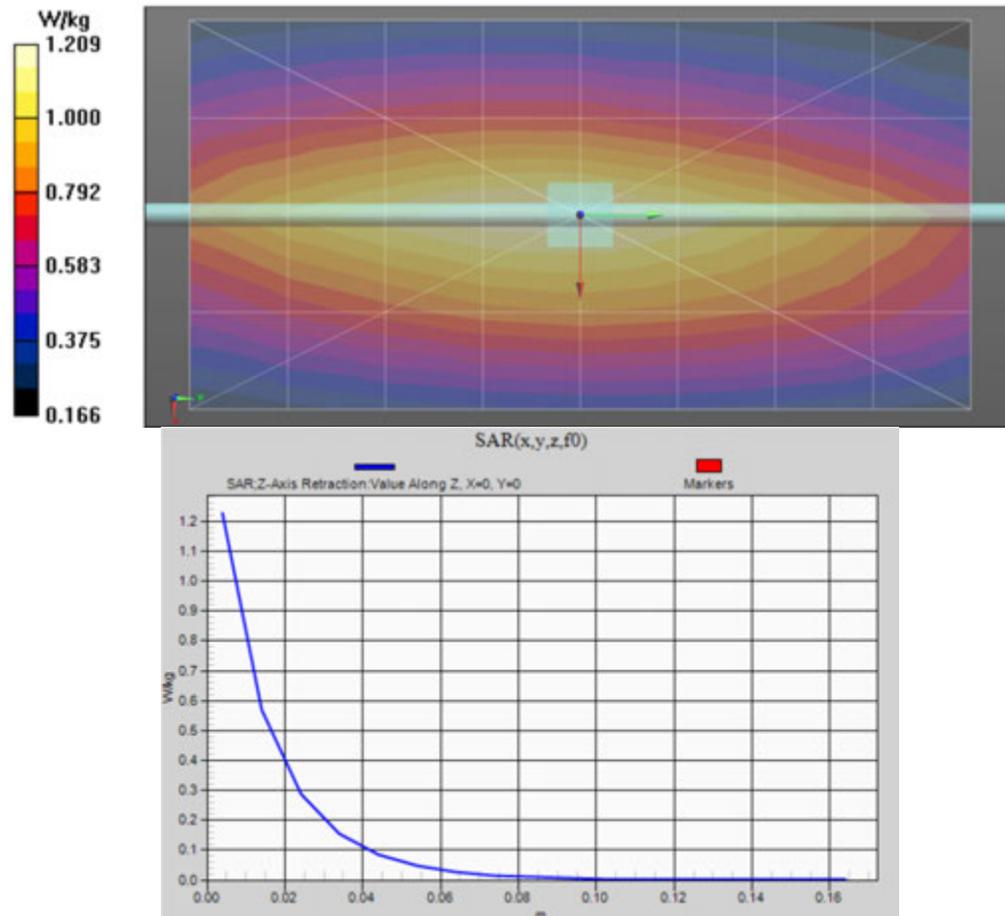
Below 2 GHz-Rev.1/System Performance Check/Dipole Area Scan 2 (41x81x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 35.68 V/m; Power Drift = -0.00 dB
Fast SAR: SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.777 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.22 W/kg

Below 2 GHz-Rev.1/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 35.68 V/m; Power Drift = -0.00 dB
 Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.737 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.23 W/kg

Below 2 GHz-Rev.1/System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm



Motorola Solutions, Inc. EME Laboratory

Date/Time: 10/15/2014 11:41:41 AM

Robot#: DASY5-FL-2 | Run#: AvG-SYSP-450H-141015-04
 Dipole Model#: D450V3
 Phantom#: OVAL1020
 Tissue Temp: 22.3 (C)
 Serial#: 1077
 Test Freq: 450 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.022 dB
 Adjusted SAR (1W): 4.80 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.88$ S/m; $\epsilon_r = 43.5$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3163, , Frequency: 450 MHz, ConvF(6.51, 6.51, 6.51); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

Below 2 GHz-Rev.1/System Performance Check/Dipole Area Scan 2 (41x81x1):

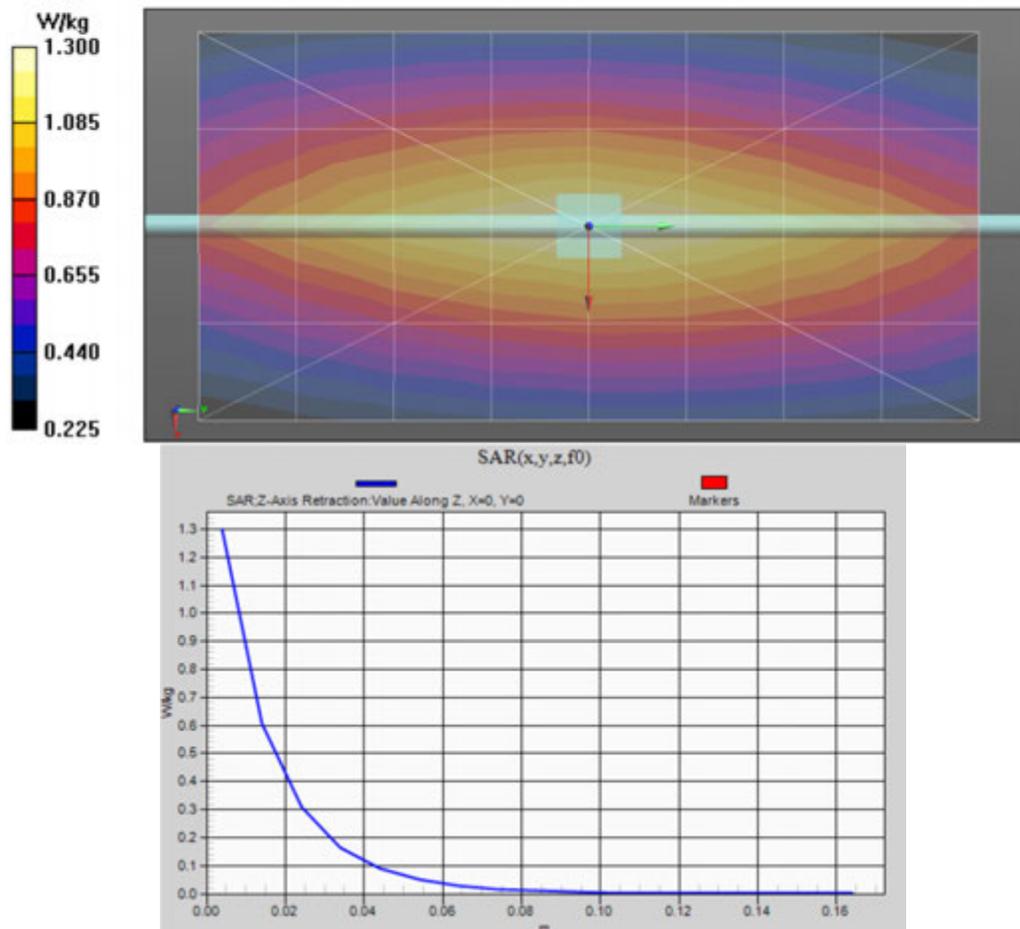
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 38.91 V/m; Power Drift = 0.00 dB
Fast SAR: SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.851 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.30 W/kg

Below 2 GHz-Rev.1/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 38.91 V/m; Power Drift = 0.00 dB
 Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.802 W/kg (SAR corrected for target medium)

Below 2 GHz-Rev.1/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

grid: dx=20mm, dy=20mm, dz=10mm



Appendix E DUT Scans

Assessments at the Body with Body-worn 4280383X62
Table 17

Motorola Solutions, Inc. EME Laboratory
 Date/Time: 10/15/2014 10:50:45 AM

Robot#: DASY5-FL-2 | Run#: AvG-Ab-141015-03
 Model#: PMUE4599A
 Phantom#: OVAL1019
 Tissue Temp: 22.8 (C)
 Serial#: 11
 Antenna: 8575099C01
 Test Freq: 457.8625 (MHz)
 Battery: 60012000001
 Carry Acc: 4280383X62
 Audio Acc: HKLN4604A
 Start Power: 4.20 (W)

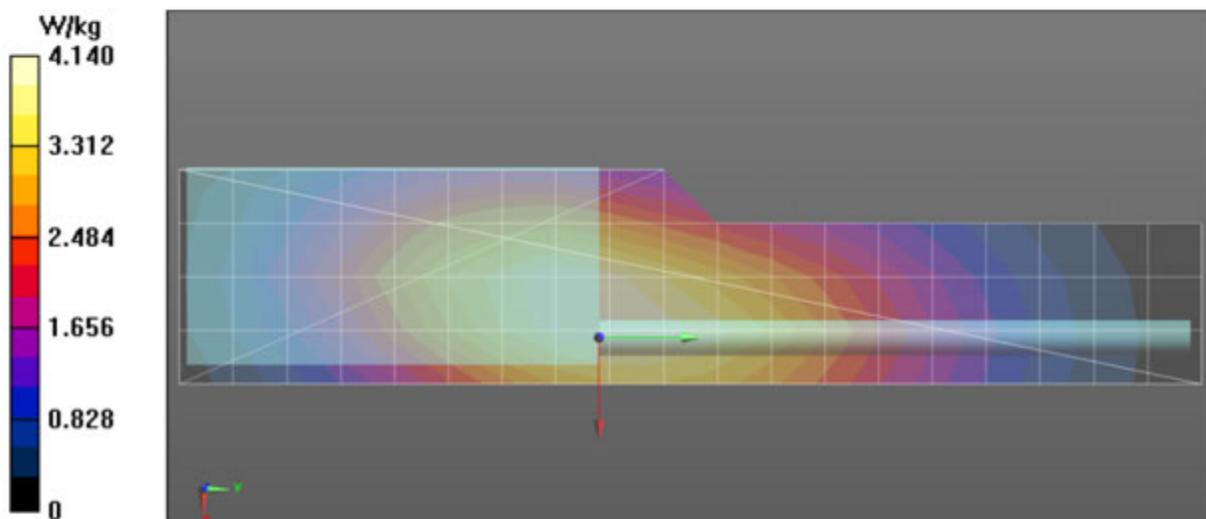
Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 458 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 55.2$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3163, , Frequency: 457.863 MHz, ConvF(7.19, 7.19, 7.19); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

Below 2 GHz-Rev.1/Ab Scan/1-Area Scan (41x191x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 63.27 V/m; Power Drift = -0.41 dB
Fast SAR: SAR(1 g) = 4.05 W/kg; SAR(10 g) = 2.95 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 4.28 W/kg

Below 2 GHz-Rev.1/Ab Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$,
 $dy=7.5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 63.27 V/m; Power Drift = -0.56 dB
 Peak SAR (extrapolated) = 5.17 W/kg
SAR(1 g) = 3.83 W/kg; SAR(10 g) = 2.8 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 4.05 W/kg

Below 2 GHz-Rev.1/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$,
 $dz=10\text{mm}$
 Maximum value of SAR (measured) = 3.98 W/kg



Assessment at the Body with other audio accessories

Assessment per “KDB 643646 D01 Body SAR Test Consideration for Audio Accessories without Built-in Antenna; Sec 1, A. when overall < 4.0 W/kg, SAR testing for that audio accessory is not necessary.” This was applicable to all remaining accessories.

Assessments at the Face
Table 19

Motorola Solutions, Inc. EME Laboratory

Date/Time: 10/1/2014 2:29:12 PM

Robot#: DASY5-FL-2 | Run#: ErC-Face-141001-06
 Model#: PMUE4618A
 Phantom#: OVAL1020
 Tissue Temp: 21.7 (C)
 Serial#: 6
 Antenna: 8575099C01
 Test Freq: 457.8625 (MHz)
 Battery: 60012000001
 Carry Acc: NA
 Audio Acc: None
 Start Power: 4.20 (W)

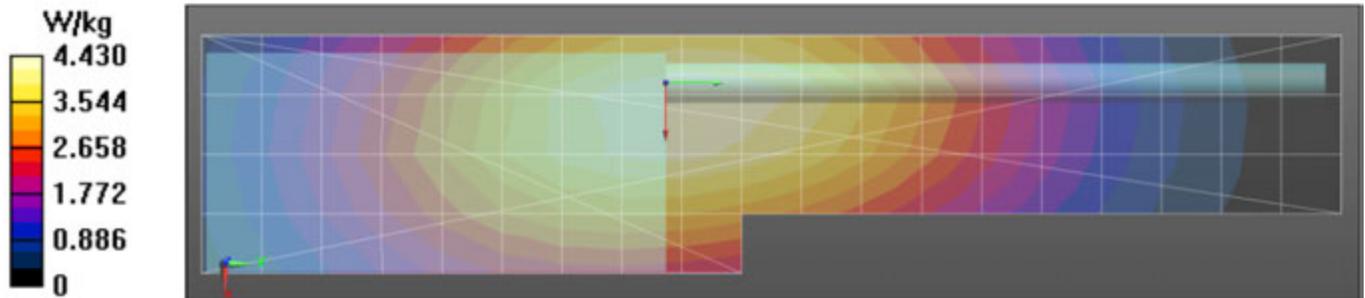
Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 458 \text{ MHz}$; $\sigma = 0.91 \text{ S/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3163, , Frequency: 457.863 MHz, ConvF(6.51, 6.51, 6.51); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

Below 2 GHz-Rev.1/Ab Scan/1-Area Scan (5x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 4.43 W/kg

Below 2 GHz-Rev.1/Ab Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 70.10 V/m; Power Drift = -0.61 dB
 Peak SAR (extrapolated) = 5.31 W/kg
SAR(1 g) = 4.07 W/kg; SAR(10 g) = 3.04 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 4.29 W/kg

Below 2 GHz-Rev.1/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$, $dz=10\text{mm}$
 Maximum value of SAR (measured) = 4.24 W/kg



Appendix F
Shortened Scan of Highest SAR configuration

Shortened Scan Table 21

Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/15/2014 1:05:45 PM

Robot#: DASY5-FL-2 | Run#: AvG-Face-141015-06
 Model#: PMUE4618A
 Phantom#: OVAL1020
 Tissue Temp: 22.3 (C)
 Serial#: 6
 Antenna: 8575099C01
 Test Freq: 457.8625 (MHz)
 Battery: 60012000001
 Carry Acc: NA
 Audio Acc: None
 Start Power: 4.20 (W)

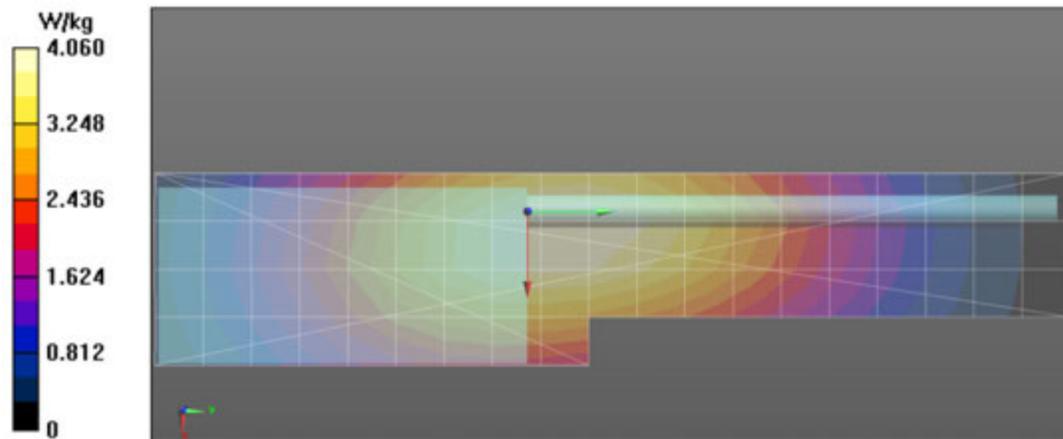
Comments: Shorten Scan

Duty Cycle: 1:1, Medium parameters used: $f = 458 \text{ MHz}$; $\sigma = 0.88 \text{ S/m}$; $\epsilon_r = 43.3$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3163, , Frequency: 457.863 MHz, ConvF(6.51, 6.51, 6.51); Calibrated: 5/15/2014
 Electronics: DAE4 Sn1231, Calibrated: 2/12/2014

Below 2 GHz-Rev.1/Face Scan/1-Area Scan (41x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 66.53 V/m; Power Drift = -0.47 dB
Fast SAR: SAR(1 g) = 3.92 W/kg; SAR(10 g) = 2.87 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 4.13 W/kg

Below 2 GHz-Rev.1/Face Scan/3-Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 66.53 V/m; Power Drift = -0.69 dB
 Peak SAR (extrapolated) = 5.00 W/kg
SAR(1 g) = 3.8 W/kg; SAR(10 g) = 2.83 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 4.00 W/kg

Below 2 GHz-Rev.1/Face Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 3.88 W/kg



Shortened scan reflects highest SAR producing configuration and is compared to the full scan.

Scan Description	Referenced Table	Test Time (min.)	SAR 1g (W/kg)	SAR 10g (W/kg)
Shorten scan (zoom)	20	7	2.23	1.66
Full scan (area & zoom)	19	17	2.34	1.75

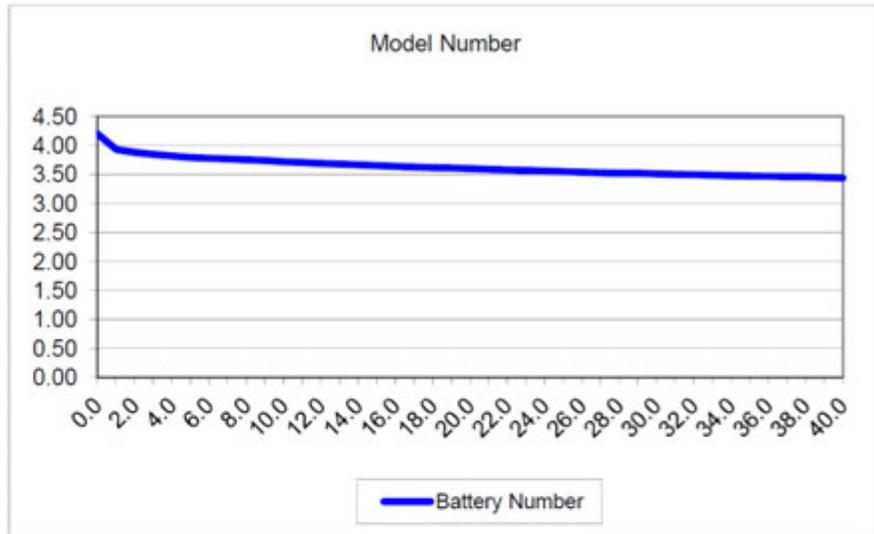
Appendix G DUT Power slump

**PMUE4618A
SN: 06**

Battery	60012000001	Transmit Mode	CW
Frequency	457.8625	Audio Accessory	NONE
Date	10/15/2014		

TX TIME (minutes) **Measured Power Watts**

	Battery Number
0.0	4.20
1.0	3.93
2.0	3.88
3.0	3.85
4.0	3.82
5.0	3.79
6.0	3.78
7.0	3.77
8.0	3.75
9.0	3.74
10.0	3.72
11.0	3.71
12.0	3.69
13.0	3.68
14.0	3.67
15.0	3.65
16.0	3.64
17.0	3.63
18.0	3.62
19.0	3.61
20.0	3.60
21.0	3.59
22.0	3.58
23.0	3.57
24.0	3.56
25.0	3.55
26.0	3.54
27.0	3.53
28.0	3.52
29.0	3.52
30.0	3.51
31.0	3.50
32.0	3.50
33.0	3.49
34.0	3.48
35.0	3.47
36.0	3.47
37.0	3.46
38.0	3.46
39.0	3.45
40.0	3.44



Appendix H DUT Test Position Photos

Photos available in Exhibit 7B

Appendix I
DUT, Body worn and audio accessories Photos

Photos available in Exhibit 7B