

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: 6/11/2013 Report Revision: A Report ID: SR11011 RMU2080 UHF Rev A 130611
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Responsible Engineer: Kim Uong (Principal Staff EME Engineer)
Report Author: Kim Uong (Principal Staff EME Engineer)
Date/s Tested: 3/6/2013
Manufacturer/Location: Motorola, Penang
Sector/Group/Div.: Radio Product & Accessories (RPA) - Business Light
Date submitted for test: 2/13/2013
DUT Description: RMU2080 UHF BRUS, 8Ch,Non-Display, Fixed Antenna, 2.0Watts, Black
Test TX mode(s): CW (PTT)
Max. Power output: 2.0 W
Nominal Power: 1.0 - 1.9 W
Tx Frequency Bands: 450-470 MHz
Signaling type: FM
Model(s) Tested: PMUE4178A
Model(s) Certified: PMUE4178A
Serial Number(s): 024TPB0158
Classification: Occupational/Controlled
FCC ID: AZ489FT4913; Rule Part 90 (450 – 470 MHz)

* Refer to section 15 of part 1 for highest SAR summary results.

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. Results outside FCC bands are not applicable for FCC compliance demonstration. 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 3.0 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 EMS EME Lab Senior Resource Manager, Laboratory Director Approval Date: 6/11/2013	Certification Date: 3/21/2013 Certification No.: L1130324
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APPENDIX D - System Check Scans

Motorola Solutions, Inc. EME Laboratory

Date/Time: 3/6/2013 5:36:19 AM

Robot#: DASY5-FL-3 | Run#: ErC-SYSP 450B-130306-01
 Dipole Model# D450V3
 Phantom#: OVAL1011
 Tissue Temp: 20.4 (C)
 Serial#: 1075
 Test Freq: 450 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.024 dB
 Adjusted SAR (1W): 4.48 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.94$ mho/m; $\epsilon_r = 56.5$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3163, , ConvF(6.97, 6.97, 6.97); Calibrated: 4/25/2012
 Electronics: DAE4 Sn729, Calibrated: 4/20/2012

Below 3 GHz-Rev.4a/System Performance Check/Dipole Area Scan 2 (5x9x1):

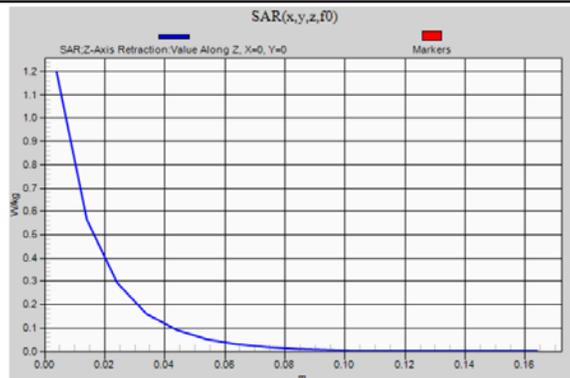
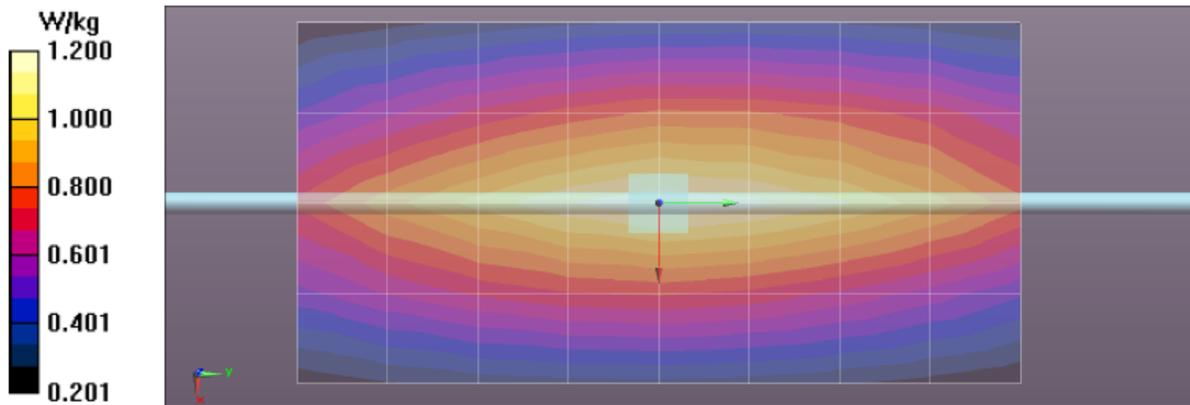
Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 1.20 W/kg

Below 3 GHz-Rev.4a/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 35.676 V/m; Power Drift = 0.01 dB
 Peak SAR (extrapolated) = 1.709 mW/g
 SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.750 mW/g (SAR corrected for target medium)

Below 3 GHz-Rev.4a/System Performance Check/Z-Axis Retraction (1x1x17):

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



Motorola Solutions, Inc. EME Laboratory

Date/Time: 3/6/2013 2:18:21 PM

Robot#: DASY5-FL-3 | Run#: ErC-SYSP 450H-130306-01
Dipole Model#: D450V3
Phantom#: OVAL1020
Tissue Temp: 20.2 (C)
Serial#: 1075
Test Freq: 450 (MHz)
Start Power: 250 (mW)
Rotation (1D): 0.033 dB
Adjusted SAR (1W): 4.48 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.84$ mho/m; $\epsilon_r = 43.5$; $\rho = 1000$ kg/m³
Probe: ES3DV3 - SN3163, , ConvF(6.71, 6.71, 6.71); Calibrated: 4/25/2012
Electronics: DAE4 Sn729, Calibrated: 4/20/2012

Below 3 GHz-Rev.4a/System Performance Check/Dipole Area Scan 2 (5x9x1):

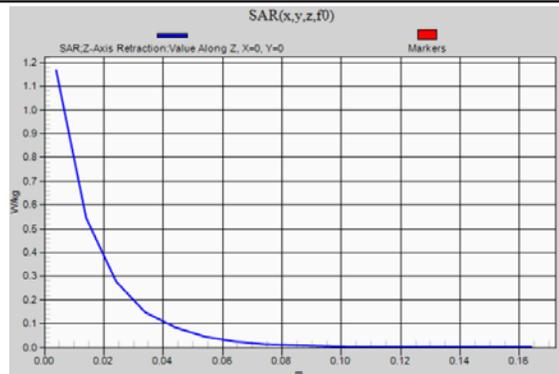
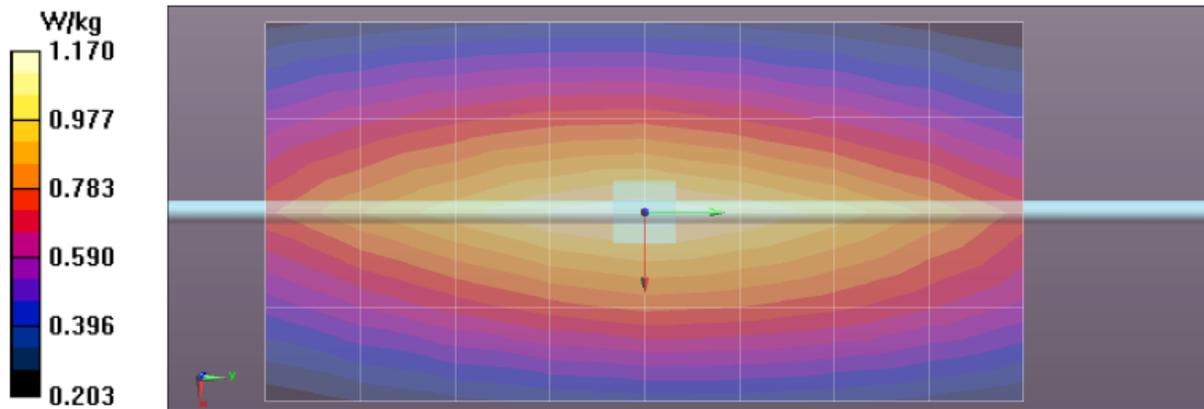
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.17 W/kg

Below 3 GHz-Rev.4a/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 37.492 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 1.624 mW/g
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.745 mW/g (SAR corrected for target medium)

Below 3 GHz-Rev.4a/System Performance Check/Z-Axis Retraction (1x1x17):

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



**APPENDIX E - DUT Scans
(Shortened Scan and Highest SAR configurations)**

Shortened Scan Result Table 17

Motorola Solutions, Inc. EME Laboratory
Date/Time: 3/6/2013 12:13:45 PM

Robot#: DASY5-FL-3 | Run#: ErC-Ab-130306-04
 Model#: PMUE4178A
 Phantom#: OVAL1011
 Tissue Temp: 20.3 (C)
 Serial#: 024TPB0158
 Antenna: Fixed
 Test Freq: 450.2000 (MHz)
 Battery: PMNN4434AR
 Carry Acc: PMLN6455A
 Audio Acc: HMN9026D
 Start Power: 1.97 (W)

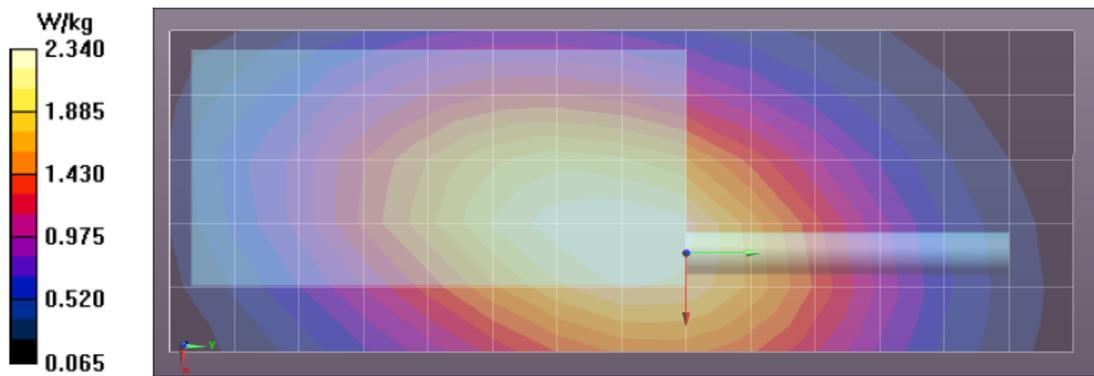
Comments: Short Scan

Duty Cycle: 1:1, Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.5$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3163, , ConvF(6.97, 6.97, 6.97); Calibrated: 4/25/2012
 Electronics: DAE4 Sn729, Calibrated: 4/20/2012

Below 3 GHz-Rev.5/Ab Scan/1-Area Scan (6x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 2.34 W/kg

Below 3 GHz-Rev.5/Ab Scan/3-Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$,
 $dy=7.5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 49.446 V/m; Power Drift = -0.26 dB
 Peak SAR (extrapolated) = 2.908 mW/g
 SAR(1 g) = 2.16 mW/g; SAR(10 g) = 1.61 mW/g (SAR corrected for target medium)
 Maximum value of SAR (measured) = 2.25 W/kg

Below 3 GHz-Rev.5/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) = 2.19 W/kg



Shortened scan reflect highest SAR producing configuration; approximate run time is 8 minutes.
 Representative full scan run time was 16 minutes.
 “Shortened” scan max calculated SAR using SAR drift: 1-g Avg. = 1.16 mW/g; 10-g Avg. = 0.87 mW/g.
 Zoom scan max calculated SAR using SAR drift (see part 1 table 14): 1-g Avg. = 1.12 mW/g; 10-g Avg. = 0.84mW/g.

**Body - Highest SAR Configuration Result
Table 14**

Motorola Solutions, Inc. EME Laboratory
Date/Time: 3/6/2013 10:58:55 AM

Robot#: DASY5-FL-3 | Run#: ErC-Ab-130306-02
 Model#: PMUE4178A
 Phantom#: OVAL1011
 Tissue Temp: 20.3 (C)
 Serial#: 024TPB0158
 Antenna: Fixed
 Test Freq: 450.2000 (MHz)
 Battery: PMNN4434AR
 Carry Acc: PMLN6455A
 Audio Acc: HMN9026D
 Start Power: 1.97 (W)

Comments:

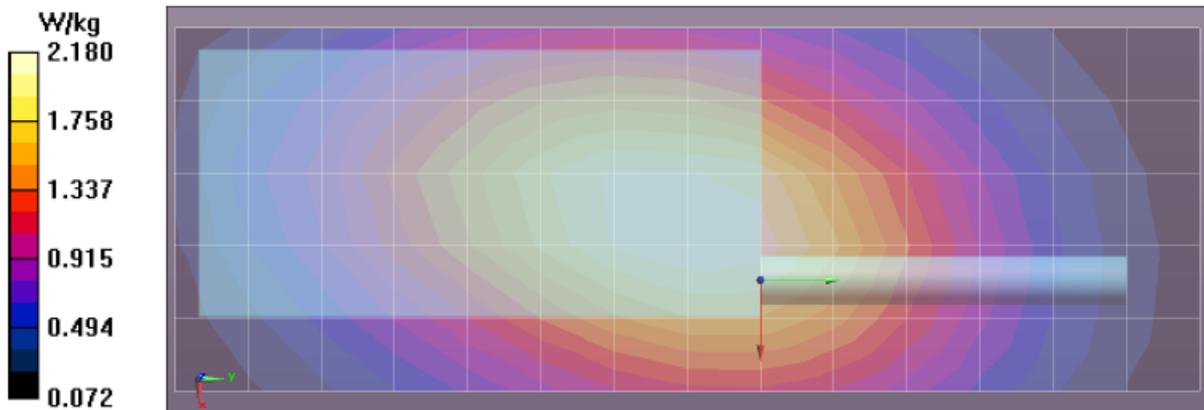
Duty Cycle: 1:1, Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.5$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3163, , ConvF(6.97, 6.97, 6.97); Calibrated: 4/25/2012
 Electronics: DAE4 Sn729, Calibrated: 4/20/2012

Below 3 GHz-Rev.5/Ab Scan/1-Area Scan (51x141x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 47.187 V/m; Power Drift = -0.28 dB
 Fast SAR: SAR(1 g) = 2.1 mW/g; SAR(10 g) = 1.56 mW/g (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 2.21 W/kg

Below 3 GHz-Rev.5/Ab Scan/1-Area Scan (6x15x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 2.18 W/kg

Below 3 GHz-Rev.5/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 = 47.187 V/m; Power Drift = -0.42 dB
 Peak SAR (extrapolated) = 2.695 mW/g
 SAR(1 g) = 2.01 mW/g; SAR(10 g) = 1.5 mW/g (SAR corrected for target medium)
 Maximum value of SAR (measured) = 2.11 W/kg

Below 3 GHz-Rev.5/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) = 2.06 W/kg



Face - Highest SAR Configuration Result
Table 16

Motorola Solutions, Inc. EME Laboratory

Date/Time: 3/6/2013 3:26:57 PM

Robot#: DASY5-FL-3 | Run#: ErC-Face-130306-06
 Model#: PMUE4178A
 Phantom#: OVAL1020
 Tissue Temp: 20.2 (C)
 Serial#: 024TPB0158
 Antenna: Fixed
 Test Freq: 450.2000 (MHz)
 Battery: PMNN4434AR
 Carry Acc: None
 Audio Acc: None
 Start Power: 1.97 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.84$ mho/m; $\epsilon_r = 43.5$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3163, , ConvF(6.71, 6.71, 6.71); Calibrated: 4/25/2012
 Electronics: DAE4 Sn729, Calibrated: 4/20/2012

Below 3 GHz-Rev.5/Face Scan/1-Area Scan (51x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

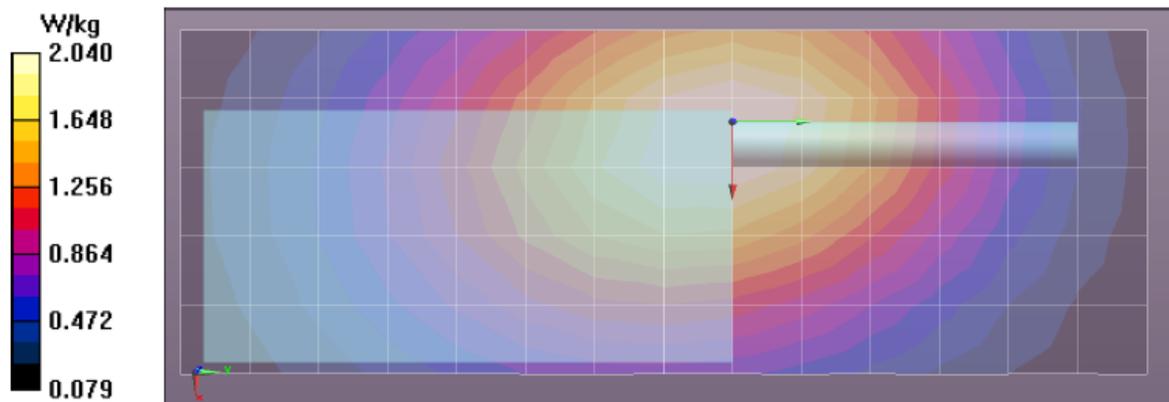
Reference Value = 51.424 V/m; Power Drift = -0.28 dB
 Fast SAR: SAR(1 g) = 2.06 mW/g; SAR(10 g) = 1.52 mW/g (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 2.11 W/kg

Below 3 GHz-Rev.5/Face Scan/1-Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 2.04 W/kg

Below 3 GHz-Rev.5/Face Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 51.424 V/m; Power Drift = -0.46 dB
 Peak SAR (extrapolated) = 2.522 mW/g
 SAR(1 g) = 1.96 mW/g; SAR(10 g) = 1.45 mW/g (SAR corrected for target medium)
 Maximum value of SAR (measured) = 2.01 W/kg

Below 3 GHz-Rev.5/Face Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm
 Maximum value of SAR (measured) = 1.97 W/kg



APPENDIX F - DUT Scans - FCC Part 90

Assessments at the Body with Body worn PMLN6455A

Table 14

(Same scan as indicated in APPENDIX E for Body - Highest SAR Configuration Result)

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 tested for that audio accessory is not necessary.” This was applicable to all remaining accessories.

Assessments at the Face

Table 16

(Same scan as indicated in APPENDIX E for Face - Highest SAR Configuration Result)

APPENDIX G - DUT Test Position Photos

Photos available in Exhibit 7B

APPENDIX H - DUT, Body worn and audio accessories Photos

Photos available in Exhibit 7B