

 MOTOROLA SOLUTIONS	  CERTIFICATE 2518.05
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2	
Motorola Solutions Inc. EME Test Laboratory Motorola Solutions Malaysia Sdn Bhd (Innoplex) Plot 2A, Medan Bayan Lepas, Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.	Date of Report: 07/27/2016 Report Revision: B
Responsible Engineer: Chang Chi Chern (EME Engineer) Report Author: Chang Chi Chern (EME Engineer) Date/s Tested: 7/3/2016 – 7/5/2016 Manufacturer: Vertex Standard LMR, Inc. DUT Description: Handheld Portable – Vertex EVX-S24-G6-3 403-480MHz 3W Test TX mode(s): CW (PTT) Max. Power output: 3.2 W (TDMA) , 2.2 W (FM) Nominal Power: 3.0 W (TDMA) , 2.0 W (FM) Tx Frequency Bands: LMR 403-480MHz Signaling type: FM and TDMA Model(s) Tested: AC146U002 (EVX-S24-G6-3) Model(s) Certified: AC146U002 (EVX-S24-G6-3) Serial Number(s): 2D6G200051, 2D6G200052 Classification: Occupational/Controlled FCC ID: AXI11464620; LMR 406.125-480 MHz IC: 10239A-11464620; This report contains results that are immaterial for IC equipment approval, which are clearly identified. 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 OET Bulletin 65. 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.	
 Tiong Nguk Ing Deputy Technical Manager Approval Date: 7/27/2016	Certification Date: 7/20/2016 Certification No.: L1160735

Appendix D

System Verification Check Scans

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/3/2016 2:04:14 PM

Robot#: DASY5-PG-2 | Run#: TLC-SYSP-450B-160703-01
 Dipole Model# D450V3
 Phantom#: Oval 1019
 Tissue Temp: 20.9 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.084 dB
 Adjusted SAR (1W): 4.44 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.95$ S/m; $\epsilon_r = 55.4$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, , Frequency: 450 MHz, ConvF(6.82, 6.82, 6.82); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x191x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 37.66 V/m; Power Drift = -0.01 dB

Fast SAR: SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.796 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.31 W/kg

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

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 37.66 V/m; Power Drift = -0.01 dB

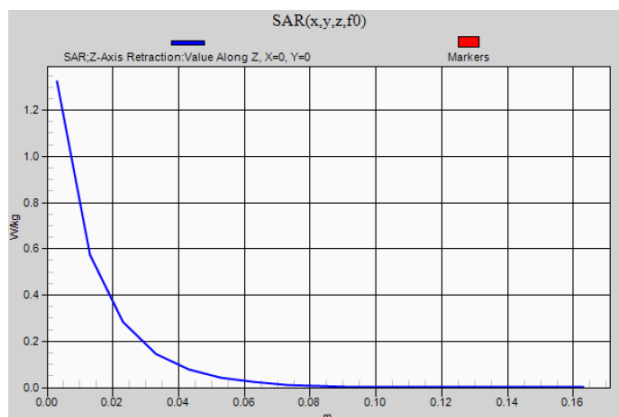
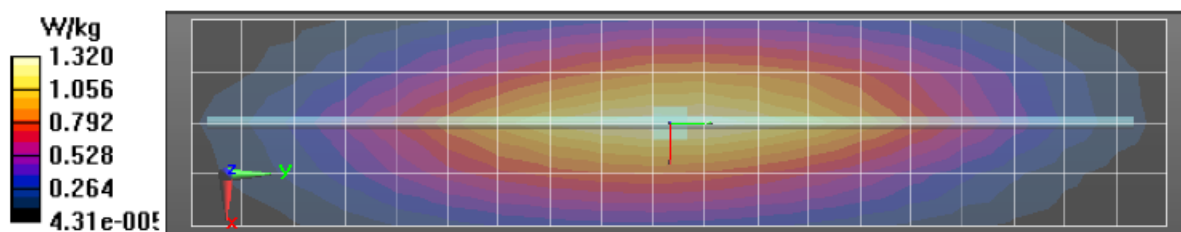
Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.730 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 1.32 W/kg

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

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



Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/4/2016 3:10:54 PM

Robot#: DASY5-PG-2 | Run#: MO-SYSP-450B-160704-11
 Dipole Model#: D450V3
 Phantom#: OVAL 1019
 Tissue Temp: 20.0 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.067 dB
 Adjusted SAR (1W): 4.52 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.95$ S/m; $\epsilon_r = 54.9$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, Frequency: 450 MHz, ConvF(6.82, 6.82, 6.82); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x191x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 37.98 V/m; Power Drift = -0.00 dB

Fast SAR: SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.810 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.34 W/kg

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

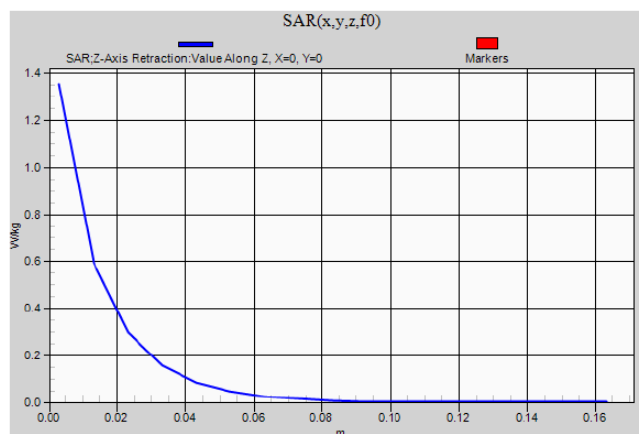
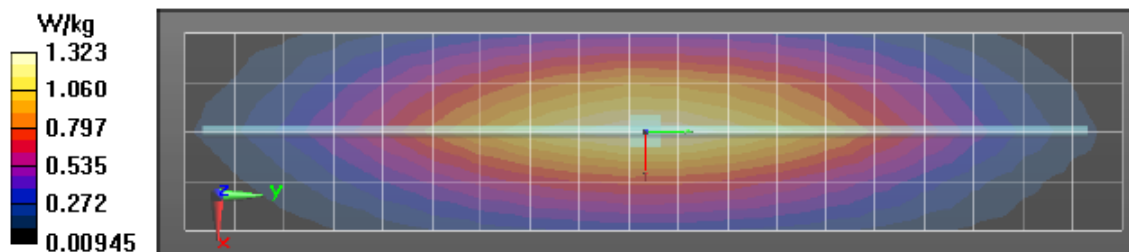
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 37.98 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.747 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 1.35 W/kg

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

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/4/2016 7:25:17 PM

Robot#: DASY5-PG-2 | Run#: MO-SYSP-450H-160704-14
 Dipole Model#: D450V3
 Phantom#: ELI5 1147
 Tissue Temp: 21.1 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.074 dB
 Adjusted SAR (1W): 4.48 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.87$ S/m; $\epsilon_r = 45.1$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, Frequency: 450 MHz, ConvF(6.7, 6.7, 6.7); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x191x1):

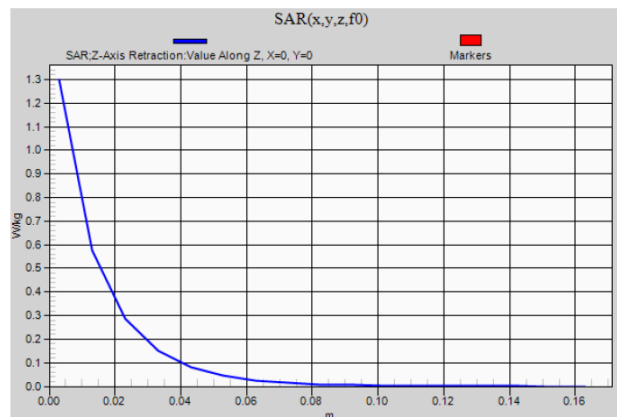
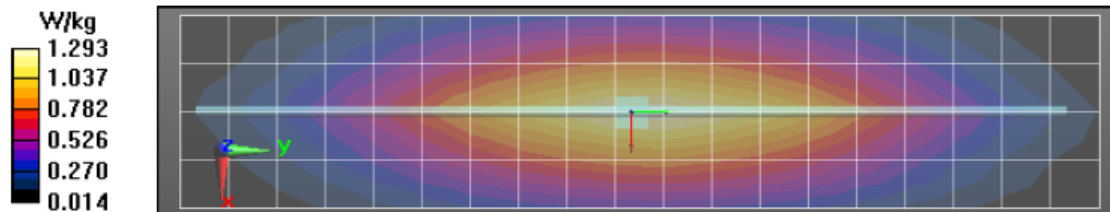
Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm
 Reference Value = 39.38 V/m; Power Drift = -0.03 dB
 Fast SAR: SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.798 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.30 W/kg

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

Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm
 Reference Value = 39.38 V/m; Power Drift = -0.03 dB
 Peak SAR (extrapolated) = 1.73 W/kg
 SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.736 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.30 W/kg

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

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



Appendix E

DUT Scans

Assessments at the Body with Body worn Clip-27 - Table 18

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/4/2016 10:17:37 AM

Robot#: DASY5-PG-2 | Run#: KBK-AB-160704-06
 Model#: AC146U002
 Phantom#: Oval 1019
 Tissue Temp: 20.9 (C)
 Serial#: 2D6G200051
 Antenna: ATU-6B
 Test Freq: 430.000 (MHz)
 Battery: FNB-V142LI
 Carry Acc: CLIP-27
 Audio Acc: MH-89A4B
 Start Power: 2.16 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 430$ MHz; $\sigma = 0.94$ S/m; $\epsilon_r = 55.7$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, , Frequency: 430 MHz, ConvF(6.82, 6.82, 6.82); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (81x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 80.45 V/m; Power Drift = -0.03 dB

Fast SAR: SAR(1 g) = 5.75 W/kg; SAR(10 g) = 4.17 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 6.43 W/kg

Below 2 GHz-Rev.2/Ab Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 80.45 V/m; Power Drift = -0.07 dB

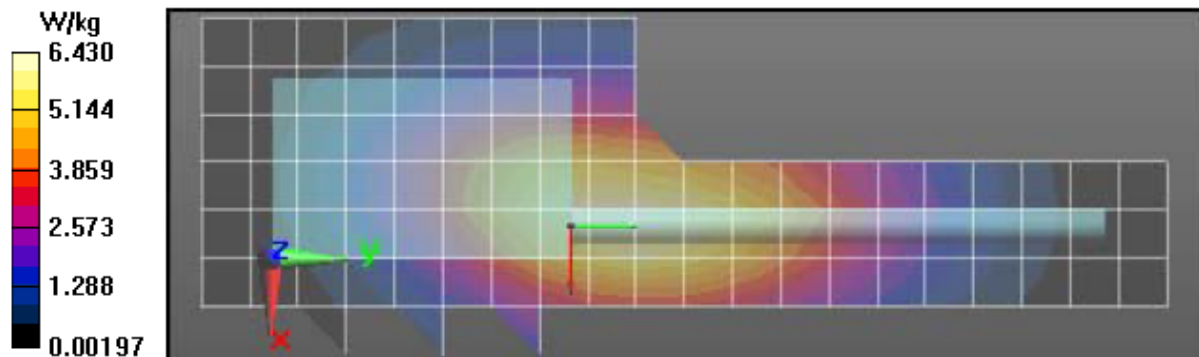
Peak SAR (extrapolated) = 8.34 W/kg

SAR(1 g) = 5.68 W/kg; SAR(10 g) = 4.05 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 6.45 W/kg

Below 2 GHz-Rev.2/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 6.43 W/kg



Assessments at the Face - Table 20

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/5/2016 8:24:47 AM

Robot#: DASY5-PG-2 | Run#: KBK-FACE-160705-03
 Model#: AC146U002
 Phantom#: ELI5 1147
 Tissue Temp: 20.9 (C)
 Serial#: 2D6G200052
 Antenna: ATU-6D
 Test Freq: 450.000 (MHz)
 Battery: FNB-V142LI
 Carry Acc: @front
 Audio Acc: NONE
 Start Power: 2.16 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450 \text{ MHz}$, $\sigma = 0.87 \text{ S/m}$, $\epsilon_r = 45.1$, $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3096, , Frequency: 450 MHz, ConvF(6.7, 6.7, 6.7); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (81x221x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Reference Value = 80.11 V/m; Power Drift = -0.27 dB

Fast SAR: SAR(1 g) = 4.97 W/kg; SAR(10 g) = 3.61 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 5.52 W/kg

Below 2 GHz-Rev.2/Face 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 = 80.11 V/m; Power Drift = -0.35 dB

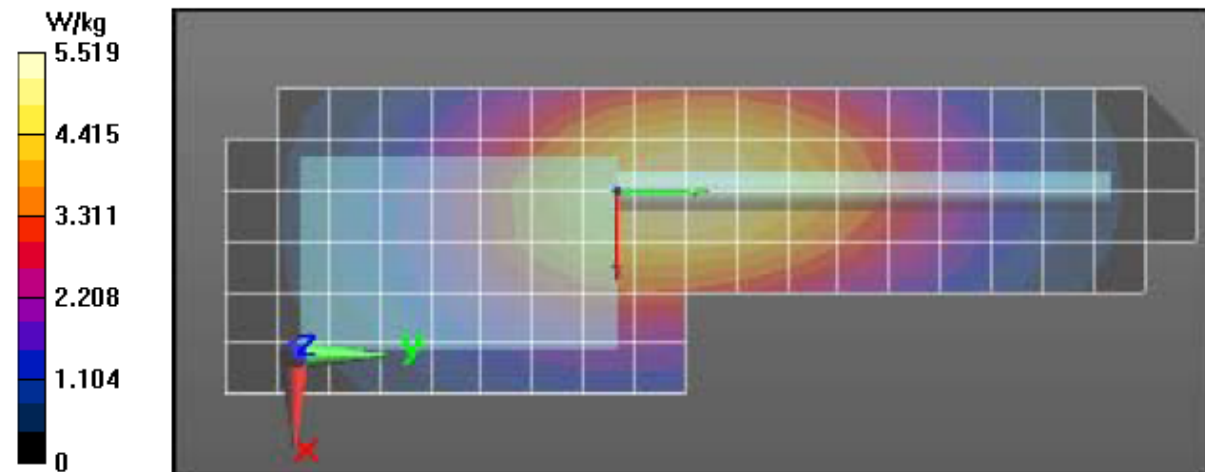
Peak SAR (extrapolated) = 6.65 W/kg

SAR(1 g) = 4.78 W/kg; SAR(10 g) = 3.46 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 5.35 W/kg

Below 2 GHz-Rev.2/Face 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) = 5.27 W/kg



Assessments at outside FCC Part 90 - Table 21 Assessments at the Body

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/4/2016 5:08:44 PM

Robot#: DASY5-PG-2 | Run#: MO-AB-160704-13
 Model#: AC146U002
 Phantom#: OVAL 1019
 Tissue Temp: 19.8 (C)
 Serial#: 2D6G200051
 Antenna: ATU-20AS
 Test Freq: 403.000 (MHz)
 Battery: FNB-V142LI
 Carry Acc: CLIP-27
 Audio Acc: MH-89A4B
 Start Power: 2.11 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 403 \text{ MHz}$; $\sigma = 0.91 \text{ S/m}$; $\epsilon_r = 55.6$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3096, Frequency: 403 MHz, ConvF(6.82, 6.82, 6.82); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (81x221x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Reference Value = 67.38 V/m; Power Drift = -0.33 dB

Fast SAR: SAR(1 g) = 3.92 W/kg; SAR(10 g) = 2.84 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 4.34 W/kg

Below 2 GHz-Rev.2/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 = 67.38 V/m; Power Drift = -0.45 dB

Peak SAR (extrapolated) = 5.40 W/kg

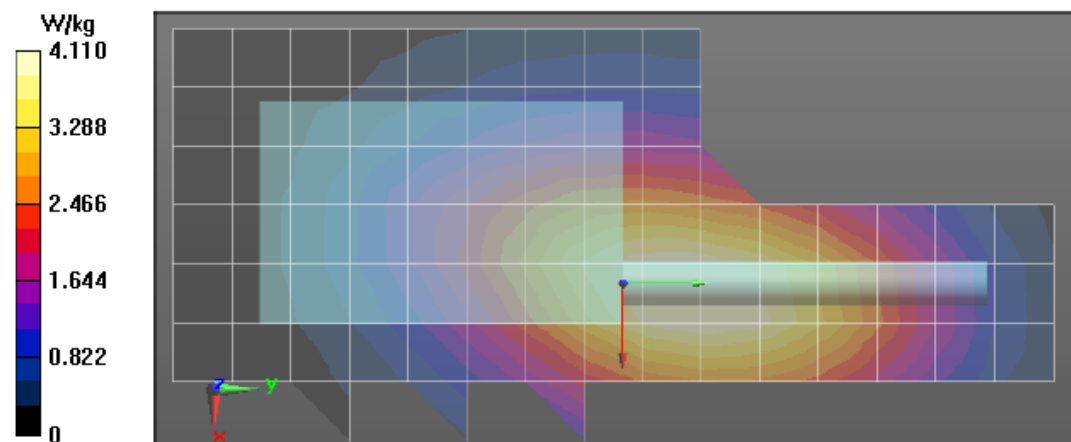
SAR(1 g) = 3.71 W/kg; SAR(10 g) = 2.63 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 4.18 W/kg

Below 2 GHz-Rev.2/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) = 4.14 W/kg



Assessments at outside FCC Part 90 - Table 22

Assessments at the Face

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/5/2016 10:22:38 AM

Robot#: DASY5-PG-2 | Run#: KBK-FACE-160705-06
 Model#: AC146U002
 Phantom#: ELI5 1147
 Tissue Temp: 20.8(C)
 Serial#: 2D6G200052
 Antenna: ATU-20AS
 Test Freq: 403.000 (MHz)
 Battery: FNB-V142LI
 Carry Acc: @front
 Audio Acc: NONE
 Start Power: 2.14 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 403$ MHz; $\sigma = 0.83$ S/m; $\epsilon_r = 46.1$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, Frequency: 403 MHz, ConvF(6.7, 6.7, 6.7); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (81x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 63.48 V/m; Power Drift = 0.25 dB

Fast SAR: SAR(1 g) = 3.5 W/kg; SAR(10 g) = 2.54 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 3.74 W/kg

Below 2 GHz-Rev.2/Face Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 63.48 V/m; Power Drift = 0.39 dB

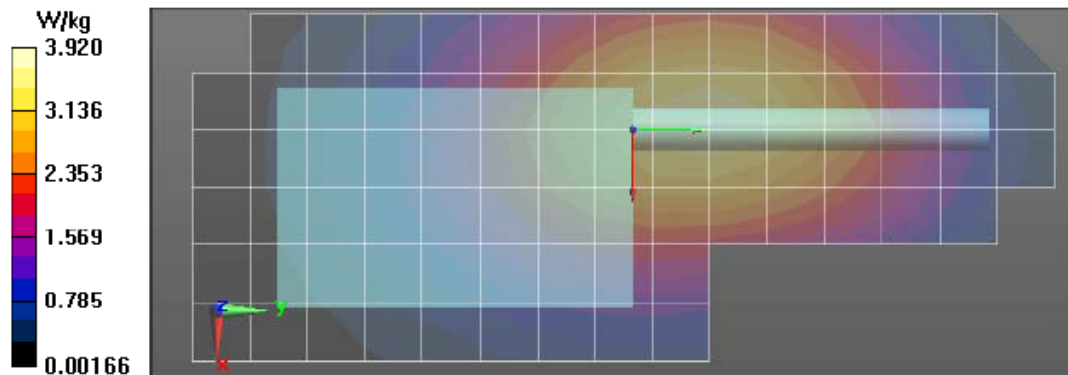
Peak SAR (extrapolated) = 4.83 W/kg

SAR(1 g) = 3.62 W/kg; SAR(10 g) = 2.62 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 3.89 W/kg

Below 2 GHz-Rev.2/Face Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 3.92 W/kg



APPENDIX F

Shortened Scan of Highest SAR configuration

Shortened Scan - Table 23

Motorola Solutions, Inc. EME Laboratory

Date/Time: 7/4/2016 4:22:29 PM

Robot#: DASY5-PG-2 | Run#: MO-AB-160704-12
 Model#: AC146U002
 Phantom#: OVAL 1019
 Tissue Temp: 19.8 (C)
 Serial#: 2D6G200051
 Antenna: ATU-6B
 Test Freq: 430.000 (MHz)
 Battery: FNB-V142LI
 Carry Acc: CLIP-27
 Audio Acc: MH-89A4B
 Start Power: 2.16 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 430$ MHz; $\sigma = 0.93$ S/m; $\epsilon_r = 55.2$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, Frequency: 430 MHz, ConvF(6.82, 6.82, 6.82); Calibrated: 4/29/2016
 Electronics: DAE4 Sn688, Calibrated: 4/21/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (81x221x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 80.91 V/m; Power Drift = -0.03 dB

Fast SAR: SAR(1 g) = 5.78 W/kg; SAR(10 g) = 4.2 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 6.46 W/kg

Below 2 GHz-Rev.2/Ab Scan/2-Volume 2D Scan (41x41x1): Interpolated grid: dx=0.7500 mm,

dy=0.7500 mm, dz=1.000 mm

Reference Value = 80.91 V/m; Power Drift = -0.07 dB

Fast SAR: SAR(1 g) = 5.78 W/kg; SAR(10 g) = 4.23 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 6.42 W/kg

Below 2 GHz-Rev.2/Ab Scan/3-Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm,

dy=7.5mm, dz=5mm

Reference Value = 81.66 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 7.89 W/kg

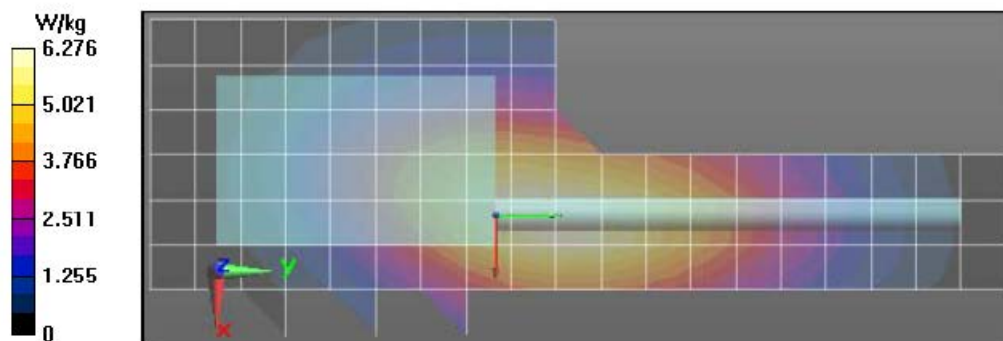
SAR(1 g) = 5.4 W/kg; SAR(10 g) = 3.86 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 6.12 W/kg

Below 2 GHz-Rev.2/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm

Maximum value of SAR (measured) = 6.34 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)	23	7	2.75	1.97
Full scan (area & zoom)	18	25	2.94	2.10

APPENDIX G

DUT Test Position Photos

Photos available in Exhibit 7B

APPENDIX H

DUT, Body worn and audio accessory Photos

Photos available in Exhibit 7B