

**MOTOROLA SOLUTIONS**

TESTING CERT # 2518.05

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 2 of 2**Motorola Solutions Inc****EME Test Laboratory**

Motorola Solutions Malaysia Sdn Bhd (Innoplex) (455657-H)
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Date of Report: 02/29/2016**Report Revision:** B

Responsible Engineer: Veeramani (Sr. EME Engineer)
Report Author: Veeramani (Sr. EME Engineer)
Date/s Tested: 01/29/2016- 02/01/2016
Manufacturer: Motorola Solutions Inc.
DUT Description: T200 GMRS/FRS Consumer Radio 462-467MHz
Test TX mode(s): CW (PTT)
Max. Power output: 0.7W (GMRS/FRS)
Nominal Power: 0.5W (GMRS/FRS)
Tx Frequency Bands: FRS 462.5625 – 462.7125 MHz
 FRS 467.5625 – 467.7125 MHz
 GMRS 462.5500 – 462.7250 MHz
Signaling type: FM
Model(s) Tested: T200 (PMUE5040A)
Model(s) Certified: T200 (PMUE5040A)
Serial Number(s): 1651NP0010
Classification: General Population/Uncontrolled
FCC ID: AZ489FT4928; FRS 467.5625 - 467.7125 MHz, FRS 462.5625 – 462.7125 MHz,
 GMRS 462.5500 – 462.7250 MHz
 This report contains results that are immaterial for FCC equipment approval, which are clearly identified.
IC: 109U-89FT4928; This report contains results that are immaterial for IC equipment approval, which are clearly identified.

The test results clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of 1.6 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 2 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: 2/29/2016

Certification Date: 2/24/2016**Certification No.:** L1160208

APPENDIX D

System Verification Check Scans

Motorola Solutions, Inc. EME Laboratory

Date/Time: 1/29/2016 10:19:14 AM

Robot#: DASY5-PG-3 | Run#: TLC-SYSP-450B-160129-04
 Dipole Model# D450V3
 Phantom#: ELI4 1037
 Tissue Temp: 21.3 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.024 dB
 Adjusted SAR (1W): 4.68 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.93$ S/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3196, , Frequency: 450 MHz, ConvF(7.06, 7.06, 7.06); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x201x1):

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

Reference Value = 38.59 V/m; Power Drift = -0.04 dB

Fast SAR: SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.833 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.37 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

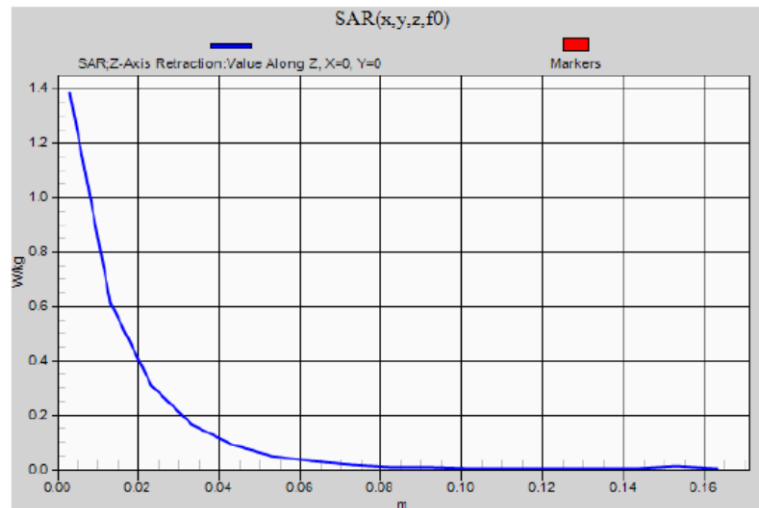
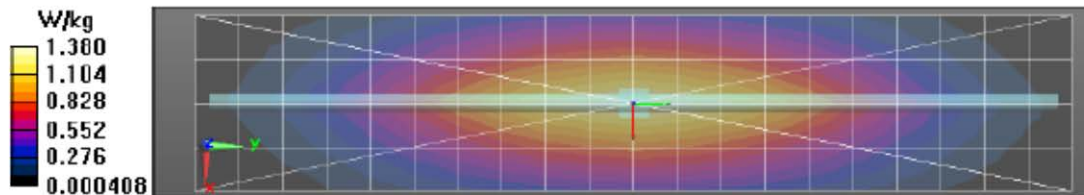
Reference Value = 38.59 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.772 W/kg (SAR corrected for target medium)**Below 2 GHz-Rev.2/System Performance Check/Z-Axis Retraction (1x1x17): Measurement**

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

Maximum value of SAR (measured) = 1.38 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 2/1/2016 7:21:33 AM

Robot#: DASY5-PG-3 | Run#: ZR-SYSP-450B-160201-01
 Dipole Model#: D450V3
 Phantom#: ELI4 1037
 Tissue Temp: 21.9 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250.000 (mW)
 Rotation (1D): 0.028 dB
 Adjusted SAR (1W): 4.64 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.91 \text{ S/m}$; $\epsilon_r = 55$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3196, , Frequency: 450 MHz, ConvF(7.06, 7.06, 7.06); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

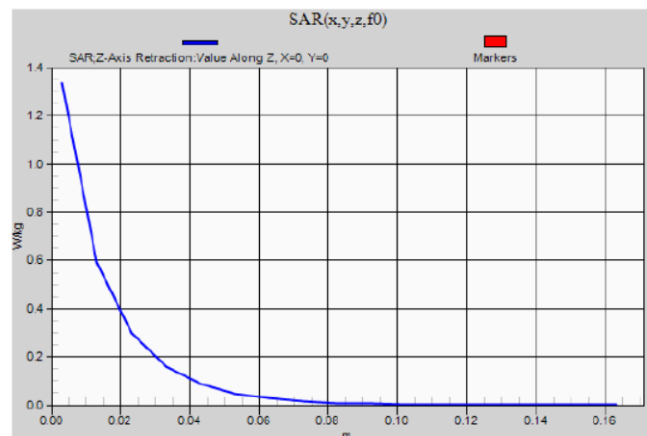
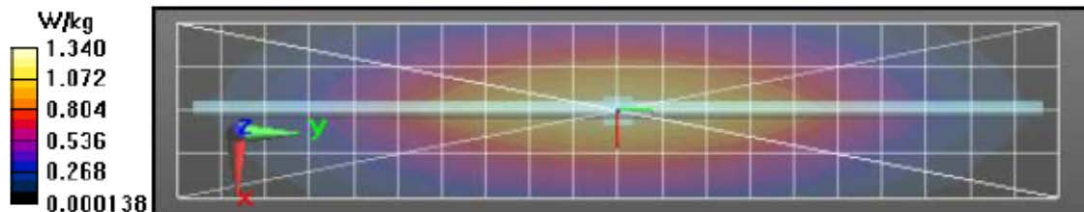
Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x201x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 39.04 V/m; Power Drift = -0.16 dB
Fast SAR: SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.841 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.36 W/kg

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

Measurement grid: $dx=7.5 \text{ mm}$, $dy=7.5 \text{ mm}$, $dz=5 \text{ mm}$
 Reference Value = 39.04 V/m; Power Drift = -0.16 dB
 Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.763 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.33 W/kg

Below 2 GHz-Rev.2/System Performance Check/Z-Axis Retraction (1x1x17): Measurement
 grid: $dx=20 \text{ mm}$, $dy=20 \text{ mm}$, $dz=10 \text{ mm}$
 Maximum value of SAR (measured) = 1.34 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 2/1/2016 2:53:04 PM

Robot#: DASY5-PG-3 | Run#: AZ-SYSP-450H-160201-07
 Dipole Model#: D450V3
 Phantom#: ELI4 1028
 Tissue Temp: 20.6 (C)
 Serial#: 1053
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.038 dB
 Adjusted SAR (1W): 4.64 mW/g (1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 44.6$; $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3196, Frequency: 450 MHz, ConvF(6.83, 6.83, 6.83); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

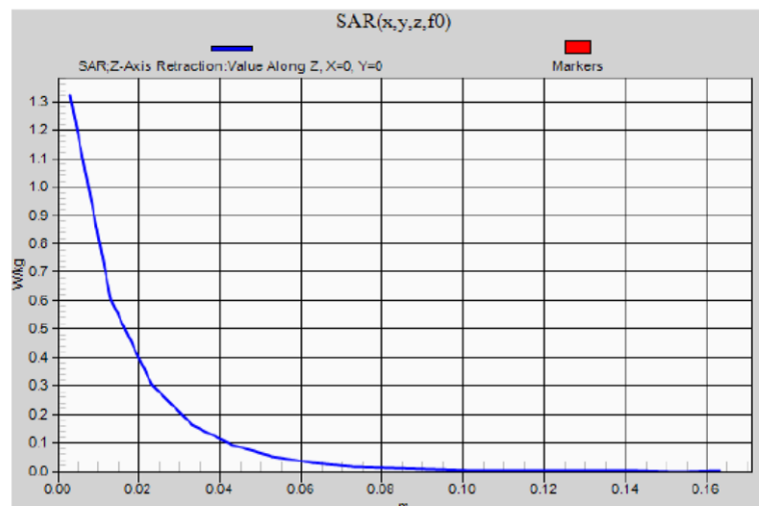
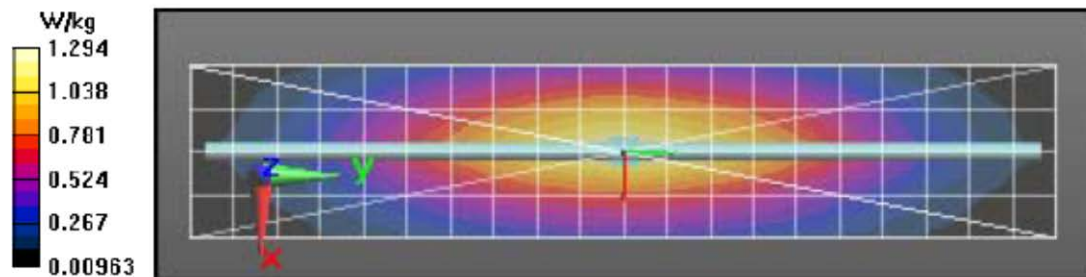
Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x201x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 40.10 V/m; Power Drift = -0.01 dB
Fast SAR: SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.815 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 = 40.10 V/m; Power Drift = -0.01 dB
 Peak SAR (extrapolated) = 1.74 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.770 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



APPENDIX E

DUT Scans

Assessments at the Body for FRS band

Table 18

Motorola Solutions, Inc. EME Laboratory
Date/Time: 1/29/2016 7:54:05 PM

Robot#: DASY5-PG-3 | Run#: AZ-AB-160129-17
 Model#: PMJE5040A
 Phantom#: ELI4 1037
 Tissue Temp: 20.1 (C)
 Serial#: 1651NP0010
 Antenna: Fixed
 Test Freq: 467.6375 (MHz)
 Battery: 3x AA Alkaline
 Carry Acc: 1564028V01
 Audio Acc: GU7140 w/56320B
 Start Power: 0.623 (W)

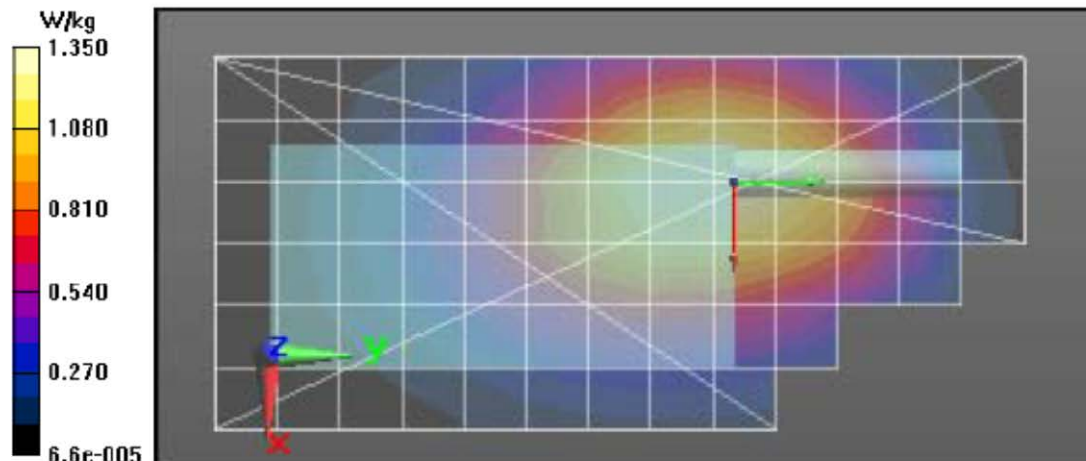
Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 468 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3196, Frequency: 467.637 MHz, ConvF(7.06, 7.06, 7.06); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 40.27 V/m; Power Drift = -0.37 dB
Fast SAR: SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.911 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.43 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 = 40.27 V/m; Power Drift = -0.52 dB
 Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.855 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.38 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) = 1.35 W/kg



Assessments at the Body for GRMS/FRS band

Table 20

Motorola Solutions, Inc. EME Laboratory
Date/Time: 1/29/2016 3:19:00 PM

Robot#: DASY5-PG-3 | Run#: AZ-AB-160129-08
 Model#: PMJE5040A
 Phantom#: ELI4 1037
 Tissue Temp: 20.3 (C)
 Serial#: 1651NP0010
 Antenna: Fixed
 Test Freq: 462.6375 (MHz)
 Battery: PMNN4477A
 Carry Acc: 1564028V01
 Audio Acc: GU6970A
 Start Power: 0.535 (W)

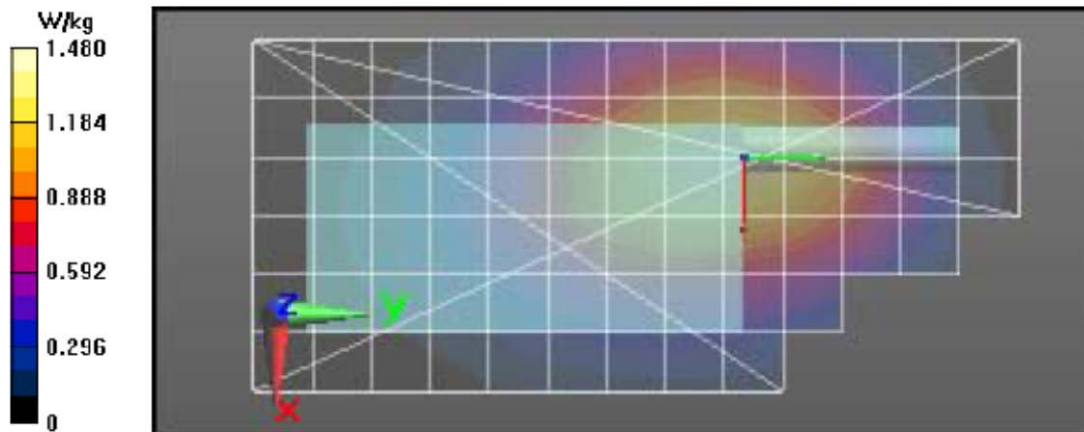
Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 463 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3196, Frequency: 462.637 MHz, ConvF(7.06, 7.06, 7.06); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 40.22 V/m; Power Drift = -0.17 dB
Fast SAR: SAR(1 g) = 1.32 W/kg; SAR(10 g) = 0.944 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.49 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 = 40.22 V/m; Power Drift = -0.26 dB
 Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.895 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.44 W/kg

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



Assessments at the Face for FRS band

Table 22

Motorola Solutions, Inc. EME Laboratory
Date/Time: 2/1/2016 5:40:02 PM

Robot#: DASY5-PG-3 | Run#: TLC-FACE-160201-11
 Model#: PMUE5040A
 Phantom#: ELI4 1028
 Tissue Temp: 19.4 (C)
 Serial#: 1651NP0010
 Antenna: Fixed
 Test Freq: 467.6375 (MHz)
 Battery: PMNN4477A
 Carry Acc: None
 Audio Acc: None
 Start Power: 0.535 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 468 \text{ MHz}$; $\sigma = 0.86 \text{ S/m}$; $\epsilon_r = 44.3$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3196, , Frequency: 467.637 MHz, ConvF(6.83, 6.83, 6.83); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (81x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Reference Value = 32.97 V/m; Power Drift = -0.08 dB

Fast SAR: SAR(1 g) = 0.857 W/kg; SAR(10 g) = 0.617 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 0.947 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 = 32.97 V/m; Power Drift = -0.13 dB

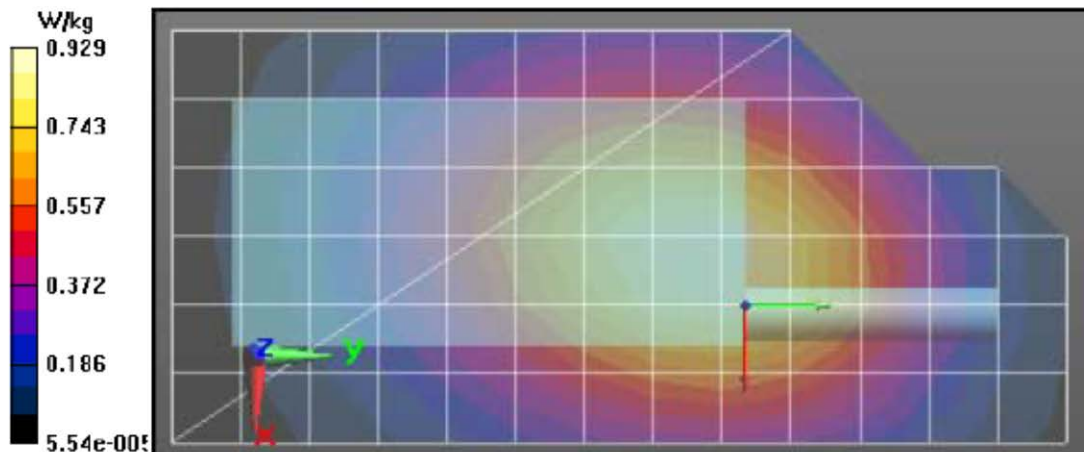
Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.839 W/kg; SAR(10 g) = 0.606 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.932 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) = 0.929 W/kg



Assessments at the Face for GRMS/FRS band

Table 24

Motorola Solutions, Inc. EME Laboratory
Date/Time: 2/1/2016 4:22:26 PM

Robot#: DASY5-PG-3 | Run#: AZ-FACE-160201-09
 Model#: PMUE5040A
 Phantom#: ELI4 1028
 Tissue Temp: 20.3(C)
 Serial#: 1651NP0010
 Antenna: Fixed
 Test Freq: 462.6375 (MHz)
 Battery: PMNN4477A
 Carry Acc: None
 Audio Acc: None
 Start Power: 0.535 (W)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 463 \text{ MHz}$; $\sigma = 0.86 \text{ S/m}$; $\epsilon_r = 44.4$; $\rho = 1000 \text{ kg/m}^3$
 Probe: ES3DV3 - SN3196, , Frequency: 462.637 MHz, ConvF(6.83, 6.83, 6.83); Calibrated: 11/17/2015
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (81x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Reference Value = 33.90 V/m; Power Drift = -0.09 dB

Fast SAR: SAR(1 g) = 0.894 W/kg; SAR(10 g) = 0.645 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 0.987 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 = 33.90 V/m; Power Drift = -0.12 dB

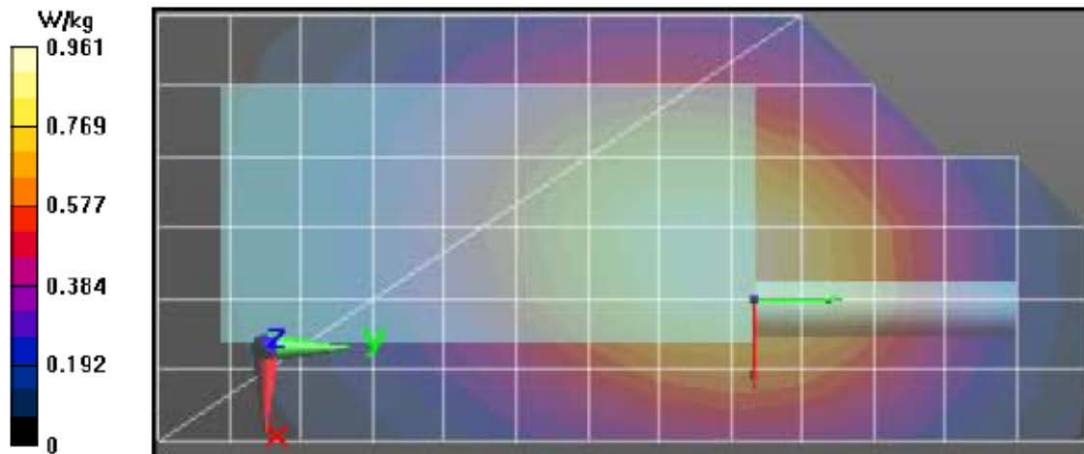
Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.876 W/kg; SAR(10 g) = 0.633 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.973 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) = 0.968 W/kg



APPENDIX F

Shortened Scan of Highest SAR configuration

Motorola Solutions, Inc. EME Laboratory

Date/Time: 2/1/2016 1:33:53 PM

Robot#: DASY5-PG-3 | Run#: AZ-AB-160201-06
 Model#: PMUE5040A
 Phantom#: EL14 1037
 Tissue Temp: 20.6 (C)
 Serial#: 1651NP0010
 Antenna: Fixed
 Test Freq: 462.6375 (MHz)
 Battery: PMNN4477A
 Carry Acc: 1564028V01
 Audio Acc: GU6970A
 Start Power: 0.535 (W)

Comments: Shorten Scan

Duty Cycle: 1:1, Medium parameters used: $f = 463 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 54.8$; $\rho = 1000 \text{ kg/m}^3$

Probe: ES3DV3 - SN3196, Frequency: 462.637 MHz, ConvR(7.06, 7.06, 7.06); Calibrated: 11/17/2015

Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x131x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Reference Value = 39.69 V/m; Power Drift = -0.27 dB

Fast SAR: SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.873 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.36 W/kg

Below 2 GHz-Rev.2/Ab Scan/2-Volume 2D Scan (41x41x1): Interpolated grid: $dx=0.7500 \text{ mm}$, $dy=0.7500 \text{ mm}$, $dz=1.000 \text{ mm}$

Reference Value = 39.69 V/m; Power Drift = -0.30 dB

Fast SAR: SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.884 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.34 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 = 39.14 V/m; Power Drift = -0.17 dB

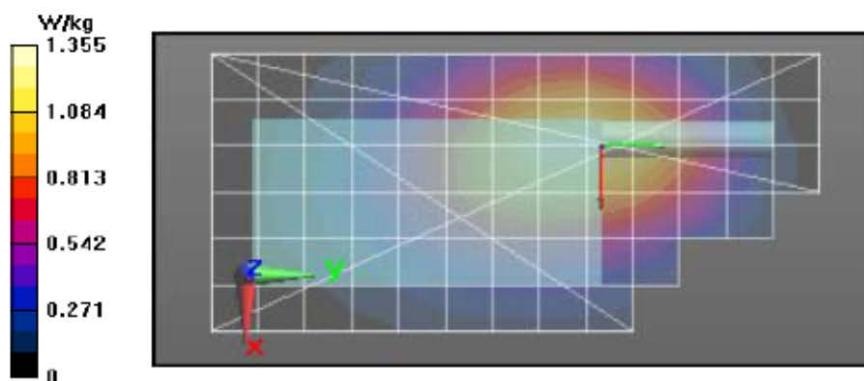
Peak SAR (extrapolated) = 1.77 W/kg

SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.854 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 1.36 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) = 1.32 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)	25	7	0.82	0.58
Full scan (area & zoom)	20	22	0.88	0.62

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