

 MOTOROLA SOLUTIONS	 CERTIFICATE 2518.05
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DECLARATION OF COMPLIANCE SAR ASSESSMENT PCII Report 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: 10/18/2016 Report Revision: A
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Responsible Engineer: Veeramani Veerapan
Report Author: Veeramani Veerapan
Date/s Tested: 9/27/2016 – 10/03/2016; 11/01/2016
Manufacturer: Motorola Solutions Inc.
DUT Description: Handheld Portable – NKP 403-527 MHz 4 W GNSS BT WIFI GOB
Test TX mode(s): CW (PTT) , Bluetooth, and WLAN 802.11 b/g/n
Max. Power output: 4.8 W (UHF band), 10.0 mW (Bluetooth), 22.4 mW (802.11b), 8.3 mW (802.11g), 12.6 mW (802.11n)
Nominal Power: 4.0 W (UHF band), 8.9 mW (Bluetooth), 16.6 mW (802.11b), 6.6 mW (802.11g), 10.0 mW (802.11n)
Tx Frequency Bands: LMR 403-527 MHz; Bluetooth 2.402-2.480 GHz; WLAN 2.412-2.462 GHz
Signaling type: FM (LMR), FHSS (Bluetooth), 802.11 b/g/n (WLAN)
Model(s) Tested: PMUE5098A
Model(s) Certified: PMUE5098A & PMUE5097A
Serial Number(s): 807TSRH667
Classification: Occupational/Controlled
FCC ID: AZ489FT7065; LMR 406.125-512 MHz, Bluetooth 2.402-2.480 GHz, WLAN 802.11 b/g/n 2.412-2.462 GHz
IC: 109U-89FT7065; 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: 11/04/2016	Certification Date: 11/04/2016 Certification No.: L1161106
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Appendix C

Dipole Calibration Certificates

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Motorola EME**

Certificate No: **D450V3-1077_Nov15**

CALIBRATION CERTIFICATE

Object **D450V3 - SN: 1077**

Calibration procedure(s) **QA CAL-15.v8
Calibration procedure for dipole validation kits below 700 MHz**

Calibration date: **November 25, 2015**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility; environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor E4412A	MY41498087	01-Apr-15 (No. 217-02128)	Mar-16
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Apr-15 (No. 217-02129)	Mar-16
Reference 20 dB Attenuator	SN: S5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ET3DV6	SN: 1507	30-Dec-14 (No. ET3-1507_Dec14)	Dec-15
DAE4	SN: 654	06-Jul-15 (No. DAE4-654_Jul15)	Jul-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	04-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

Calibrated by:	Name Leif Klysner	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	

Issued: November 25, 2015

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Calibration Laboratory of
 Schmid & Partner
 Engineering AG
 Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL tissue simulating liquid
 ConvF sensitivity in TSL / NORM x,y,z
 N/A not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) IEC 62209-2, "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)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	ELI4 Flat Phantom	Shell thickness: 2 ± 0.2 mm
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	43.5	0.87 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	44.0 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	4.57 W/kg ± 18.1 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	0.777 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	3.07 W/kg ± 17.6 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	56.7	0.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.3 ± 6 %	0.95 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	1.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	4.52 W/kg ± 18.1 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	0.749 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	2.97 W/kg ± 17.6 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	58.1 Ω - 2.3 j Ω
Return Loss	- 22.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	55.0 Ω - 6.8 j Ω
Return Loss	- 21.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.349 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	June 24, 2010

DASY5 Validation Report for Head TSL

Date: 25.11.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V3; Serial: D450V3 - SN: 1077

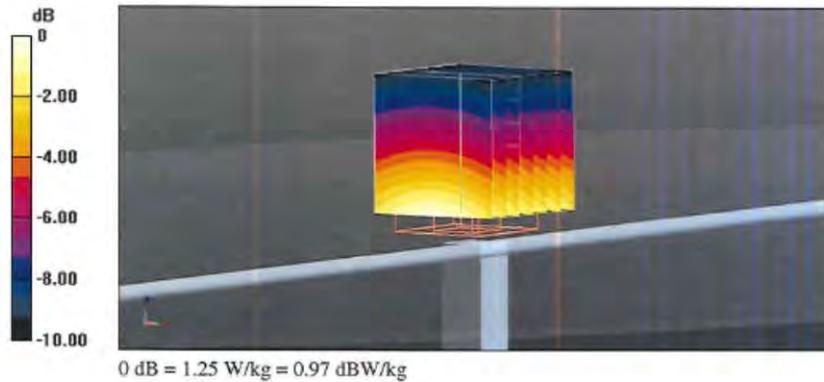
Communication System: UID 0 - CW; Frequency: 450 MHz
Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.89 \text{ S/m}$; $\epsilon_r = 44$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

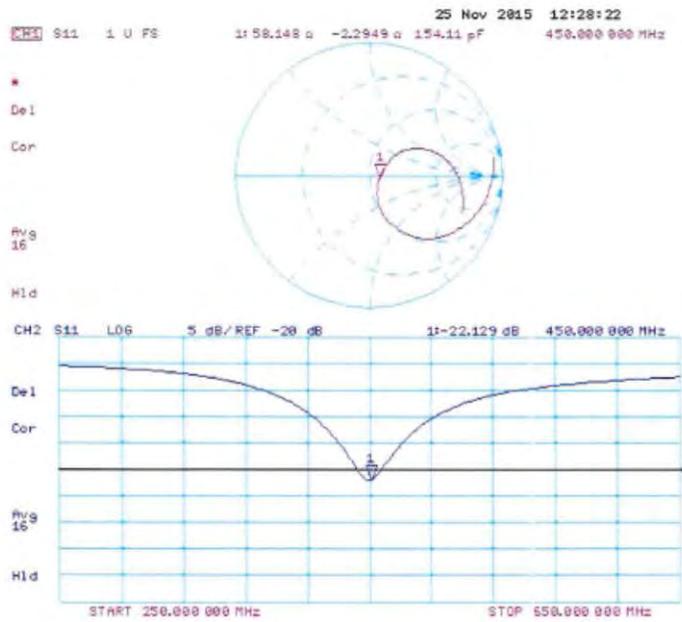
- Probe: ET3DV6 - SN1507; ConvF(6.58, 6.58, 6.58); Calibrated: 30.12.2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 08.07.2015
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1003
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 39.43 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.777 W/kg
Maximum value of SAR (measured) = 1.25 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 25.11.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V3; Serial: D450V3 - SN: 1077

Communication System: UID 0 - CW; Frequency: 450 MHz
 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 56.3$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

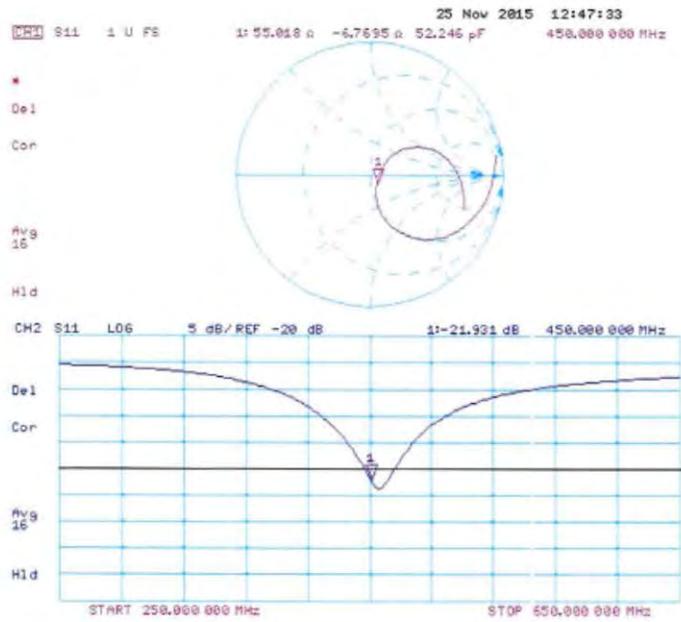
- Probe: ET3DV6 - SN1507; ConvF(7.05, 7.05, 7.05); Calibrated: 30.12.2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 08.07.2015
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1003
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 36.74 V/m; Power Drift = -0.04 dB
 Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.749 W/kg
 Maximum value of SAR (measured) = 1.22 W/kg



Impedance Measurement Plot for Body TSL



Appendix D

System Verification Check Scans

Motorola Solutions, Inc. EME Laboratory
Date/Time: 9/27/2016 10:49:57 AM

Robot#: DASY5-PG-4 | Run#: FD-SYSP-450B-160927-03
 Dipole Model#: D450V3
 Phantom#: OVAL 1019
 Tissue Temp: 20.0 (C)
 Serial#: 1053
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation(1D): 0.025 dB
 Adjusted SAR (1W): 4.32 mW/kg(1g)

Comments

Duty Cycle: 1:1, Medium parameters used f = 450 MHz; $\sigma = 0.91$ S/m; $\epsilon_r = 56.1$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics DAE4 Sml 294, Calibrated: 1/6/2016

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

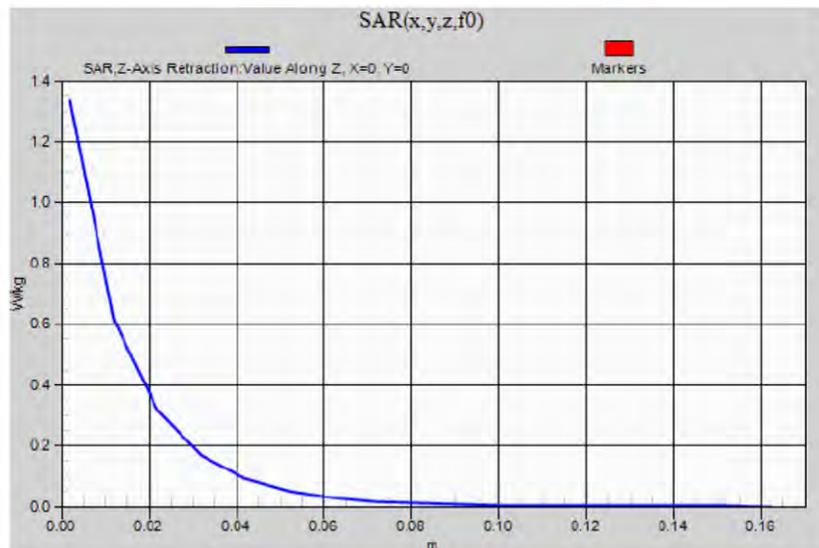
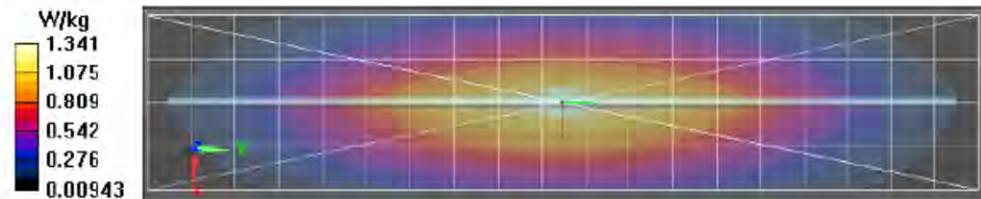
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 37.05 V/m; Power Drift = -0.09 dB
Fast SAR: SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.791 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.35 W/kg

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 = 37.05 V/m; Power Drift = -0.09 dB
 Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.725 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) = 1.33 W/kg



Motorola Solutions, Inc. EME Laboratory
 Date/Time: 9/28/2016 11:59:57 AM

Robot#: DASY5-PG-4 | Run#: FD-SYSP-450B-160928-05
 Dipole Model#: D450V3
 Phantom#: OVAL 1019
 Tissue Temp: 21.0 (C)
 Serial#: 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.017 dB
 Adjusted SAR (1W): 4.52 mW/g(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used f = 450 MHz, $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 56.5$; $\rho = 1000 \text{ kg/m}^3$
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated 7/29/2016
 Electronics: DAE4 Sml 294, Calibrated: 1/6/2016

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

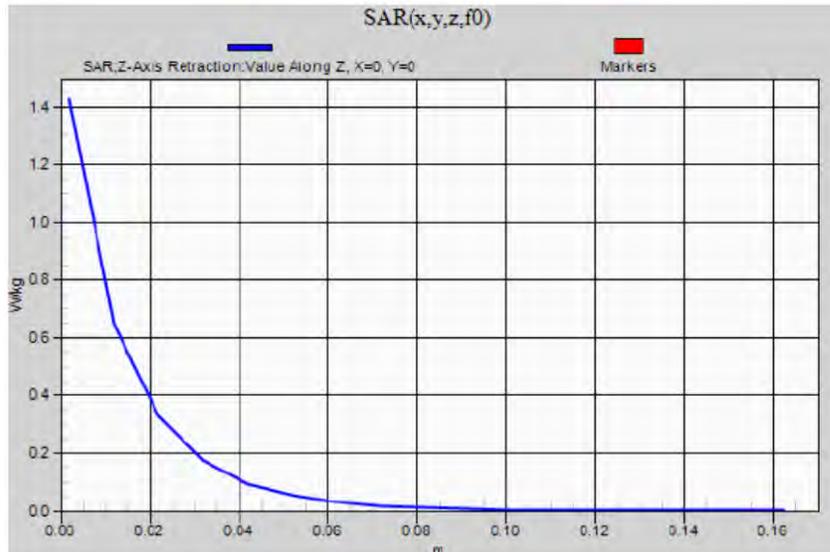
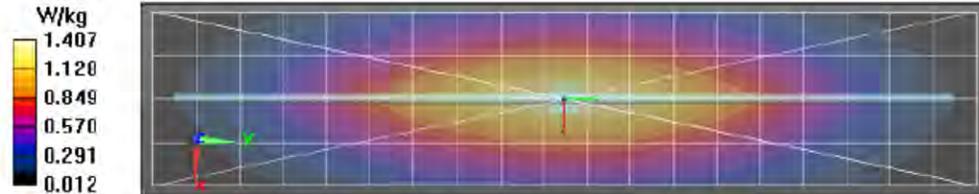
Interpolated grid: $\Delta x=1.500 \text{ mm}$, $\Delta y=1.500 \text{ mm}$
 Reference Value = 37.35 V/m; Power Drift = 0.01 dB
Fast SAR: SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.816 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.41 W/kg

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

Measurement grid: $\Delta x=7.5 \text{ mm}$, $\Delta y=7.5 \text{ mm}$, $\Delta z=5 \text{ mm}$
 Reference Value = 37.35 V/m; Power Drift = 0.01 dB
 Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.753 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.42 W/kg

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

grid: $\Delta x=20 \text{ mm}$, $\Delta y=20 \text{ mm}$, $\Delta z=10 \text{ mm}$
 Maximum value of SAR (measured) = 1.43 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 9/29/2016 12:53:17 PM

Robot#: DASY5-PG-4 | Run#: FD-SYSP-450B-160929-06
 Dipole Model#: D450V3
 Phantom#: OV AL 1019
 Tissue Temp: 21.1 (C)
 Serial#: 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 2.50 (mW)
 Rotation (1D): 0.017 dB
 Adjusted SAR (1W): 4.52 mW/kg(1g)

Comments

Duty Cycle: 1:1, Medium parameters used f= 450 MHz; $\sigma = 0.93$ S/m; $\epsilon_r = 56.3$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics DAE4 Snl 294, Calibrated: 1/6/2016

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

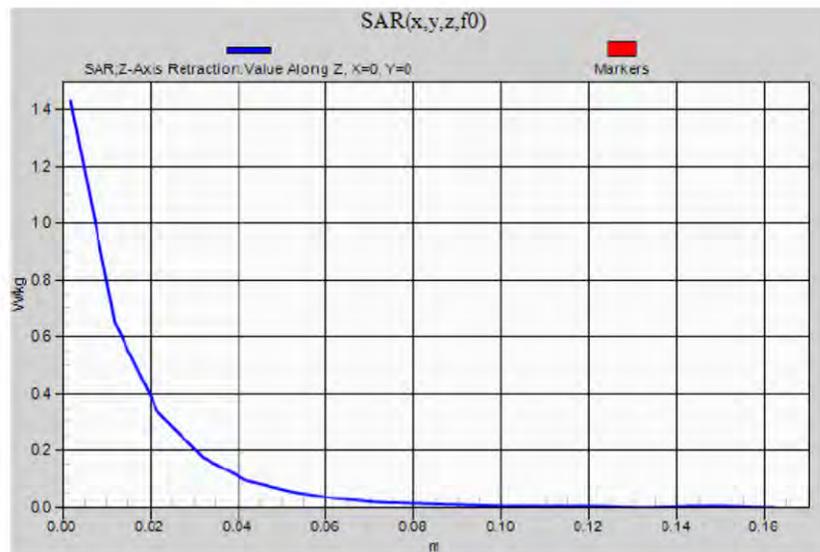
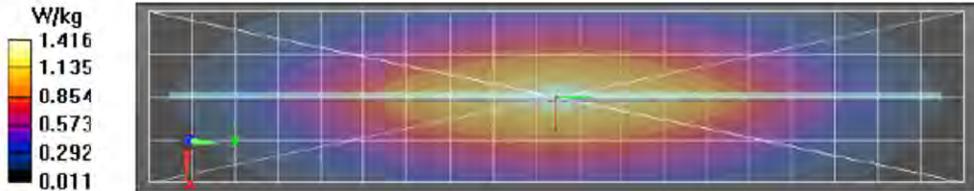
Interpolated grid dx=1.500 mm, dy=1.500 mm
 Reference Value = 39.54 V/m; Power Drift = -0.01 dB
Fast SAR: SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.817 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.42 W/kg

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 = 39.54 V/m; Power Drift = -0.01 dB
 Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.752 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) = 1.43 W/kg



Motorola Solutions, Inc. EME Laboratory

Date/Time: 9/30/2016 3:56:57 PM

Robot# DASY5-PG-4 | Run# FIE-SYSP-450H-160930-09
 Dipole Model# D450V3
 Phantom# ELI5 1147
 Tissue Temp: 21.2 (C)
 Serial# 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (ID): 0.031 dB
 Adjusted SAR (1W): 4.56 mW/g(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: f= 450 MHz, $\sigma = 0.87$ S/m; $\epsilon_r = 44$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(10.62, 10.62, 10.62); Calibrated: 7/29/2016
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

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

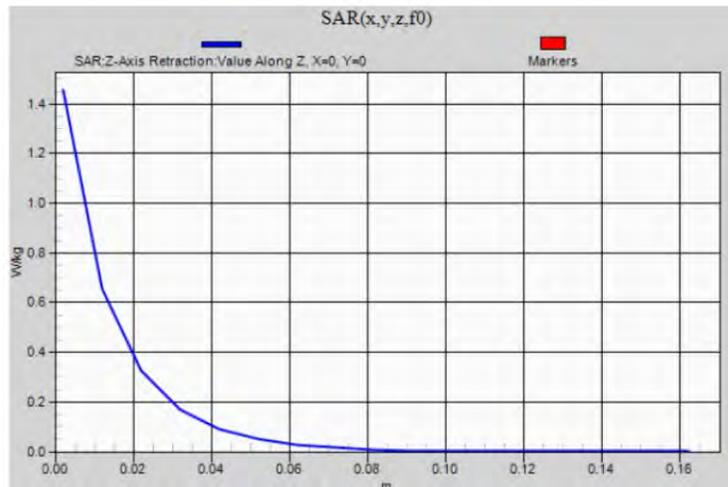
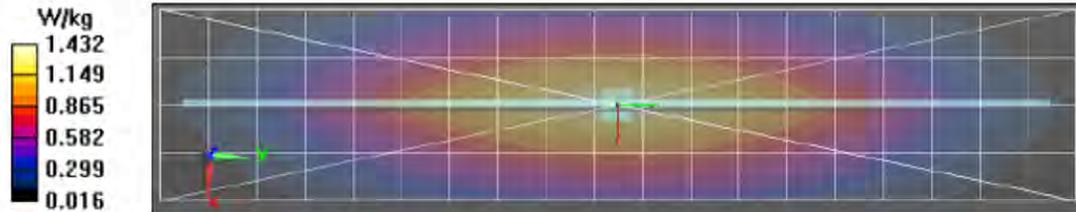
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 41.57 V/m; Power Drift = -0.01 dB
Fast SAR: SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.828 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.44 W/kg

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 = 41.57 V/m; Power Drift = -0.01 dB
 Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.761 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.45 W/kg

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) = 1.46 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/4/2016 10:16:08 AM

Robot#: DASY5-PG-4 | Run#: FD-SYSP-450H-161004-01
 Dipole Model#: D450V3
 Phantom#: ELL151147
 Tissue Temp: 21.6 (C)
 Serial#: 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.14 dB
 Adjusted SAR (1W): 468 mW/kg(1g)

Comments

Duty Cycle: 1:1, Medium parameters used f= 450 MHz; $\sigma = 0.83 \text{ S/m}$; $\epsilon_r = 43.8$; $\rho = 1000 \text{ kg/m}^3$
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(10.62, 10.62, 10.62); Calibrated: 7/29/2016
 Electronics DAE4 Sml 294, Calibrated: 1/6/2016

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

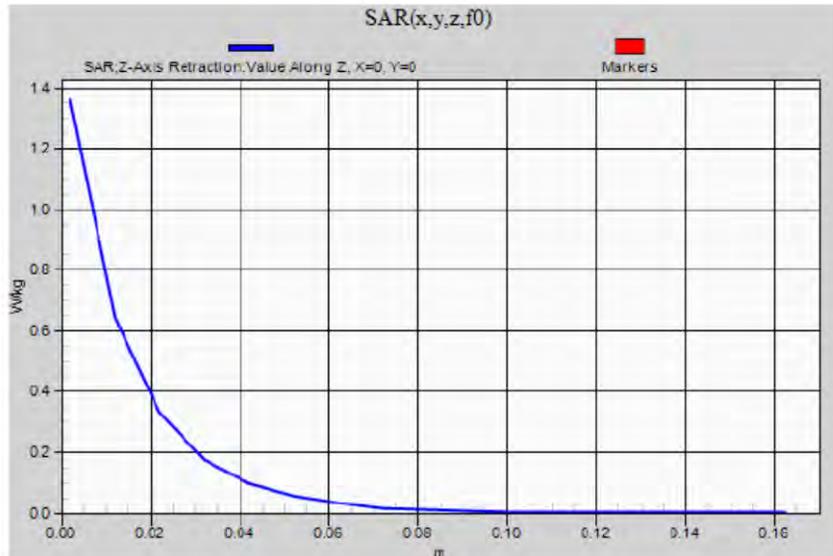
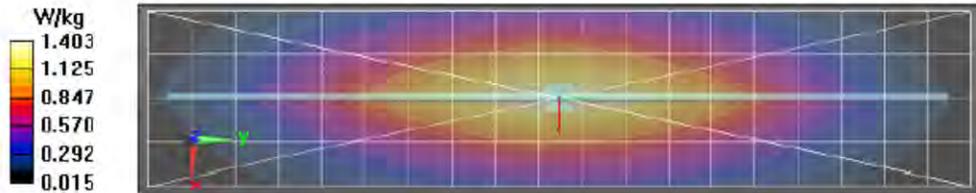
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 42.05 V/m; Power Drift = 0.11 dB
Fast SAR: SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.847 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.41 W/kg

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 = 42.05 V/m; Power Drift = 0.11 dB
 Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.788 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.42 W/kg

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) = 1.36 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/5/2016 8:33:38 AM

Robot# DASY5-PG-4 | Run# FD-SY SP-450H-161005-03
 Dipole Model# D450V3
 Phantom# ELI5 1147
 Tissue Temp: 21.9 (C)
 Serial# 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.048 dB
 Adjusted SAR (1W): 4.48 mW/g(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz, $\sigma = 0.86$ S/m, $\epsilon_r = 44.1$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(10.62, 10.62, 10.62), Calibrated: 7/29/2016
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

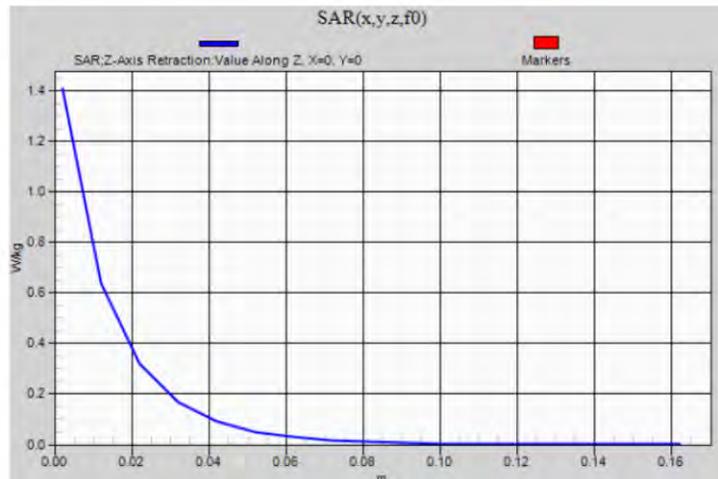
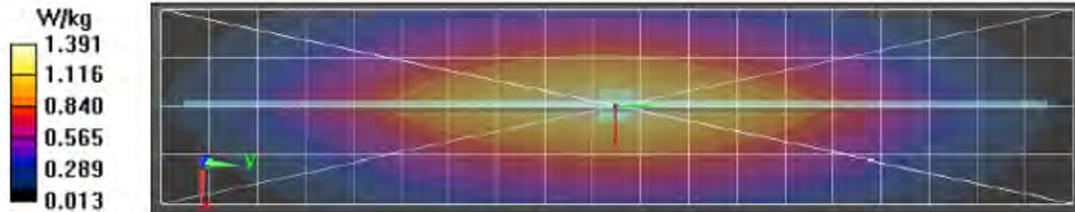
Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x191x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 41.18 V/m; Power Dnft = 0.00 dB
Fast SAR: SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.808 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.40 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 = 41.18 V/m; Power Dnft = 0.00 dB
 Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.748 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.41 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: 10/5/2016 3:30:53 PM

Robot# DASY5-PG-4 | Run# FIE-SYSP-450B-161005-09
 Dipole Model# D450V3
 Phantom# OVAL 1019
 Tissue Temp: 21.9 (C)
 Serial# 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.14 dB
 Adjusted SAR (1W): 4.48 mW/g(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: f = 450 MHz, $\sigma = 0.96$ S/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

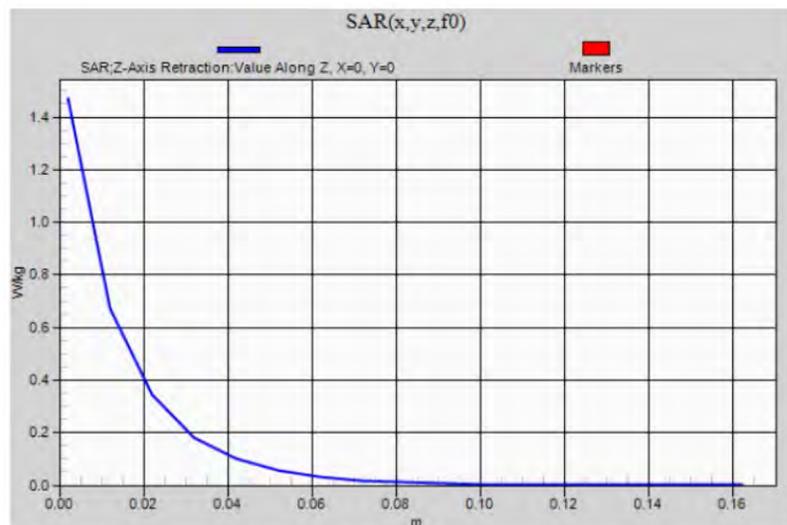
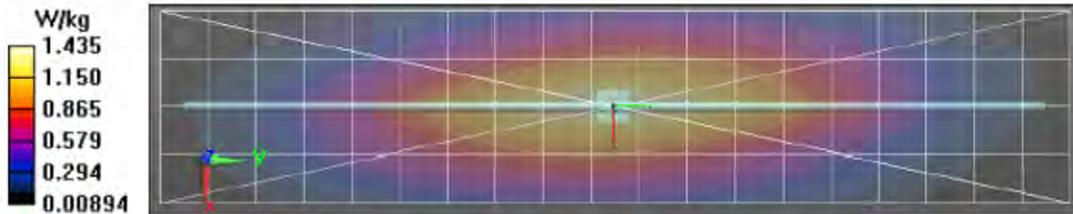
Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x191x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 39.40 V/m; Power Drift = 0.01 dB
Fast SAR: SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.812 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.45 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 = 39.40 V/m; Power Drift = 0.01 dB
 Peak SAR (extrapolated) = 1.76 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.752 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.47 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: 10/13/2016 6:02:10 PM

Robot#: DASY5-PG-4 | Run#: FD-SYSP-450B-161013-01
 Dipole Model#: D450V3
 Phantom#: EL14 1019
 Tissue Temp: 20.1 (C)
 Serial#: 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation(1D): 0.022 dB
 Adjusted SAR(1W): 4.32 mW/kg(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used f = 450 MHz; $\sigma = 0.93$ S/m; $\epsilon_r = 55.5$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics: DAE4 Sml 294, Calibrated: 1/6/2016

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

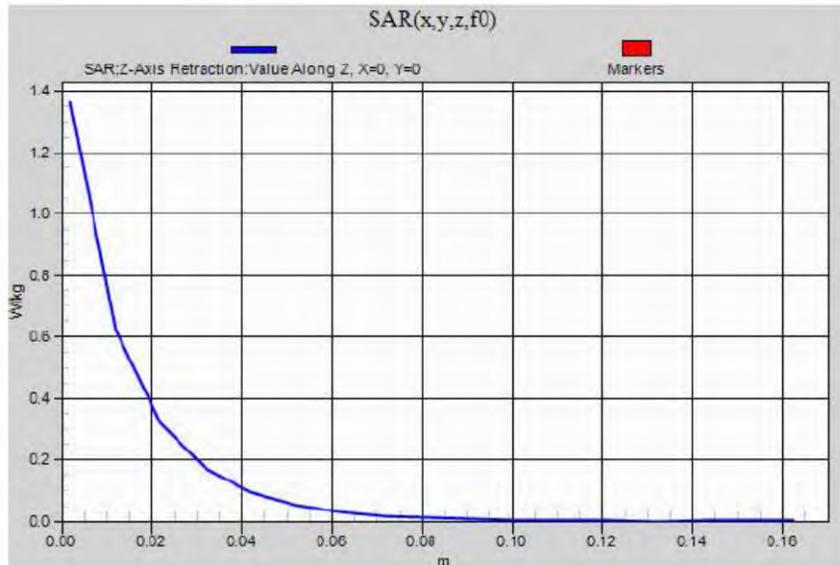
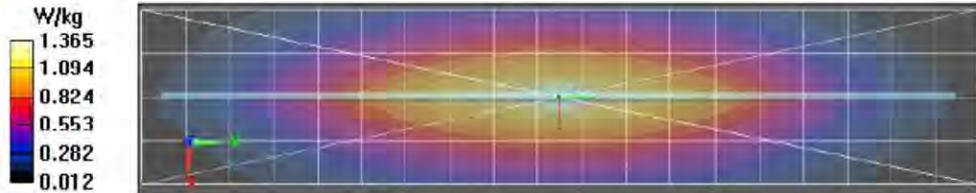
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 39.05 V/m; Power Drift = -0.09 dB
Fast SAR: SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.787 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.37 W/kg

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 = 39.05 V/m; Power Drift = -0.09 dB
 Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.726 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) = 1.36 W/kg



Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/13/2016 3:08:20 PM

Robot#: DASY5-PG-2 | Run#: AZ-SYSP-450H-161013-06
 Dipole Model#: D450V3
 Phantom#: EL15 1147
 Tissue Temp.: 20.9 (C)
 Serial#: 1077
 Test Freq: 450.0000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.110 dB
 Adjusted SAR (1W): 4.48 mW/g (1 g)

Comments

Communication System Band: Dipole 450, Communication System UID: 0, Duty Cycle: 1:1,
 Medium parameters used: f = 450 MHz, $\sigma = 0.88$ S/m, $\epsilon_r = 44.5$, $\rho = 1000$ kg/m³
 Probe: ES3DV3 - SN3096, , Frequency: 450 MHz, ConvF(6.7, 6.7, 6.7); Calibrated: 4/29/2016
 Electronics: DAE3 Sn374, Calibrated: 4/22/2016

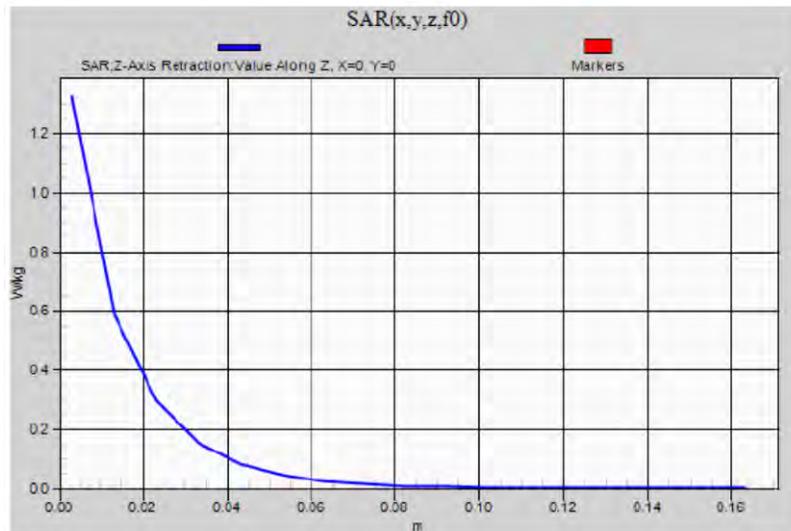
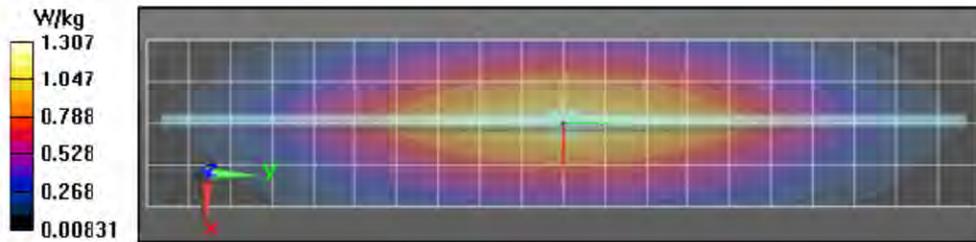
Below 2 GHz-Rev.2/System Performance Check/Dipole Area Scan 2 (41x201x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference V value = 39.36 V/m; Power Drift = -0.02 dB
Fast SAR: SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.791 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 V value = 39.36 V/m; Power Drift = -0.02 dB
 Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.738 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: 11/1/2016 10:29:22 AM

Robot# DASY5-PG-1 | Run# ZWS-SYSP450B-161101-06
 Dipole Model# D450V3
 Phantom# EL14 1109
 Tissue Temp: 21.5 (C)
 Serial#: 1077
 Test Freq: 450.000 (MHz)
 Start Power: 250 (mW)
 Rotation (1D): 0.054 dB
 Adjusted SAR (1W): 4.52 mW/g(1g)

Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 450$ MHz, $\sigma = 0.94$ S/m, $\epsilon_r = 55.8$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN3612, , Frequency: 450 MHz, ConvF(9.07, 9.07, 9.07), Calibrated: 7/11/2016
 Electronics: DAE4 Sn684, Calibrated: 4/29/2016

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

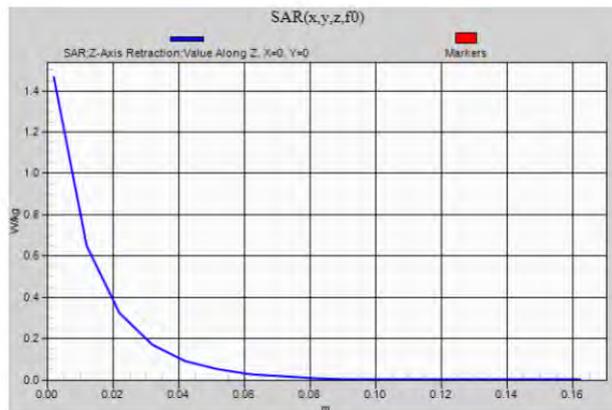
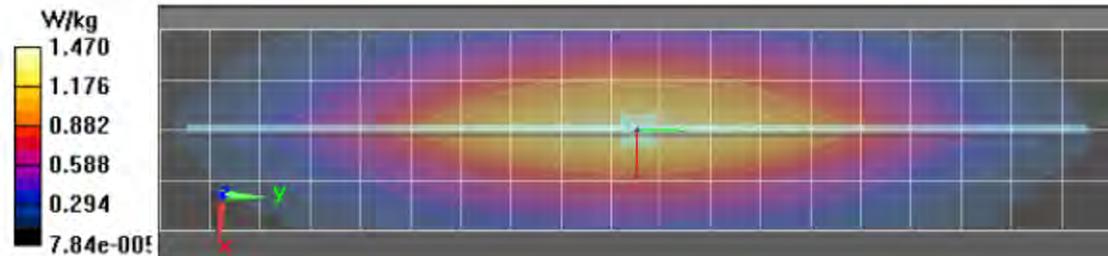
Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 39.61 V/m; Power Drift = 0.02 dB
Fast SAR: SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.822 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 1.44 W/kg

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 = 39.61 V/m; Power Drift = 0.02 dB
 Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.752 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 1.46 W/kg

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) = 1.47 W/kg



Appendix E

DUT Scans

Assessments at the Body Table 15

Motorola Solutions, Inc. EME Laboratory
Date/Time: 9/30/2016 9:16:57 AM

Robot#: DASY5-PG-4 | Run: FD-AB-160930-04
 Model#: PMUE5098A
 Phantom#: OVAL 1019
 Tissue Temp: 21.3 (C)
 Serial#: 807TSRH667
 Antenna: PMAE4102A
 Test Freq: 450.000 (MHz)
 Battery: PMNN4407BR
 Carry Acc: RLN4570A
 Audio Acc: NONE
 Start Power: 4.79 (W)

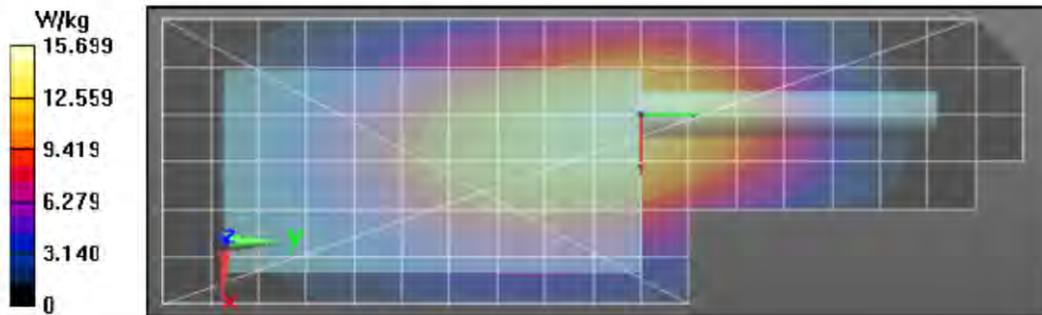
Comments

Duty Cycle: 1:1, Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 56.3$; $\rho = 1000 \text{ kg/m}^3$
 Probe: EX3DV4 - SN7422, Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics: DAE4 Sml 294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 124.0 V/m; Power Drift = -0.47 dB
Fast SAR: SAR(1 g) = 13.4 W/kg; SAR(10 g) = 9.65 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 16.0 W/kg

Below 2 GHz-Rev.2/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 = 124.0 V/m; Power Drift = -0.62 dB
 Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 12.6 W/kg; SAR(10 g) = 9.09 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 15.1 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) = 14.8 W/kg



Assessments at the Face Table 16

Motorola Solutions, Inc. EME Laboratory Date/Time: 9/30/2016 9:17:58 PM

Robot# DASY5-PG-4 | Run: FIE-FACE-160930-16
 Model#: PMUE5098A
 Phantom#: EL15 1147
 Tissue Temp: 21.1 (C)
 Serial#: 807 TSRH667
 Antenna: PMAE4049A
 Test Freq: 465.500 (MHz)
 Battery: PMNN4489A
 Carry Acc: NONE
 Audio Acc: NONE
 Start Power: 4.73 (W)

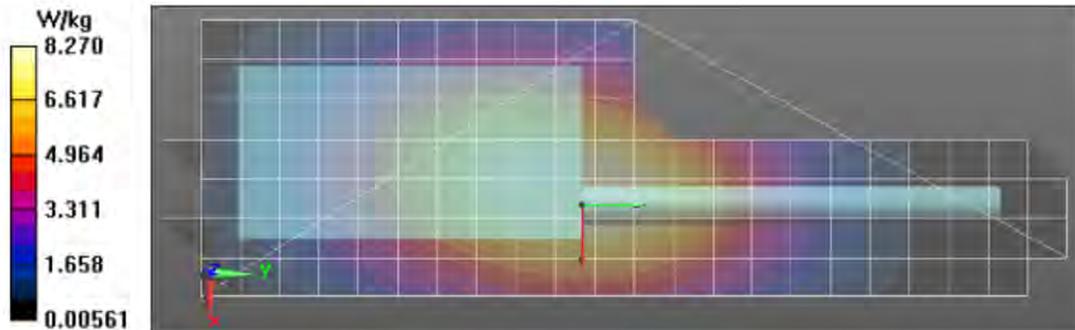
Comments:

Duty Cycle: 1:1, Medium parameters used: $f = 466 \text{ MHz}$, $\sigma = 0.88 \text{ S/m}$, $\epsilon_r = 43.7$; $\rho = 1000 \text{ kg/m}^3$
 Probe: EX3DV4 - SN7422, Frequency: 465.5 MHz, ConvF(10.62, 10.62, 10.62); Calibrated: 7/29/2016
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (71x231x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Reference Value = 101.3 V/m; Power Drift = -0.33 dB
Fast SAR: SAR(1 g) = 7.4 W/kg; SAR(10 g) = 5.41 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 8.79 W/kg

Below 2 GHz-Rev.2/Face 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 = 101.3 V/m; Power Drift = -0.44 dB
 Peak SAR (extrapolated) = 9.44 W/kg
SAR(1 g) = 7.1 W/kg; SAR(10 g) = 5.29 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 8.37 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) = 8.27 W/kg



Assessments at outside FCC Part 90
Assessments at the Body
Table 17

Motorola Solutions, Inc. EME Laboratory
Date/Time: 9/28/2016 9:04:30 PM

Robot#: DASY5-PG-4 | Run: FIE-AB-160928-18
Model#: PMUE5098A
Phantom#: OVAL 1019
Tissue Temp: 20.6 (C)
Serial#: 807TSRH667
Antenna: PMAE4049A
Test Freq: 519.500 (MHz)
Battery: PMNN4407BR
Carry Acc: RLN4570A
Audio Acc: NONE
Start Power: 4.79 (W)

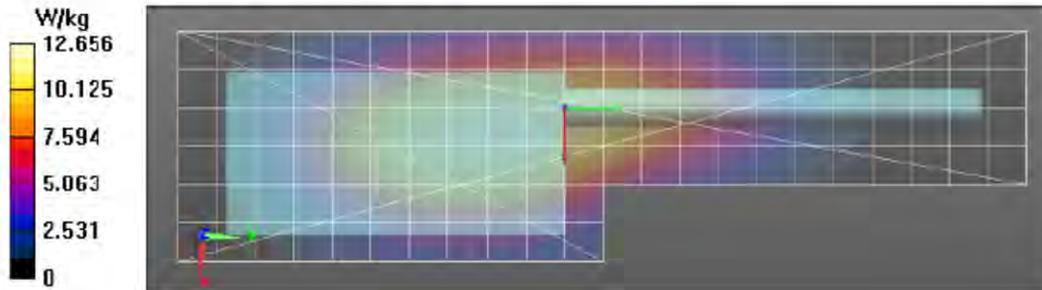
Comments

Duty Cycle: 1:1, Medium parameters used: $f = 520$ MHz; $\sigma = 0.98$ S/m; $\epsilon_r = 55.5$; $\rho = 1000$ kg/m³
Probe: EX3DV4 - SN7422, , Frequency: 519.5 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
Electronics DAE4 Sml 294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x221x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm
Reference Value = 110.6 V/m; Power Drift = -0.52 dB
Fast SAR: SAR(1 g) = 10.8 W/kg; SAR(10 g) = 7.81 W/kg (SAR corrected for target medium)
Maximum value of SAR (interpolated) = 12.9 W/kg

Below 2 GHz-Rev.2/Ab Scan/3-Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm,
 $dy=7.5$ mm, $dz=5$ mm
Reference Value = 110.6 V/m; Power Drift = -0.70 dB
Peak SAR (extrapolated) = 14.0 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 7.59 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 12.2 W/kg

Below 2 GHz-Rev.2/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: $dx=20$ mm, $dy=20$ mm,
 $dz=10$ mm
Maximum value of SAR (measured) = 11.9 W/kg



Assessments at outside FCC Part 90
Assessments at the Face
Table 17

Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/13/2016 8:50:12 PM

Robot#: DASY5-PG-2 | Run#: FD-FACE-161013-14
Model#: PMJE5098A
Phantom#: ELI5 1147
Tissue Temp: 20.8 (C)
Serial#: 807TSRH667
Antenna: PMAE4022B
Test Freq: 403.000 (MHz)
Battery: PMNN4489A
Carry Acc: NONE
Audio Acc: NONE
Start Power: 4.76 (W)

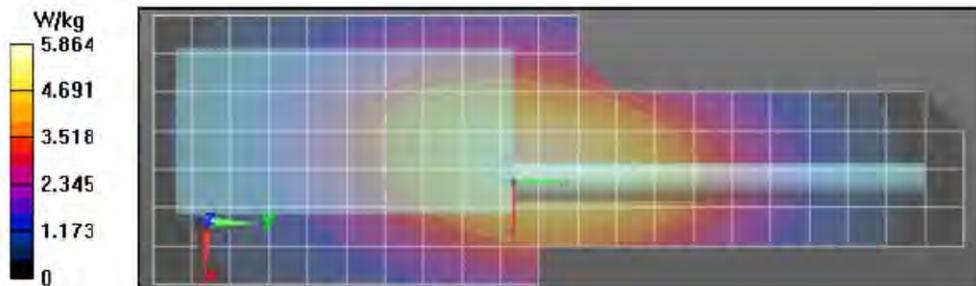
Comments

Communication System Band: Belize UHF, Communication System UID: 0, Duty Cycle: 1:1,
Medium parameters used: f = 403 MHz, $\sigma = 0.84 \text{ S/m}$, $\epsilon_r = 45.5$, $\rho = 1000 \text{ kg/m}^3$
Probe: ES3DV3 - SN3096, , Frequency: 403 MHz, ConvF(6.7, 6.7, 6.7); Calibrated: 4/29/2016
Electronics: DAE3 Sn374, Calibrated: 4/22/2016

Below 2 GHz-Rev.2/Face Scan/1-Area Scan (71x211x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Reference Value = 81.07 V/m; Power Drift = -0.23 dB
Fast SAR: SAR(1 g) = 5.45 W/kg; SAR(10 g) = 3.98 W/kg (SAR corrected for target medium)
Maximum value of SAR (interpolated) = 5.87 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 = 81.07 V/m; Power Drift = -0.28 dB
Peak SAR (extrapolated) = 6.96 W/kg
SAR(1 g) = 5.28 W/kg; SAR(10 g) = 3.91 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 5.69 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) = 5.66 W/kg



APPENDIX F
Shortened Scan of Highest SAR configuration

Shortened Scan Table 18

Motorola Solutions, Inc. EME Laboratory
Date/Time: 10/5/2016 4:24:35 PM

Robot#: DASY5-PG-4 | Run: FIE-AB-161005-10
 Model#: PMUE5098A
 Phantom#: ELI4 1109
 Tissue Temp: 21.7 (C)
 Serial#: 807TSRH667
 Antenna: PMAE4102A
 Test Freq: 450.000 (MHz)
 Battery: PMNN4407BR
 Carry Acc: RLN4570A
 Audio Acc: NONE
 Start Power: 4.75 (W)

Comments:

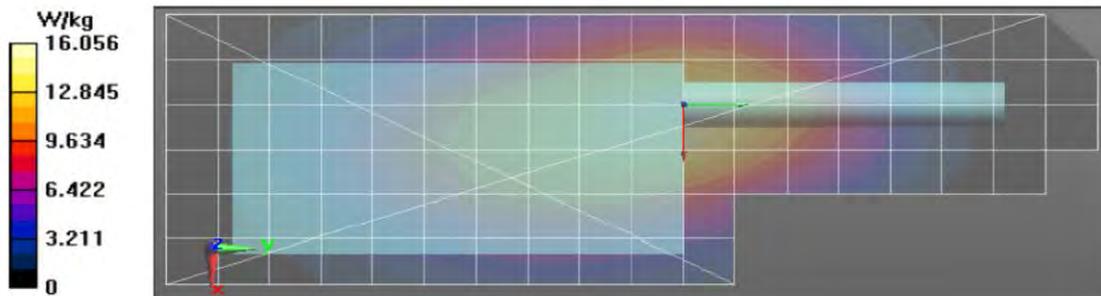
Duty Cycle: 1:1, Medium parameters used: f = 450 MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³
 Probe: EX3DV4 - SN7422, , Frequency: 450 MHz, ConvF(11.01, 11.01, 11.01); Calibrated: 7/29/2016
 Electronics: DAE4 Sn1294, Calibrated: 1/6/2016

Below 2 GHz-Rev.2/Ab Scan/1-Area Scan (61x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Reference Value = 121.6 V/m; Power Drift = -0.37 dB
 Fast SAR: SAR(1 g) = 13.7 W/kg; SAR(10 g) = 9.84 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 16.3 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 = 121.6 V/m; Power Drift = -0.42 dB
 Fast SAR: SAR(1 g) = 13.4 W/kg; SAR(10 g) = 9.82 W/kg (SAR corrected for target medium)
 Maximum value of SAR (interpolated) = 15.8 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) = 15.7 W/kg

Below 2 GHz-Rev.2/Ab Scan/3-Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
 Reference Value = 132.2 V/m; Power Drift = -0.28 dB
 Peak SAR (extrapolated) = 18.6 W/kg
 SAR(1 g) = 13.3 W/kg; SAR(10 g) = 9.71 W/kg (SAR corrected for target medium)
 Maximum value of SAR (measured) = 16.0 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)	18	7	7.17	5.23
Full scan (area & zoom)	15	25	7.28	5.25

APPENDIX G DUT Test Position Photos

1.0 Highest SAR Test position per body position

1.1 Body

DUT with antenna PMAE4102A with offered battery PMNN4407BR and body worn accessory RLN4570A against the phantom without an audio accessory attached. Same positions test for other applicable antennas.

Antenna kit #	Separation Distances (mm)		
	@ bottom surface of the DUT	@ antenna's base	@ antenna's tip
PMAE4022B	0	18	19
PMAE4049A	0	18	19
PMAE4100A	0	18	19
PMAE4102A	0	18	19

1.2 Face

DUT with front side separated 2.5cm from phantom with antenna PMAE4049A and battery PMNN4489A.

Antenna kit #	Separation Distances (mm)		
	@ bottom surface of the DUT	@ antenna's base	@ antenna's tip
PMAE4022B	30	37	42
PMAE4049A	30	37	42
PMAE4100A	30	37	40
PMAE4102A	30	37	40

APPENDIX H Antennas Dimension and photo

Antennas dimension and photo(s):

Antenna Kit #	Physical Length (mm)	Electrical Length
PMAE4022B	160	1/4 wave
PMAE4049A	160	1/4 wave
PMAE4100A	90	1/4 wave
PMAE4102A	90	1/4 wave



Top to bottom: PMAE4100A, PMAE4102A, PMAE4049A, PMAE4022B