









#### **DECLARATION OF COMPLIANCE SAR ASSESSMENT PCII Report Part 2 of 2**

**Motorola Solutions Inc. EME Test Laboratory** 

Motorola Solutions Malaysia Sdn Bhd Plot 2A, Medan Bayan Lepas,

Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.

**Date of Report:** 09/23/2021

**Report Revision:** A

**Responsible Engineer:** Ch'ng Jian Sheng (EME Engineer)

**Report Author:** Muhammad Zakwan Bin Zaidi (Senior Technician) 08/27/2021, 08/31/2021, 09/17/2021, 09/21/2021 **Date/s Tested:** 

**Manufacturer:** Motorola Solutions Inc.

**DUT Description:** CLS1410 Black; 450-470 MHz at 1.0W

**Test TX mode(s):** CW (PTT) Max. Power output: 1.3 W **Nominal Power:** 1.0 W

**Tx Frequency Bands:** 450-470 MHz

Signaling type: FM

Model(s) Tested: CU1410BKV4BA (HCUE1081G)

Model(s) Certified: AP1810BKN8BB (RLA1002G), CU1110GYN1BA (HCUE1080G),

CU1110GYN1BB (HCUE1080G), CU1410BKV4BB (HCUE1081G),

CU1410BKV4BS (HCUE1142G), HCUE1082G,

GS1810BKN8BB (RLA1001G),P24VPC03D2BA (HCUE1157G),

CU1410BKV4BA (HCUE1081G)

134TXR5794 **Serial Number(s):** 

**Classification:** Occupational/Controlled **Applicant Name:** Motorola Solutions Inc

**Applicant Address:** 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322.

FCC ID: AZ489FT4963; 450-470 MHz

IC: 109U-89FT4963

**ISED Test Site registration:** 24843

**FCC Test Firm Registration** 

823256 **Number:** 

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 FCC 47 CFR § 2.1093 and RSS-102 (Issue 5).

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 (no deviation from standard methods). 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)

> Saw Sun Hock (Approved Signatory) Approval Date: 10/4/2021



# Appendix D System Verification Check Scans

# Motorola Solutions, Inc. EME Laboratory

Date/Time: 8/27/2021 5:07:12 PM

Robot#: DASY5-PG-1 | Run#: MHI-SYSP-450H-210827-02

Dipole Model# D450V3
Phantom#: ELI4 1108
Tissue Temp: 20.5 (C)
Serial#: 1054

Test Freq: 450.0000 (MHz)
Start Power: 250 (mW)
Rotation (1D): 0.054 dB
Adjusted SAR (1W): 4.84 mW/g (1g)

#### Comments:

Communication System Band: D450, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.89 \text{ S/m}$ ;  $\varepsilon_r = 43.4$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

## Below 2 GHz-Rev.3/System Performance Check/Dipole Area Scan 2 (41x221x1):

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

Reference Value = 44.57 V/m; Power Drift = -0.00 dB

Fast SAR: SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.904 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.68 W/kg

# Below 2 GHz-Rev.3/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

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

Reference Value = 44.57 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.812 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

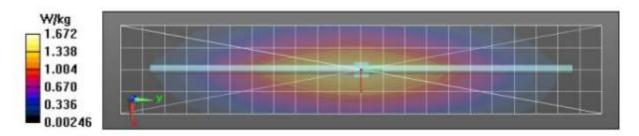
Ratio of SAR at M2 to SAR at M1 = 63.9%

Maximum value of SAR (measured) = 1.68 W/kg

# Below 2 GHz-Rev.3/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

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

Maximum value of SAR (measured) = 1.69 W/kg



# Motorola Solutions, Inc. EME Laboratory

Date/Time: 8/30/2021 11:20:02 PM

Robot#: DASY5-PG-1 | Run#: FZ-SYSP-450H-210830-20

Dipole Model# D450V3
Phantom#: ELI4 1108
Tissue Temp: 20.4 (C)
Serial#: 1077

Test Freq: 450.0000 (MHz)
Start Power: 250 (mW)
Rotation (1D): 0.06 dB
Adjusted SAR (1W): 4.96 mW/g (1g)

#### Comments:

Communication System Band: D450, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.84 \text{ S/m}$ ;  $\varepsilon_r = 42.1$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

# Below 2 GHz-Rev.3/System Performance Check/Dipole Area Scan 2 (41x221x1):

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

Reference Value = 45.37 V/m; Power Drift = -0.02 dB

Fast SAR: SAR(1 g) = 1.33 W/kg; SAR(10 g) = 0.913 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.64 W/kg

# Below 2 GHz-Rev.3/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

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

Reference Value = 45.37 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.831 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

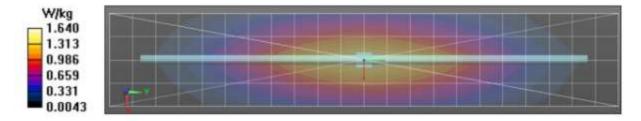
Ratio of SAR at M2 to SAR at M1 = 64.3%

Maximum value of SAR (measured) = 1.65 W/kg

# Below 2 GHz-Rev.3/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

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

Maximum value of SAR (measured) = 1.65 W/kg



# Motorola Solutions, Inc. EME Laboratory

Date/Time: 9/17/2021 5:59:30 PM

Robot#: DASY5-PG-1 | Run#: FZ-SYSP-450H-210917-13

Dipole Model# D450V3
Phantom#: ELI4 1108
Tissue Temp: 20.1 (C)
Serial#: 1077

Test Freq: 450.0000 (MHz)
Start Power: 250 (mW)
Rotation (1D): 0.084 dB
Adjusted SAR (1W): 4.80 mW/g (1g)

#### Comments:

Communication System Band: D450, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.89 \text{ S/m}$ ;  $\varepsilon_r = 42.6$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

# Below 2 GHz-Rev.3/System Performance Check/Dipole Area Scan 2 (41x221x1):

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

Reference Value = 44.69 V/m; Power Drift = -0.11 dB

Fast SAR: SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.893 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.65 W/kg

# Below 2 GHz-Rev.3/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

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

Reference Value = 44.69 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.93 W/kg

SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.795 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

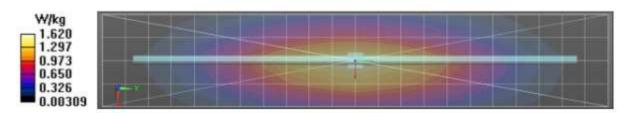
Ratio of SAR at M2 to SAR at M1 = 63.3%

Maximum value of SAR (measured) = 1.67 W/kg

# Below 2 GHz-Rev.3/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

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

Maximum value of SAR (measured) = 1.66 W/kg



#### Report ID: P22000-EME-00015

# Motorola Solutions, Inc. EME Laboratory

Date/Time: 9/21/2021 1:56:35 AM

Robot#: DASY5-PG-1 | Run#: BL-SYSP-450H-210921-03#

Dipole Model# D450V3
Phantom#: ELI4 1108
Tissue Temp: 20.9 (C)
Serial#: 1077

Test Freq: 450.0000 (MHz)
Start Power: 250.0000 (mW)
Rotation (1D): 0.071 dB
Adjusted SAR (1W): 4.72 mW/g (1g)

#### Comments:

Communication System Band: D450, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.89 \text{ S/m}$ ;  $\varepsilon_s = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

# Below 2 GHz-Rev.3/System Performance Check/Dipole Area Scan 2 (41x211x1):

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

Reference Value = 44.29 V/m; Power Drift = -0.05 dB

Fast SAR: SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.885 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 1.64 W/kg

# Below 2 GHz-Rev.3/System Performance Check/0-Degree Cube (5x5x7)/Cube 0:

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

Reference Value = 44.29 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.93 W/kg

SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.782 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

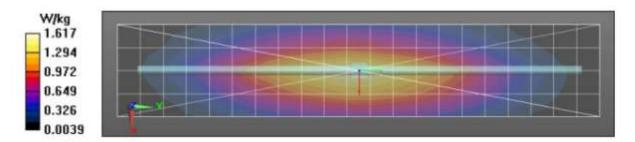
Ratio of SAR at M2 to SAR at M1 = 62.6%

Maximum value of SAR (measured) = 1.66 W/kg

# Below 2 GHz-Rev.3/System Performance Check/Z-Axis Retraction (1x1x17): Measurement

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

Maximum value of SAR (measured) = 1.66 W/kg



# Appendix E DUT Scans

# **Assessment for Face Configuration - Table 17**

## Motorola Solutions, Inc. EME Laboratory Date/Time: 8/27/2021 6:25:51 PM

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Robot#: DASY5-PG-1 | Run#: MHI-FACE-210827-03

Model#: CU1410BKV4BA (HCUE1081G)

Phantom#: ELI4 1108 Tissue Temp: 20.5 (C) Serial#: 134TXR5794 Antenna: Fixed Antenna Test Freq: 450.0000 (MHz) Battery: PMNN4497A Carry Acc: @ front Audio Acc: N/A Start Power: 0.865 (W)

#### Comments:

Communication System Band: Fiji UHF, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.89 \text{ S/m}$ ;  $\epsilon_r = 43.4$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

# Below 2 GHz-Rev.3/Face Scan/1-Area Scan (61x131x1): Interpolated grid: dx=1.500 mm, dy=1.500

mm

Reference Value = 43.19 V/m; Power Drift = -0.41 dB

Fast SAR: SAR(1 g) = 1.65 W/kg; SAR(10 g) = 1.2 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 2.04 W/kg

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

dy=7.5mm, dz=5mm

Reference Value = 43.19 V/m; Power Drift = -0.57 dB

Peak SAR (extrapolated) = 2.15 W/kg

SAR(1 g) = 1.52 W/kg; SAR(10 g) = 1.1 W/kg (SAR corrected for target medium)

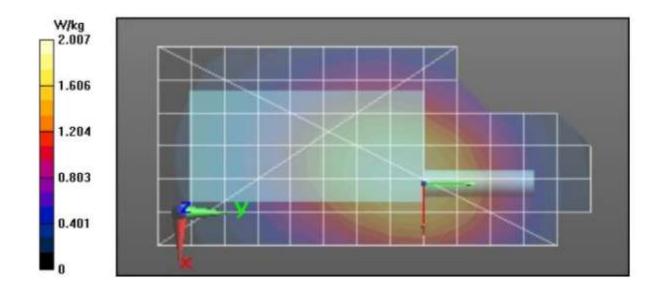
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 70.4%

Maximum value of SAR (measured) = 1.92 W/kg

# Below 2 GHz-Rev.3/Face Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm,

Maximum value of SAR (measured) = 1.88 W/kg



# Assessment for Body Configuration Table 17 and 18

#### Motorola Solutions, Inc. EME Laboratory Date/Time: 8/31/2021 12:12:32 AM

Robot#: DASY5-PG-1 | Run#: FZ-AB-210831-01#

Model#: CU1410BKV4BA (HCUE1081G)

Phantom#: ELI4 1108 Tissue Temp: 20.1 (C) Scrial#: 134TXR5794 Antenna: Fixed Antenna Test Freq: 450.0000 (MHz) Battery: PMNN4497A Carry Acc: HCLN4013C Audio Acc: HKLN4606A Start Power: 0.865 (W)

#### Comments:

Communication System Band: Fiji UHF, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.84$  S/m;  $\epsilon_s = 42.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

#### Below 2 GHz-Rev.3/Ab Scan/1-Area Scan (61x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 48.28 V/m; Power Drift = -0.34 dB

Fast SAR: SAR(1 g) = 2.04 W/kg; SAR(10 g) = 1.45 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 2.48 W/kg

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

dy=7.5mm, dz=5mm

Reference Value = 48.28 V/m; Power Drift = -0.42 dB

Peak SAR (extrapolated) = 2.79 W/kg

SAR(1 g) = 1.96 W/kg; SAR(10 g) = 1.39 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

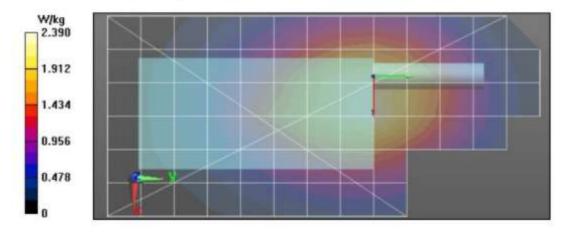
Ratio of SAR at M2 to SAR at M1 = 69.1%

Maximum value of SAR (measured) = 2.48 W/kg

# Below 2 GHz-Rev.3/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm

Maximum value of SAR (measured) = 2.47 W/kg



# **APPENDIX F Shortened Scan of Highest SAR configuration**

#### Motorola Solutions, Inc. EME Laboratory Date/Time: 9/21/2021 3:32:25 AM

Robot#: DASY5-PG-1 | Run#: BL-AB-210921-05#

Model#: CU1410BKV4BA (HCUE1081G)

Phantom#: ELI4 1108 Tissue Temp: 21.3 (C) 134TXR5794 Serial#-Antenna: Fixed Antenna 450.0000 (MHz) Test Freq: Battery: PMNN4497A Carry Acc: HCLN4013C HKLN4606A Audio Ace: Start Power: 0.865 (W)

Comments: Shorten scan

Communication System Band: Fiji UHF, Communication System UID: 0, Duty Cycle: 1:1,

Medium parameters used: f = 450 MHz;  $\sigma = 0.89 \text{ S/m}$ ;  $\epsilon_r = 41.5$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Probe: EX3DV4 - SN7486, Calibrated: 6/18/2021, Frequency: 450 MHz, ConvF(11.24, 11.24, 11.24) @ 450 MHz

Electronics: DAE4 Sn1488, Calibrated: 4/7/2021

#### Below 2 GHz-Rev.3/Ab Scan/1-Area Scan (61x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 43.51 V/m: Power Drift = -0.51 dB

Fast SAR: SAR(1 g) = 1.84 W/kg; SAR(10 g) = 1.32 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 2.28 W/kg

#### Below 2 GHz-Rev.3/Ab Scan/2-Volume Scan 2D (41x41x1): Interpolated grid: dx=0.7500 mm,

dy=0.7500 mm, dz=1.000 mm

Reference Value = 43.51 V/m; Power Drift = -0.53 dB

Fast SAR: SAR(1 g) = 1.88 W/kg; SAR(10 g) = 1.33 W/kg (SAR corrected for target medium)

Maximum value of SAR (interpolated) = 2.33 W/kg

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

dy=7.5mm, dz=5mm

Reference Value = 55.95 V/m; Power Drift = -0.26 dB

Peak SAR (extrapolated) = 2.89 W/kg

SAR(1 g) = 1.9 W/kg; SAR(10 g) = 1.32 W/kg (SAR corrected for target medium)

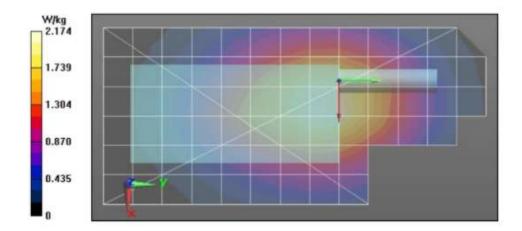
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 66.4% Maximum value of SAR (measured) = 2.53 W/kg

# Below 2 GHz-Rev.3/Ab Scan/4-Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm

Maximum value of SAR (measured) = 2.31 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)
Shorten scan (zoom)	19	8	1.52
Full scan (area & zoom)	17	20	1.62

# **APPENDIX G DUT Test Position Photos**

# 1.0 Highest SAR Test Position per location

### 1.1 Body

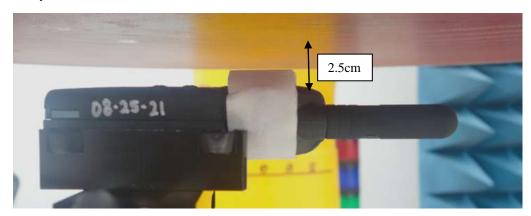
DUT with Fixed antenna, battery PMNN4497A and Belt clip HCLN4013C positioned against the phantom with an audio accessory HKLN4606A attached.



Antenna kit #	Separation Distances (mm)			
	@ bottom surface of DUT	@ base of antenna	@ tip of antenna	
Fixed	9	26	31	

### 1.2 Face

Front of DUT with Fixes antenna and battery PMNN4497A separated 2.5cm from the phantom without an audio accessory attached.



Antenna kit #	Separation Distances (mm)			
	@ bottom surface of DUT	@ base of antenna	@ tip of antenna	
Fixed	27	32	32	

# **APPENDIX H Additional Accessories**

For photos of previously approved accessories please refer to previous filing report.

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