

Applicant:	Kyocera
FCC ID:	OVF-K5302
IC#:	3572A-S2300
Report #:	CT- K5302-9A-0711-R0

# **EXHIBIT 9 APPENDIX A: SAR VALIDATION PLOTS**

# Validation for HEAD



Applicant:	Kyocera
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Date: 07/21/2011

#### 835MHz Validation @ 20dbm, Probe #3035, DAE#675, Dipole #467

Communication System: CDMA, Frequency: 835 MHz, Duty Cycle: 1:1 Medium: Head 835 MHz,Medium parameters used: f = 835 MHz;  $\sigma$  = 0.9 mho/m;  $\epsilon_r$  = 41.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** Probe: ES3DV3 - SN3035, ConvF(6.08, 6.08, 6.08), Calibrated: 9/9/2010 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn675,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

**835MHz Validation/Area Scan (61x121x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.04 mW/g

#### **835MHz Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 34.1 V/m; Power Drift = -0.010 dB Peak SAR (extrapolated) = 1.49 W/kg

Peak SAR (extrapolated) = 1.49 W/Kg

### SAR(1 g) = 0.969 mW/g; SAR(10 g) = 0.628 mW/g

Maximum value of SAR (measured) = 1.05 mW/g





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## Interpolated SAR(x,y,z,f0) SAR; Z Scan: Value Along Z, X=0, Y=0 1.3-1.2 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.0 0.00 0.02 0.04 0.06 0.08 0.10 0.12 0.14 0.16 m



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#### 1800MHz Validation, Probe #3036 DAE #530, Dipole #220

Communication System: CW 1800Mhz, Frequency: 1800 MHz, Duty Cycle: 1:1 Medium: H1800,Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.46 mho/m;  $\epsilon_r$  = 39.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** Probe: ES3DV3 - SN3036, ConvF(5.06, 5.06, 5.06), Calibrated: 5/11/2011 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn530,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

**1800Mhz/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 3.96 mW/g

**1800Mhz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 44.1 V/m; Power Drift = 0.238 dB Peak SAR (extrapolated) = 6.60 W/kg

#### SAR(1 g) = 3.54 mW/g; SAR(10 g) = 1.85 mW/g

Maximum value of SAR (measured) = 3.99 mW/g





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Date: 07/20/2011

#### 1900Mhz Validation @ 20dBm Probe 3035, DAE 675 and Dipole 5d016

Communication System: CW, Frequency: 1900 MHz, Duty Cycle: 1:1 Medium: HSL1900,Medium parameters used (interpolated): f = 1900 MHz;  $\sigma$  = 1.37 mho/m;  $\epsilon_r$  = 38.6;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** 

Probe: ES3DV3 - SN3035, ConvF(5, 5, 5), Calibrated: 9/9/2010 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn675,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** 

Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

#### 1900MHz Validation @20dBm/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 4.62 mW/g

**1900MHz Validation** @20dBm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 56.3 V/m; Power Drift = 0.152 dB Peak SAR (extrapolated) = 6.85 W/kg

#### SAR(1 g) = 3.83 mW/g; SAR(10 g) = 2.02 mW/g

Maximum value of SAR (measured) = 4.30 mW/g



 $0 \, dB = 4.30 \, mW/g$ 



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## Interpolated SAR(x,y,z,f0) SAR; Z Scan: Value Along Z, X=0, Y=0 5.5-5.0 4.5 4.0 3.5 3.0 6/// 2.5 2.0 1.5 1.0 0.5 0.0 E -0.00 0.02 0.04 0.06 0.08 0.10 0.12 0.14 0.16 m



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# Validation for BODY



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Date: 07/27/2011

### 835MHz Validation (in Muscle), Probe #3036, DAE #530, Dipole #467

Communication System: CW, Frequency: 835 MHz, Duty Cycle: 1:1 Medium: M800,Medium parameters used: f = 835 MHz;  $\sigma$  = 0.95 mho/m;  $\epsilon_r$  = 54;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** Probe: ES3DV3 - SN3036, ConvF(6.03, 6.03, 6.03), Calibrated: 5/11/2011 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn530,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

**835MHz/Area Scan (51x121x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.05 mW/g

**835MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 32.2 V/m; Power Drift = -0.073 dB Peak SAR (extrapolated) = 1.43 W/kg

#### SAR(1 g) = 0.961 mW/g; SAR(10 g) = 0.634 mW/g

Maximum value of SAR (measured) = 1.04 mW/g





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Date: 08/02/2011

#### 1800MHz (Muscle) Validation, Probe #3036 DAE #530, Dipole #220

Communication System: CW 1800Mhz, Frequency: 1800 MHz, Duty Cycle: 1:1 Medium: M1800,Medium parameters used: f = 1800 MHz;  $\sigma$  = 1.56 mho/m;  $\epsilon_r$  = 51.2;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** Probe: ES3DV3 - SN3036, ConvF(4.79, 4.79, 4.79), Calibrated: 5/11/2011 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn530,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

**1800Mhz/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 4.27 mW/g

**1800Mhz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 39.6 V/m; Power Drift = 0.894 dB Peak SAR (extrapolated) = 6.71 W/kg

SAR(1 g) = 3.71 mW/g; SAR(10 g) = 1.95 mW/g

Maximum value of SAR (measured) = 4.20 mW/g





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# Interpolated SAR(x,y,z,f0) SAR; Z Scan: Value Along Z, X=0, Y=0 5.0 4.5 4.0 3.5 3.0 6//√2.5 2.0 1.5 1.0 0.5 -0.0 0.00 0.02 0.04 0.06 0.08 0.10 0.12 0.14 0.16 m

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Date: 07/25/2011

### 1900Mhz Validation (Muscle) @ 20dBm Probe 3035, DAE 675 and Dipole 5d016

Communication System: CW, Frequency: 1900 MHz, Duty Cycle: 1:1 Medium: Muscle 1900Mhz,Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.51 mho/m;  $\epsilon_r$  = 51.5;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom: SAM 12,Phantom section: Flat Section **DASY4 Configuration:** Probe: ES3DV3 - SN3035, ConvF(4.5, 4.5, 4.5), Calibrated: 9/9/2010 Sensor-Surface: 4mm (Mechanical Surface Detection), Electronics: DAE4 Sn675,Calibrated: 5/5/2011 Measurement SW: DASY4, V4.7 Build 80 Postprocessing SW: SEMCAD, V1.8 Build 186 **Temperature:** 

Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

**1900MHz Validation @20dBm/Area Scan (61x61x1):** Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 5.32 mW/g

**1900MHz Validation @20dBm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 56.9 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 7.32 W/kg

#### SAR(1 g) = 4.24 mW/g; SAR(10 g) = 2.25 mW/g

Maximum value of SAR (measured) = 4.79 mW/g



 $0 \, dB = 4.79 mW/g$