


	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

**APPENDIX A - SAR MEASUREMENT DATA**

<b>Applicant:</b>	<b>Kenwood USA Corporation</b>	<b>FCC ID:</b>	<b>ALH413800</b>	<b>Freq. Range:</b>	<b>450 - 512 MHz</b>	<b>KENWOOD</b>
<b>DUT Type:</b>	<b>Portable FM UHF PTT Radio Transceiver</b>	<b>DUT Models:</b>	<b>TK-3312-1</b>	<b>TK-3317-1</b>		
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## Face SAR Plot #1 (F1)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.87 \text{ mho/m}$ ;  $\epsilon_r = 42.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 4.93 mW/g

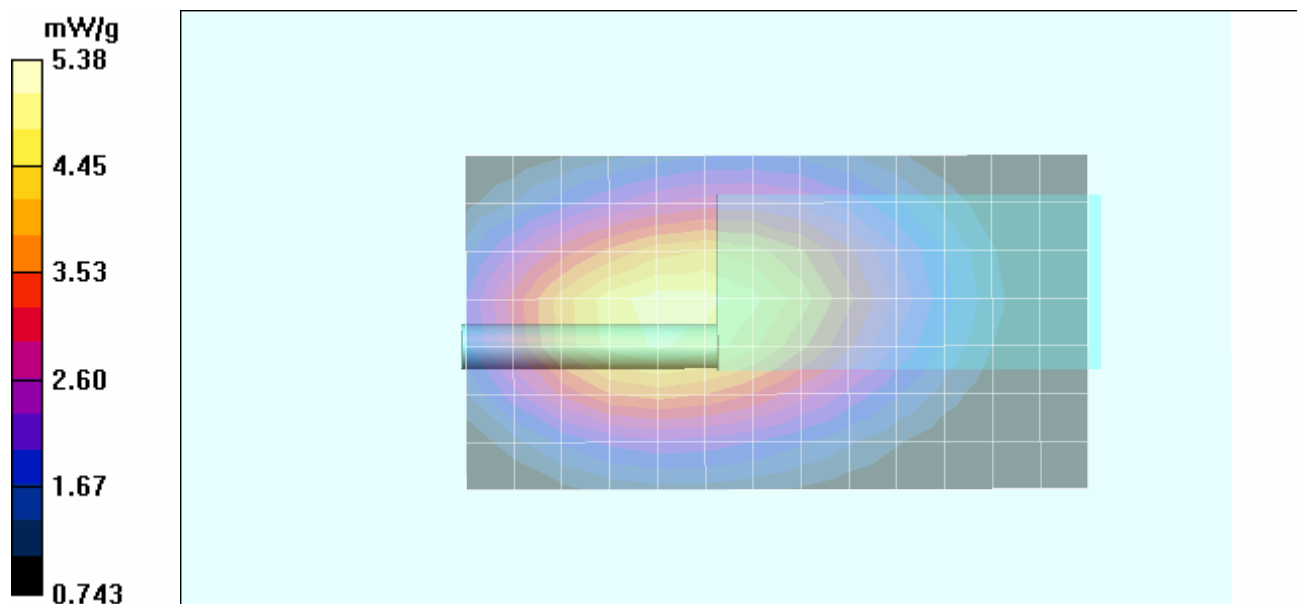
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 78.1 V/m; Power Drift = -0.551 dB



Peak SAR (extrapolated) = 7.19 W/kg

**SAR(1 g) = 5.12 mW/g; SAR(10 g) = 3.7 mW/g**

Maximum value of SAR (measured) = 5.38 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #2 (F2)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 484$  MHz;  $\sigma = 0.87$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 7.06 mW/g

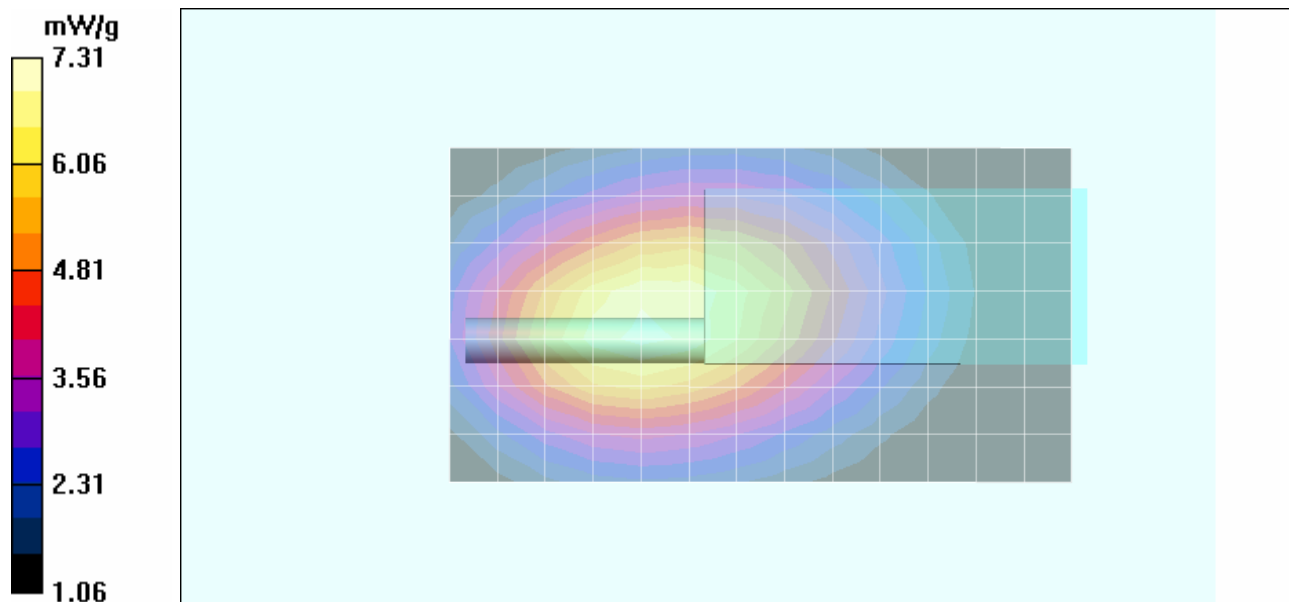
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 90.7 V/m; Power Drift = -0.224 dB



Peak SAR (extrapolated) = 9.79 W/kg

**SAR(1 g) = 6.98 mW/g; SAR(10 g) = 5.07 mW/g**

Maximum value of SAR (measured) = 7.31 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Face SAR Plot #3 (F3)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.878 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.89 mW/g

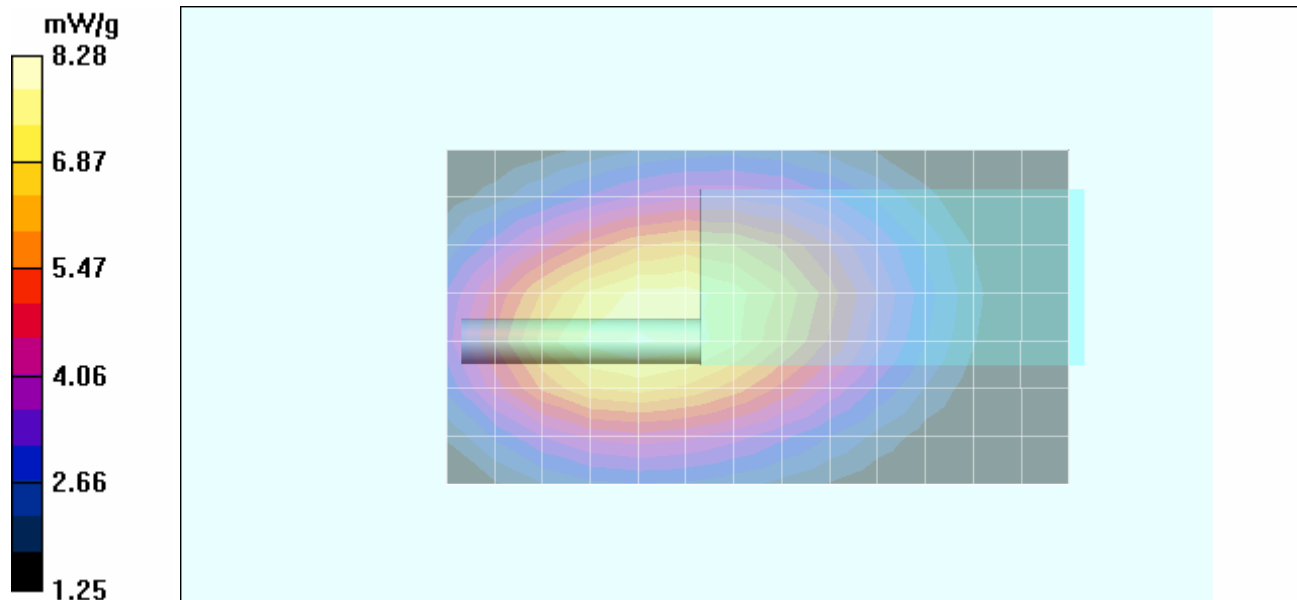
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 96.4 V/m; Power Drift = -0.336 dB



Peak SAR (extrapolated) = 11.1 W/kg

**SAR(1 g) = 7.88 mW/g; SAR(10 g) = 5.75 mW/g**

Maximum value of SAR (measured) = 8.28 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #4 (F4)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.892 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.25 mW/g

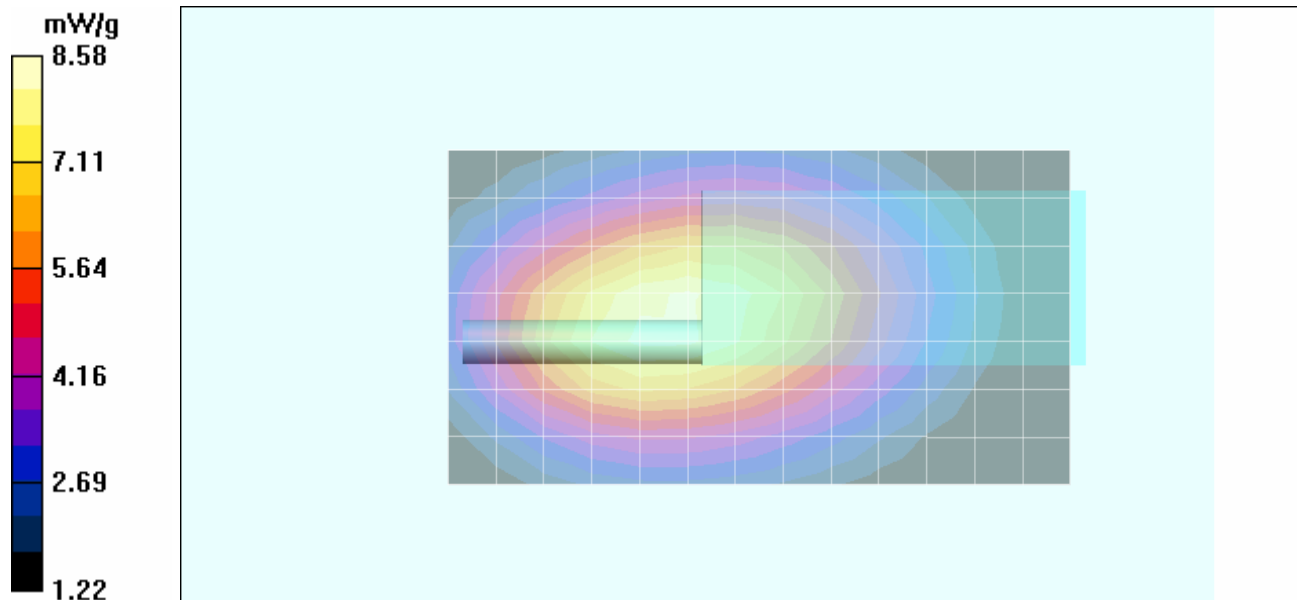
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.9 V/m; Power Drift = -0.401 dB



Peak SAR (extrapolated) = 11.5 W/kg

**SAR(1 g) = 8.15 mW/g; SAR(10 g) = 5.91 mW/g**

Maximum value of SAR (measured) = 8.58 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #5 (F5)

Date Tested: 08/17/2010

### Face-held SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.892 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.47 mW/g

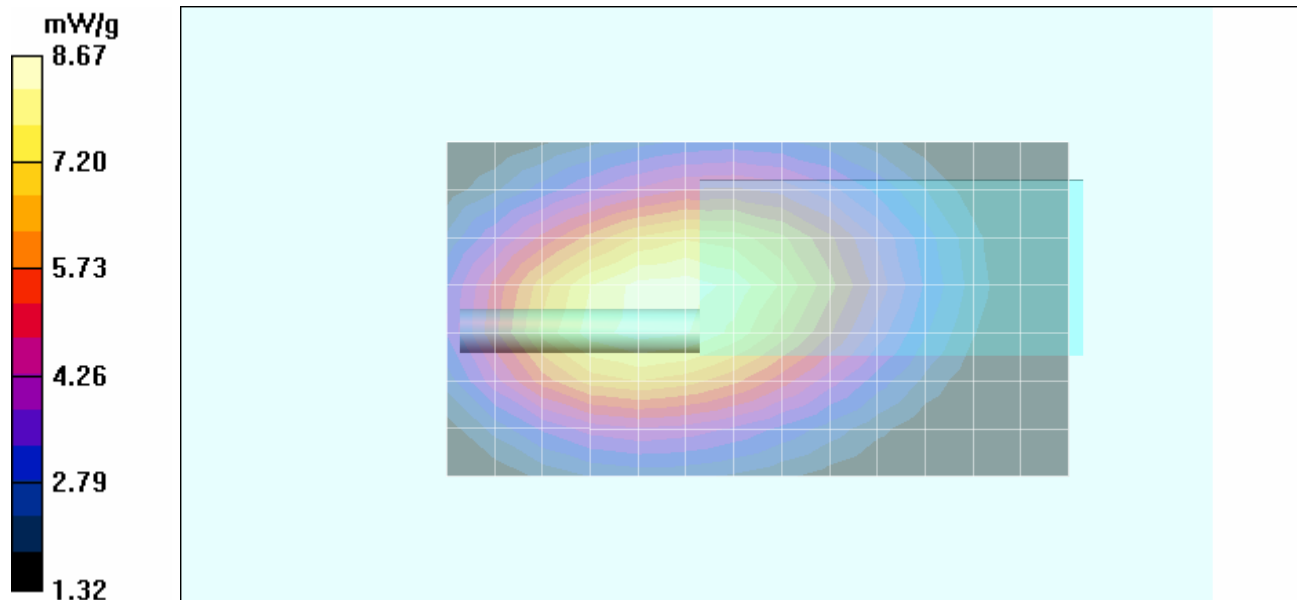
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 100.1 V/m; Power Drift = -0.554 dB



Peak SAR (extrapolated) = 11.6 W/kg

**SAR(1 g) = 8.24 mW/g; SAR(10 g) = 5.97 mW/g**

Maximum value of SAR (measured) = 8.67 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #6 (F6)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 490 \text{ MHz}$ ;  $\sigma = 0.87 \text{ mho/m}$ ;  $\epsilon_r = 42.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 4.27 mW/g

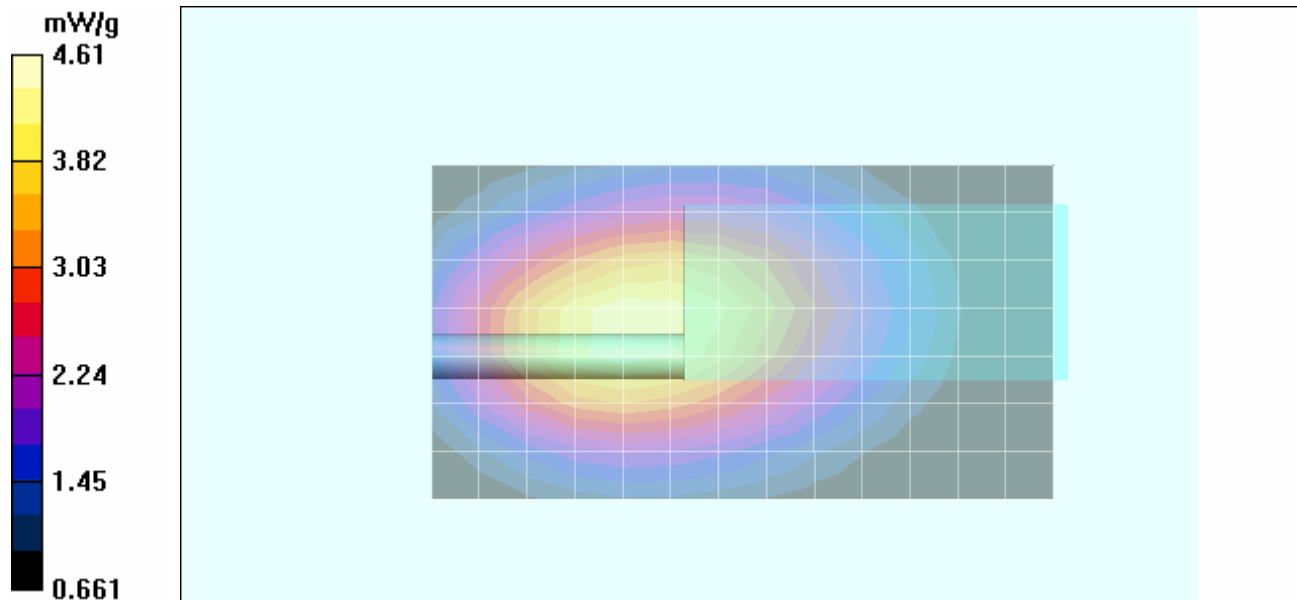
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 71.2 V/m; Power Drift = -0.443 dB



Peak SAR (extrapolated) = 6.14 W/kg

**SAR(1 g) = 4.39 mW/g; SAR(10 g) = 3.19 mW/g**

Maximum value of SAR (measured) = 4.61 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1	TK-3317-1	
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## Face SAR Plot #7 (F7)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.892 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 6.25 mW/g

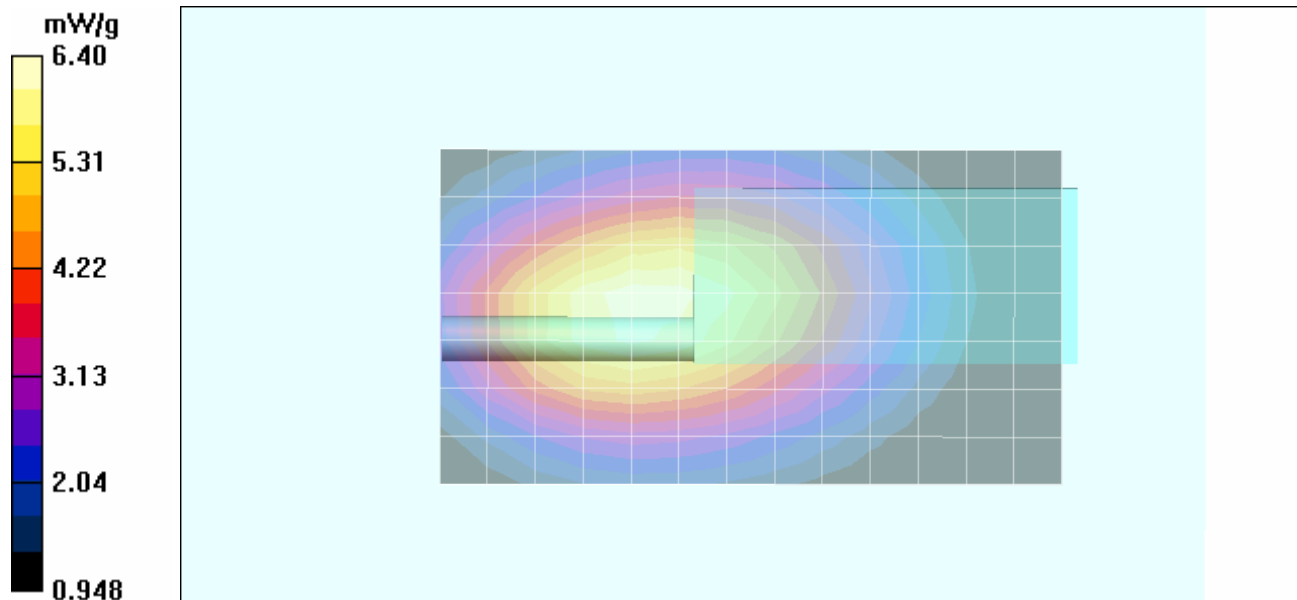
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 88.4 V/m; Power Drift = -0.644 dB

Peak SAR (extrapolated) = 8.53 W/kg



**SAR(1 g) = 6.1 mW/g; SAR(10 g) = 4.45 mW/g**

Maximum value of SAR (measured) = 6.40 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #8 (F8)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 490$  MHz;  $\sigma = 0.87$  mho/m;  $\epsilon_r = 42.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 5.59 mW/g

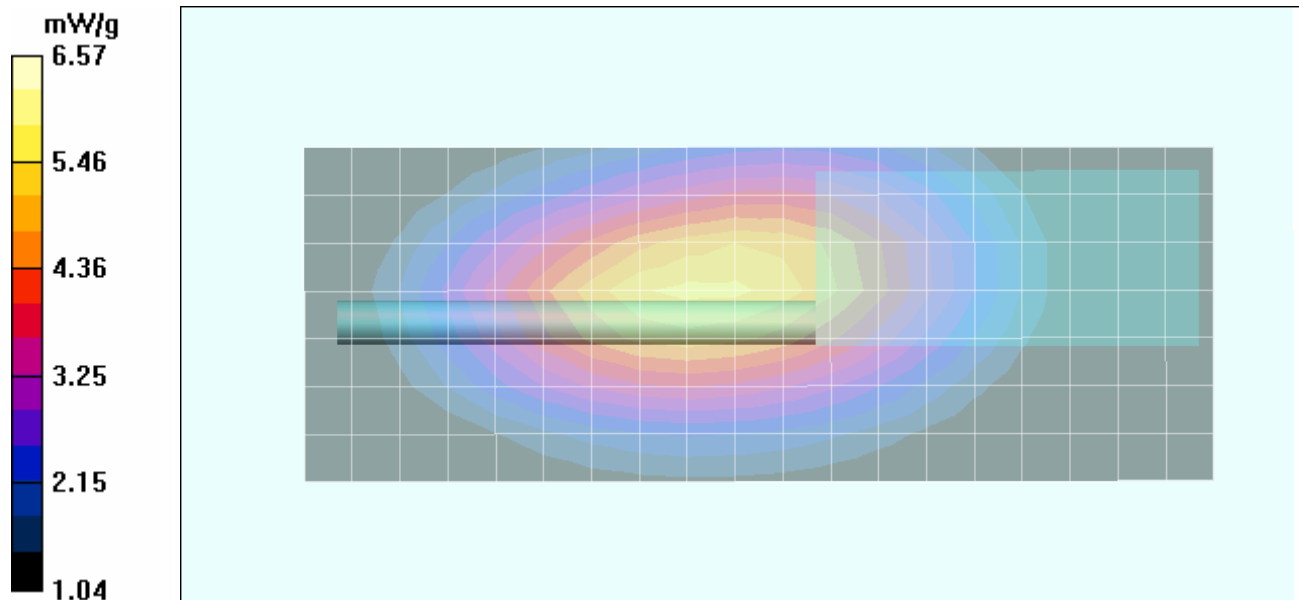
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 90.0 V/m; Power Drift = -0.466 dB



Peak SAR (extrapolated) = 8.75 W/kg

**SAR(1 g) = 6.27 mW/g; SAR(10 g) = 4.59 mW/g**

Maximum value of SAR (measured) = 6.57 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Face SAR Plot #9 (F9)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 484$  MHz;  $\sigma = 0.87$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 6.75 mW/g

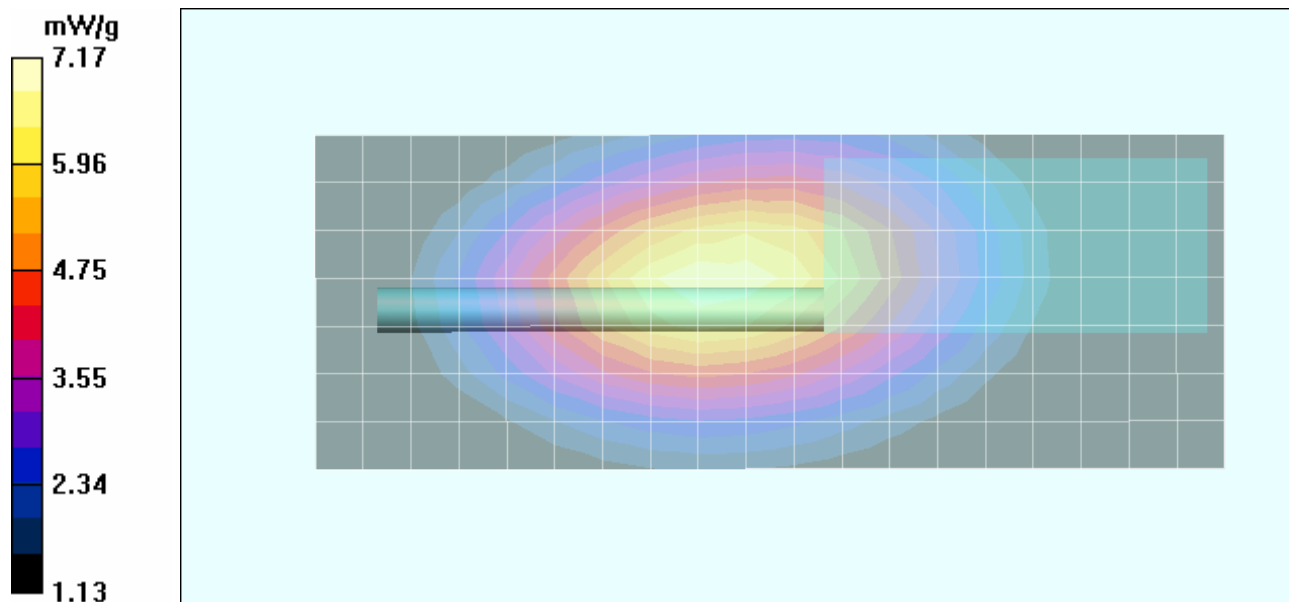
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 92.5 V/m; Power Drift = -0.378 dB



Peak SAR (extrapolated) = 9.52 W/kg

**SAR(1 g) = 6.82 mW/g; SAR(10 g) = 4.96 mW/g**

Maximum value of SAR (measured) = 7.17 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1	TK-3317-1	
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Face SAR Plot #10 (F10)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.878 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.31 mW/g

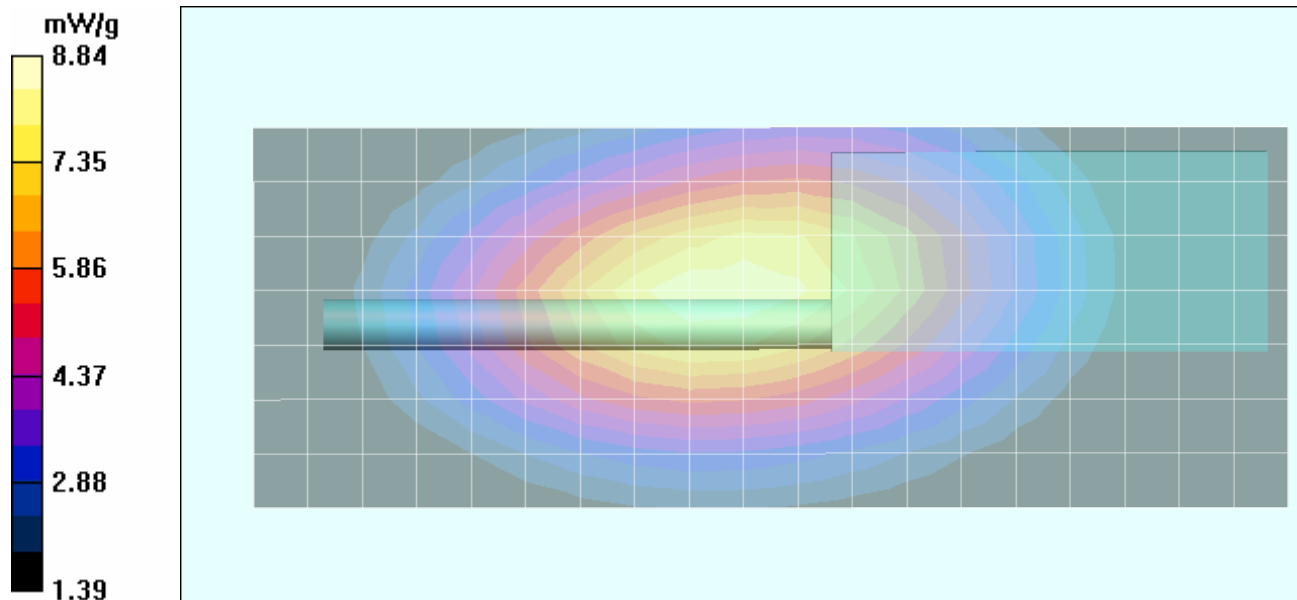
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 101.1 V/m; Power Drift = -0.245 dB

Peak SAR (extrapolated) = 11.7 W/kg

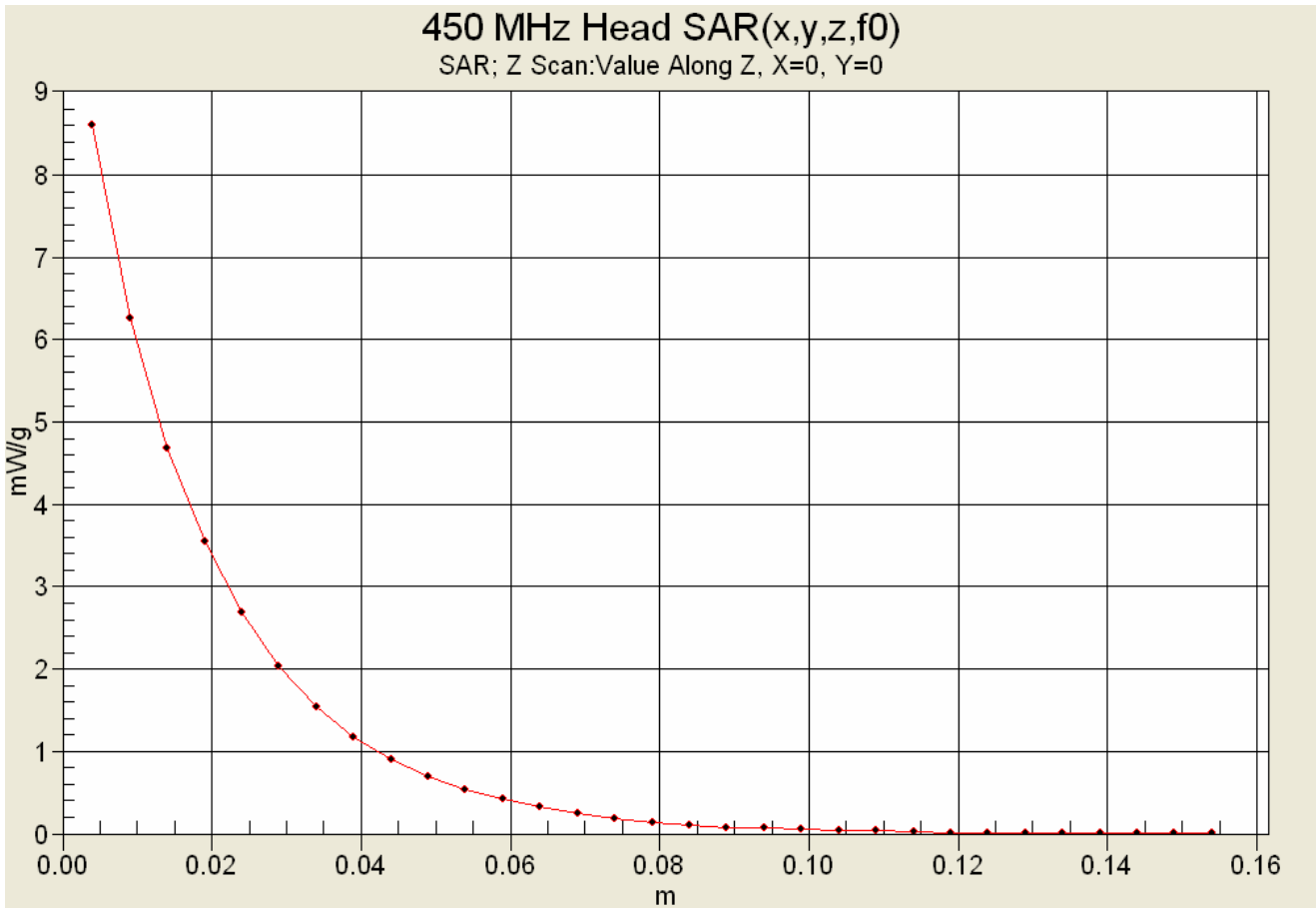
**SAR(1 g) = 8.43 mW/g; SAR(10 g) = 6.19 mW/g**



Maximum value of SAR (measured) = 8.84 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Face SAR Plot #11 (F11)

Date Tested: 08/17/2010

### Face-held SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.892 \text{ mho/m}$ ;  $\epsilon_r = 42.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.20 mW/g

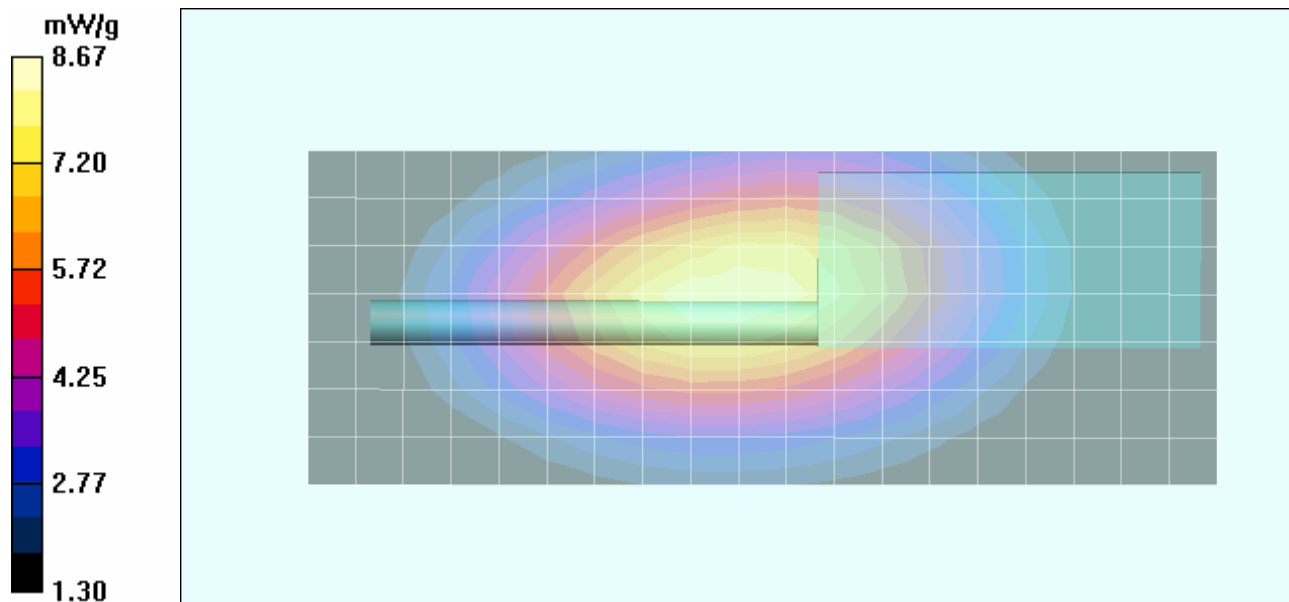
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 98.8 V/m; Power Drift = -0.394 dB



Peak SAR (extrapolated) = 11.4 W/kg

**SAR(1 g) = 8.22 mW/g; SAR(10 g) = 6.0 mW/g**

Maximum value of SAR (measured) = 8.67 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Face SAR Plot #12 (F12)

Date Tested: 08/17/2010

### Face-held SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: 1SU12 (Pre-production)**

Ambient Temp: 23.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated):  $f = 512$  MHz;  $\sigma = 0.892$  mho/m;  $\epsilon_r = 42.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.25, 7.25, 7.25); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 8.53 mW/g

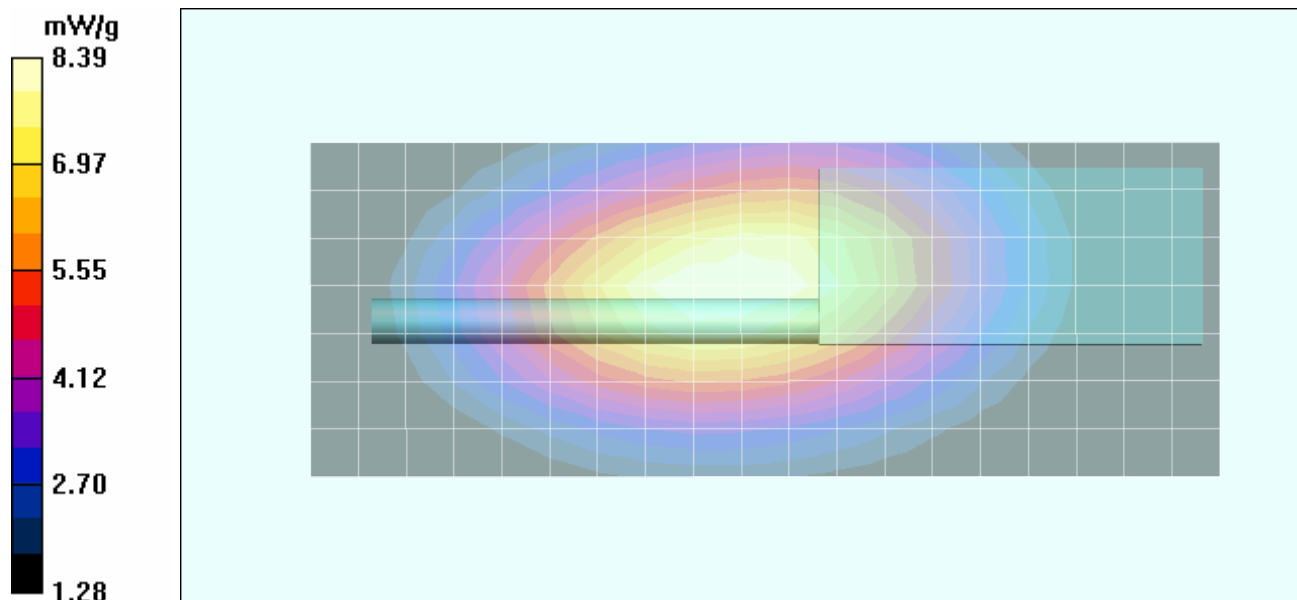
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 102.4 V/m; Power Drift = -0.615 dB



Peak SAR (extrapolated) = 11.2 W/kg

**SAR(1 g) = 8.01 mW/g; SAR(10 g) = 5.85 mW/g**

Maximum value of SAR (measured) = 8.39 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #1 (B1)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.6 mW/g

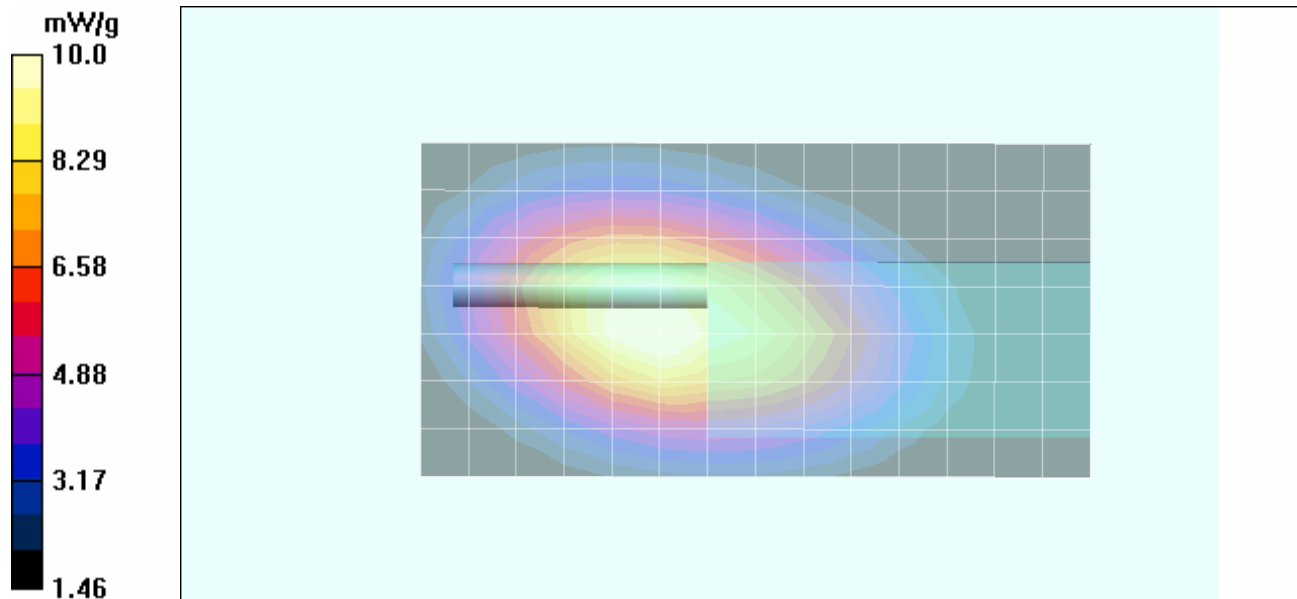
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 101.2 V/m; Power Drift = 0.053 dB



Peak SAR (extrapolated) = 14.1 W/kg

**SAR(1 g) = 9.55 mW/g; SAR(10 g) 6.79 mW/g**

Maximum value of SAR (measured) = 10.0 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #2 (B2)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 463.3 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.937$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 12.6 mW/g

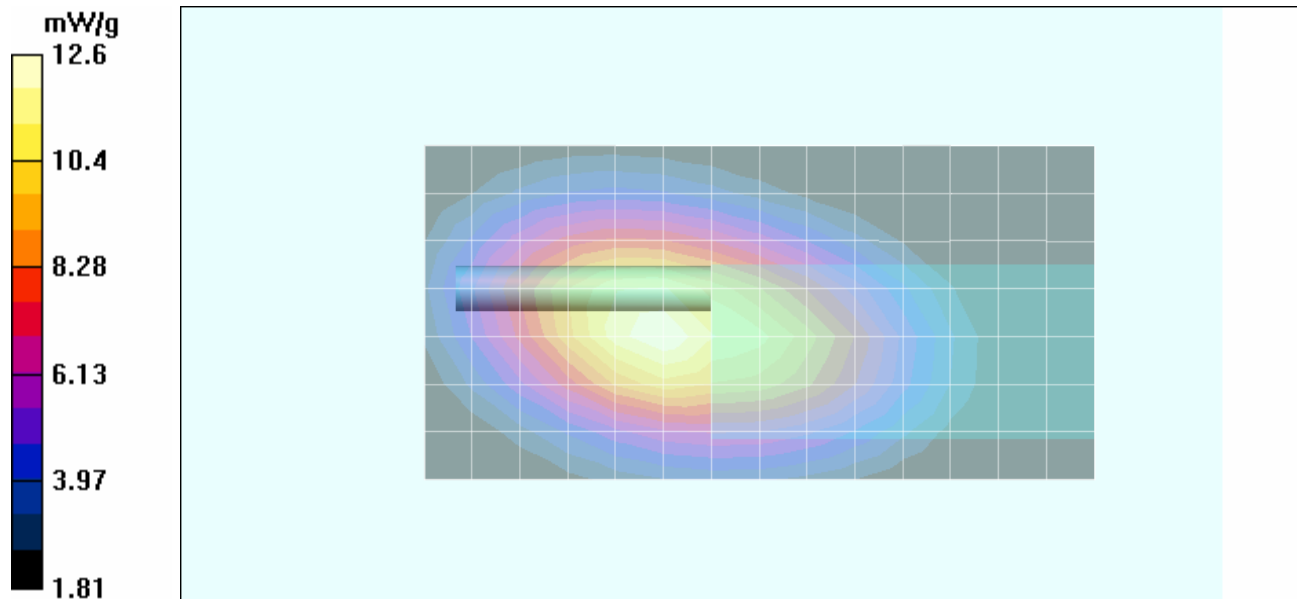
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 115.6 V/m; Power Drift = -0.276 dB

Peak SAR (extrapolated) = 17.7 W/kg



**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.42 mW/g**

Maximum value of SAR (measured) = 12.6 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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## Body SAR Plot #3 (B3)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 55.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.86 mW/g

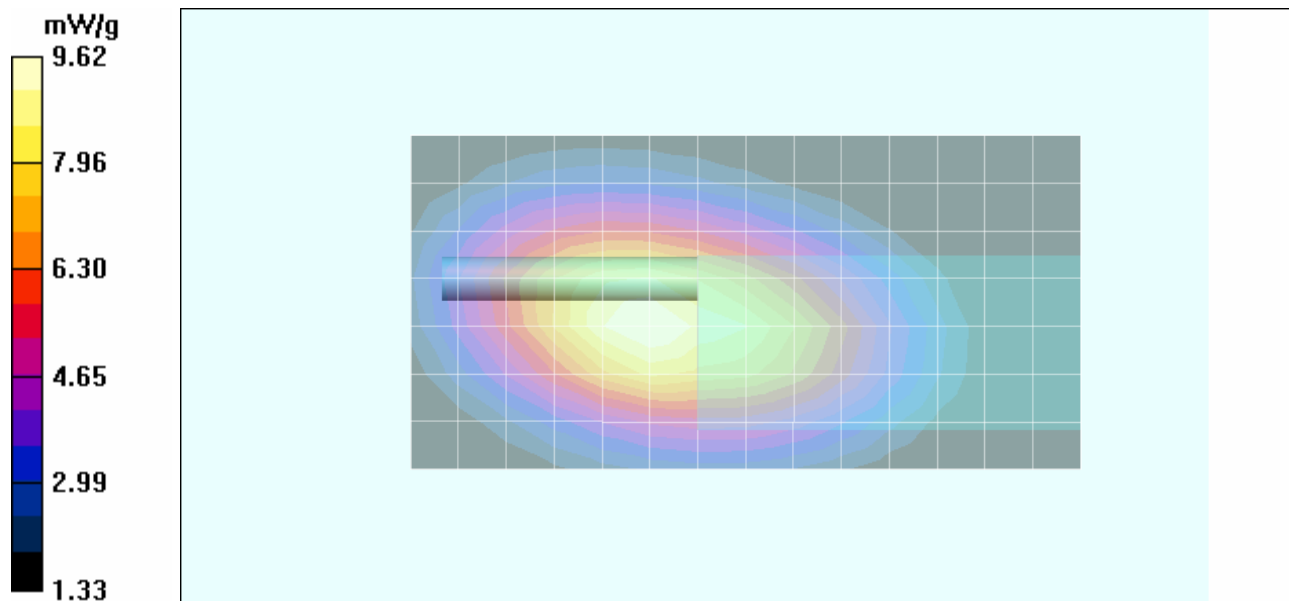
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 100.5 V/m; Power Drift = -0.235 dB



Peak SAR (extrapolated) = 13.6 W/kg

**SAR(1 g) = 9.11 mW/g; SAR(10 g) 6.45 mW/g**

Maximum value of SAR (measured) = 9.62 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Body SAR Plot #4 (B4)

Date Tested: 08/05/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 490.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.25 mW/g

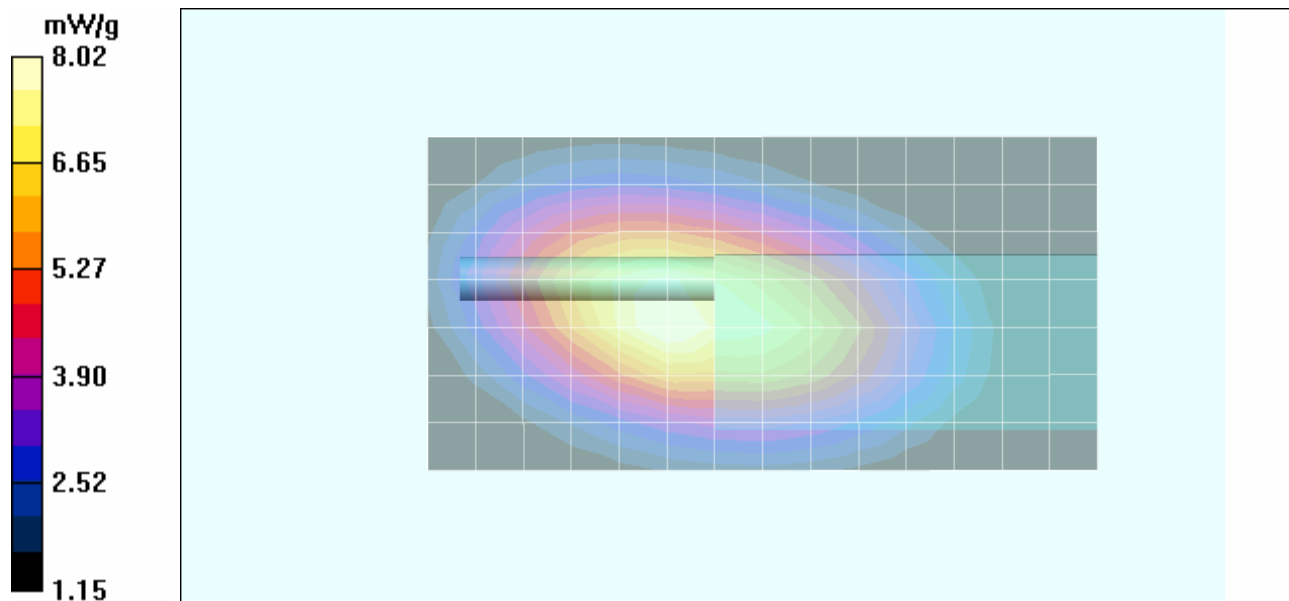
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 89.8 V/m; Power Drift = -0.373 dB



Peak SAR (extrapolated) = 11.2 W/kg

**SAR(1 g) = 7.6 mW/g; SAR(10 g) 5.42 mW/g**

Maximum value of SAR (measured) = 8.02 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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## Body SAR Plot #5 (B5)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.09 mW/g

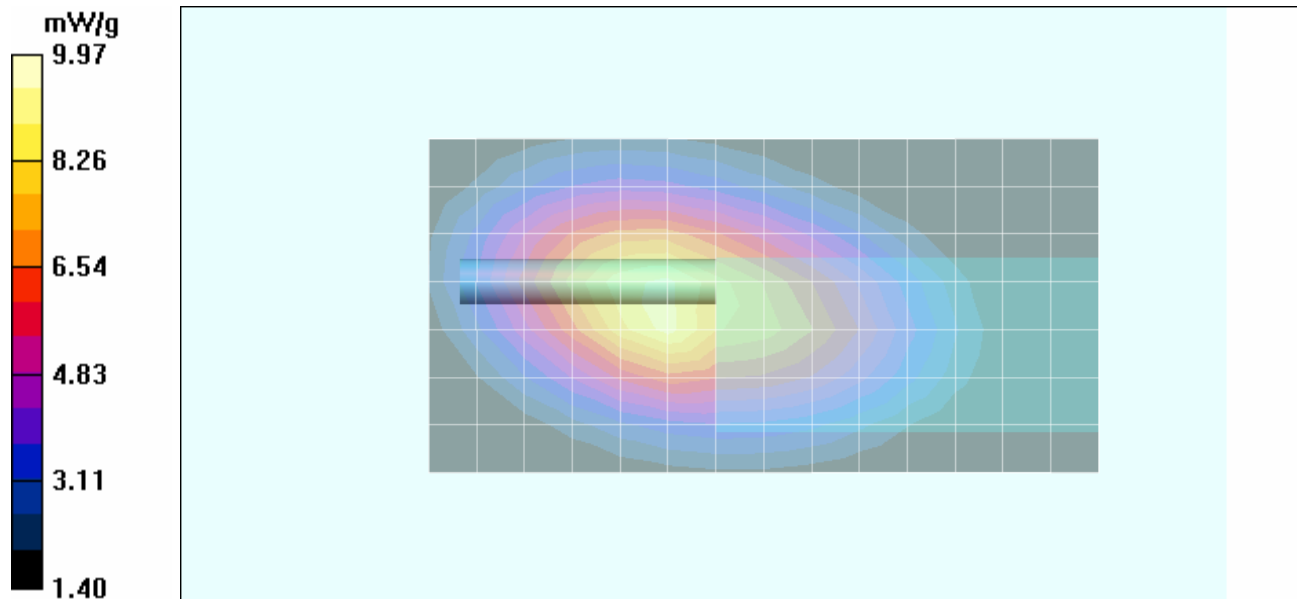
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 95.8 V/m; Power Drift = 0.330 dB



Peak SAR (extrapolated) = 13.9 W/kg

**SAR(1 g) = 9.49 mW/g; SAR(10 g) 6.79 mW/g**

Maximum value of SAR (measured) = 9.97 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #6 (B6)

Date Tested: 08/09/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.937$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 12.9 mW/g

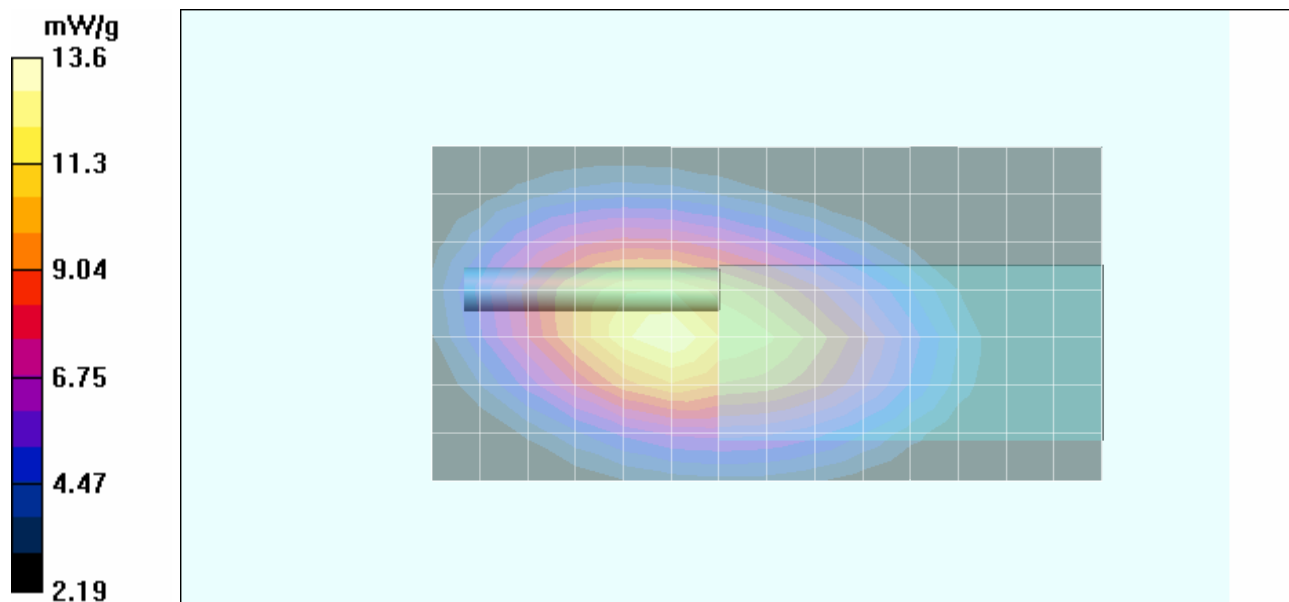
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 123.7 V/m; Power Drift = -0.649 dB

Peak SAR (extrapolated) = 19.0 W/kg

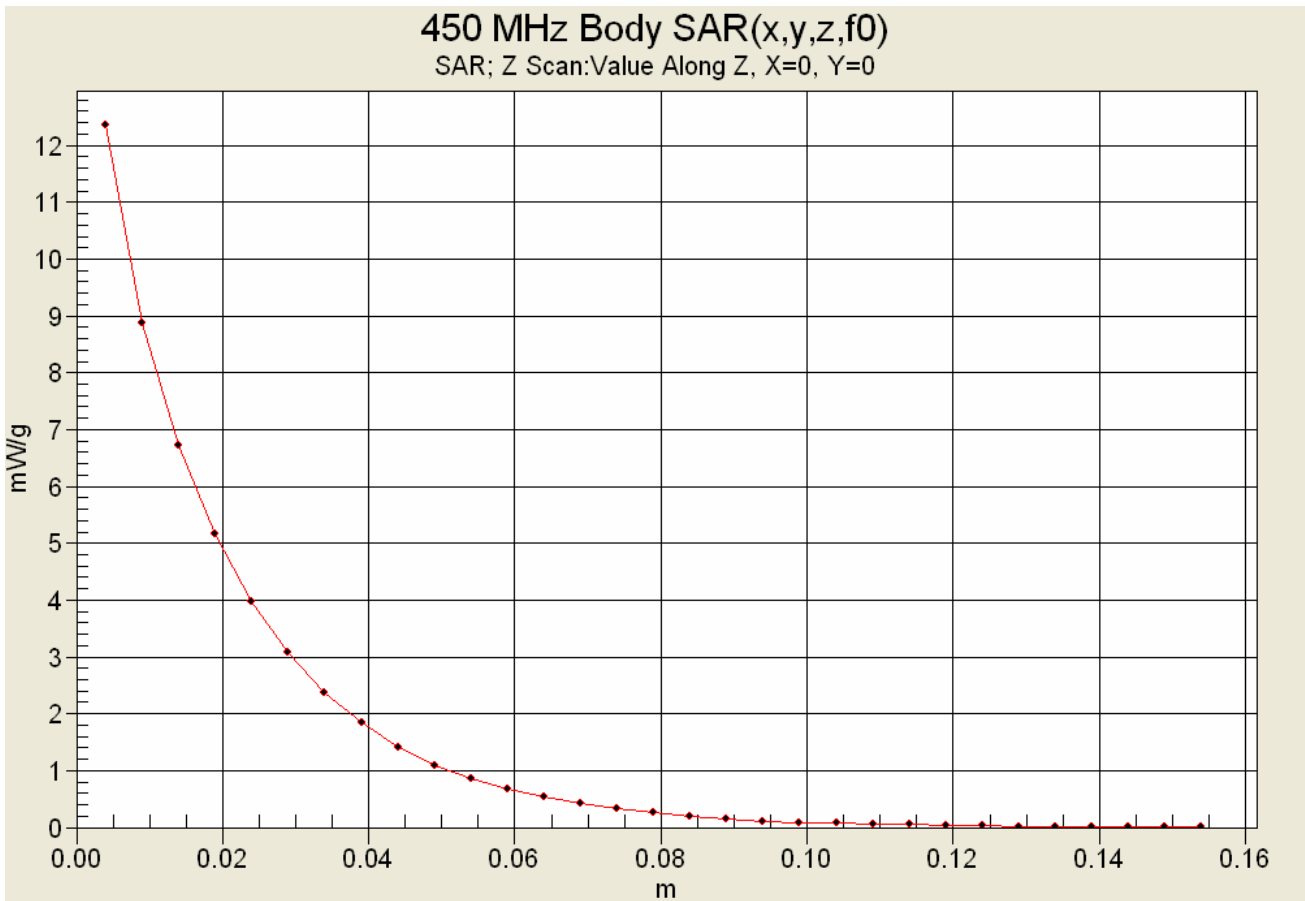
**SAR(1 g) = 13 mW/g; SAR(10 g) 9.32 mW/g**



Maximum value of SAR (measured) = 13.6 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #7 (B7)

Date Tested: 08/09/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.6 mW/g

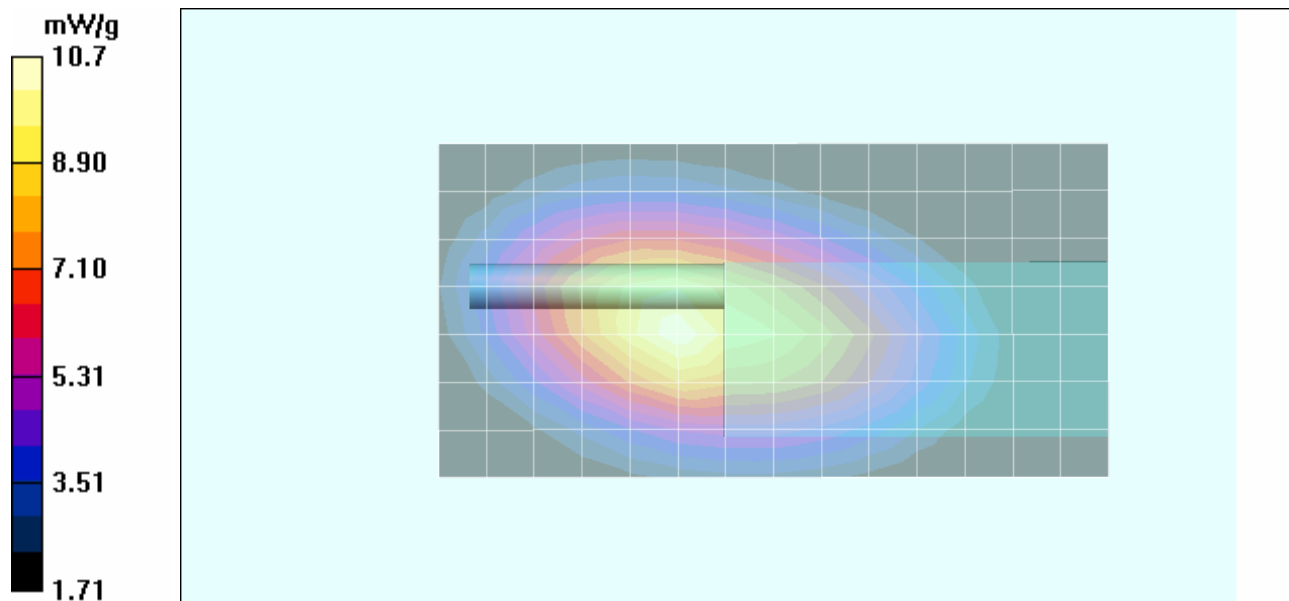
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.8 V/m; Power Drift = -0.661 dB



Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.38 mW/g**

Maximum value of SAR (measured) = 10.7 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #8 (B8)

Date Tested: 08/09/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.98 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.74 mW/g

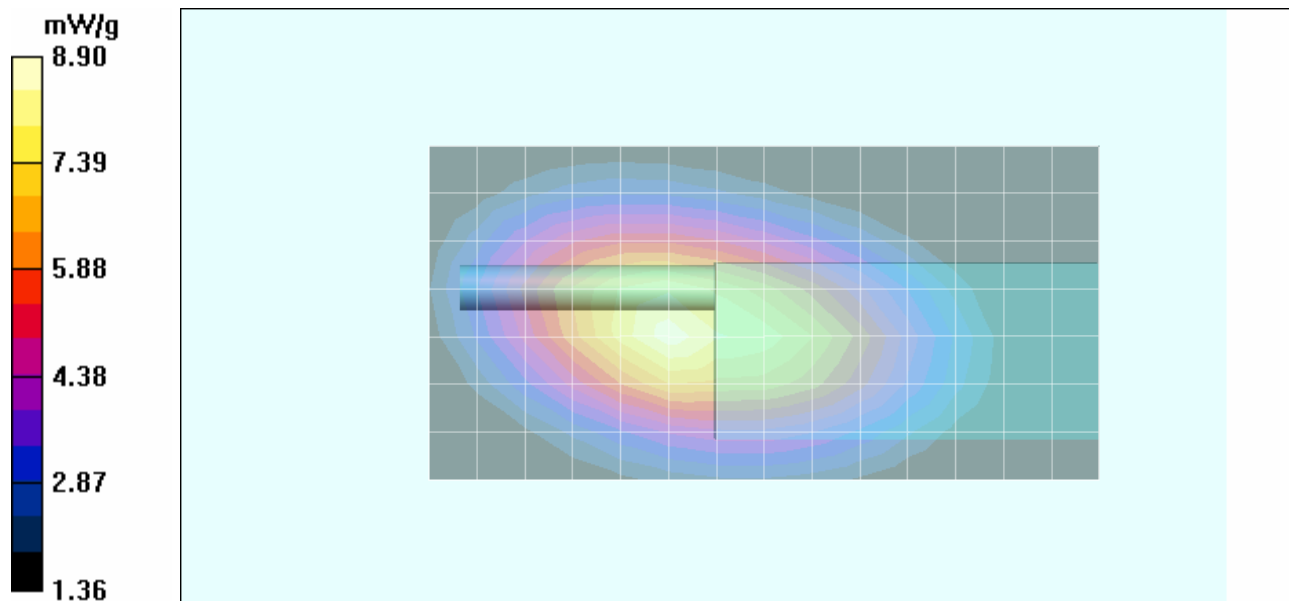
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.6 V/m; Power Drift = -0.570 dB



Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 8.46 mW/g; SAR(10 g) 6.14 mW/g**

Maximum value of SAR (measured) = 8.90 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #9 (B9)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 470.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.6 mW/g

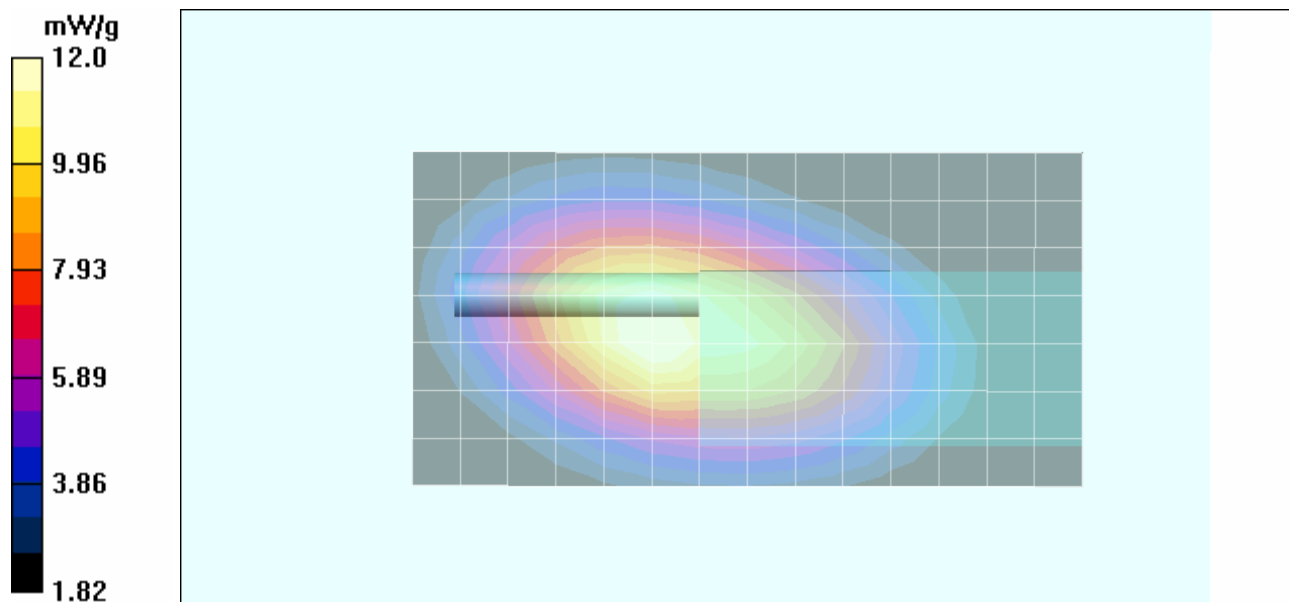
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.4 V/m; Power Drift = -0.548 dB

Peak SAR (extrapolated) = 17.0 W/kg



**SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.15 mW/g**

Maximum value of SAR (measured) = 12.0 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #10 (B10)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484$  MHz;  $\sigma = 0.962$  mho/m;  $\epsilon_r = 55.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 12.3 mW/g

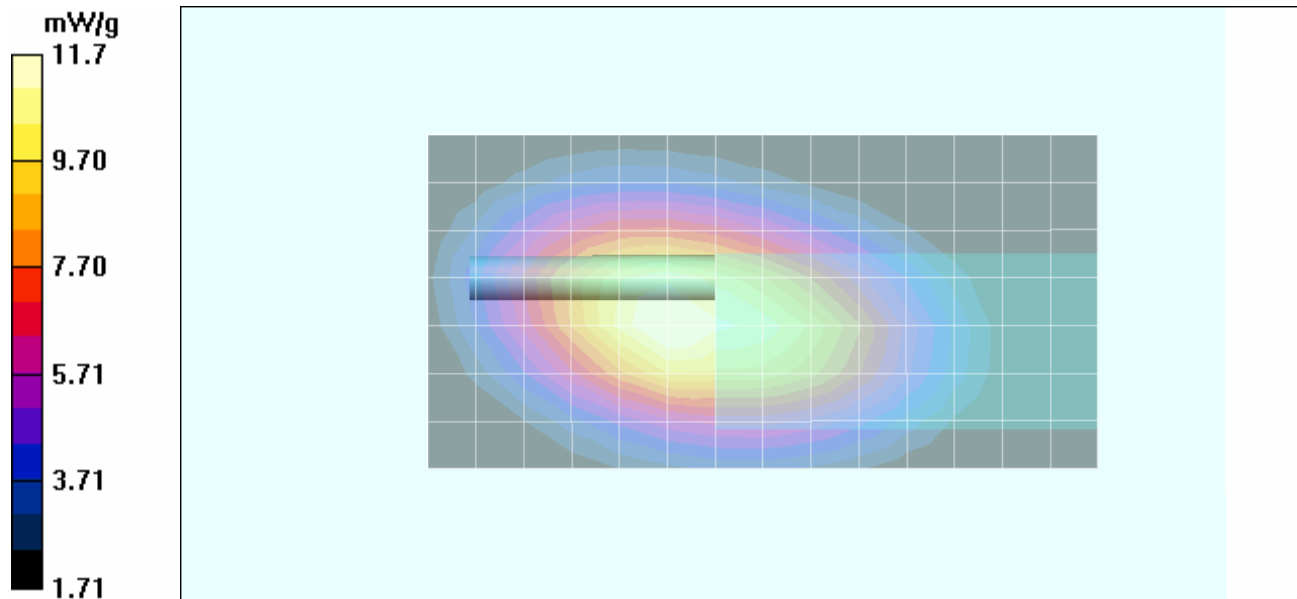
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 109.6 V/m; Power Drift = -0.277 dB



Peak SAR (extrapolated) = 16.4 W/kg

**SAR(1 g) = 11.1 mW/g; SAR(10 g) 7.83 mW/g**

Maximum value of SAR (measured) = 11.7 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Body SAR Plot #11 (B11)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.97 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 13.2 mW/g

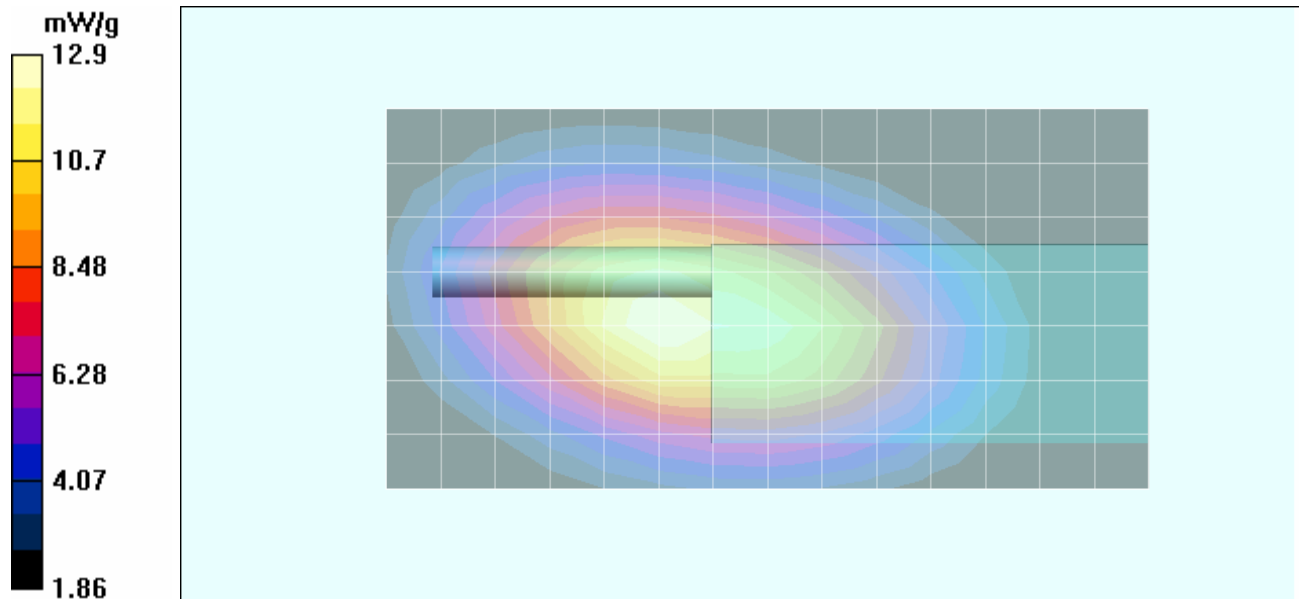
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.5 V/m; Power Drift = -0.504 dB



Peak SAR (extrapolated) = 18.4 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.82 mW/g**

Maximum value of SAR (measured) = 12.9 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Body SAR Plot #12 (B12)

Date Tested: 08/05/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.6$ ;  $\rho = 1000$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm

Maximum value of SAR (measured) = 13.7 mW/g

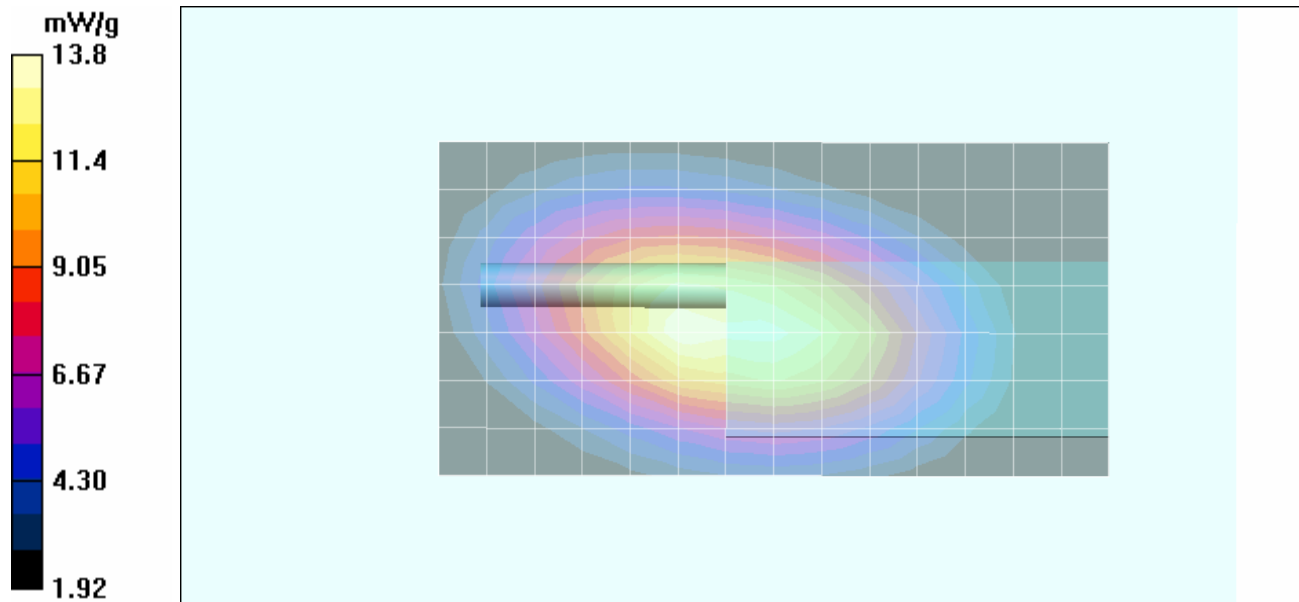
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5$ mm,  $dy=7.5$ mm,  $dz=5$ mm

Reference Value = 117.2 V/m; Power Drift = -0.470 dB

Peak SAR (extrapolated) = 19.4 W/kg

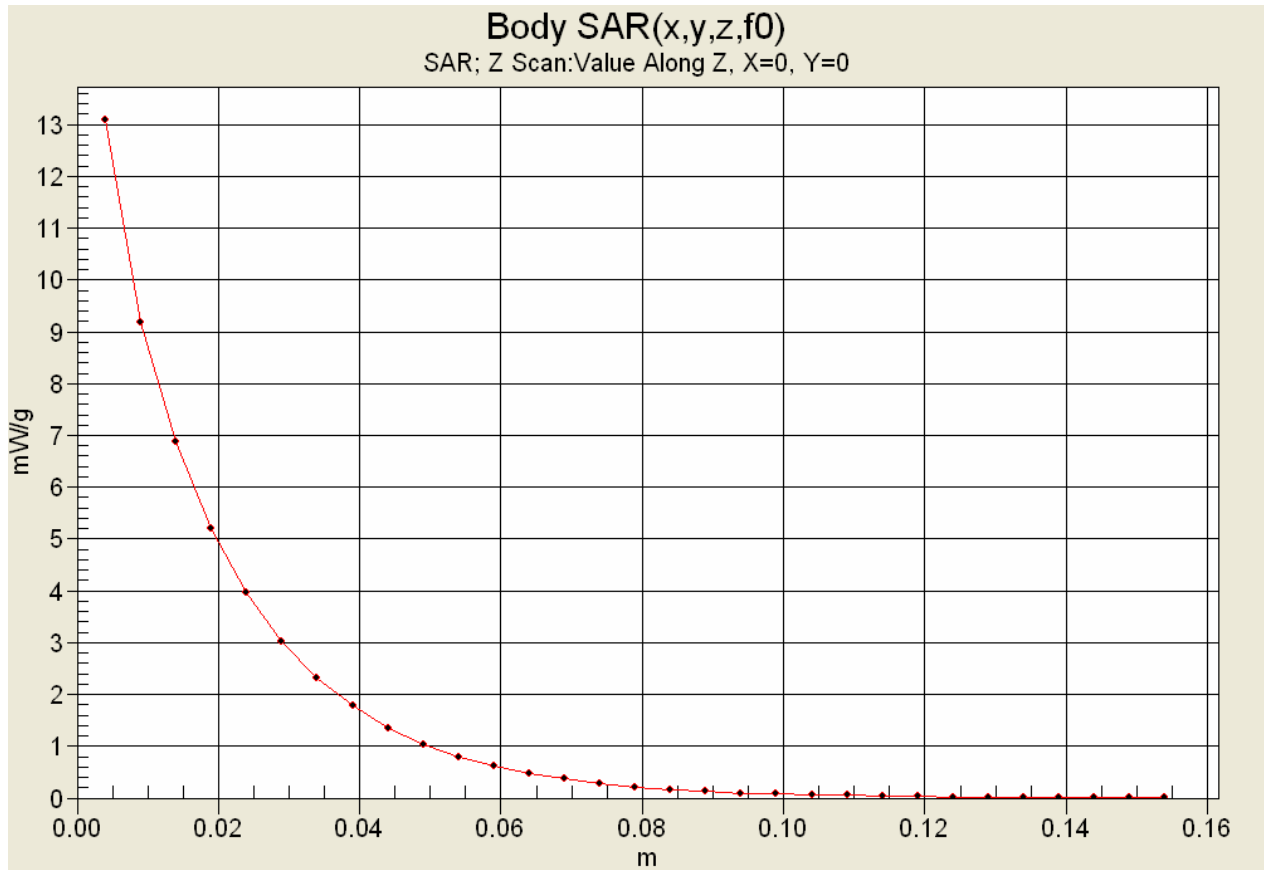
**SAR(1 g) = 13.0 mW/g; SAR(10 g) 9.35 mW/g**



Maximum value of SAR (measured) = 13.8 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Z-Axis Scan



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## Body SAR Plot #13 (B13)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M2 – 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498$  MHz;  $\sigma = 0.948$  mho/m;  $\epsilon_r = 56.4$ ;  $\rho = 1000$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 11.7 mW/g

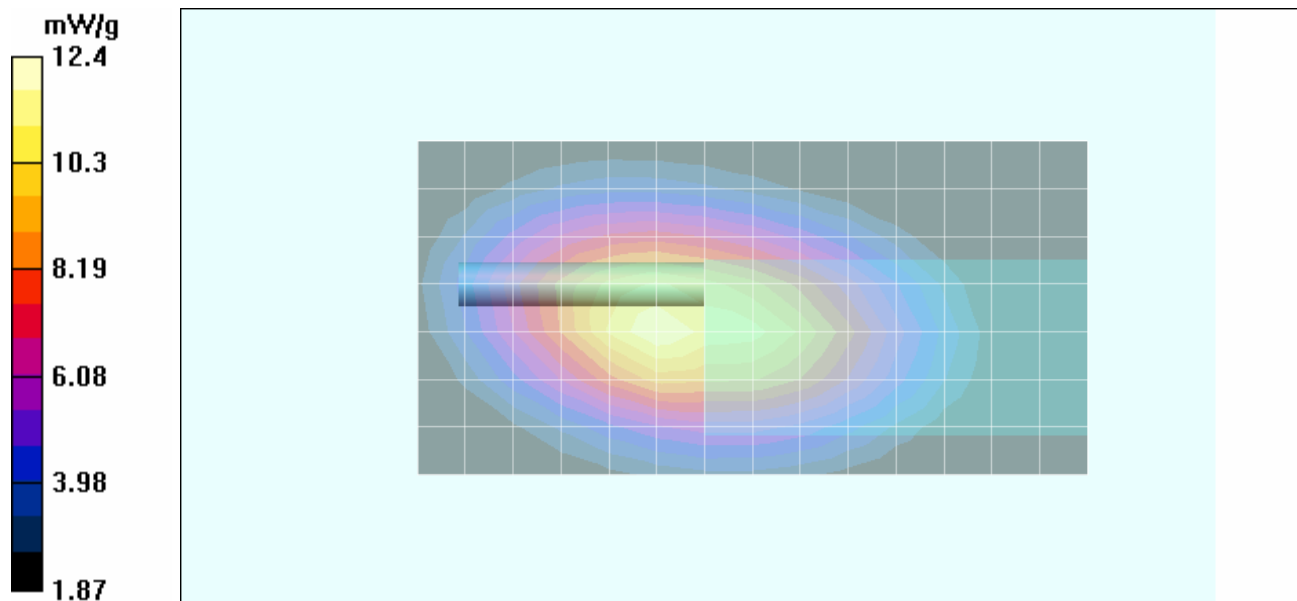
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 115.9 V/m; Power Drift = -0.657 dB



Peak SAR (extrapolated) = 17.3 W/kg

**SAR(1 g) = 11.8 mW/g; SAR(10 g) 8.43 mW/g**

Maximum value of SAR (measured) = 12.4 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #14 (B14)

Date Tested: 08/09/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M2 – 512.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512$  MHz;  $\sigma = 0.98$  mho/m;  $\epsilon_r = 55.5$ ;  $\rho = 1000$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 12.0 mW/g

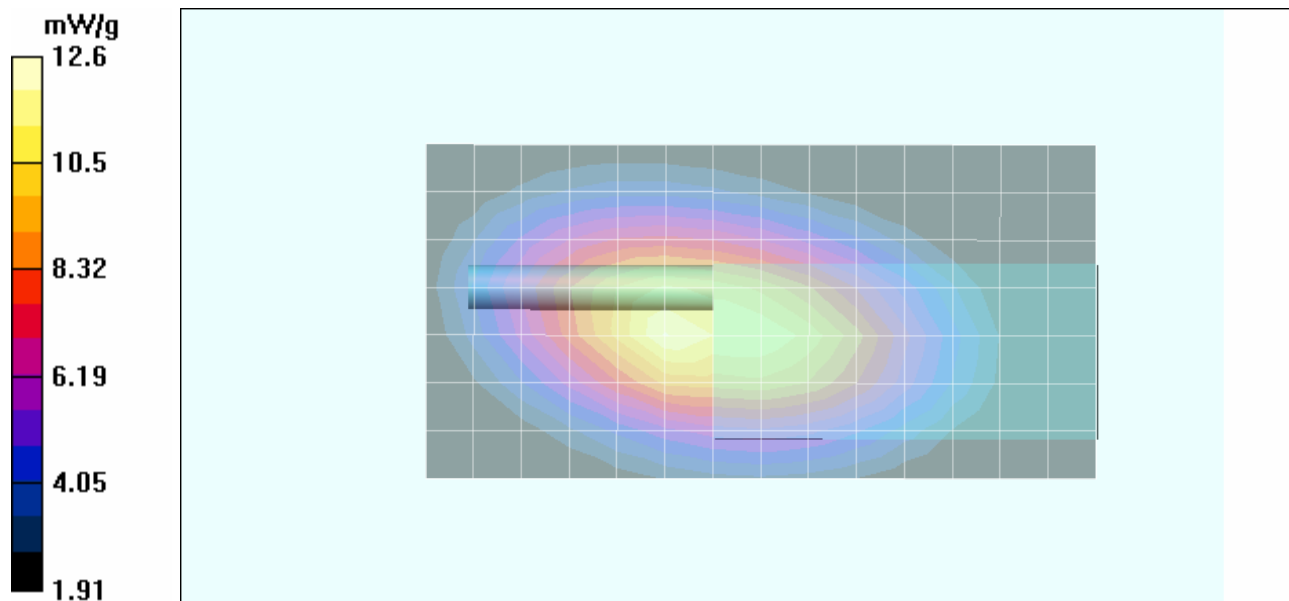
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 112.0 V/m; Power Drift = -0.344 dB



Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.57 mW/g**

Maximum value of SAR (measured) = 12.6 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #15 (B15)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M – 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.86 mW/g

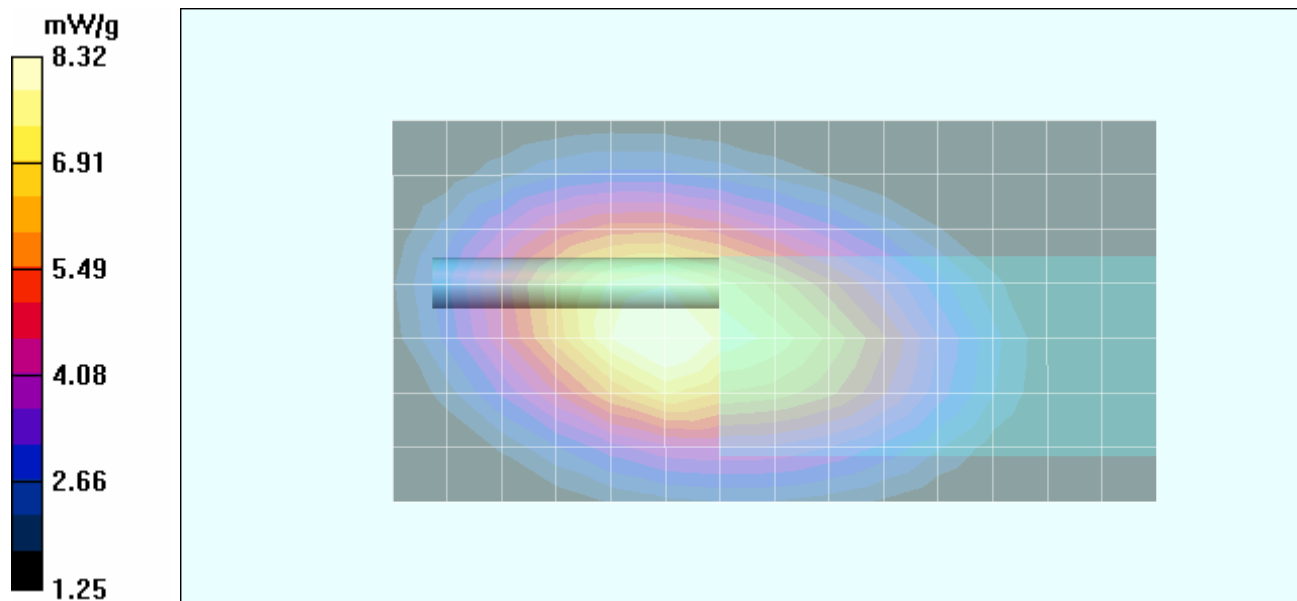
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 92.2 V/m; Power Drift = 0.090 dB



Peak SAR (extrapolated) = 11.7 W/kg

**SAR(1 g) = 7.9 mW/g; SAR(10 g) 5.63 mW/g**

Maximum value of SAR (measured) = 8.32 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #16 (B16)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.42 mW/g

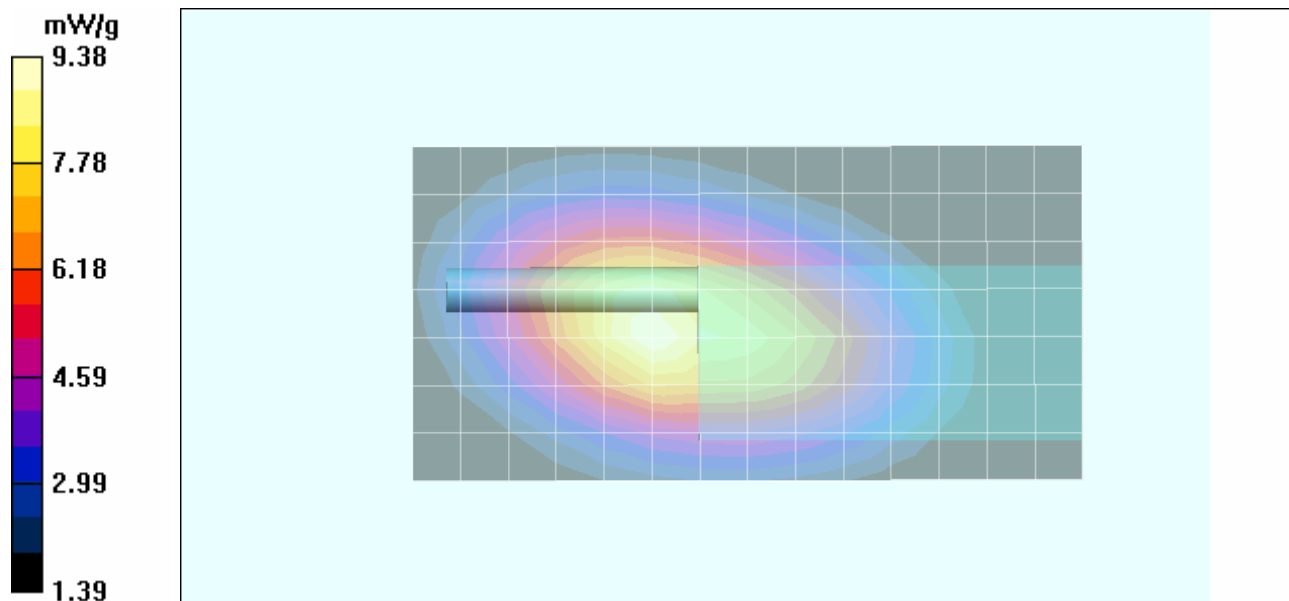
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 98.7 V/m; Power Drift = -0.600 dB

Peak SAR (extrapolated) = 13.1 W/kg



**SAR(1 g) = 8.87 mW/g; SAR(10 g) 6.32 mW/g**

Maximum value of SAR (measured) = 9.38 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #17 (B17)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.98 mW/g

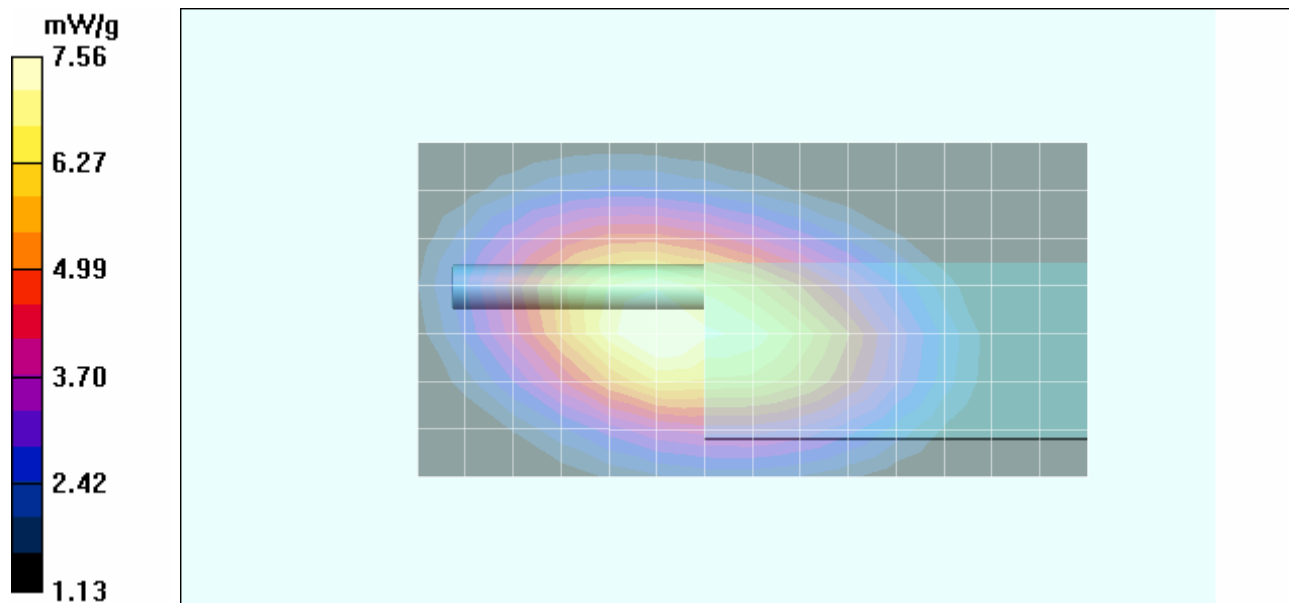
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 90.1 V/m; Power Drift = -0.406 dB



Peak SAR (extrapolated) = 10.7 W/kg

**SAR(1 g) = 7.22 mW/g; SAR(10 g) 5.13 mW/g**

Maximum value of SAR (measured) = 7.56 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #18 (B18)

Date Tested: 08/05/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 6.69 mW/g

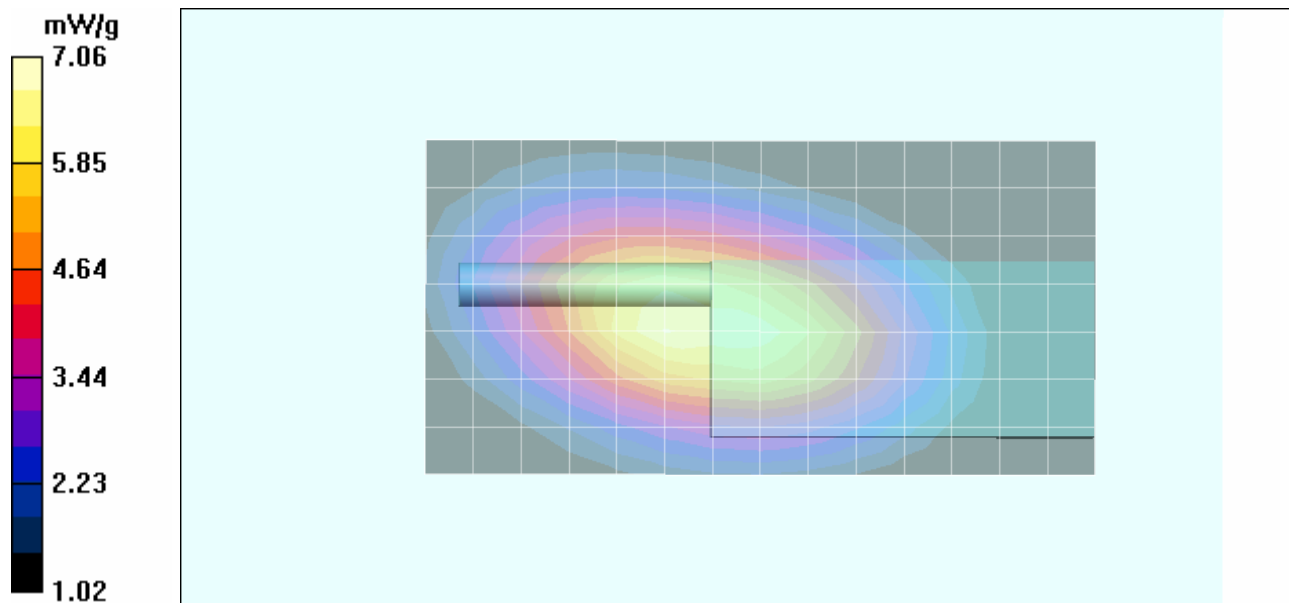
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 89.9 V/m; Power Drift = -0.832 dB



Peak SAR (extrapolated) = 9.97 W/kg

**SAR(1 g) = 6.75 mW/g; SAR(10 g) 4.87 mW/g**

Maximum value of SAR (measured) = 7.06 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #19 (B19)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-23M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.84 mW/g

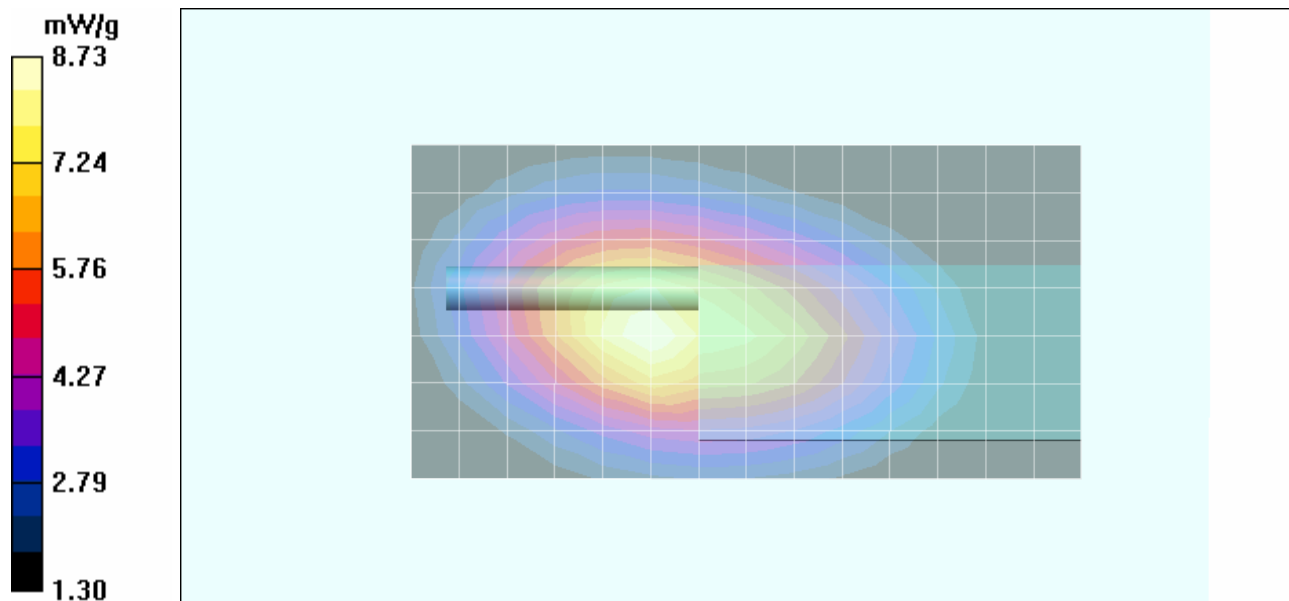
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.6 V/m; Power Drift = -0.550 dB



Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 8.28 mW/g; SAR(10 g) 5.92 mW/g**

Maximum value of SAR (measured) = 8.73 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #20 (B20)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M2 - 470.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.6 mW/g

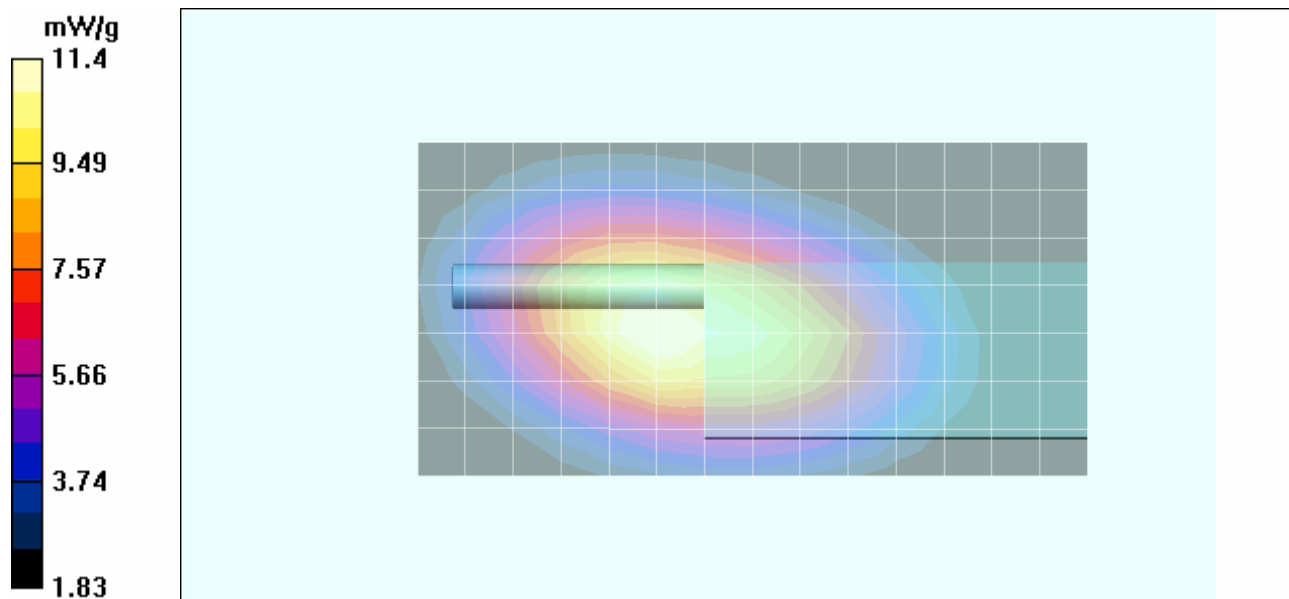
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.5 V/m; Power Drift = -0.441 dB



Peak SAR (extrapolated) = 16.0 W/kg

**SAR(1 g) = 10.9 mW/g; SAR(10 g) 7.82 mW/g**

Maximum value of SAR (measured) = 11.4 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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## Body SAR Plot #21 (B21)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M2 - 484.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.962 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 10.5 mW/g

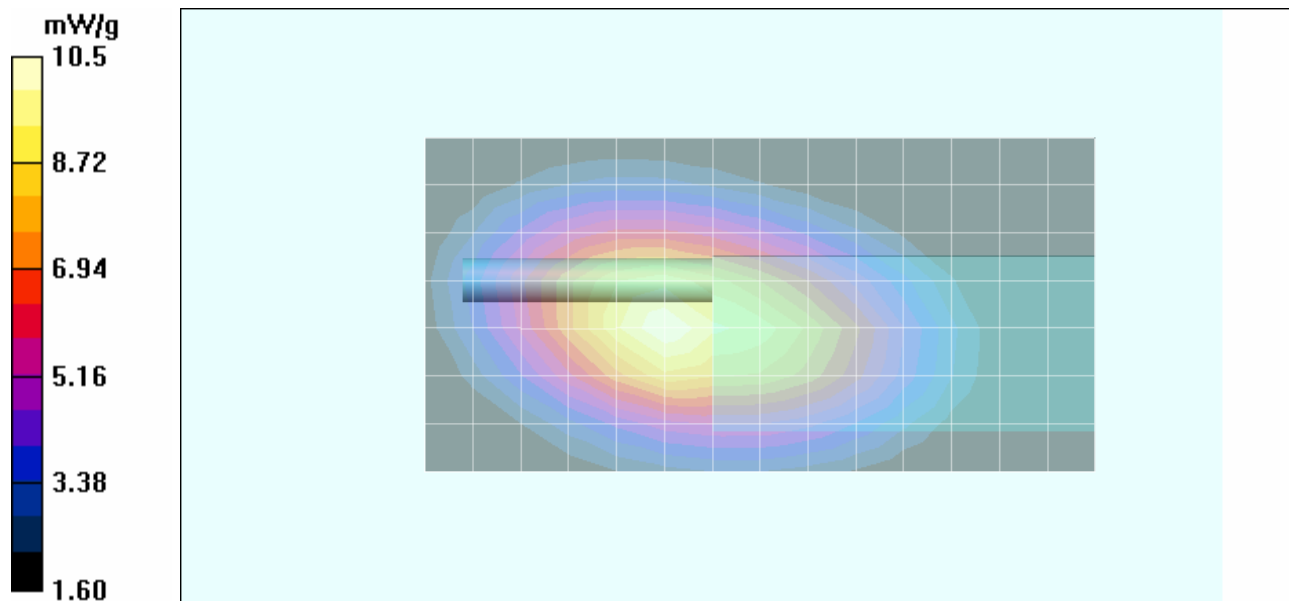
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 107.1 V/m; Power Drift = -0.656 dB



Peak SAR (extrapolated) = 14.7 W/kg

**SAR(1 g) = 9.93 mW/g; SAR(10 g) 7.1 mW/g**

Maximum value of SAR (measured) = 10.5 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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## Body SAR Plot #22 (B22)

Date Tested: 08/09/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M2 - 498.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.64 mW/g

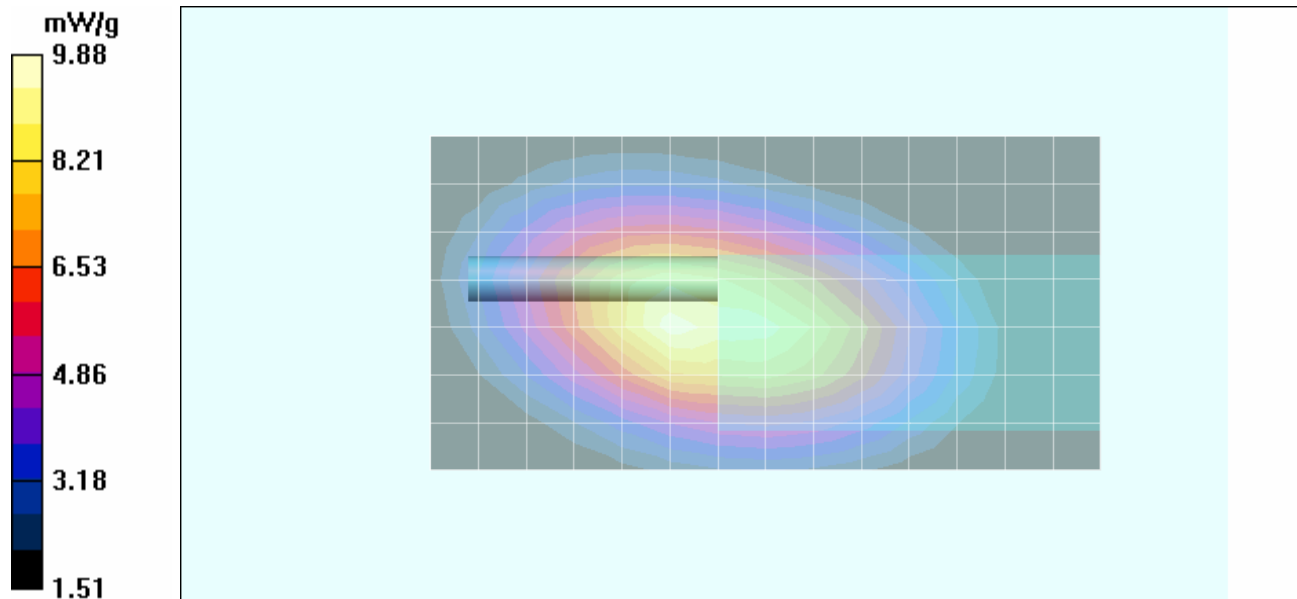
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 101.4 V/m; Power Drift = -0.549 dB



Peak SAR (extrapolated) = 13.8 W/kg

**SAR(1 g) = 9.39 mW/g; SAR(10 g) 6.73 mW/g**

Maximum value of SAR (measured) = 9.88 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #23 (B23)

Date Tested: 08/05/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-23M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.4 mW/g

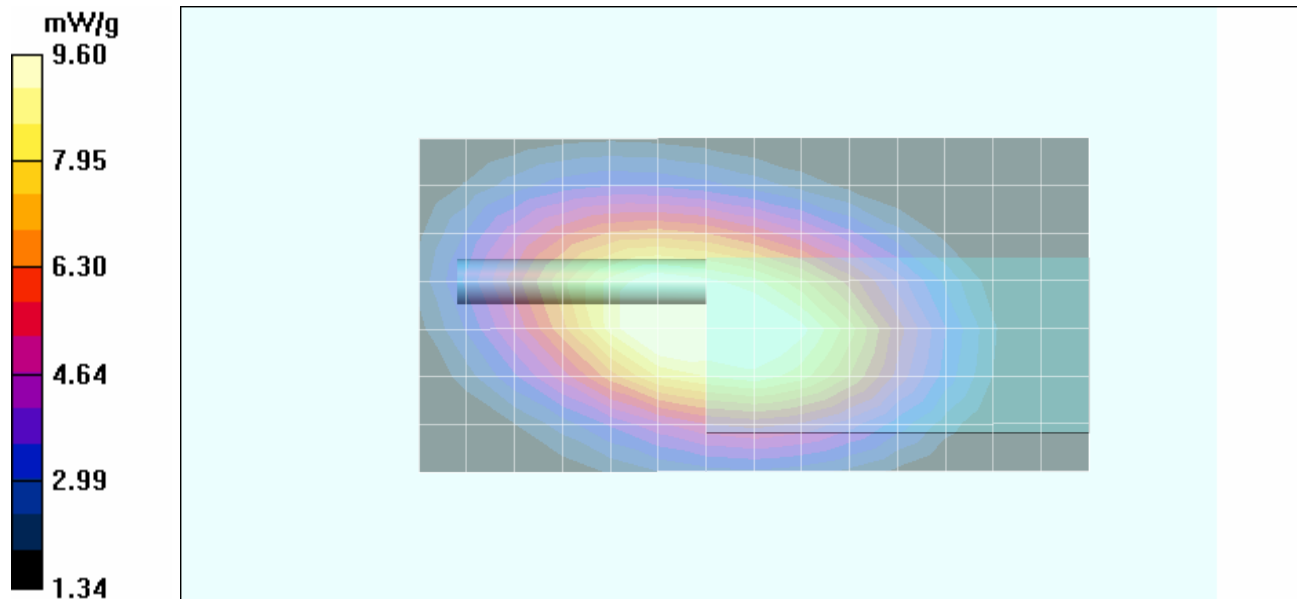
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.9 V/m; Power Drift = -0.578 dB

Peak SAR (extrapolated) = 13.4 W/kg



**SAR(1 g) = 9.04 mW/g; SAR(10 g) 6.49 mW/g**

Maximum value of SAR (measured) = 9.60 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #24 (B24)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-23M2 - 470.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.8 mW/g

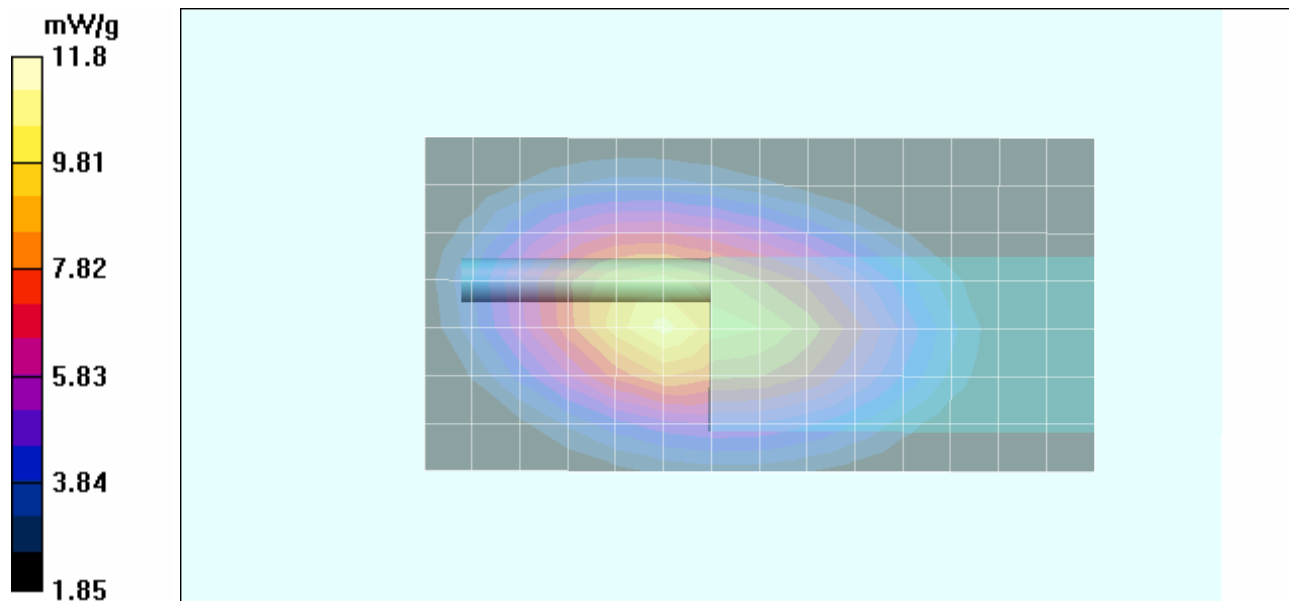
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.3 V/m; Power Drift = -0.900 dB

Peak SAR (extrapolated) = 16.4 W/kg



**SAR(1 g) = 11.2 mW/g; SAR(10 g) 8.0 mW/g**

Maximum value of SAR (measured) = 11.8 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #25 (B25)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-23M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.43 mW/g

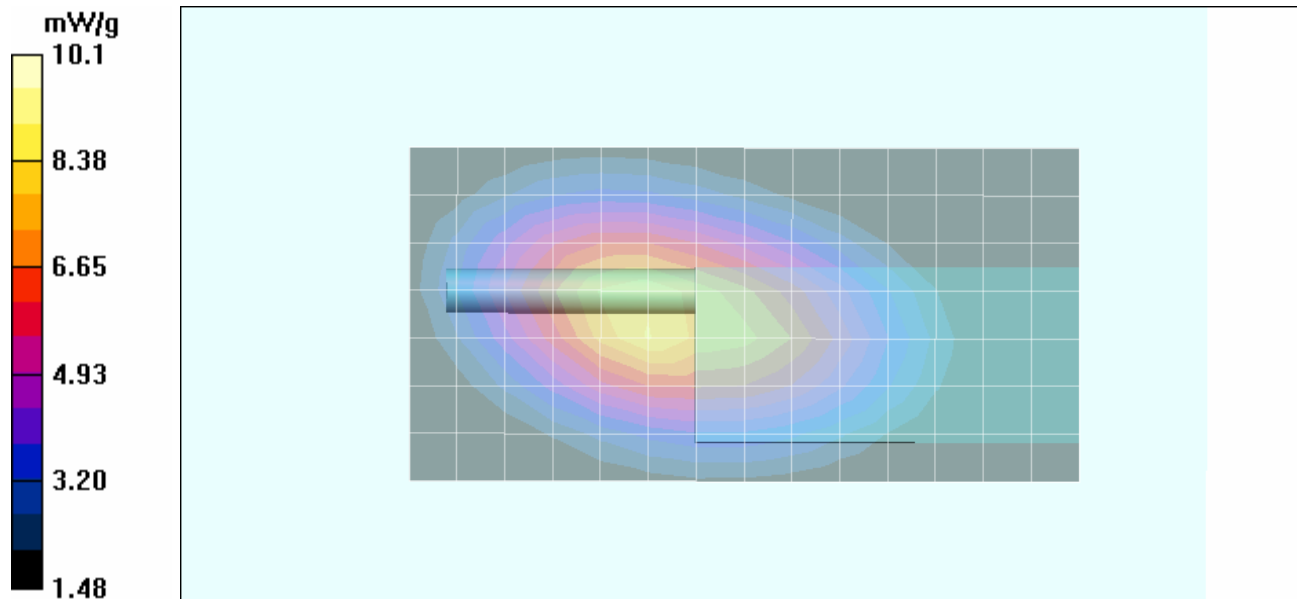
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 106.8 V/m; Power Drift = -1.03 dB



Peak SAR (extrapolated) = 14.0 W/kg

**SAR(1 g) = 9.64 mW/g; SAR(10 g) 6.94 mW/g**

Maximum value of SAR (measured) = 10.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #26 (B26)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 57.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 8.75 mW/g

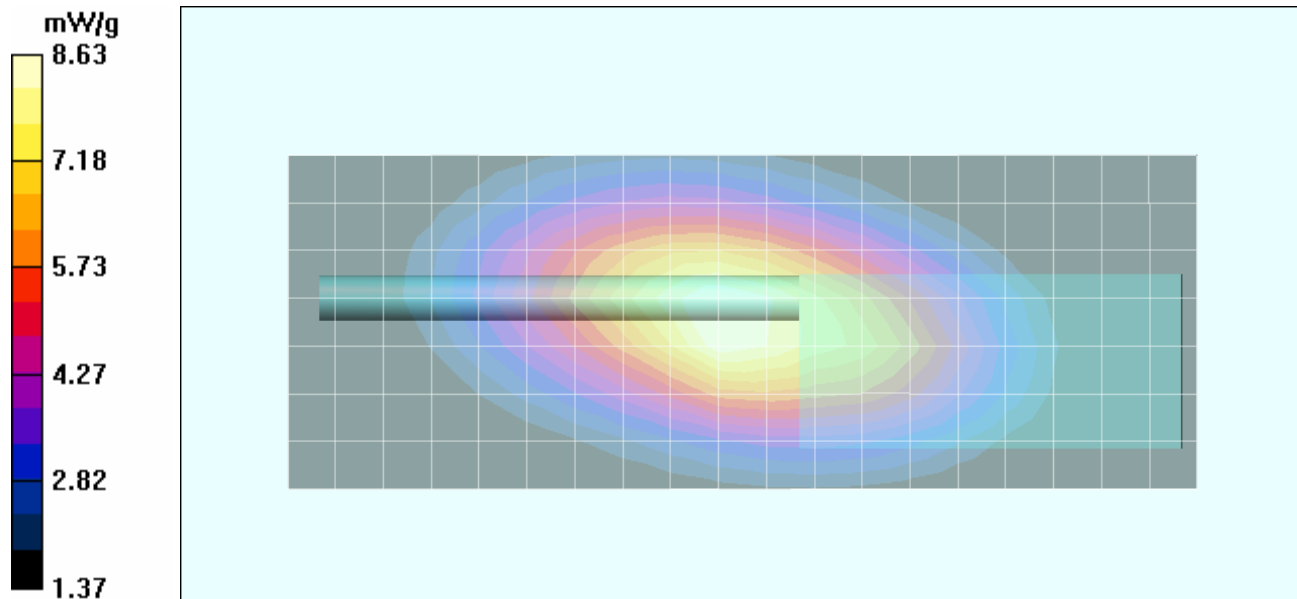
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 94.0 V/m; Power Drift = -0.093 dB



Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 8.27 mW/g; SAR(10 g) 5.92 mW/g**

Maximum value of SAR (measured) = 8.63 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #27 (B27)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 57.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.6 mW/g

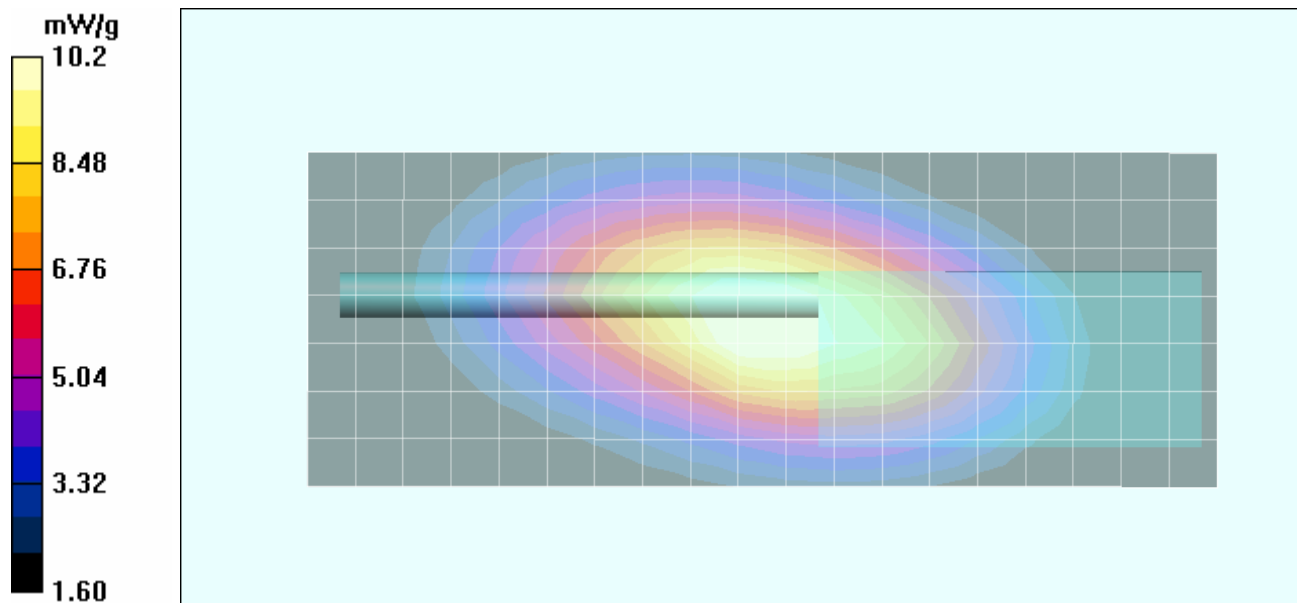
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.4 V/m; Power Drift = -0.224 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.8 mW/g; SAR(10 g) 7.02 mW/g**

Maximum value of SAR (measured) = 10.2 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #28 (B28)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.17 mW/g

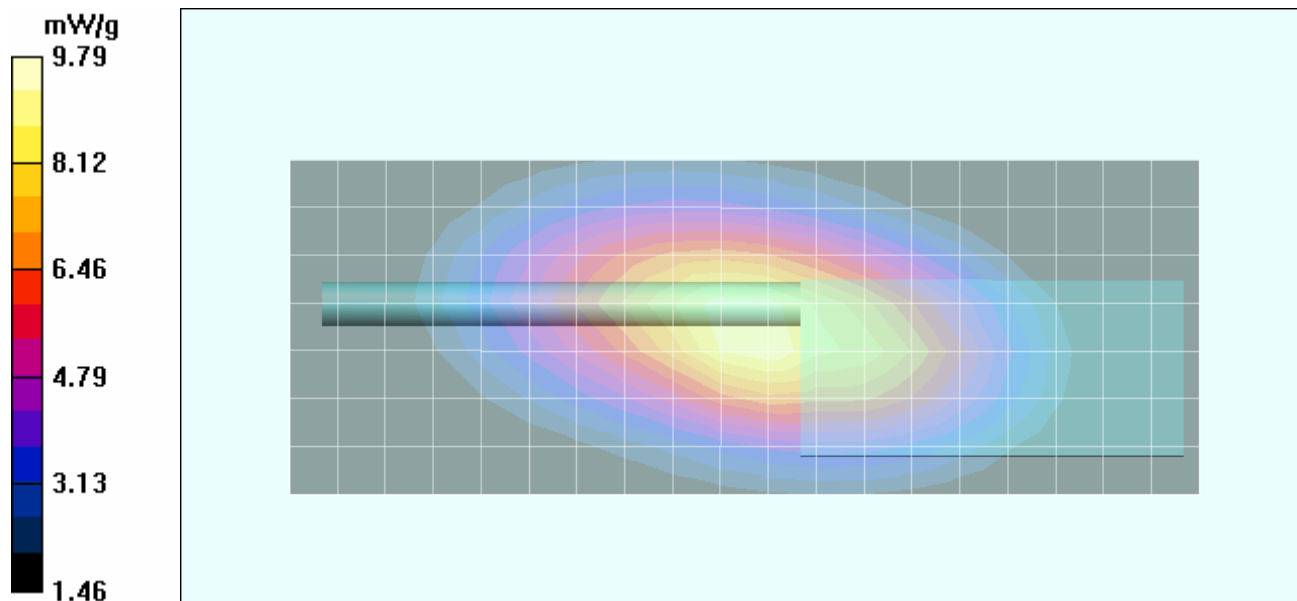
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 98.7 V/m; Power Drift = -0.346 dB



Peak SAR (extrapolated) = 13.7 W/kg

**SAR(1 g) = 9.26 mW/g; SAR(10 g) 6.57 mW/g**

Maximum value of SAR (measured) = 9.79 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #29 (B29)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.24 mW/g

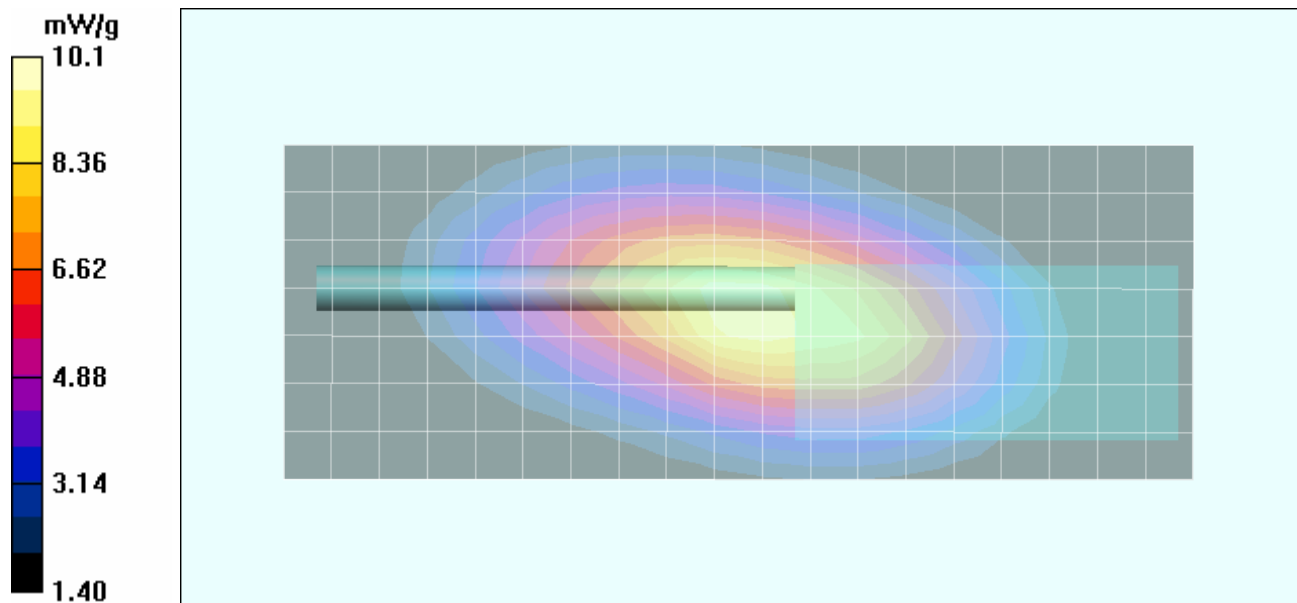
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 96.8 V/m; Power Drift = -0.301 dB



Peak SAR (extrapolated) = 14.0 W/kg

**SAR(1 g) = 9.49 mW/g; SAR(10 g) 6.73 mW/g**

Maximum value of SAR (measured) = 10.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Body SAR Plot #30 (B30)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.927$  mho/m;  $\epsilon_r = 56.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.08 mW/g

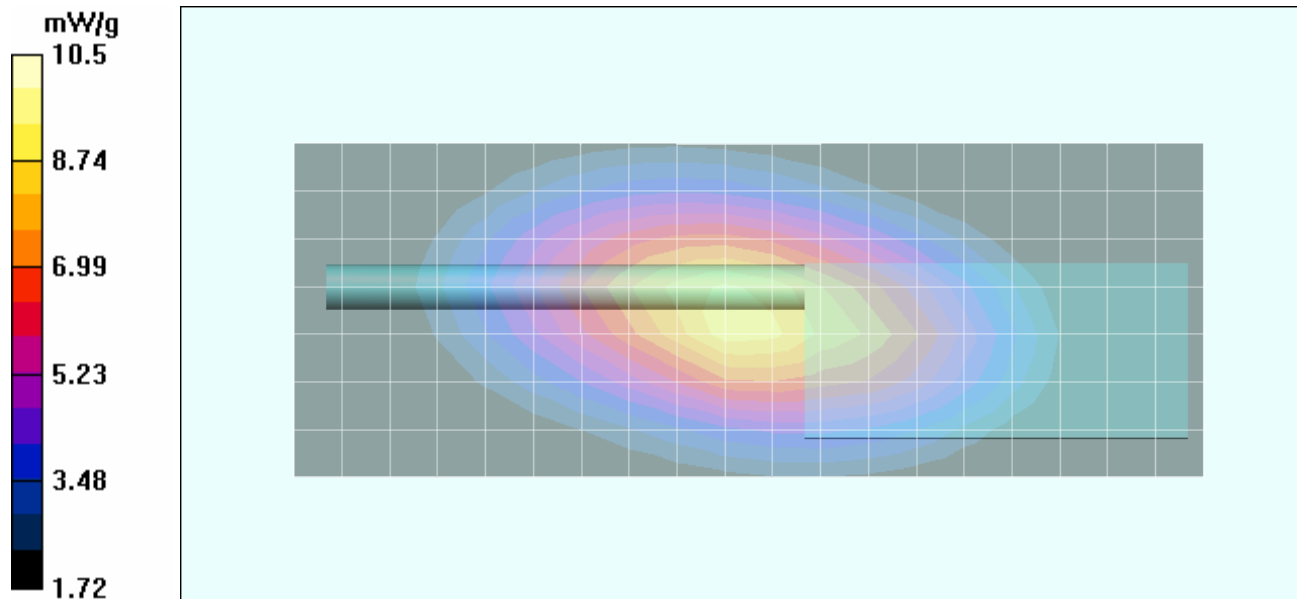
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 105.8 V/m; Power Drift = -0.430 dB



Peak SAR (extrapolated) = 14.7 W/kg

**SAR(1 g) = 10.0 mW/g; SAR(10 g) 7.22 mW/g**

Maximum value of SAR (measured) = 10.5 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Body SAR Plot #31 (B31)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 470.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.9 mW/g

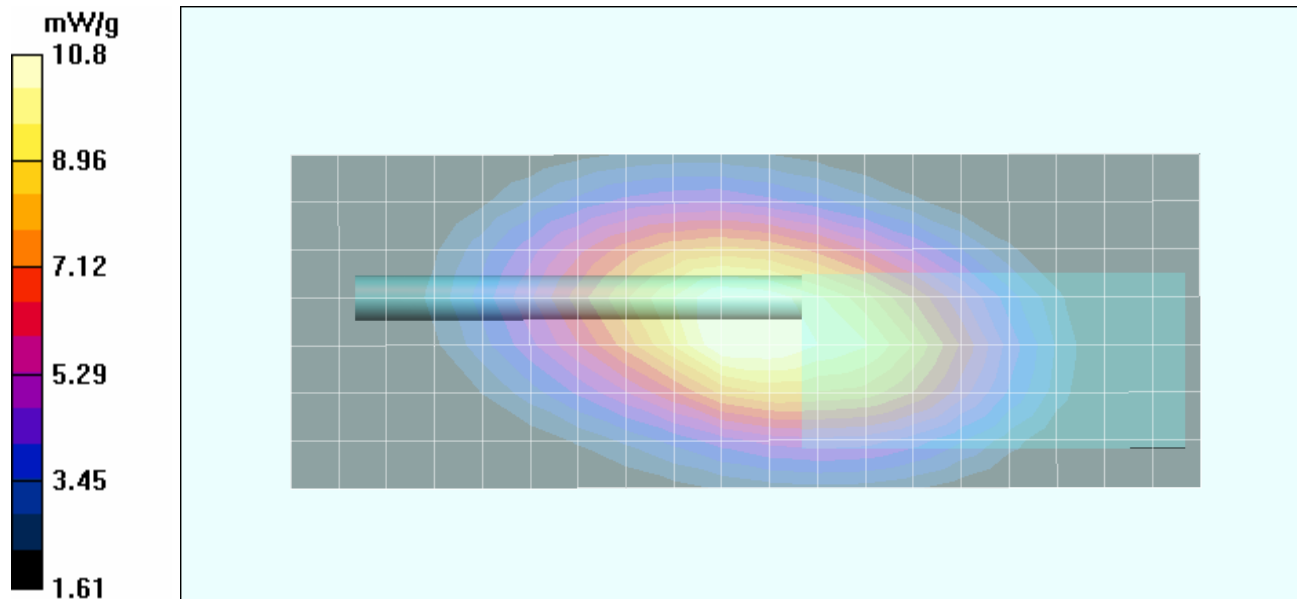
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 104.1 V/m; Power Drift = -0.237 dB

Peak SAR (extrapolated) = 15.5 W/kg



**SAR(1 g) = 10.4 mW/g; SAR(10 g) 7.39 mW/g**

Maximum value of SAR (measured) = 10.8 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #32 (B32)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 57.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 10.4 mW/g

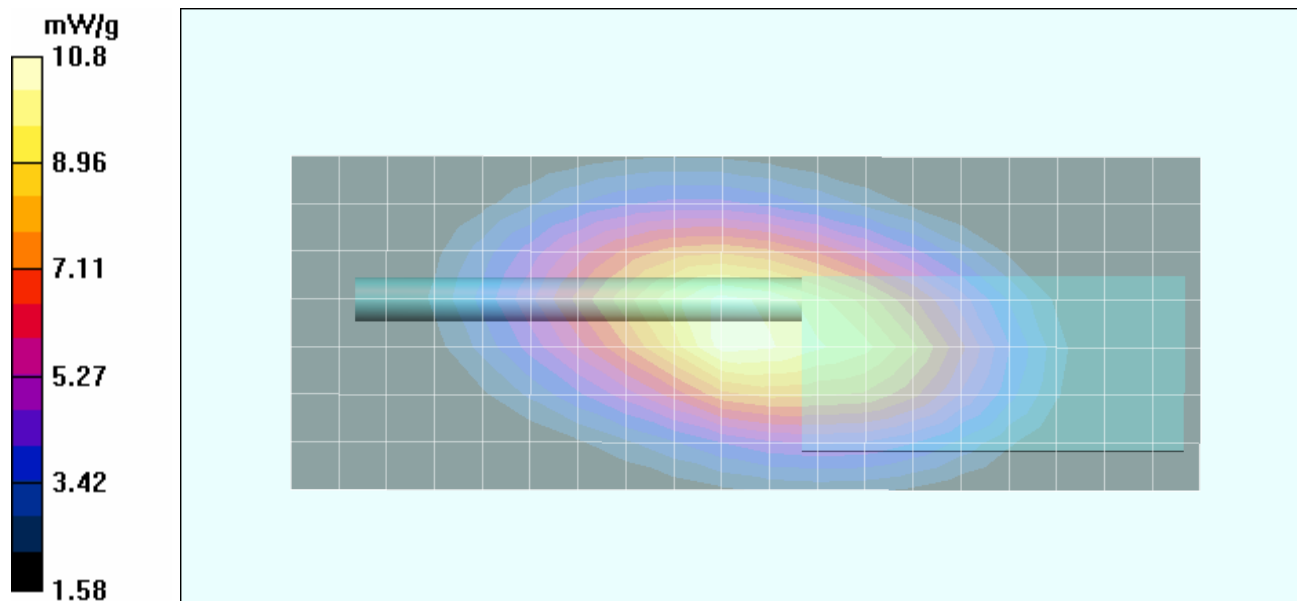
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 104.7 V/m; Power Drift = -0.313 dB

Peak SAR (extrapolated) = 15.1 W/kg



**SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.25 mW/g**

Maximum value of SAR (measured) = 10.8 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #33 (B33)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.9 mW/g

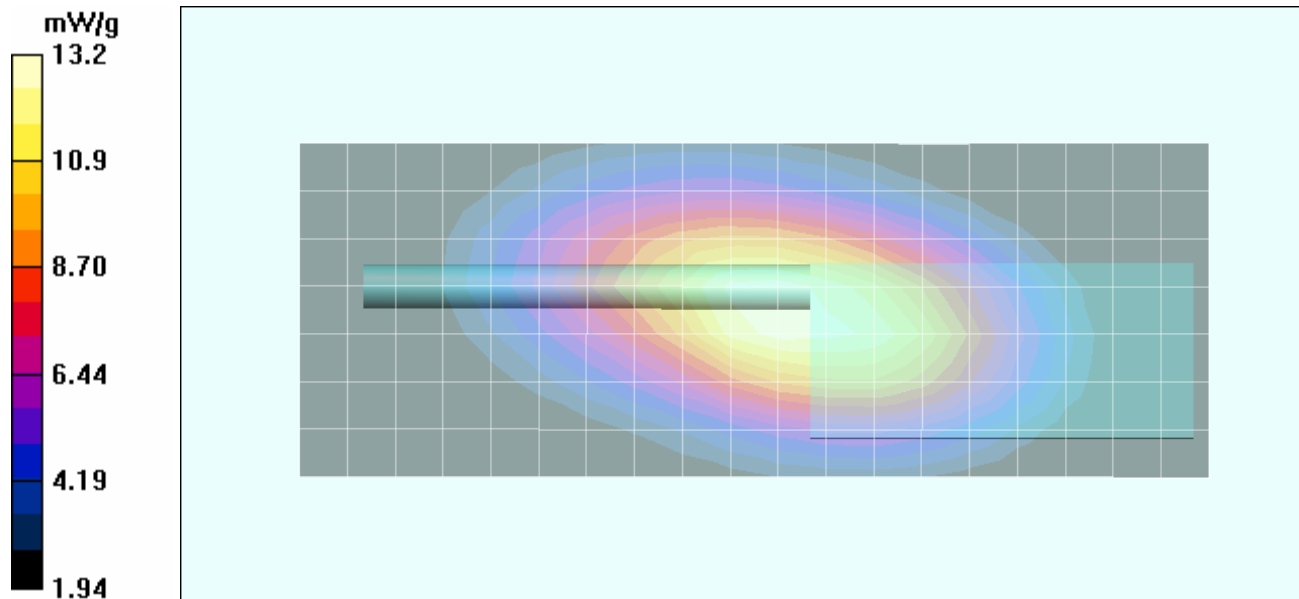
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.0 V/m; Power Drift = -0.346 dB

Peak SAR (extrapolated) = 18.8 W/kg

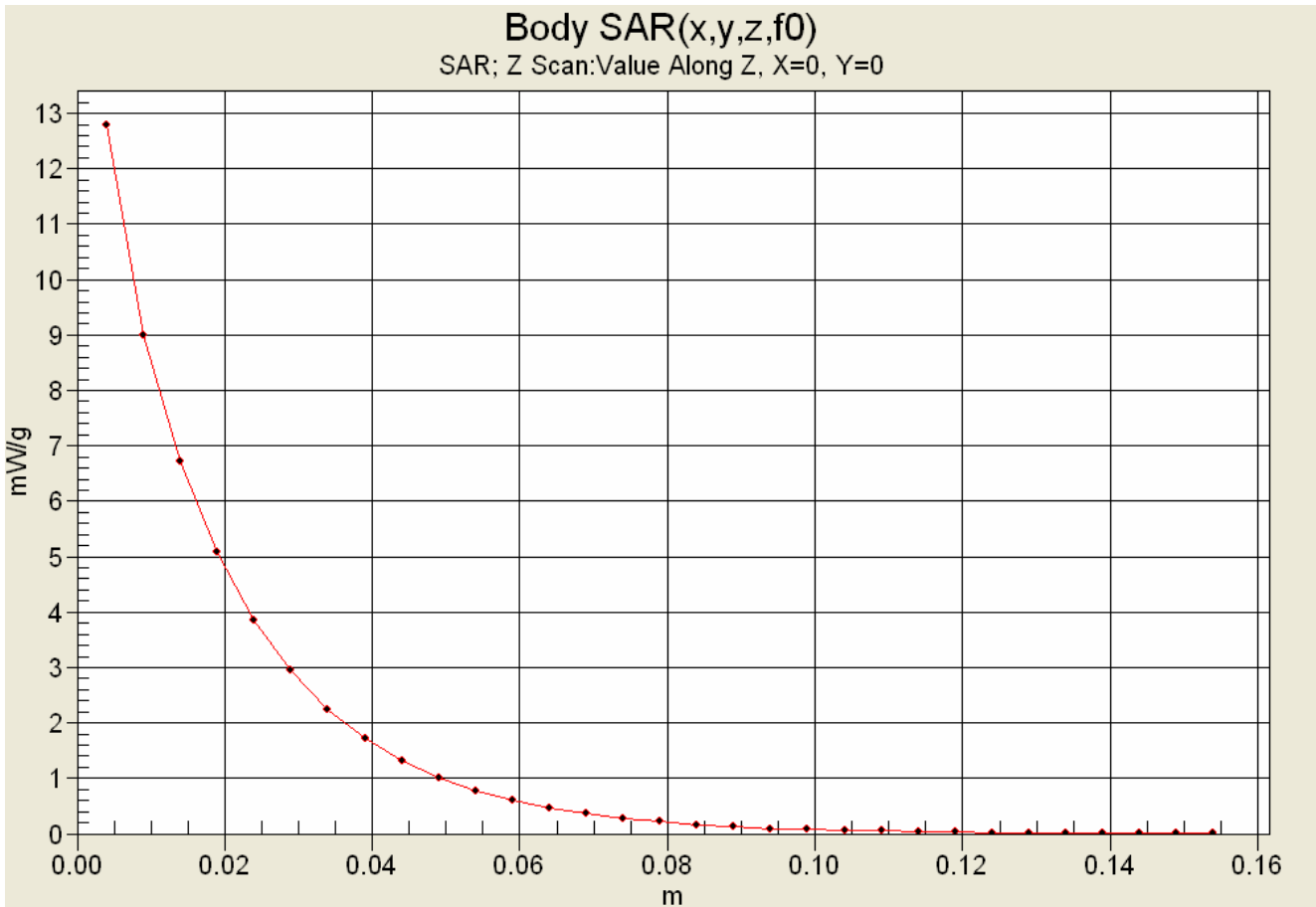
**SAR(1 g) = 12.7 mW/g; SAR(10 g) 9.09 mW/g**



Maximum value of SAR (measured) = 13.2 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #34 (B34)

Date Tested: 08/06/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Whip Antenna KRA-27M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.97 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.1 mW/g

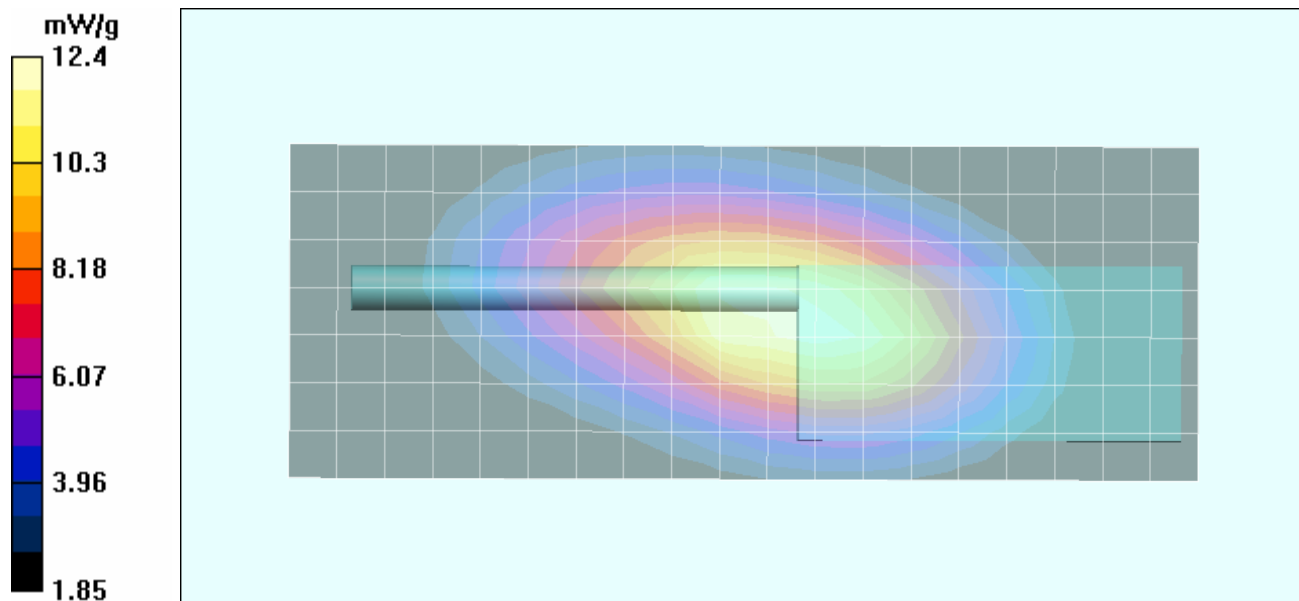
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.1 V/m; Power Drift = -0.316 dB



Peak SAR (extrapolated) = 17.2 W/kg

**SAR(1 g) = 11.5 mW/g; SAR(10 g) 8.42 mW/g**

Maximum value of SAR (measured) = 12.4 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #35 (B35)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M2 - 470.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.2 mW/g

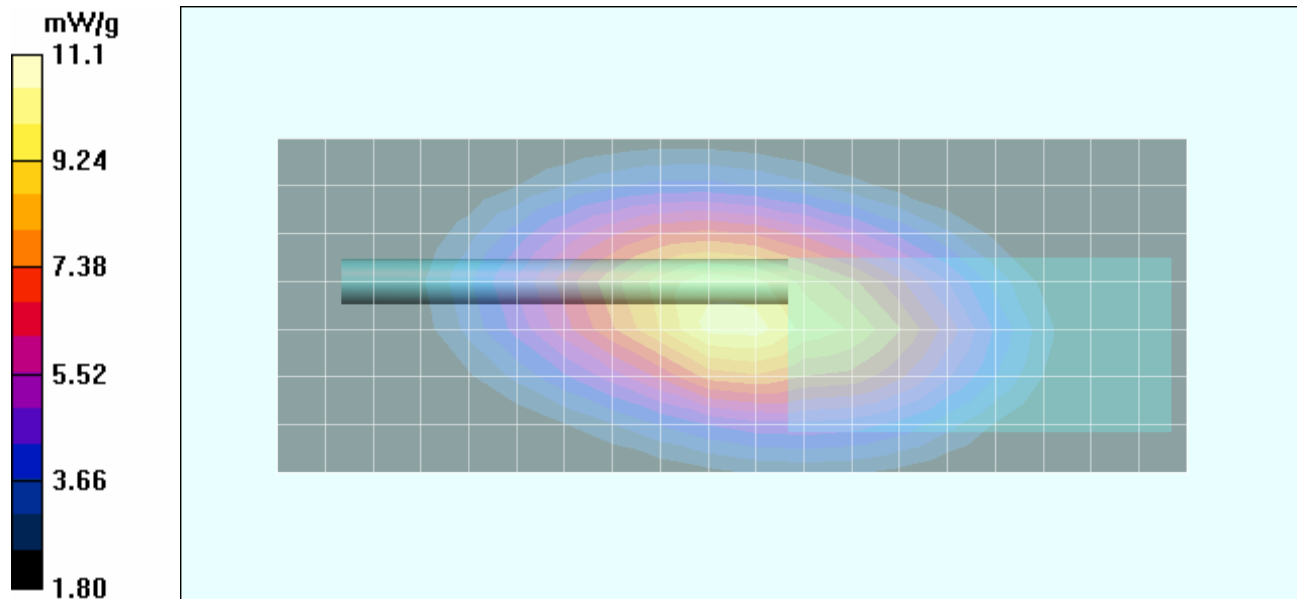
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 107.2 V/m; Power Drift = -0.337 dB



Peak SAR (extrapolated) = 15.3 W/kg

**SAR(1 g) = 10.5 mW/g; SAR(10 g) 7.6 mW/g**

Maximum value of SAR (measured) = 11.1 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #36 (B36)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M2 - 484.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484$  MHz;  $\sigma = 0.934$  mho/m;  $\epsilon_r = 56.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.86 mW/g

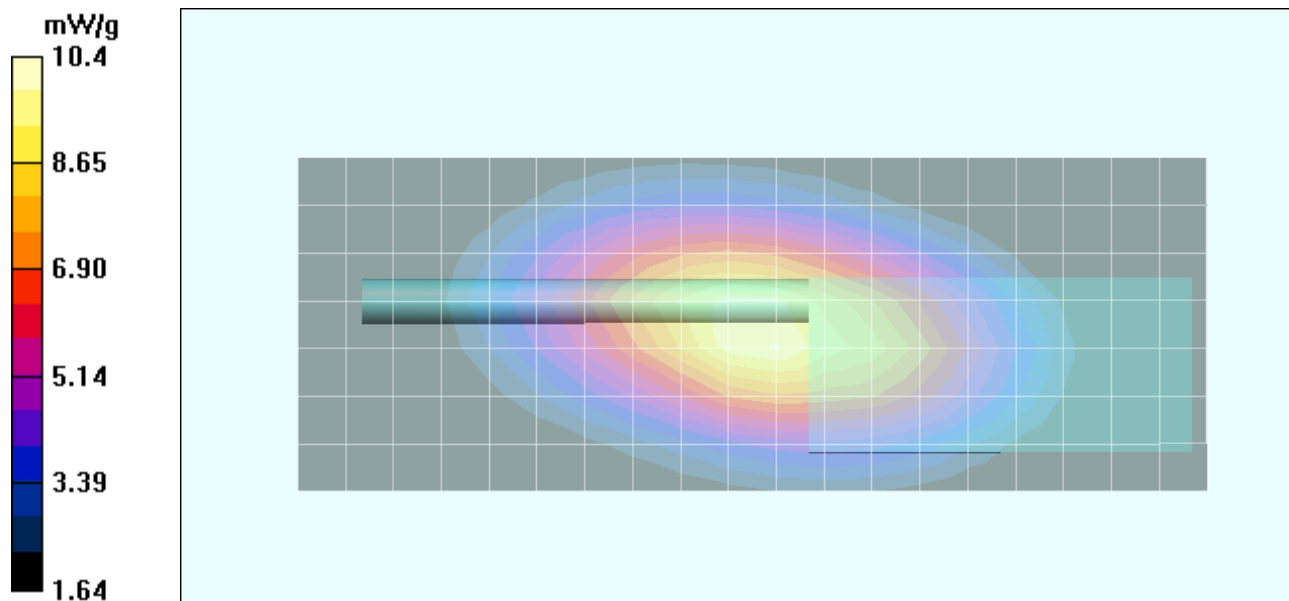
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 105.8 V/m; Power Drift = -0.811 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.86 mW/g; SAR(10 g) 7.07 mW/g**

Maximum value of SAR (measured) = 10.4 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Body SAR Plot #37 (B37)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M2 - 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.948 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.0 mW/g

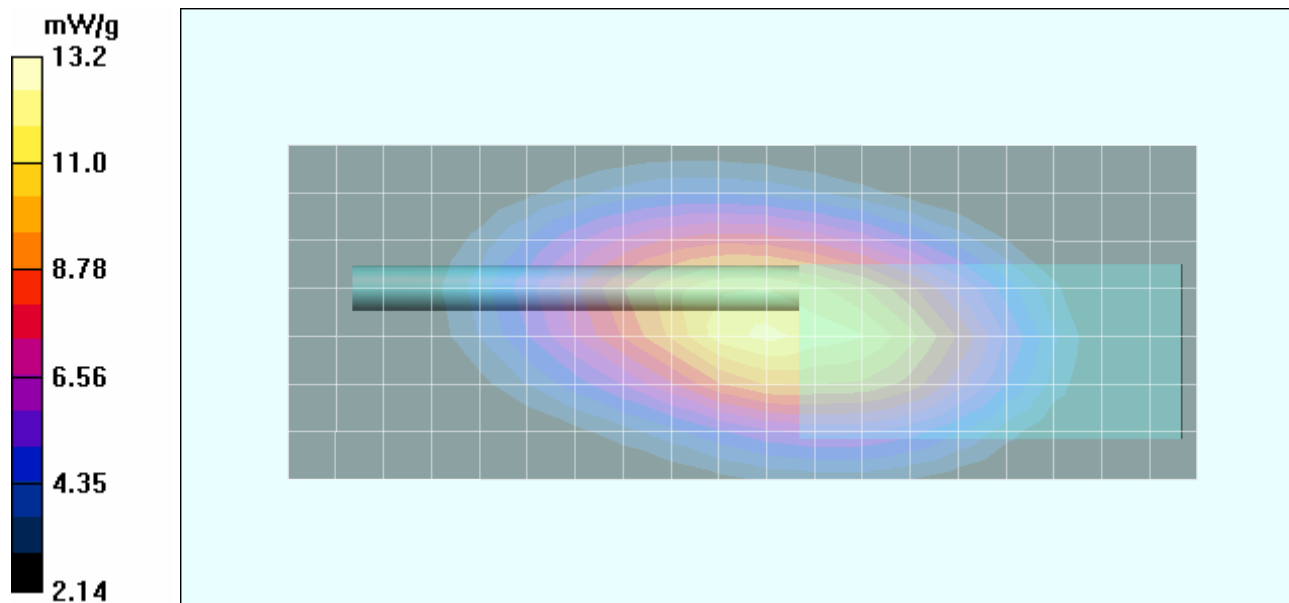
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.7 V/m; Power Drift = -0.556 dB

Peak SAR (extrapolated) = 18.4 W/kg

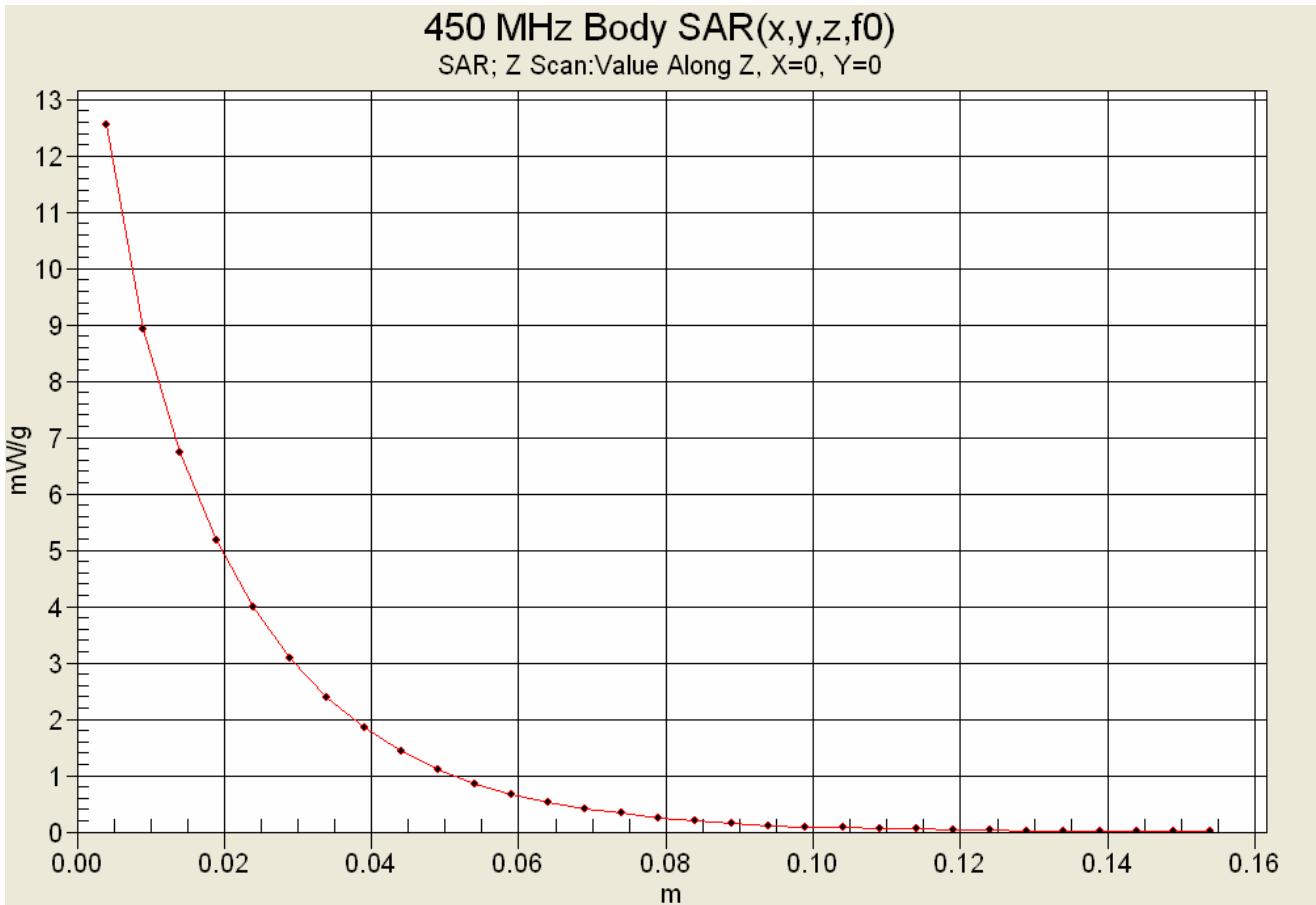
**SAR(1 g) = 12.7 mW/g; SAR(10 g) 9.13 mW/g**



Maximum value of SAR (measured) = 13.2 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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## Body SAR Plot #38 (B38)

Date Tested: 08/10/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Whip Antenna KRA-27M2 - 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: None**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.962 \text{ mho/m}$ ;  $\epsilon_r = 55.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 11.9 mW/g

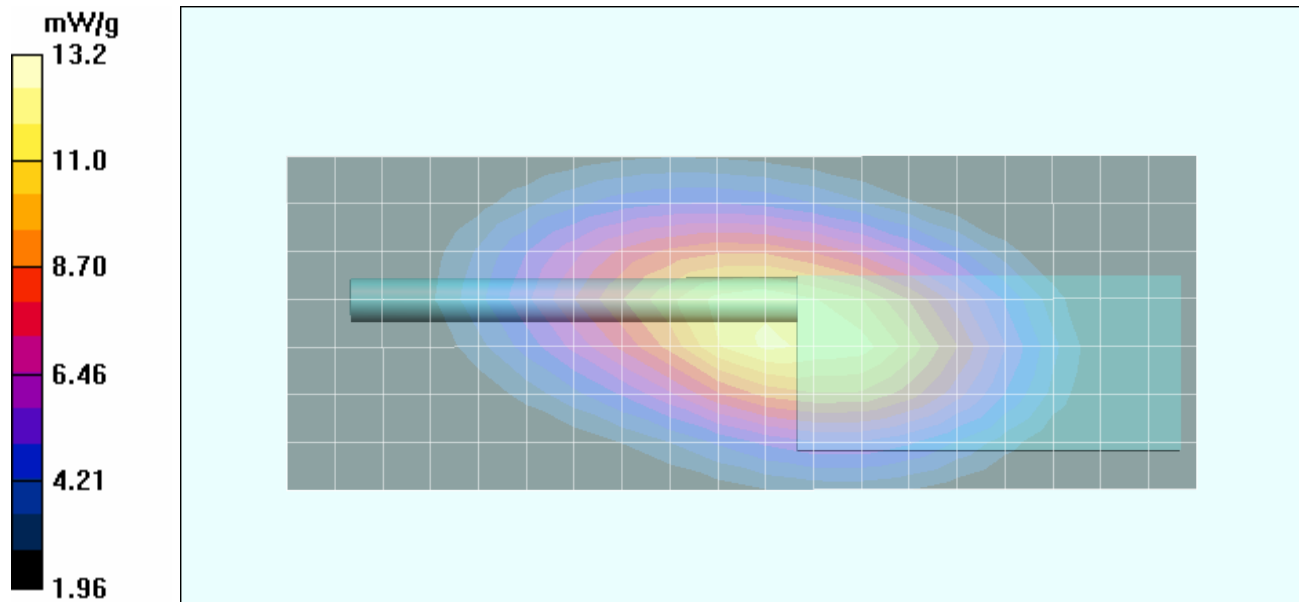
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.4 V/m; Power Drift = -0.633 dB

Peak SAR (extrapolated) = 18.5 W/kg



**SAR(1 g) = 12.6 mW/g; SAR(10 g) 9.13 mW/g**

Maximum value of SAR (measured) = 13.2 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Audio Accessory SAR Plot #1 (A1)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Headset P/N: KHS-10-OH

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.2 mW/g

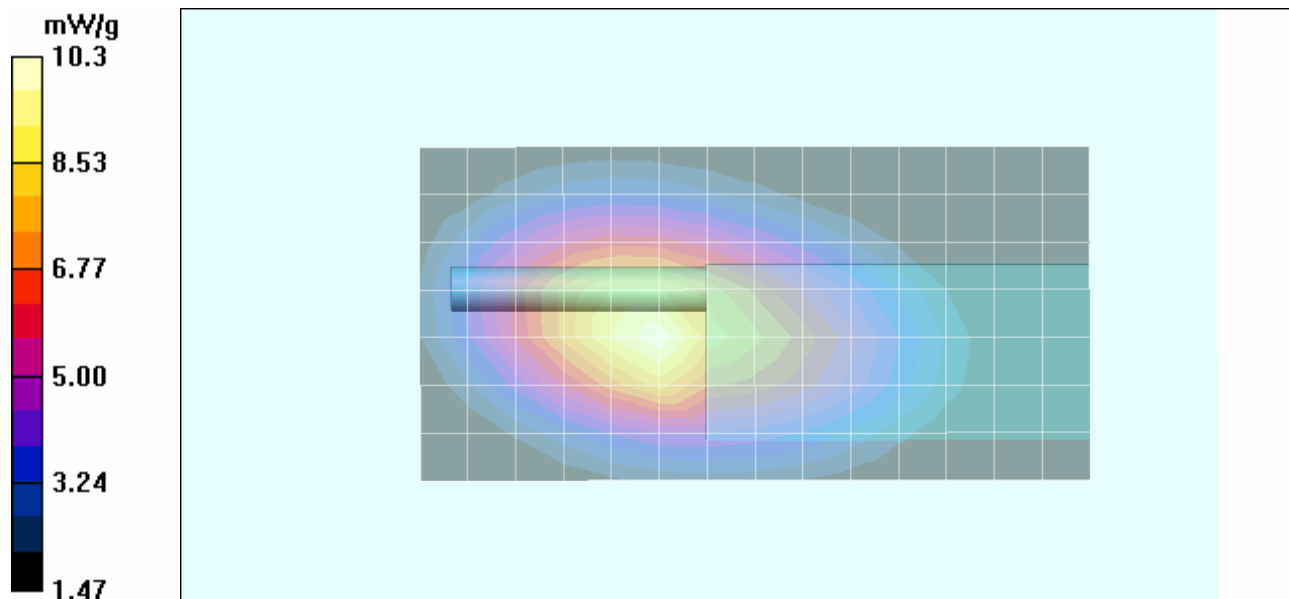
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 102.6 V/m; Power Drift = 0.150 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.74 mW/g; SAR(10 g) 6.92 mW/g**

Maximum value of SAR (measured) = 10.3 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory Plot #2 (A2)

Date Tested: 08/11/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Headset P/N: KHS-10-OH**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 11.9 mW/g

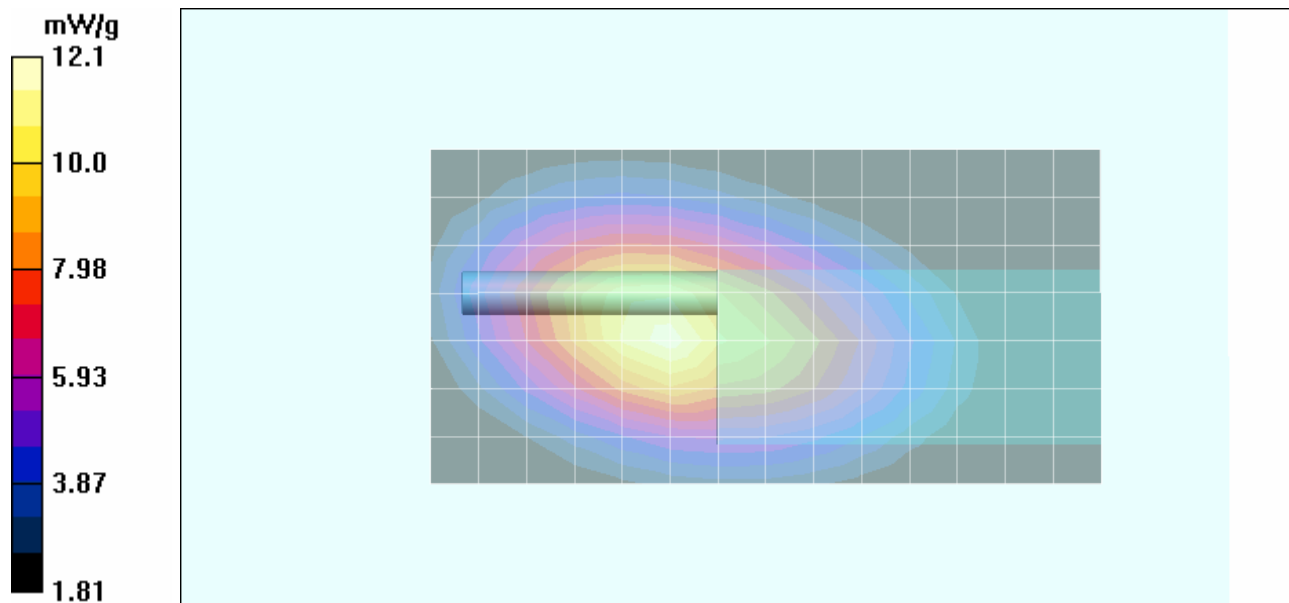
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.1 V/m; Power Drift = -0.807 dB



Peak SAR (extrapolated) = 17.0 W/kg

**SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.16 mW/g**

Maximum value of SAR (measured) = 12.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #3 (A3)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Headset P/N: KHS-10-OH**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.937 \text{ mho/m}$ ;  $\epsilon_r = 54$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.23 mW/g

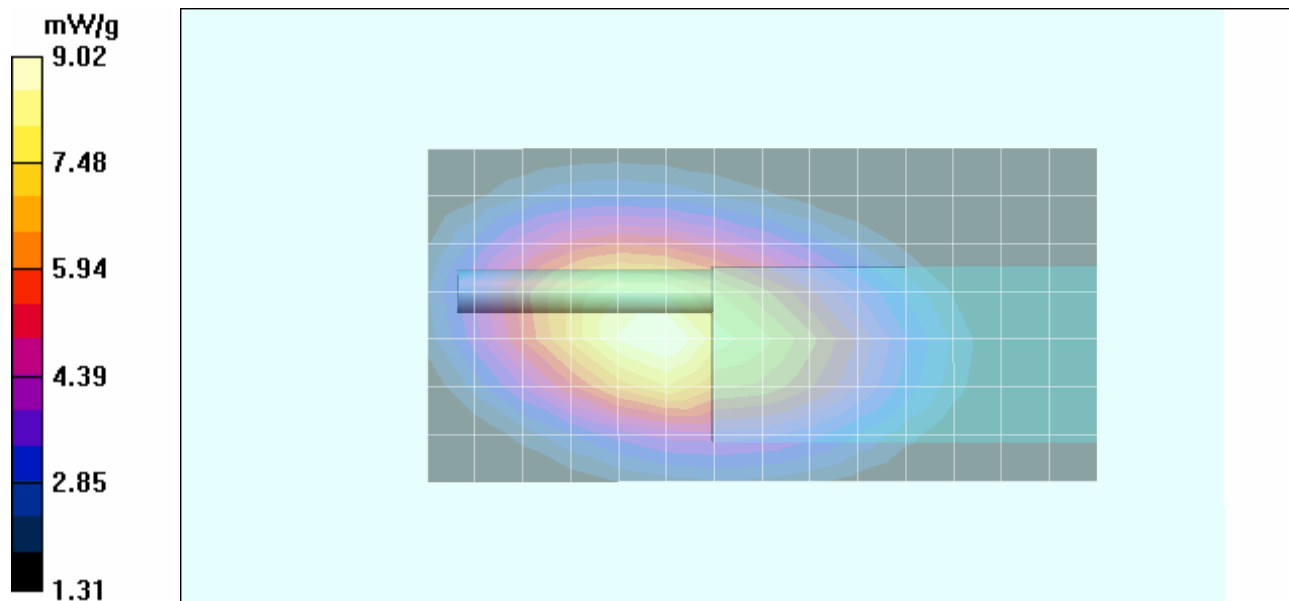
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 99.9 V/m; Power Drift = -0.639 dB



Peak SAR (extrapolated) = 12.6 W/kg

**SAR(1 g) = 8.55 mW/g; SAR(10 g) 6.08 mW/g**

Maximum value of SAR (measured) = 9.02 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #4 (A4)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.4 mW/g

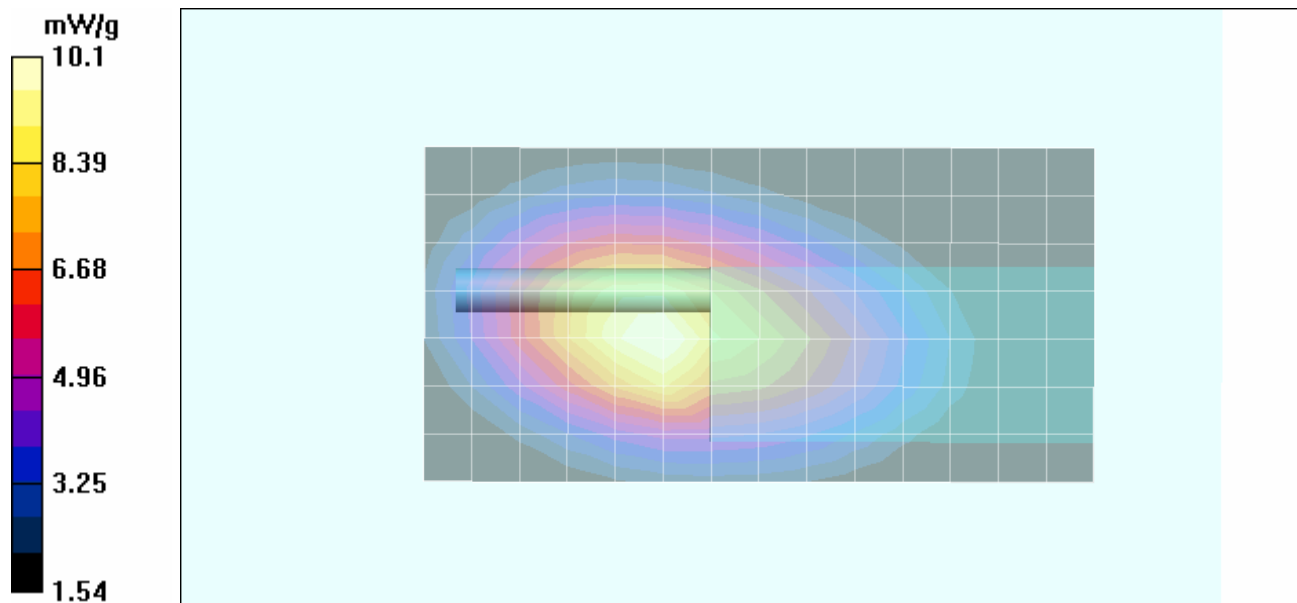
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.0 V/m; Power Drift = 0.273 dB



Peak SAR (extrapolated) = 14.3 W/kg

**SAR(1 g) = 9.72 mW/g; SAR(10 g) 6.96 mW/g**

Maximum value of SAR (measured) = 10.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #5 (A5)

Date Tested: 08/11/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 12.2 mW/g

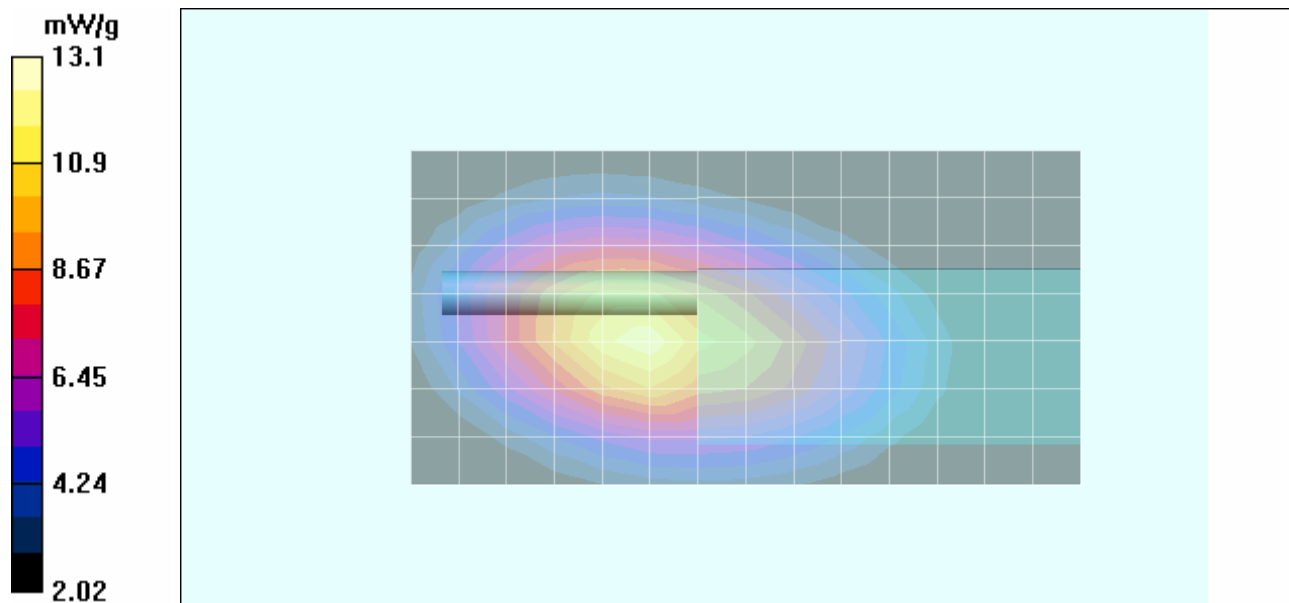
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 125.9 V/m; Power Drift = -0.859 dB

Peak SAR (extrapolated) = 18.5 W/kg

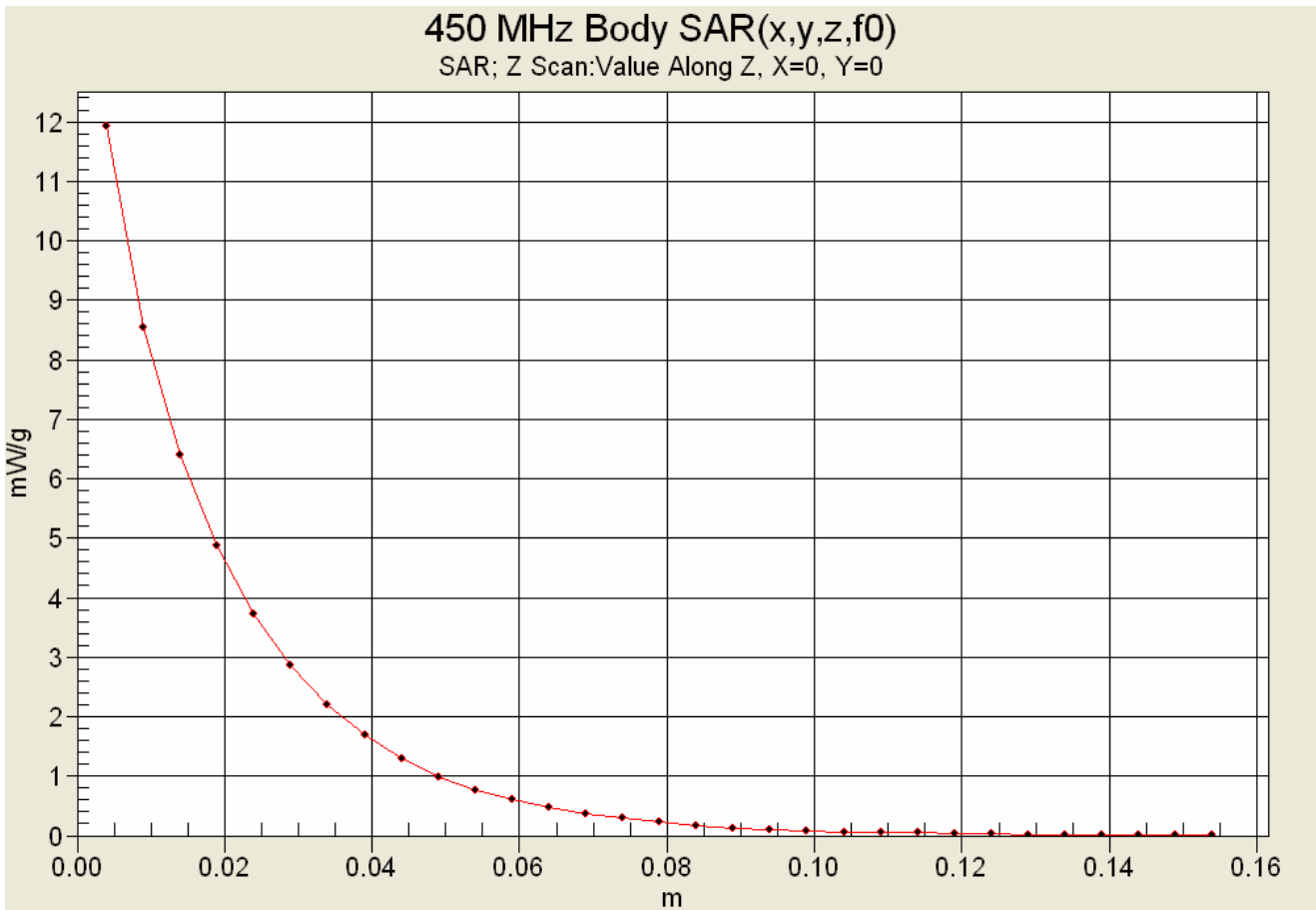
**SAR(1 g) = 12.5 mW/g; SAR(10 g) 8.95 mW/g**



Maximum value of SAR (measured) = 13.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #6 (A6)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.937 \text{ mho/m}$ ;  $\epsilon_r = 54$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.33 mW/g

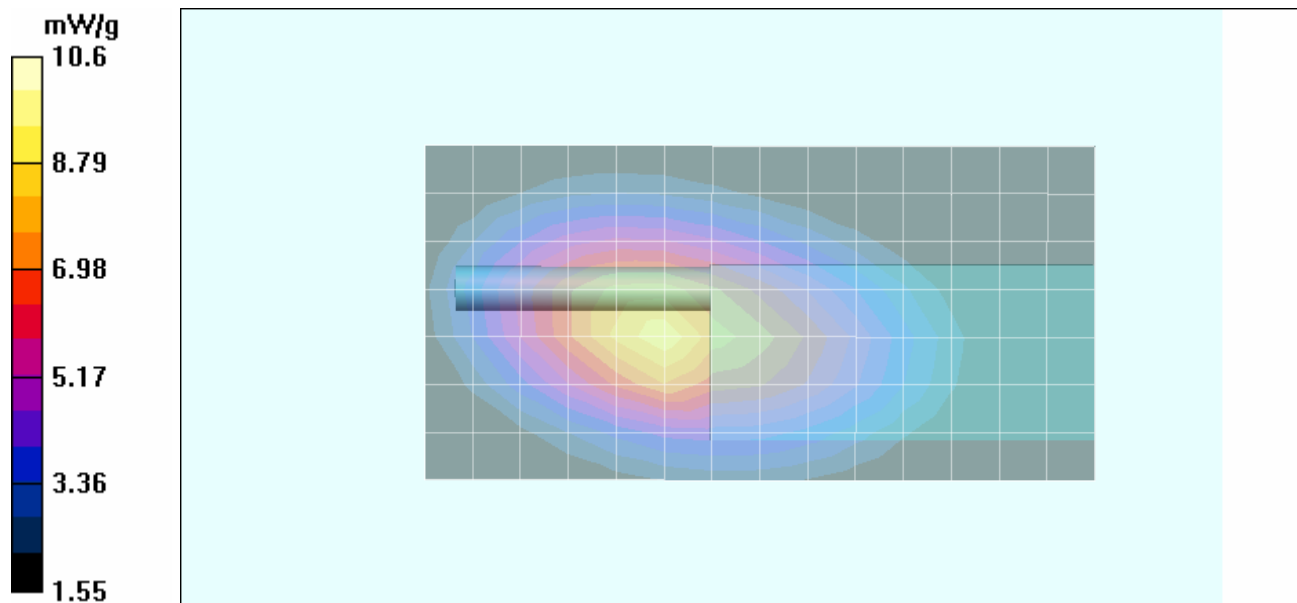
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.5 V/m; Power Drift = -0.817 dB



Peak SAR (extrapolated) = 15.0 W/kg

**SAR(1 g) = 10 mW/g; SAR(10 g) 7.13 mW/g**

Maximum value of SAR (measured) = 10.6 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #7 (A7)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.47 mW/g

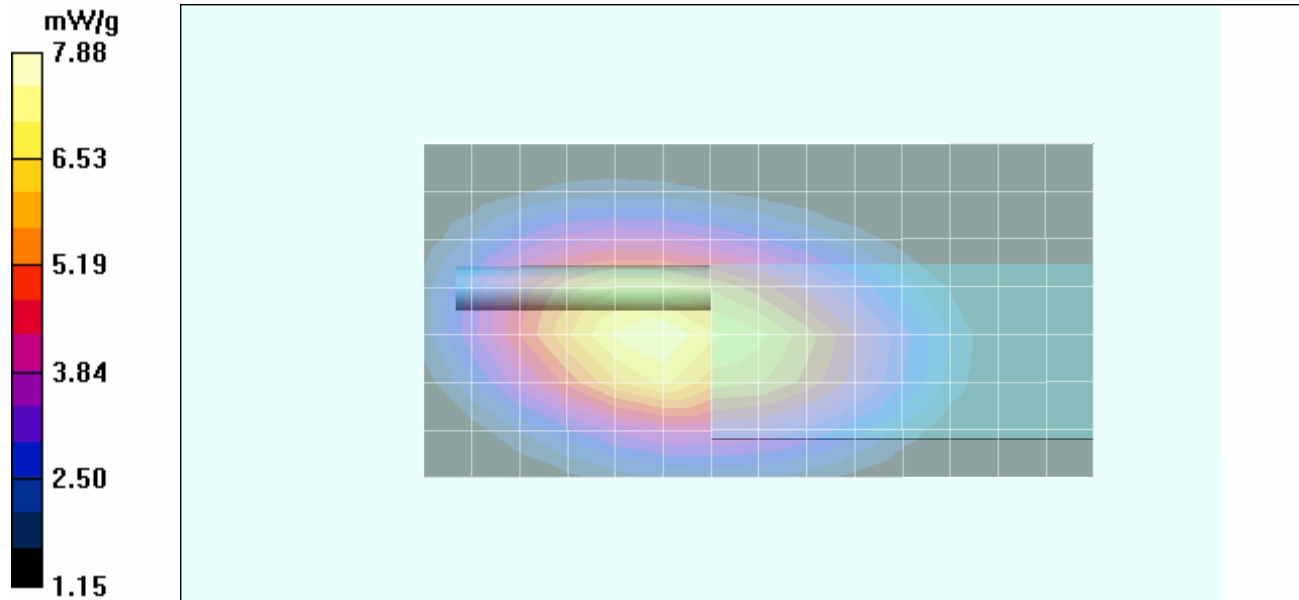
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 94.4 V/m; Power Drift = -0.540 dB

Peak SAR (extrapolated) = 11.0 W/kg



**SAR(1 g) = 7.47 mW/g; SAR(10 g) 5.32 mW/g**

Maximum value of SAR (measured) = 7.88 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #8 (A8)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-25

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.41 mW/g

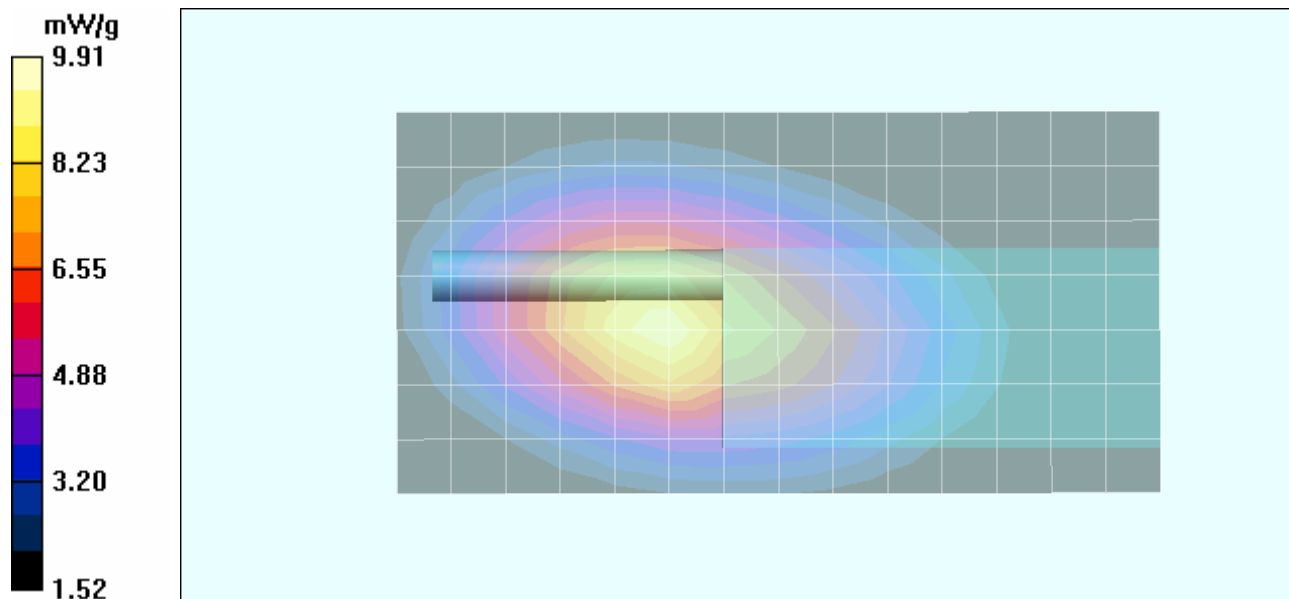
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 102.7 V/m; Power Drift = -0.454 dB



Peak SAR (extrapolated) = 13.9 W/kg

**SAR(1 g) = 9.45 mW/g; SAR(10 g) 6.76 mW/g**

Maximum value of SAR (measured) = 9.91 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #9 (A9)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-25**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.3 mW/g

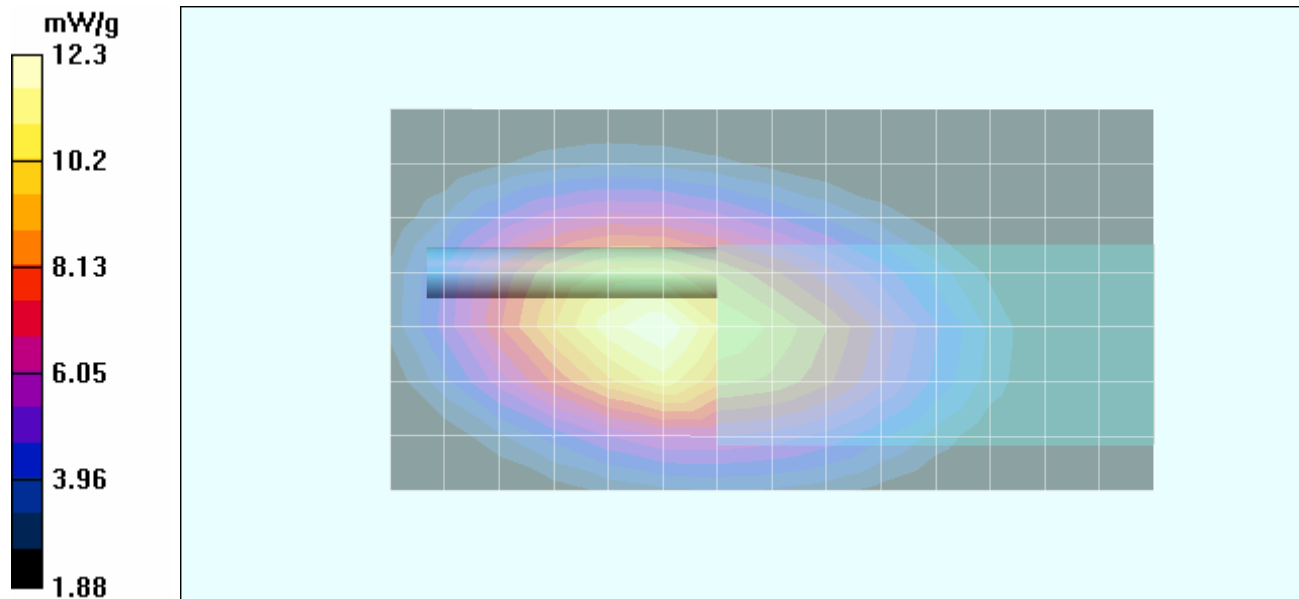
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 123.7 V/m; Power Drift = -0.910 dB

Peak SAR (extrapolated) = 17.4 W/kg

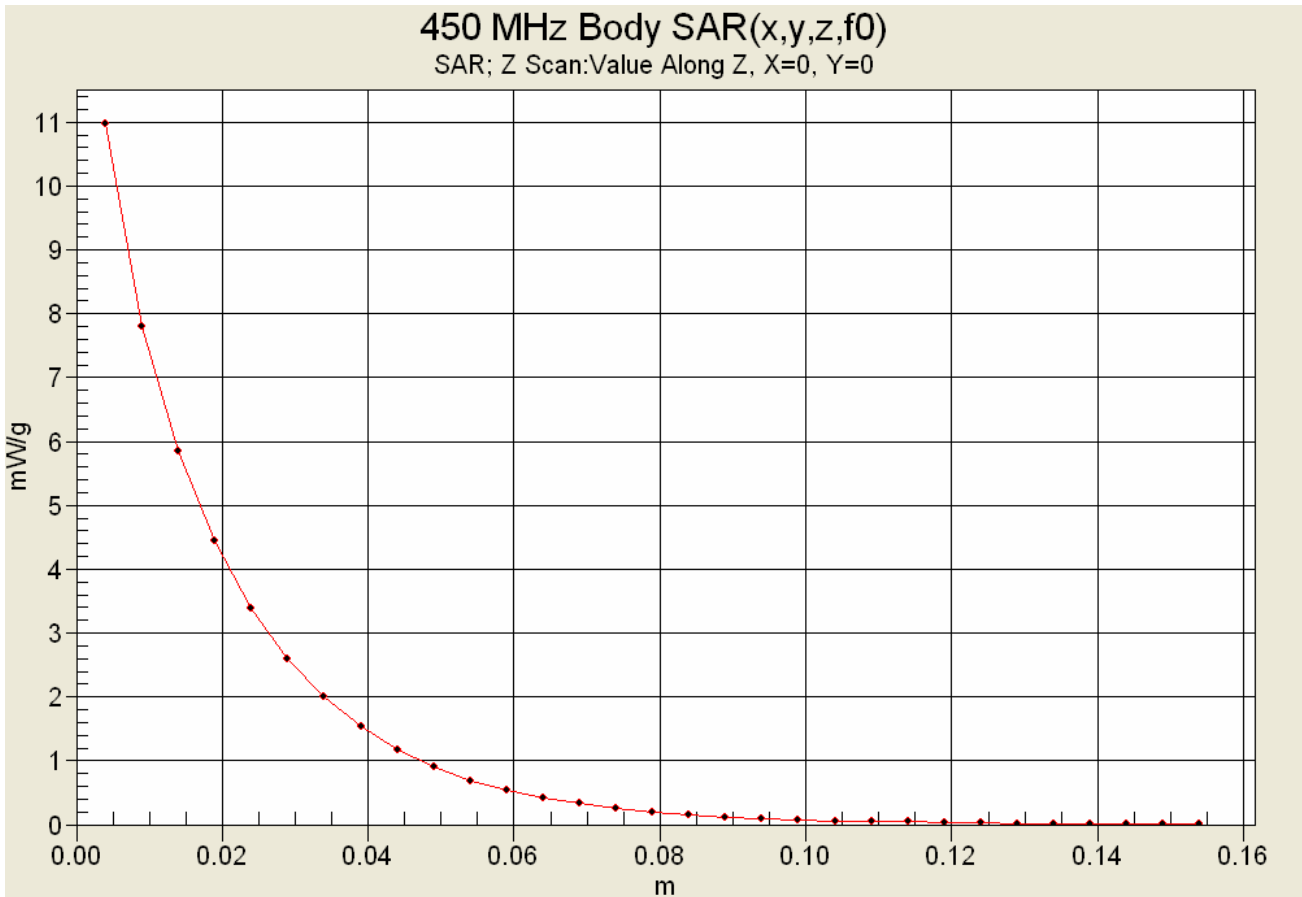
**SAR(1 g) = 11.6 mW/g; SAR(10 g) 8.23 mW/g**



Maximum value of SAR (measured) = 12.3 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #10 (A10)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-25**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7$  MHz;  $\sigma = 0.933$  mho/m;  $\epsilon_r = 55.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.44 mW/g

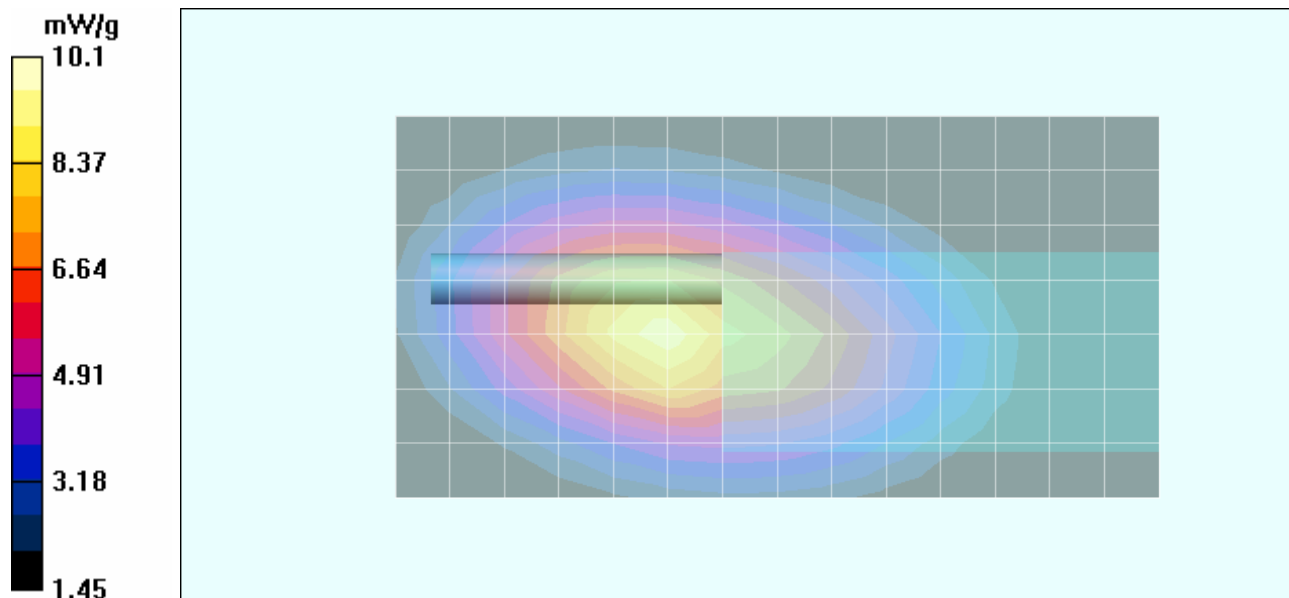
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 111.1 V/m; Power Drift = -0.922 dB



Peak SAR (extrapolated) = 14.2 W/kg

**SAR(1 g) = 9.55 mW/g; SAR(10 g) 6.79 mW/g**

Maximum value of SAR (measured) = 10.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #11 (A11)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-25

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.00 mW/g

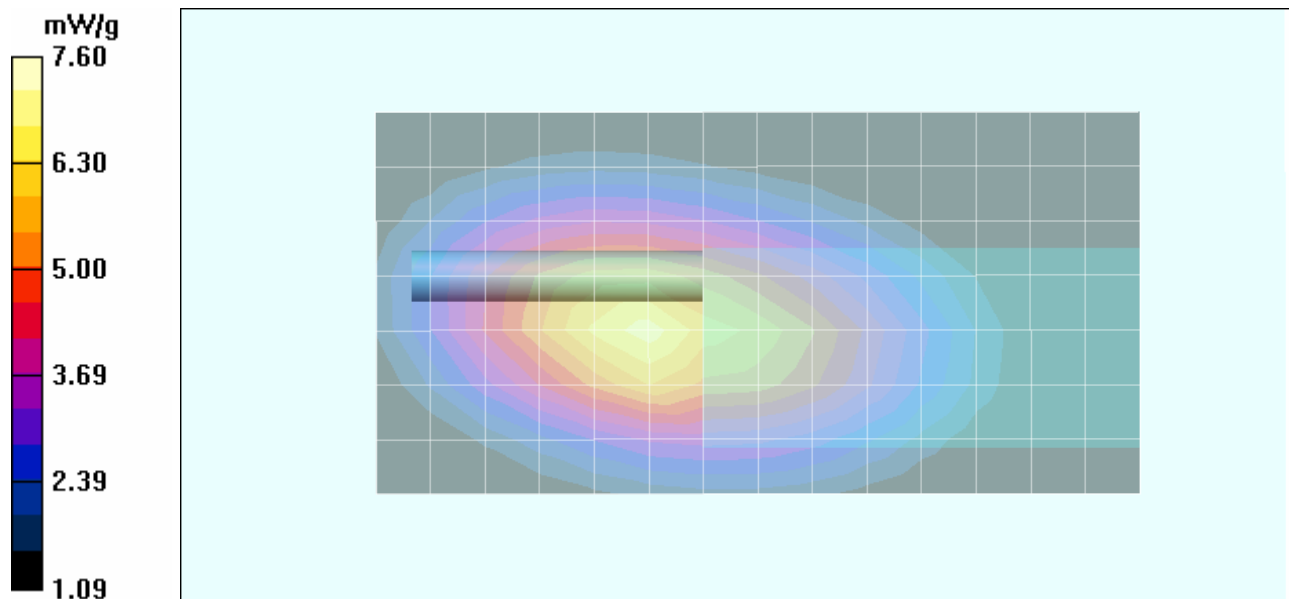
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 93.7 V/m; Power Drift = -0.667 dB



Peak SAR (extrapolated) = 10.7 W/kg

**SAR(1 g) = 7.21 mW/g; SAR(10 g) 5.13 mW/g**

Maximum value of SAR (measured) = 7.60 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #12 (A12)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-26

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.00 mW/g

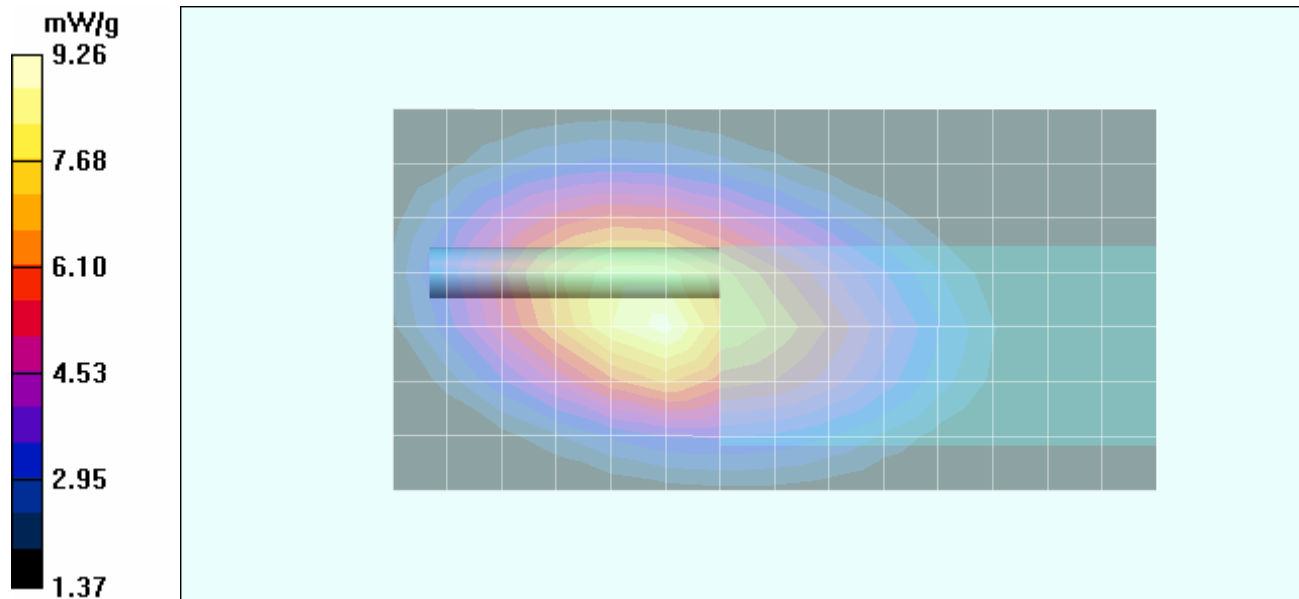
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 99.0 V/m; Power Drift = 0.456 dB



Peak SAR (extrapolated) = 13.1 W/kg

**SAR(1 g) = 8.88 mW/g; SAR(10 g) 6.33 mW/g**

Maximum value of SAR (measured) = 9.26 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #13 (A13)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-26**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 11.6 mW/g

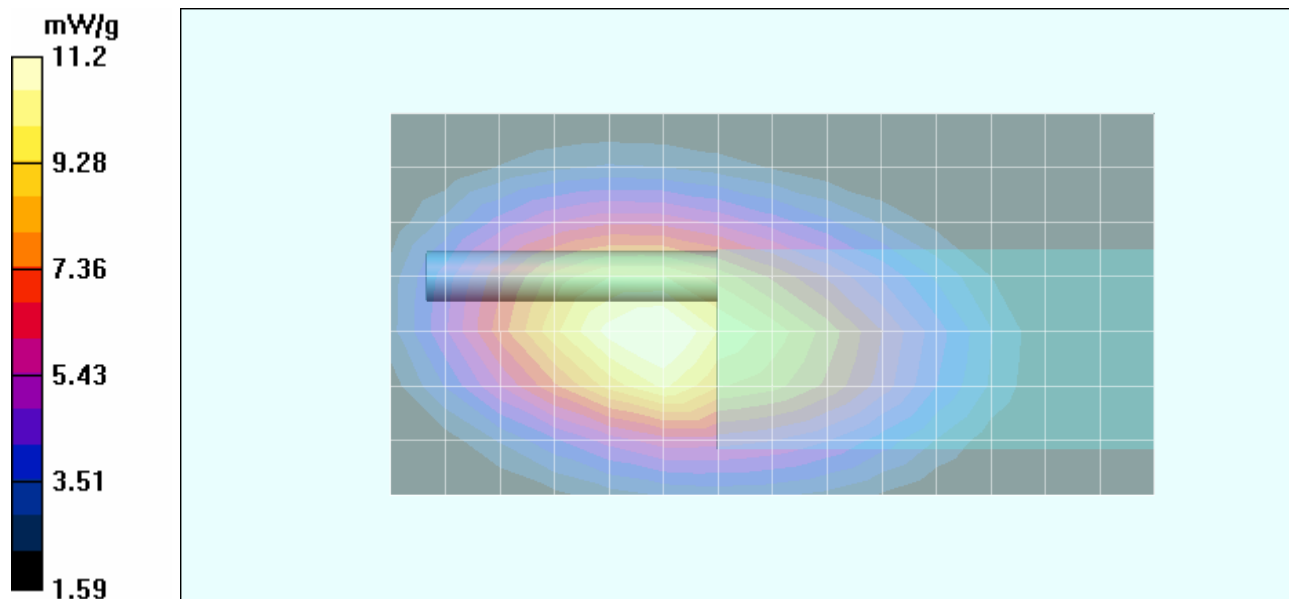
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 115.0 V/m; Power Drift = -0.702 dB



Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 10.6 mW/g; SAR(10 g) 7.52 mW/g**

Maximum value of SAR (measured) = 11.2 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #14 (A14)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-26**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.933 \text{ mho/m}$ ;  $\epsilon_r = 55.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.87 mW/g

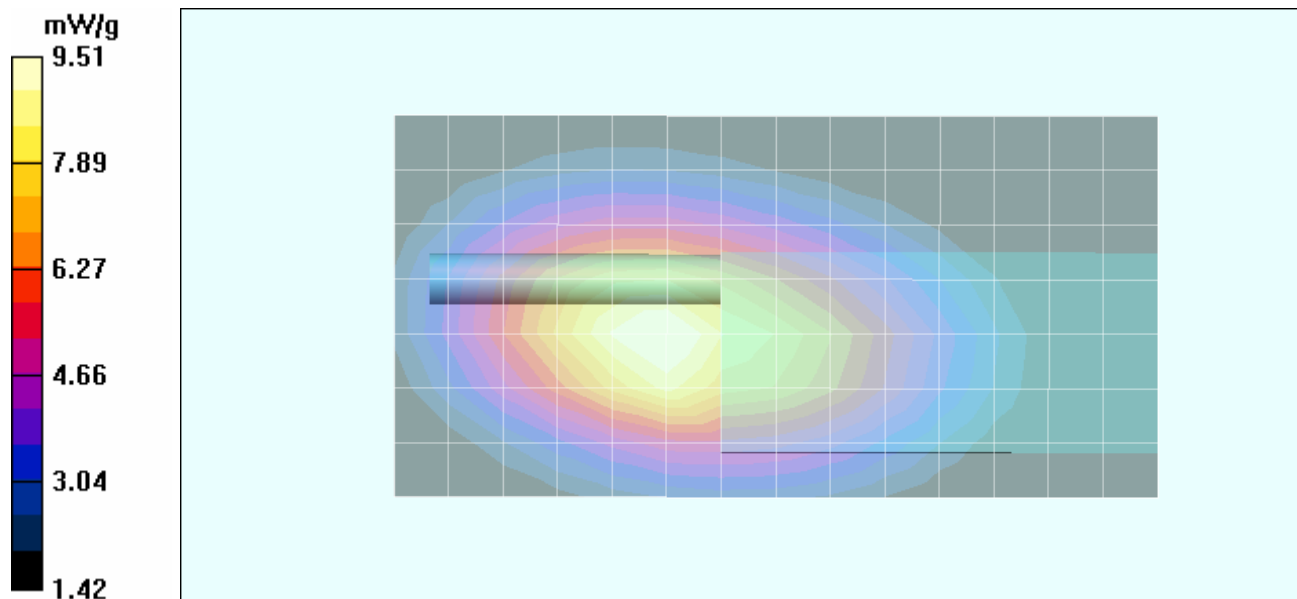
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 105.0 V/m; Power Drift = -0.494 dB

Peak SAR (extrapolated) = 13.4 W/kg



**SAR(1 g) = 9.06 mW/g; SAR(10 g) 6.45 mW/g**

Maximum value of SAR (measured) = 9.51 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #15 (A15)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-26**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.49 mW/g

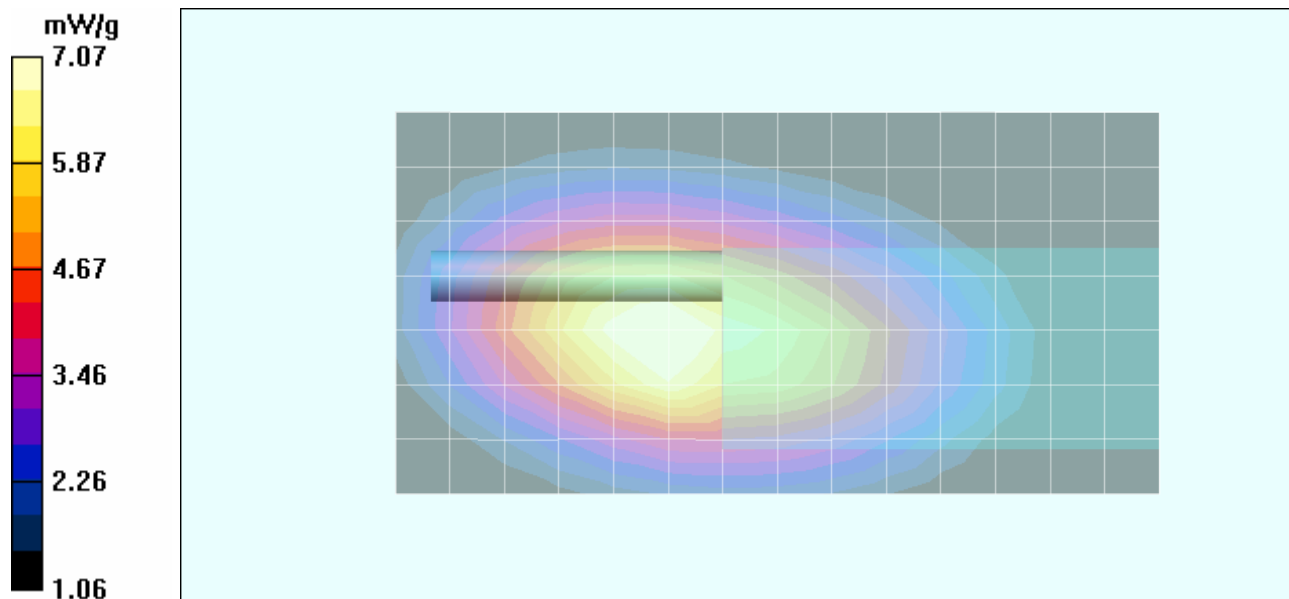
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 91.1 V/m; Power Drift = -0.548 dB



Peak SAR (extrapolated) = 9.90 W/kg

**SAR(1 g) = 6.79 mW/g; SAR(10 g) 4.88 mW/g**

Maximum value of SAR (measured) = 7.07 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #16 (A16)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-27**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.9 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.41 mW/g

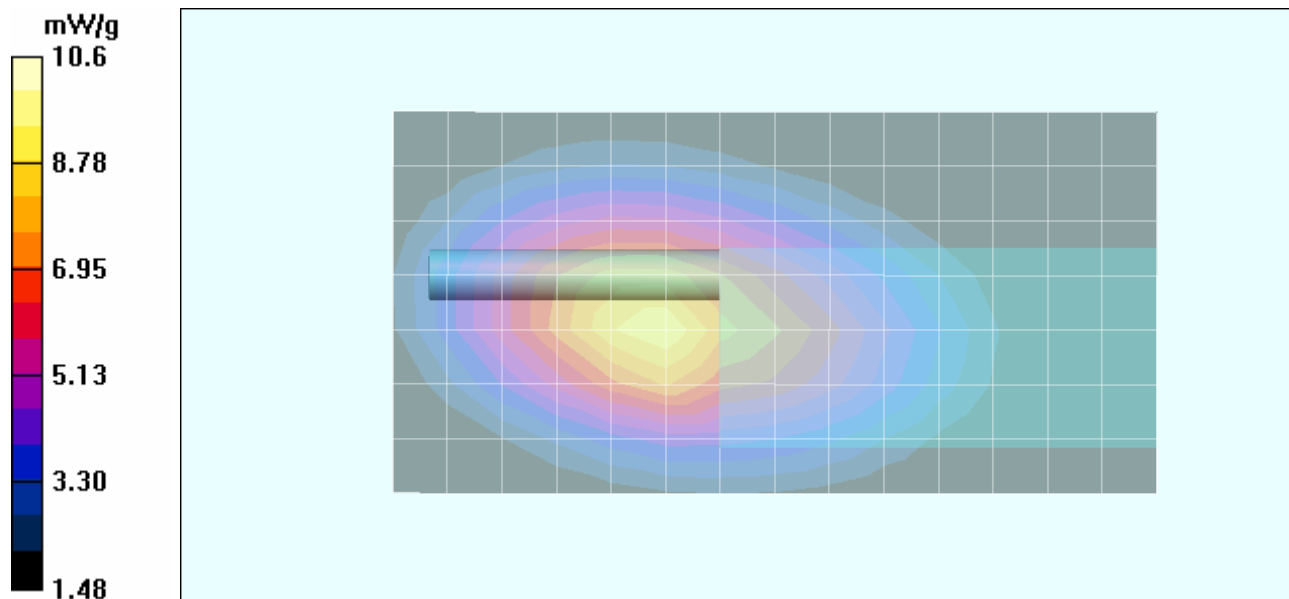
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 106.2 V/m; Power Drift = 0.034 dB



Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) 7.16 mW/g**

Maximum value of SAR (measured) = 10.6 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #17 (A17)

Date Tested: 08/31/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-27

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 55.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 11.9 mW/g

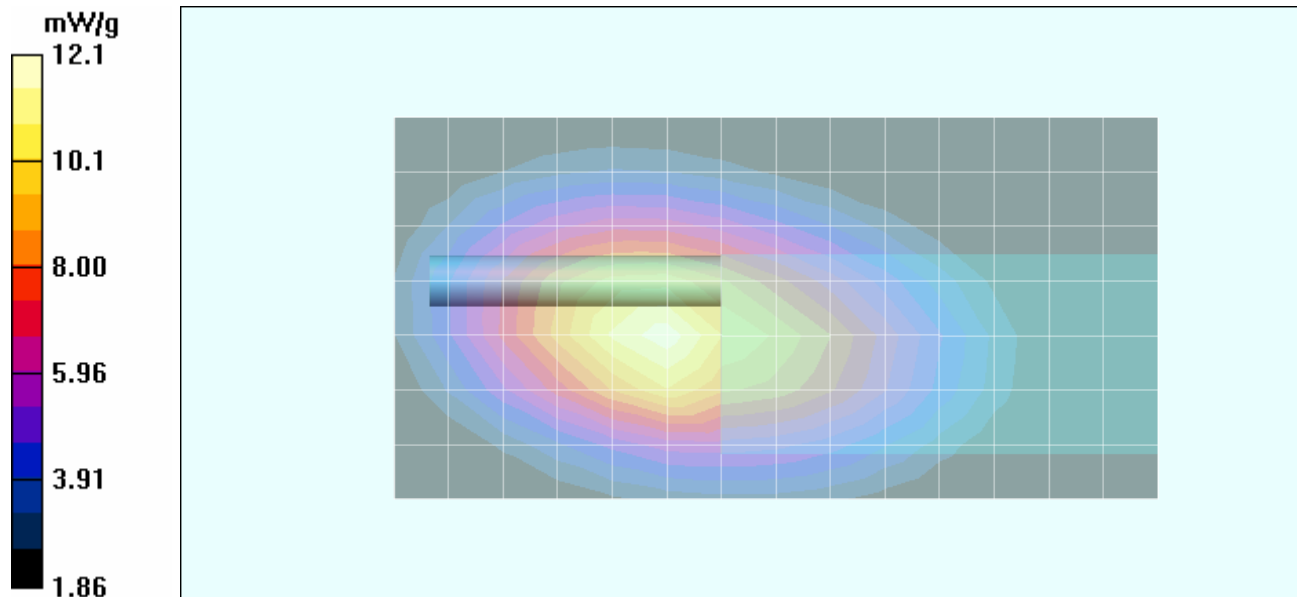
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.6 V/m; Power Drift = -0.728 dB



Peak SAR (extrapolated) = 17.2 W/kg

**SAR(1 g) = 11.5 mW/g; SAR(10 g) 8.2 mW/g**

Maximum value of SAR (measured) = 12.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Audio Accessory SAR Plot #18 (A18)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-27

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7$  MHz;  $\sigma = 0.927$  mho/m;  $\epsilon_r = 56.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 9.54 mW/g

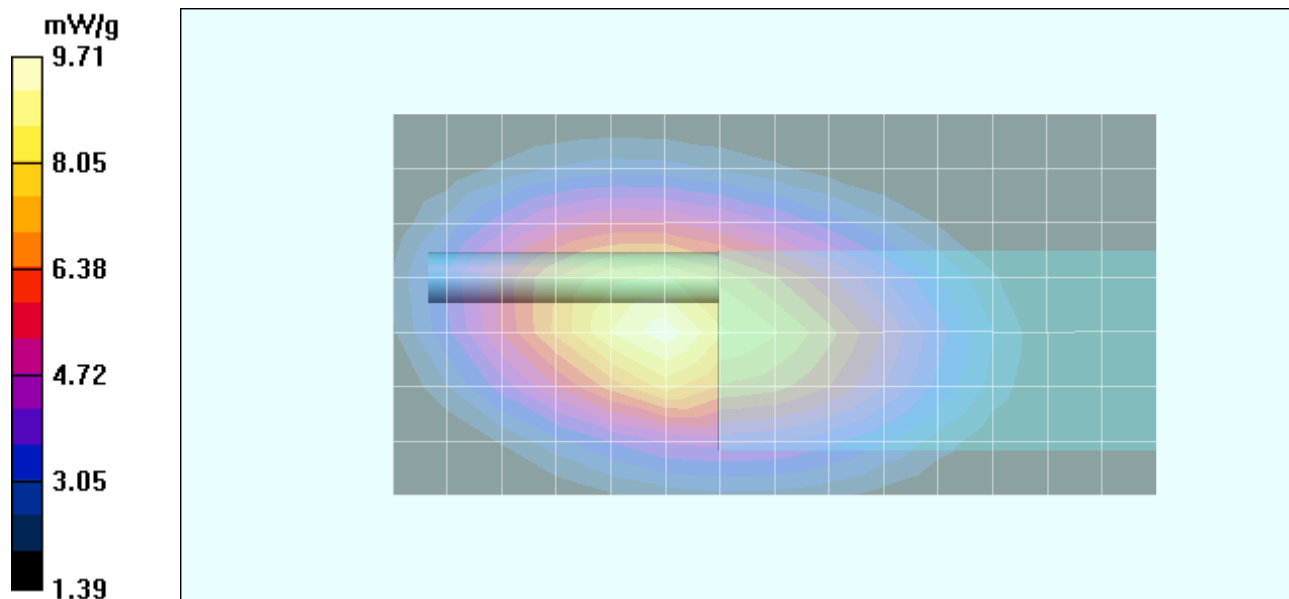
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 107.8 V/m; Power Drift = -0.920 dB



Peak SAR (extrapolated) = 13.8 W/kg

**SAR(1 g) = 9.24 mW/g; SAR(10 g) 6.56 mW/g**

Maximum value of SAR (measured) = 9.71 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #19 (A19)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-27**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 6.84 mW/g

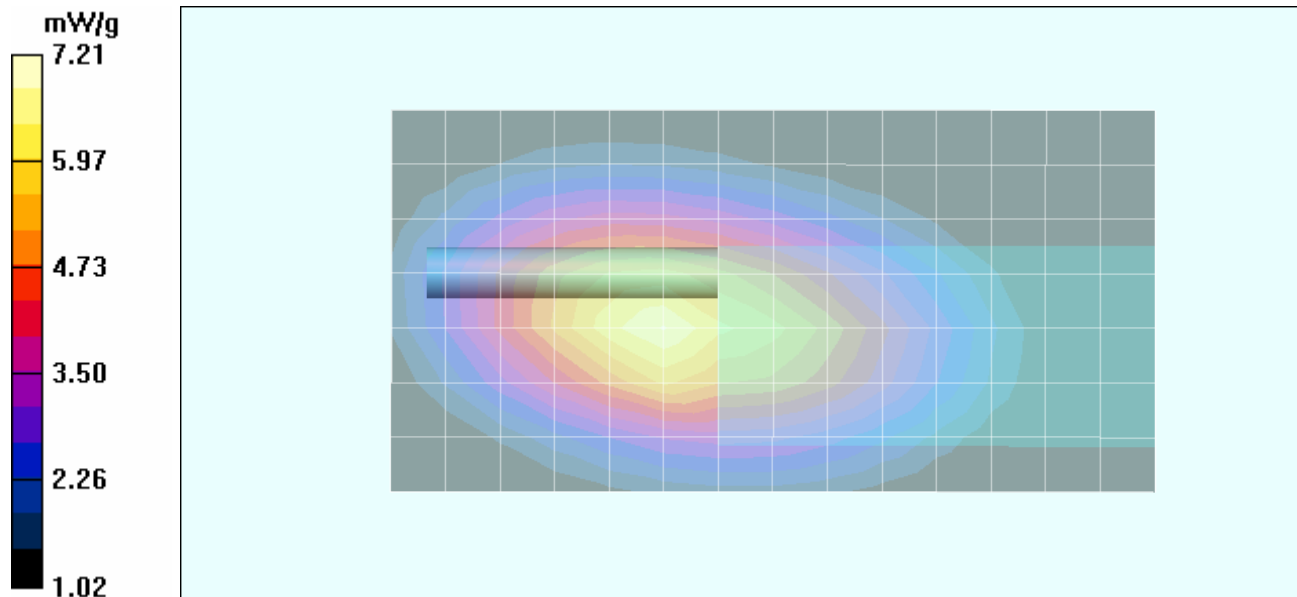
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 89.2 V/m; Power Drift = -0.566 dB



Peak SAR (extrapolated) = 10.1 W/kg

**SAR(1 g) = 6.86 mW/g; SAR(10 g) 4.89 mW/g**

Maximum value of SAR (measured) = 7.21 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #20 (A20)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.1 mW/g

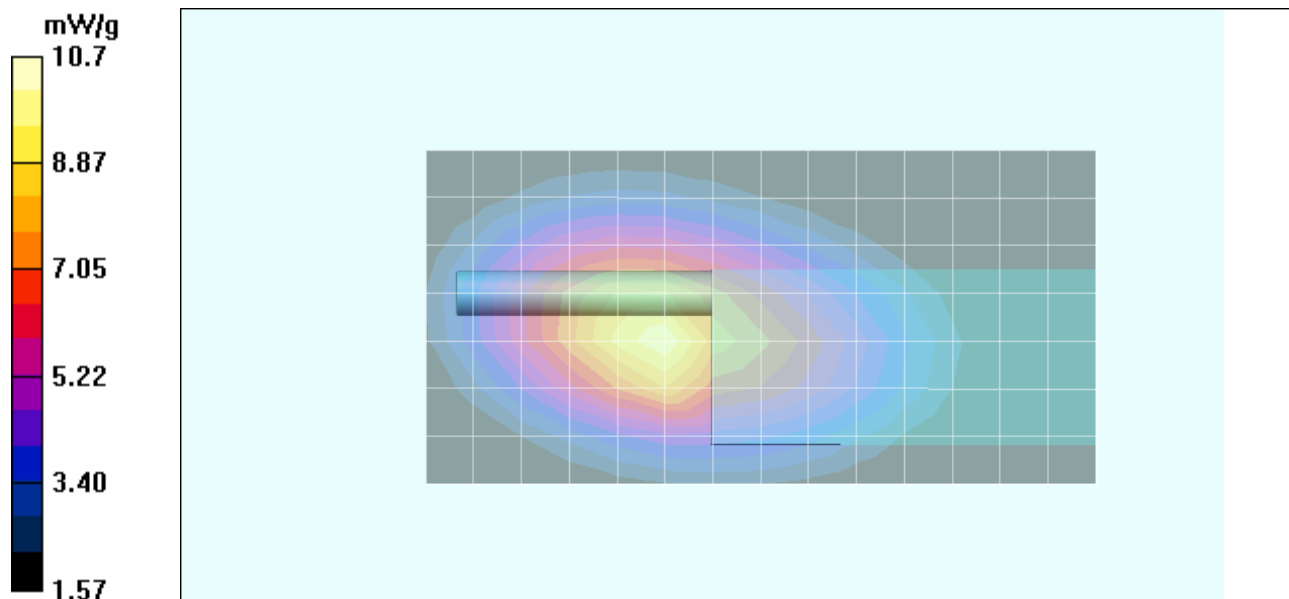
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 105.2 V/m; Power Drift = 0.188 dB

Peak SAR (extrapolated) = 15.1 W/kg

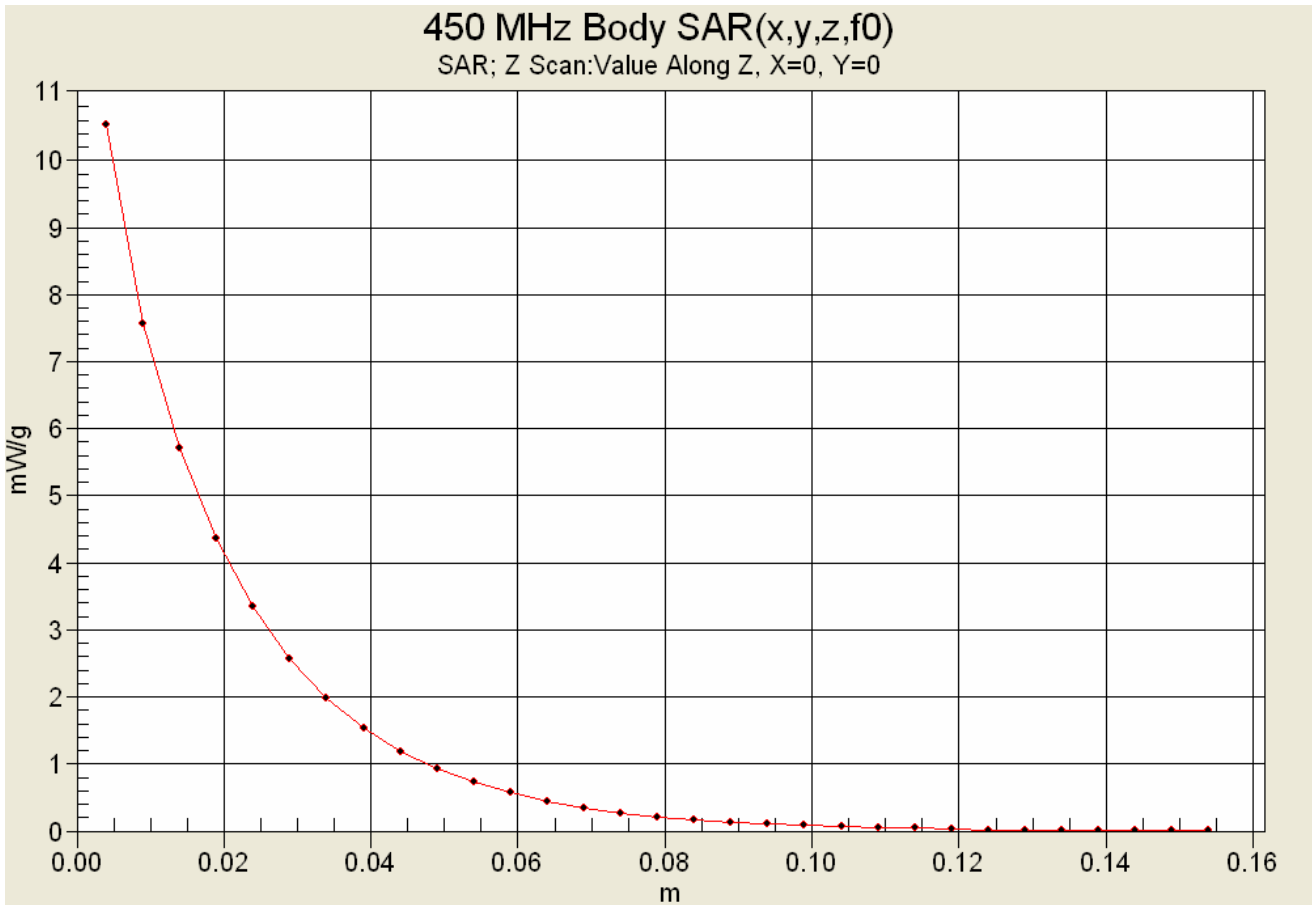
**SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.29 mW/g**



Maximum value of SAR (measured) = 10.7 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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## Audio Accessory SAR Plot #21 (A21)

Date Tested: 08/11/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 13.0 mW/g

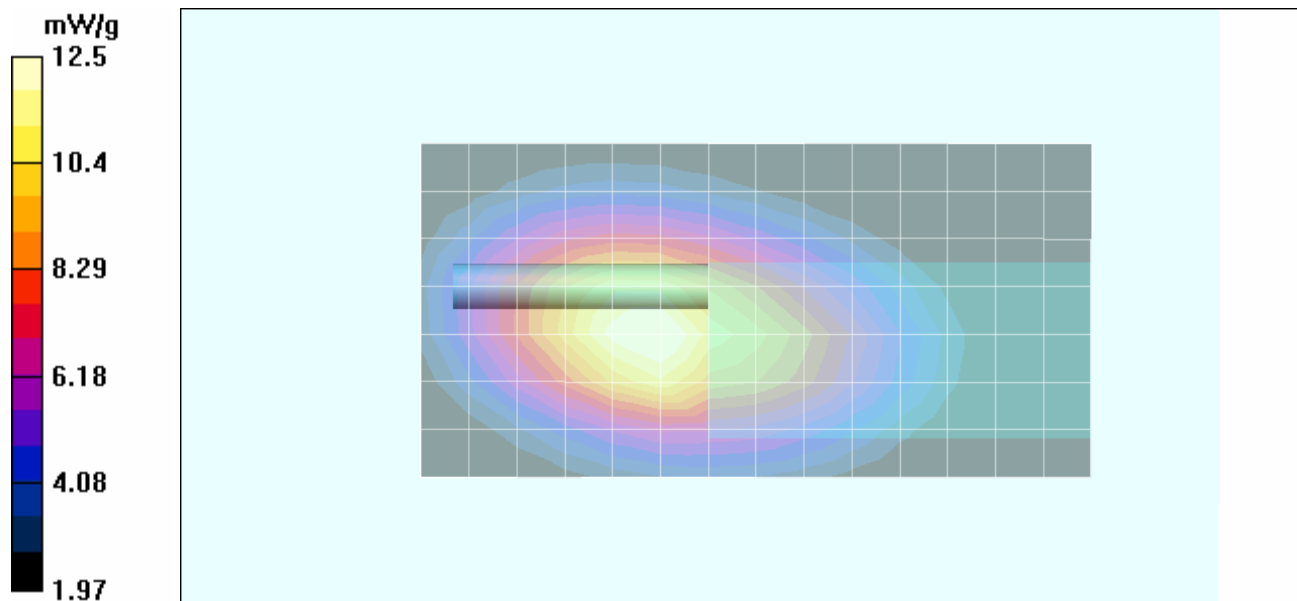
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 121.3 V/m; Power Drift = -0.669 dB

Peak SAR (extrapolated) = 17.7 W/kg



**SAR(1 g) = 12.0 mW/g; SAR(10 g) 8.52 mW/g**

Maximum value of SAR (measured) = 12.5 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #22 (A22)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.937 \text{ mho/m}$ ;  $\epsilon_r = 54$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.3 mW/g

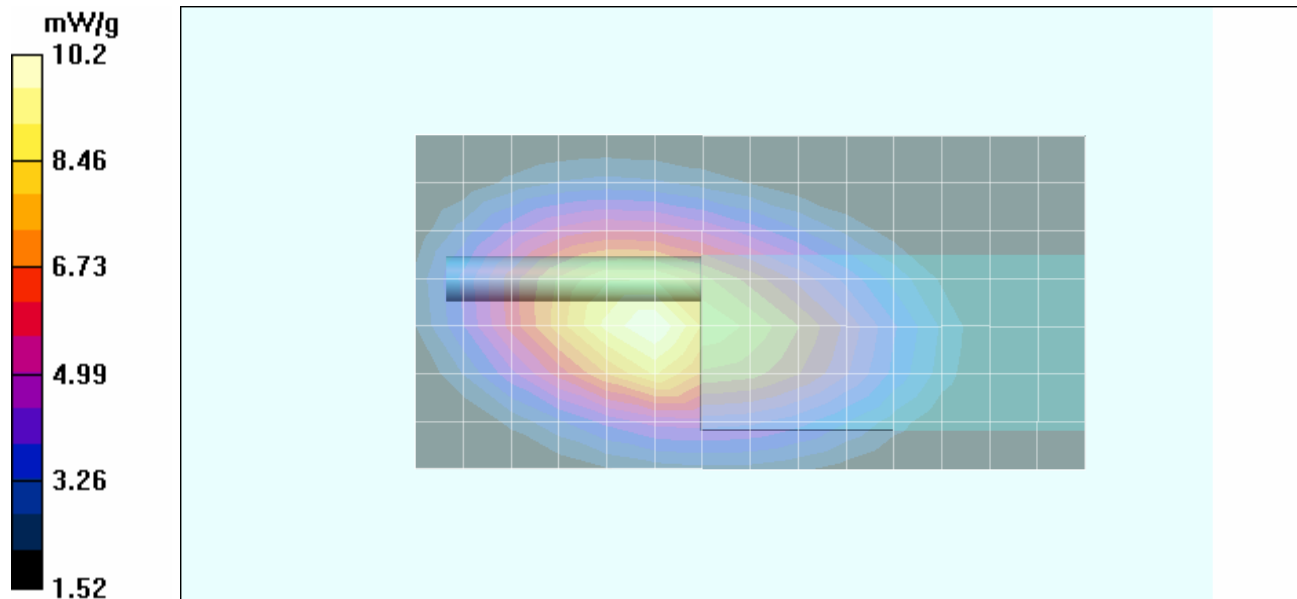
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.3 V/m; Power Drift = -0.791 dB



Peak SAR (extrapolated) = 14.3 W/kg

**SAR(1 g) = 9.59 mW/g; SAR(10 g) 6.79 mW/g**

Maximum value of SAR (measured) = 10.2 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #23 (A23)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.73 mW/g

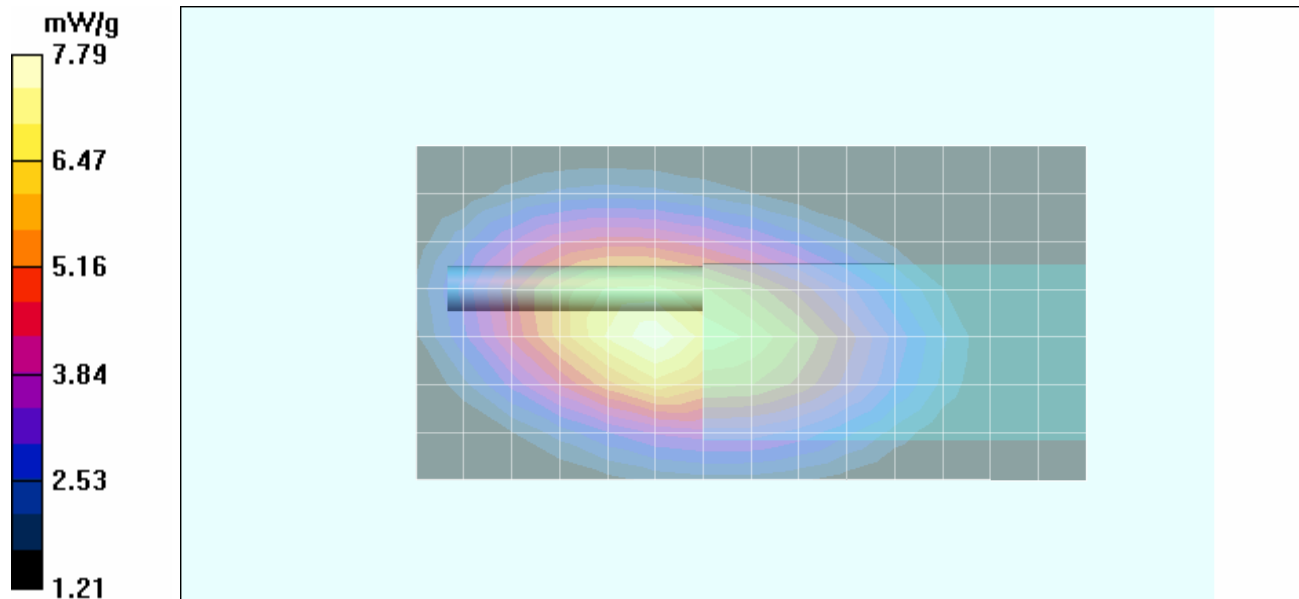
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 93.4 V/m; Power Drift = -0.545 dB



Peak SAR (extrapolated) = 10.8 W/kg

**SAR(1 g) = 7.41 mW/g; SAR(10 g) 5.32 mW/g**

Maximum value of SAR (measured) = 7.79 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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## Audio Accessory SAR Plot #24 (A24)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-9BL

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.1 mW/g

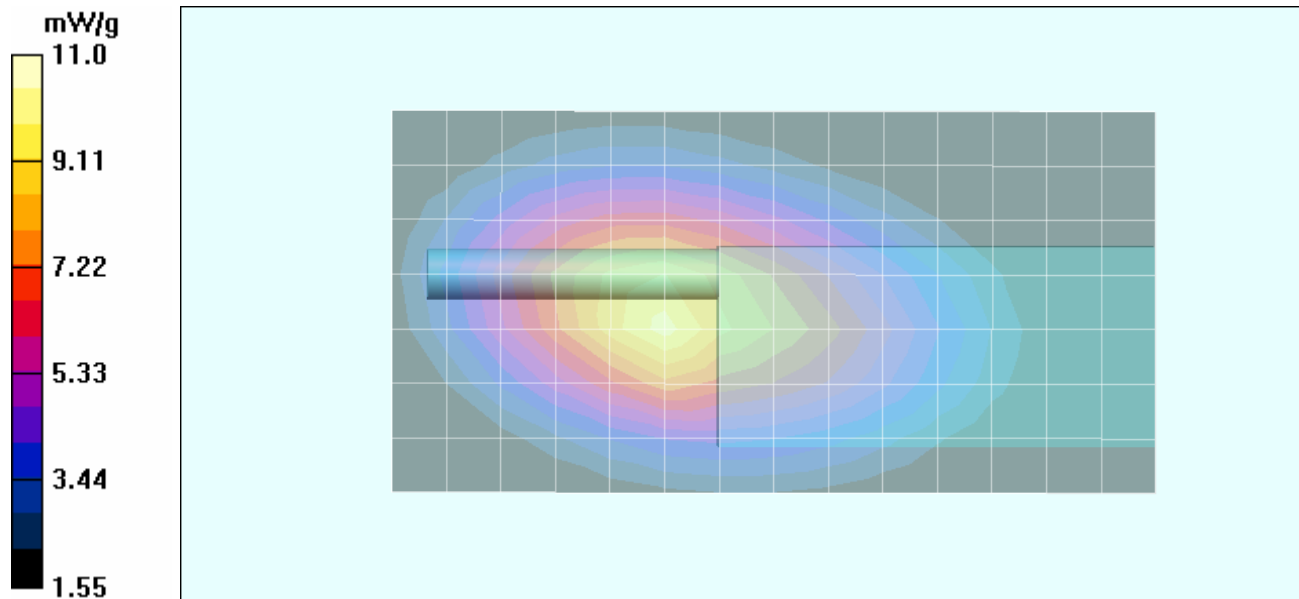
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.6 V/m; Power Drift = 0.268 dB



Peak SAR (extrapolated) = 15.2 W/kg

**SAR(1 g) = 10.4 mW/g; SAR(10 g) 7.38 mW/g**

Maximum value of SAR (measured) = 11.0 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #25 (A25)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.913$  mho/m;  $\epsilon_r = 56.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 10.1 mW/g

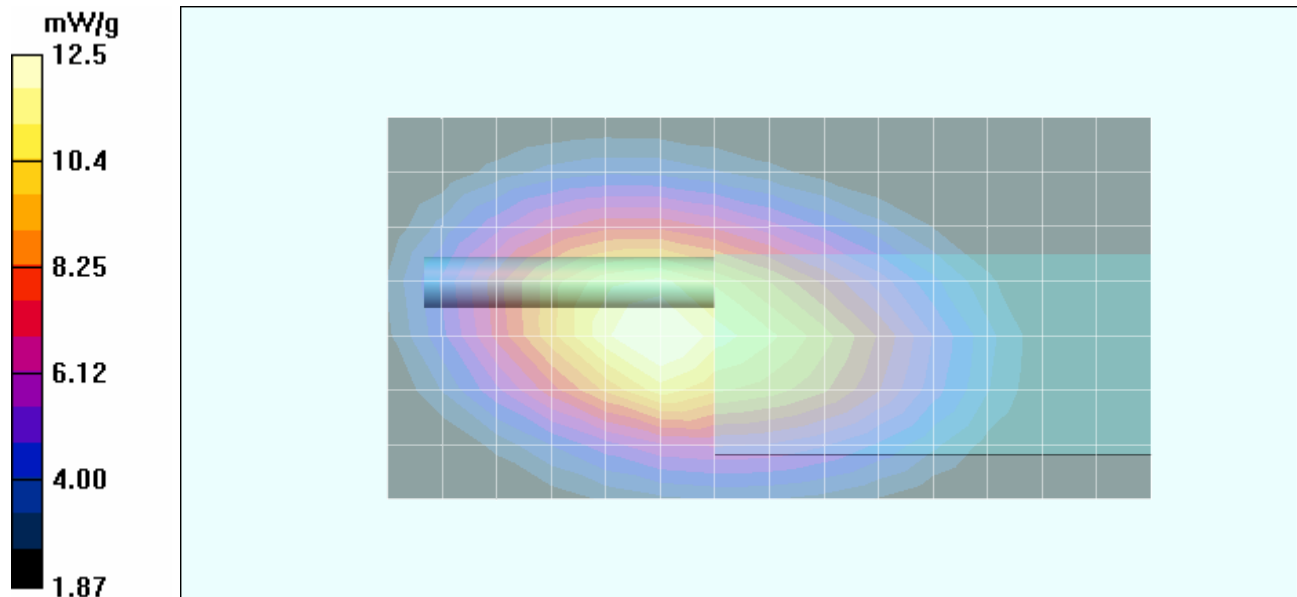
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 122.5 V/m; Power Drift = -0.795 dB

Peak SAR (extrapolated) = 17.6 W/kg

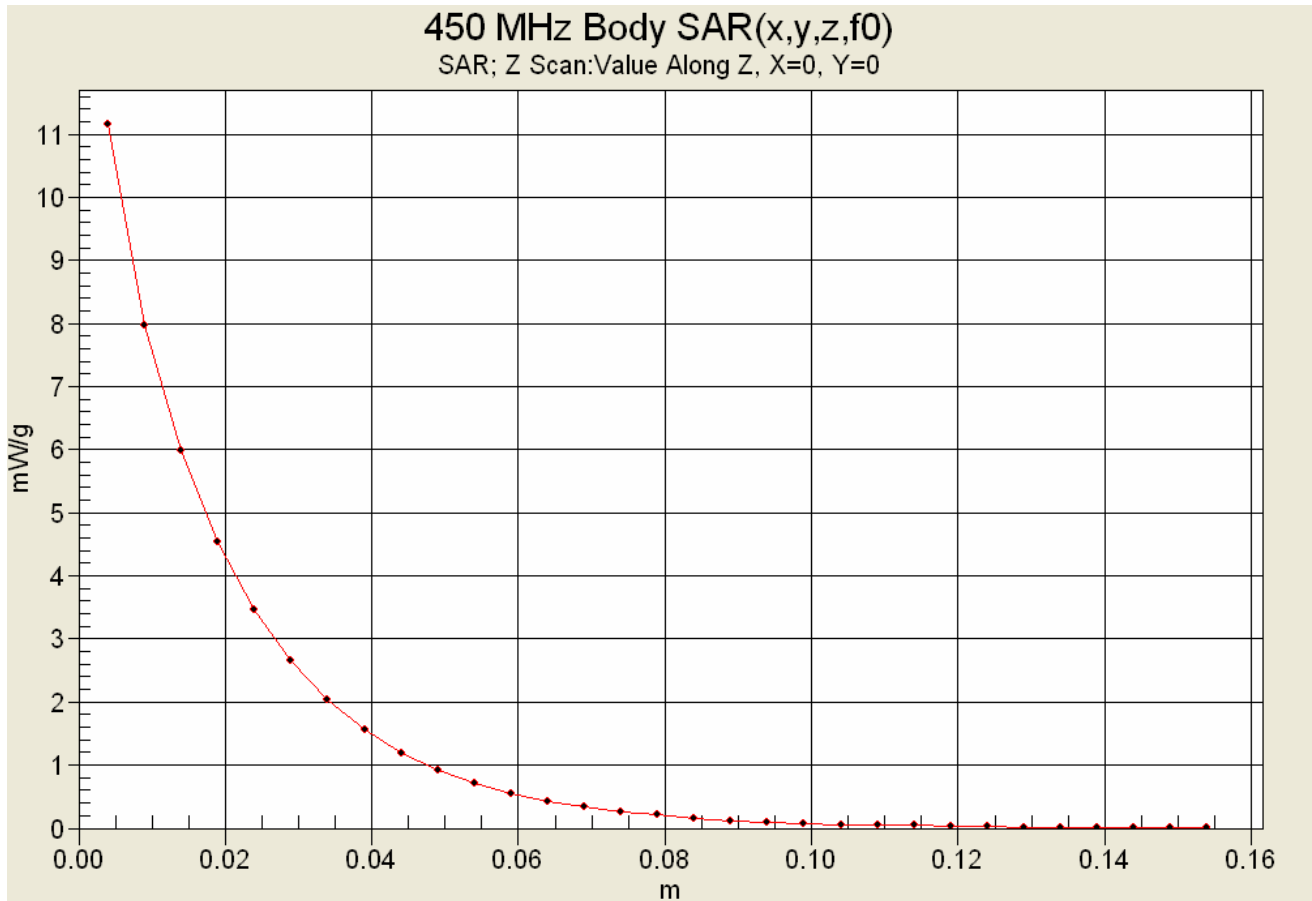
**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.47 mW/g**



Maximum value of SAR (measured) = 12.5 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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### Z-Axis Scan



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## Audio Accessory SAR Plot #26 (A26)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.927 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 9.43 mW/g

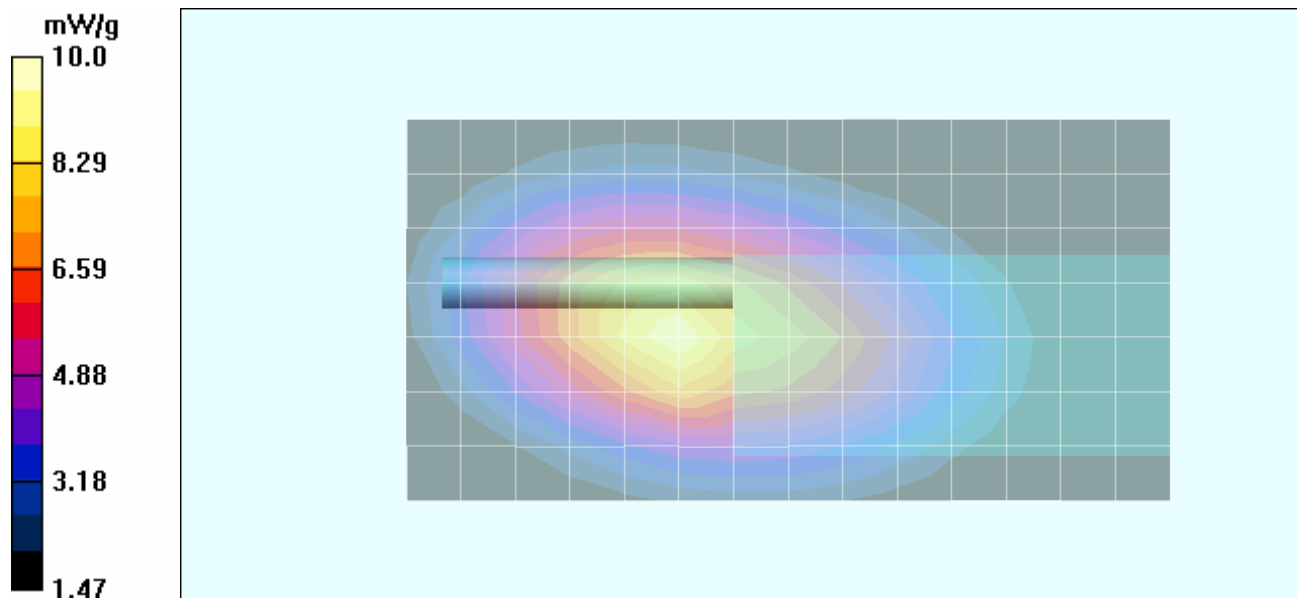
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.6 V/m; Power Drift = -0.960 dB



Peak SAR (extrapolated) = 14.3 W/kg

**SAR(1 g) = 9.57 mW/g; SAR(10 g) 6.78 mW/g**

Maximum value of SAR (measured) = 10.0 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #27 (A27)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 490.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 490 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 490 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 7.00 mW/g

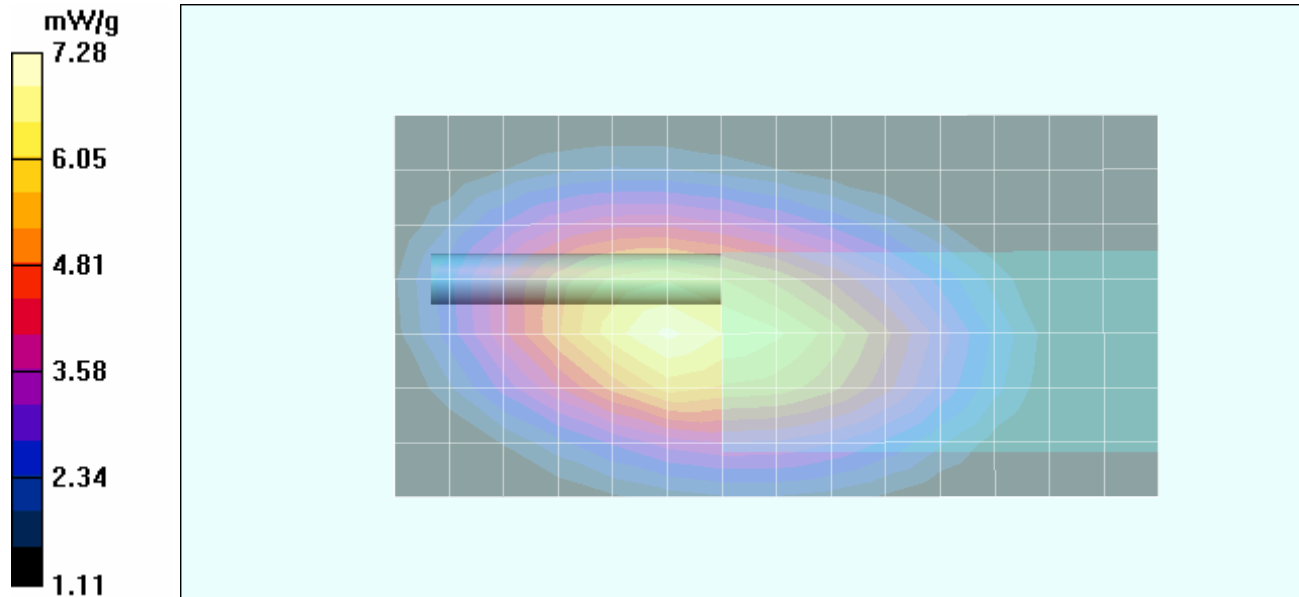
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 90.6 V/m; Power Drift = -0.442 dB



Peak SAR (extrapolated) = 10.2 W/kg

**SAR(1 g) = 6.96 mW/g; SAR(10 g) 4.97 mW/g**

Maximum value of SAR (measured) = 7.28 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #28 (A28)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 450.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 450 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 10.1 mW/g

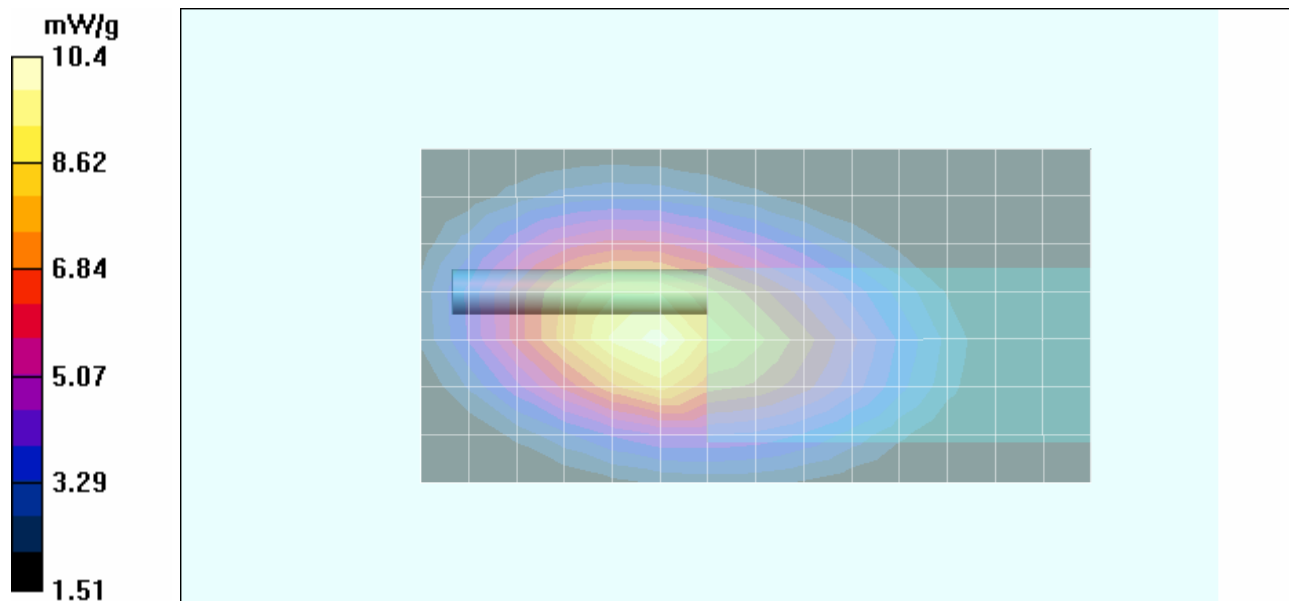
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 102.9 V/m; Power Drift = 0.247 dB

Peak SAR (extrapolated) = 14.4 W/kg



**SAR(1 g) = 9.84 mW/g; SAR(10 g) 7.04 mW/g**

Maximum value of SAR (measured) = 10.4 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #29 (A29)

Date Tested: 08/11/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 463.3 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.4 mW/g

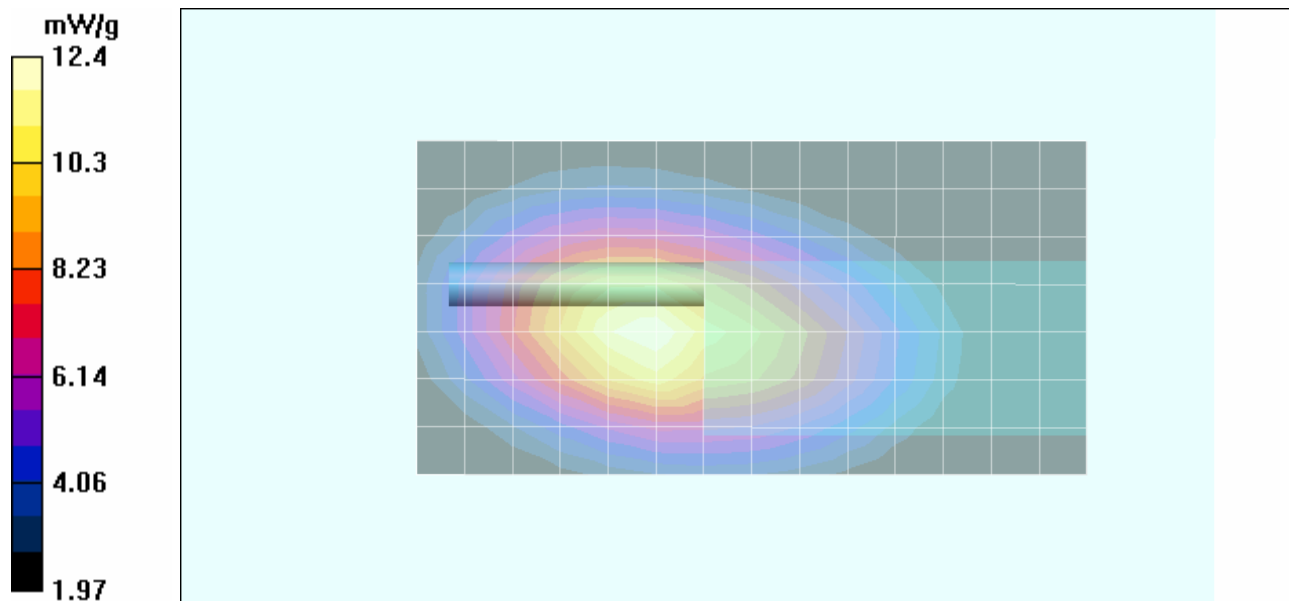
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 121.0 V/m; Power Drift = -0.694 dB



Peak SAR (extrapolated) = 17.4 W/kg

**SAR(1 g) = 11.8 mW/g; SAR(10 g) 8.48 mW/g**

Maximum value of SAR (measured) = 12.4 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #30 (A30)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - Stub Antenna KRA-17M – 476.7 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS**

Ambient Temp: 22.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 476.7 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 476.7 \text{ MHz}$ ;  $\sigma = 0.937 \text{ mho/m}$ ;  $\epsilon_r = 54$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) =  $-0.893 \text{ mW/g}$

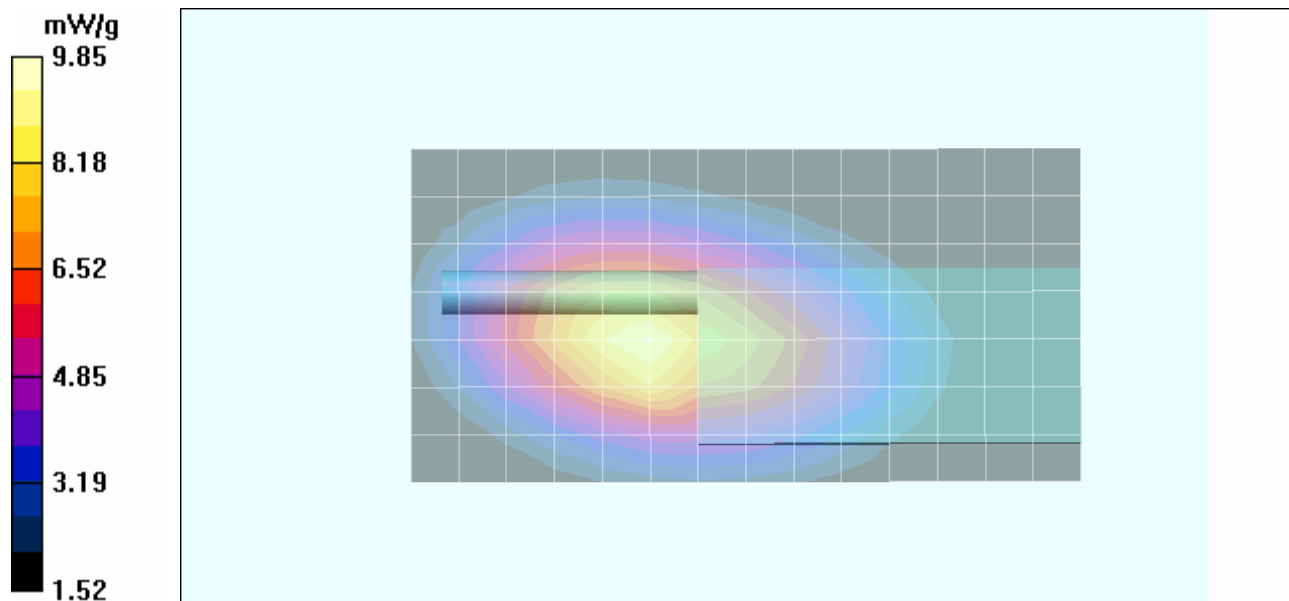
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $109.4 \text{ V/m}$ ; Power Drift =  $0.247 \text{ dB}$



Peak SAR (extrapolated) =  $13.9 \text{ W/kg}$

**SAR(1 g) =  $9.36 \text{ mW/g}$ ; SAR(10 g)  $7.04 \text{ mW/g}$**

Maximum value of SAR (measured) =  $9.85 \text{ mW/g}$



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #31 (A31)

Date Tested: 08/13/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Headset P/N: KHS-10-OH**

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 11.4 mW/g

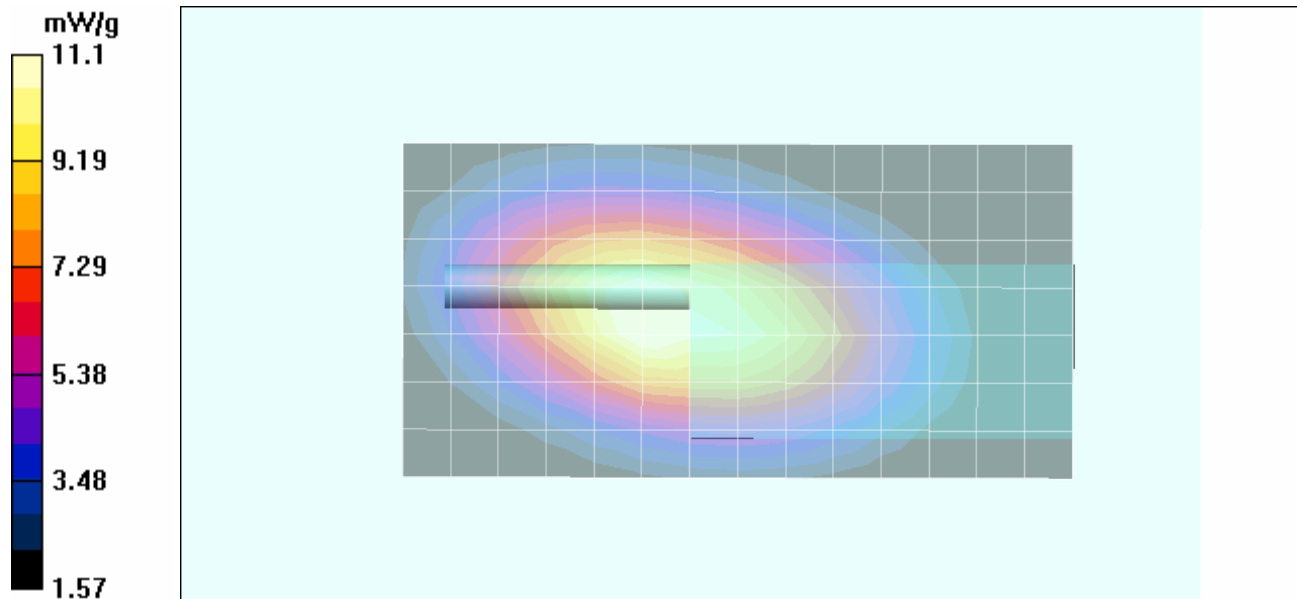
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 102.9 V/m; Power Drift = -0.209 dB



Peak SAR (extrapolated) = 15.5 W/kg

**SAR(1 g) = 10.5 mW/g; SAR(10 g) 7.51 mW/g**

Maximum value of SAR (measured) = 11.1 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #32 (A32)

Date Tested: 08/11/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Headset P/N: KHS-10-OH**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.98 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.8 mW/g

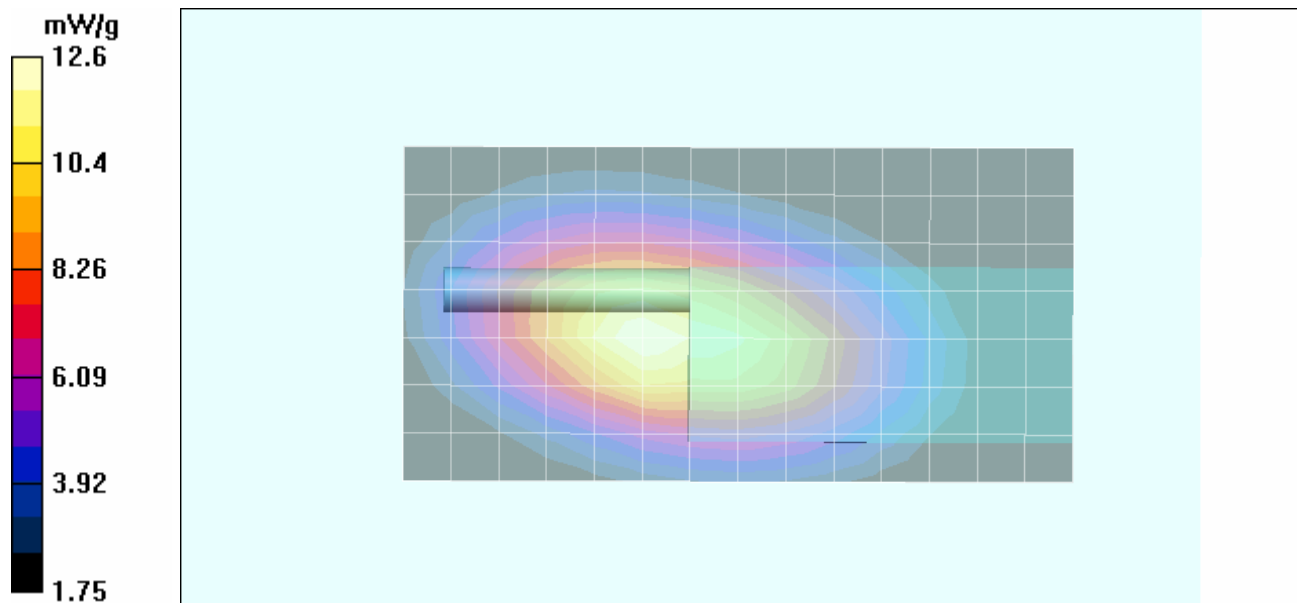
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 114.1 V/m; Power Drift = -0.389 dB



Peak SAR (extrapolated) = 17.7 W/kg

**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.43 mW/g**

Maximum value of SAR (measured) = 12.6 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #33 (A33)

Date Tested: 08/13/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 498.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

Area Scan (8x14x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (measured) = 11.3 mW/g

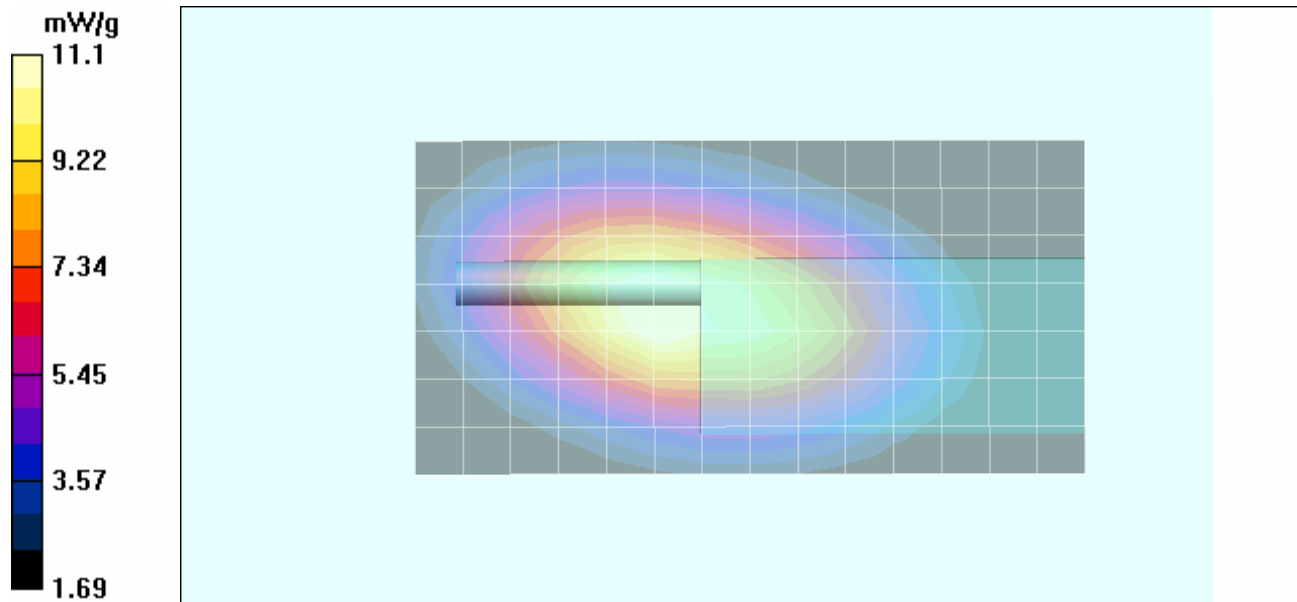
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 104.6 V/m; Power Drift = -0.195 dB



Peak SAR (extrapolated) = 15.5 W/kg

**SAR(1 g) = 10.5 mW/g; SAR(10 g) 7.57 mW/g**

Maximum value of SAR (measured) = 11.1 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413800	Freq. Range:	450 - 512 MHz	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	DUT Models:	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #34 (A34)

Date Tested: 08/11/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Ear-Bud P/N: KHS-23**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.98 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 13.1 mW/g

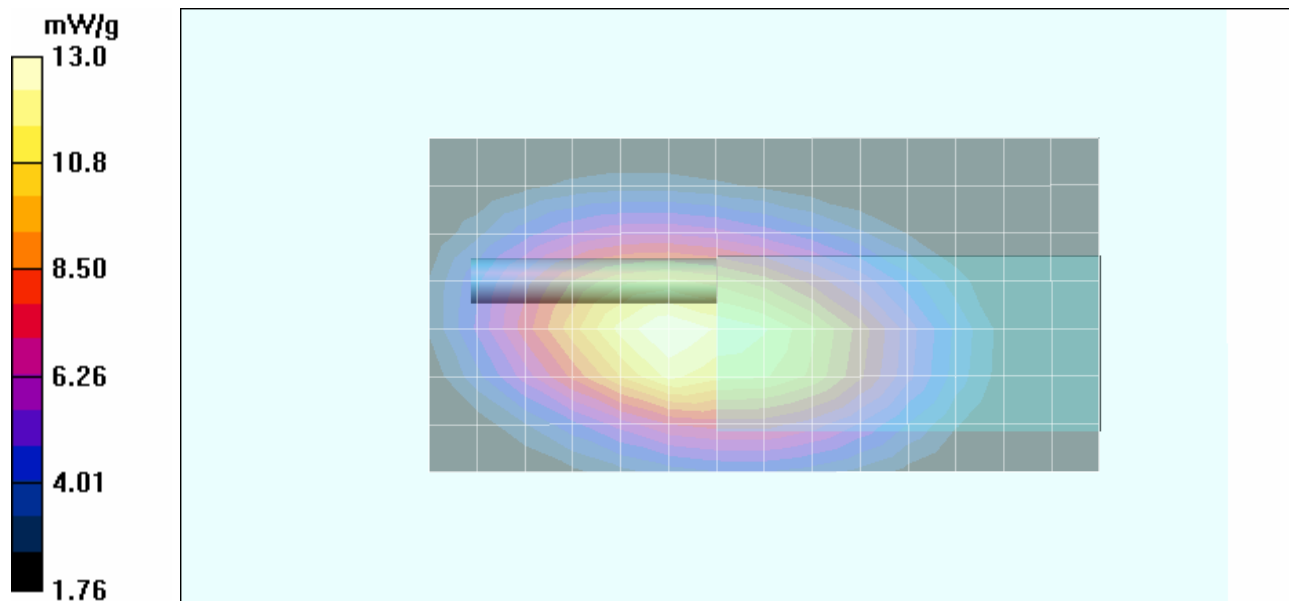
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.4 V/m; Power Drift = -0.339 dB



Peak SAR (extrapolated) = 18.4 W/kg

**SAR(1 g) = 12.3 mW/g; SAR(10 g) 8.74 mW/g**

Maximum value of SAR (measured) = 13.0 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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## Audio Accessory SAR Plot #35 (A35)

Date Tested: 08/13/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 498.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL**

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.0 mW/g

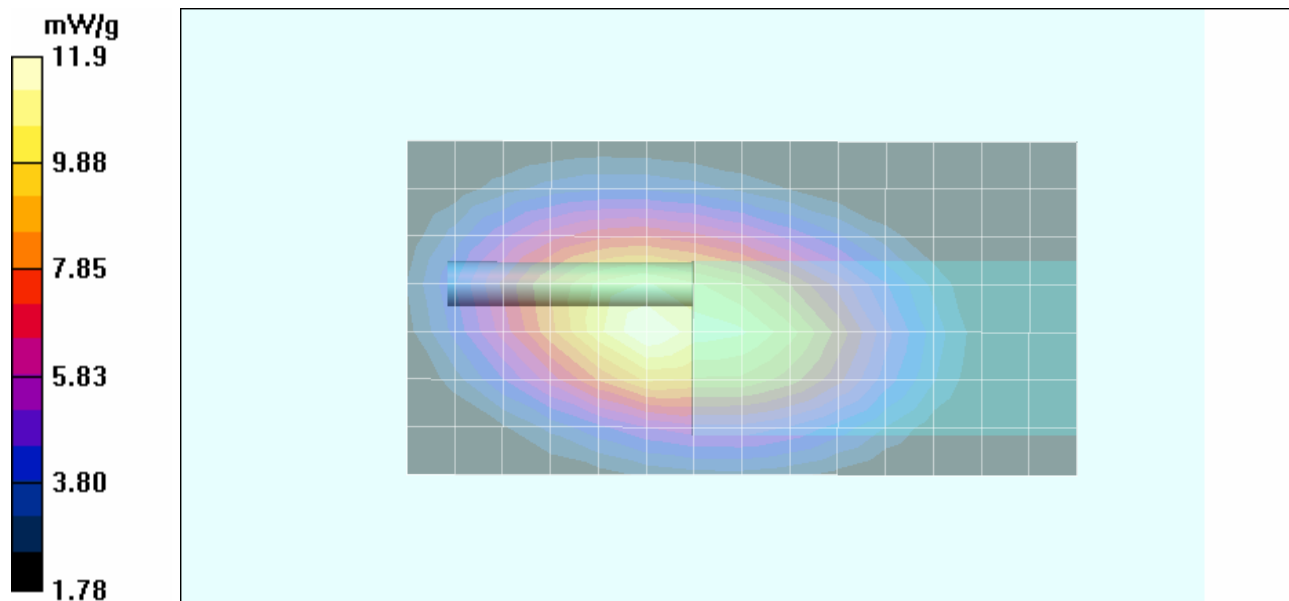
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 111.2 V/m; Power Drift = -0.447 dB

Peak SAR (extrapolated) = 16.7 W/kg



**SAR(1 g) = 11.3 mW/g; SAR(10 g) 8.07 mW/g**

Maximum value of SAR (measured) = 11.9 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #36 (A36)

Date Tested: 08/11/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 512.0 MHz

**DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)**

**Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Microphone P/N: KHS-8BL**

Ambient Temp: 20.0°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.98 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

#### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 13.8 mW/g

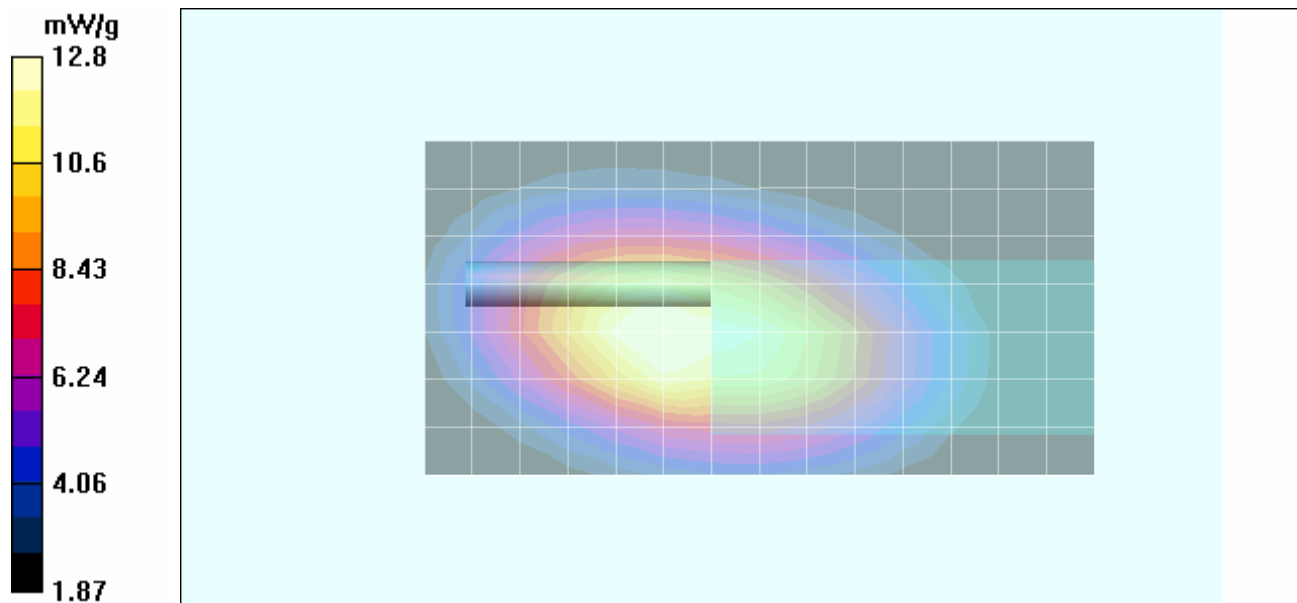
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.2 V/m; Power Drift = -0.458 dB

Peak SAR (extrapolated) = 17.9 W/kg



**SAR(1 g) = 12.1 mW/g; SAR(10 g) 8.69 mW/g**

Maximum value of SAR (measured) = 12.8 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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	<u>Date(s) of Evaluation</u> Aug. 05 - Sept. 07, 2010	<u>Test Report Serial No.</u> 080310ALH-T1037-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> October 26, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

## Audio Accessory SAR Plot #37 (A37)

Date Tested: 08/13/2010

### Body-worn SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M2 – 498.0 MHz

DUT: Kenwood TK-3312-1; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 1SU12 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KHS-48GPS

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 54.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.73, 7.73, 7.73); Calibrated: 15/07/2010
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body-worn SAR - 1.3 cm Belt-Clip Spacing from Back of DUT to Planar Phantom

**Area Scan (8x14x1):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$

Maximum value of SAR (measured) = 12.0 mW/g

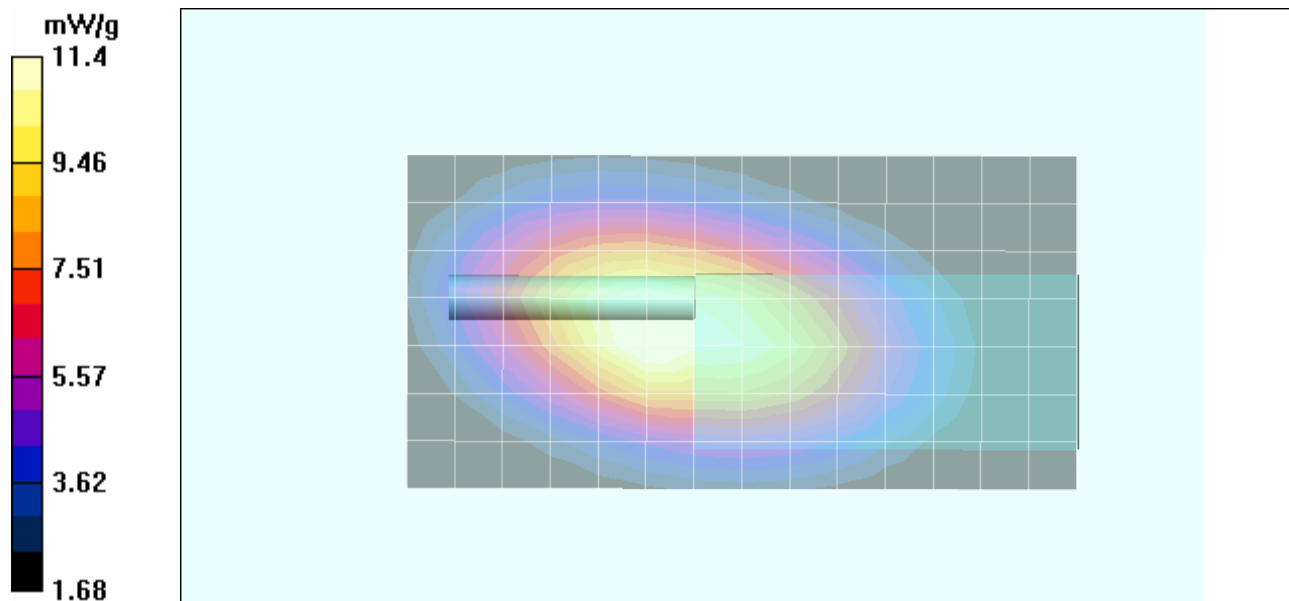
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 106.3 V/m; Power Drift = -0.389 dB

Peak SAR (extrapolated) = 16.0 W/kg

**SAR(1 g) = 10.8 mW/g; SAR(10 g) 7.72 mW/g**

Maximum value of SAR (measured) = 11.4 mW/g



<b>Applicant:</b>	Kenwood USA Corporation	<b>FCC ID:</b>	ALH413800	<b>Freq. Range:</b>	450 - 512 MHz	<b>KENWOOD</b>
<b>DUT Type:</b>	Portable FM UHF PTT Radio Transceiver	<b>DUT Models:</b>	TK-3312-1	TK-3317-1		
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