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

## Audio Accessory SAR Plot #38 (A38)

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: 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: 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

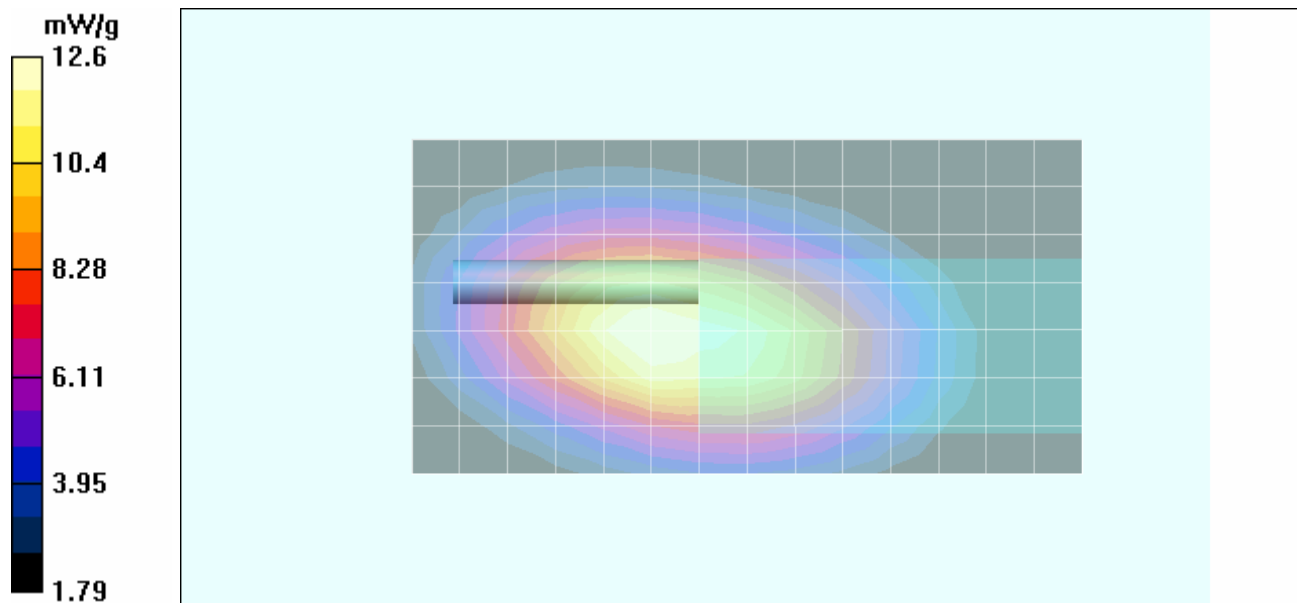
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 114.6 V/m; Power Drift = -0.317 dB



Peak SAR (extrapolated) = 17.7 W/kg

**SAR(1 g) = 12.0 mW/g; SAR(10 g) 8.55 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #39 (A39)

Date Tested: 08/11/2010

### 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: 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) = 8.46 mW/g

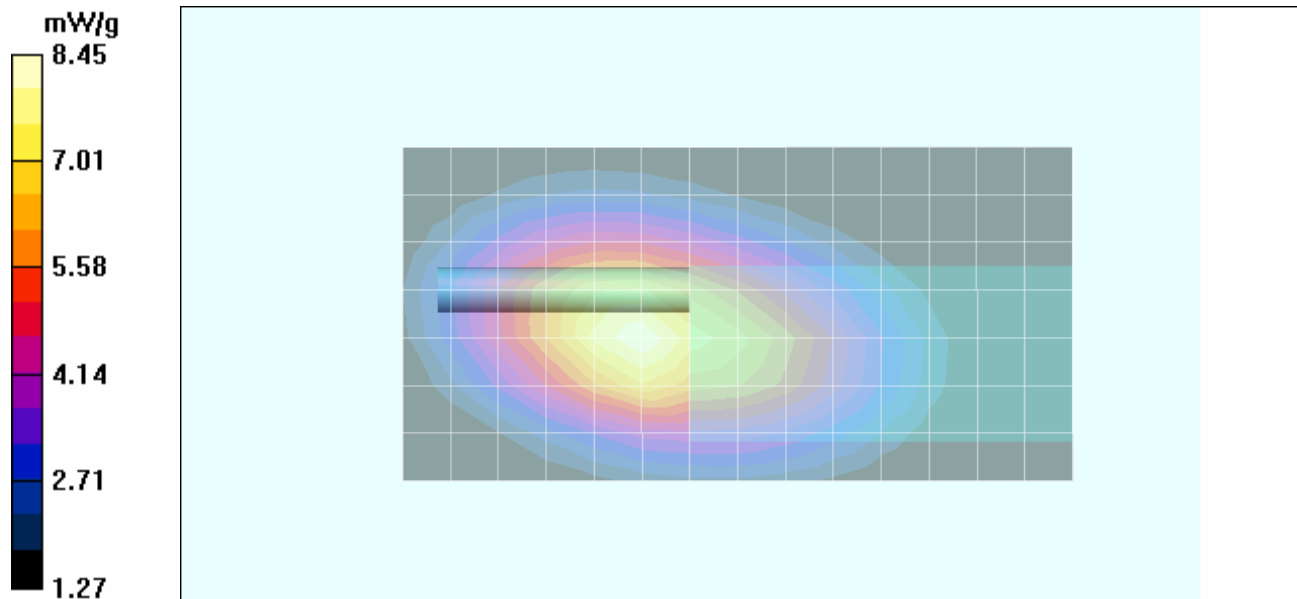
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.8 V/m; Power Drift = -0.713 dB



Peak SAR (extrapolated) = 11.8 W/kg

**SAR(1 g) = 8.0 mW/g; SAR(10 g) 5.77 mW/g**

Maximum value of SAR (measured) = 8.45 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #40 (A40)

Date Tested: 08/11/2010

### 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: 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):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.21 mW/g

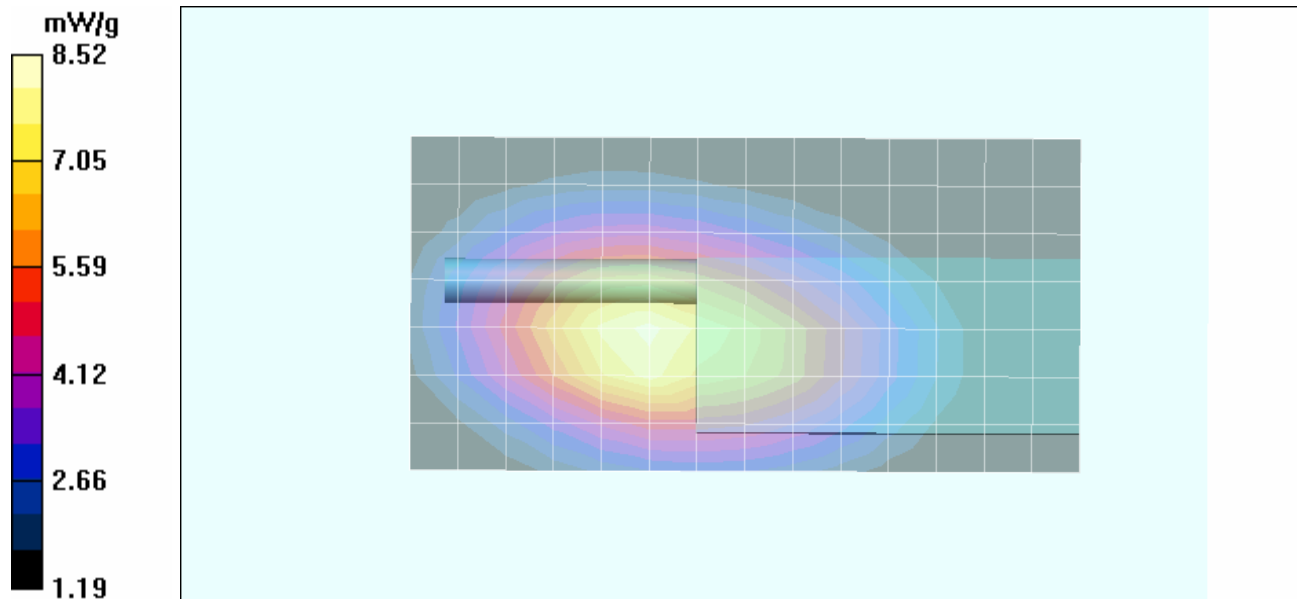
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 99.4 V/m; Power Drift = -0.560 dB



Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 8.21 mW/g; SAR(10 g) 5.81 mW/g**

Maximum value of SAR (measured) = 8.52 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #41 (A41)

Date Tested: 08/11/2010

### 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: 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) = 8.99 mW/g

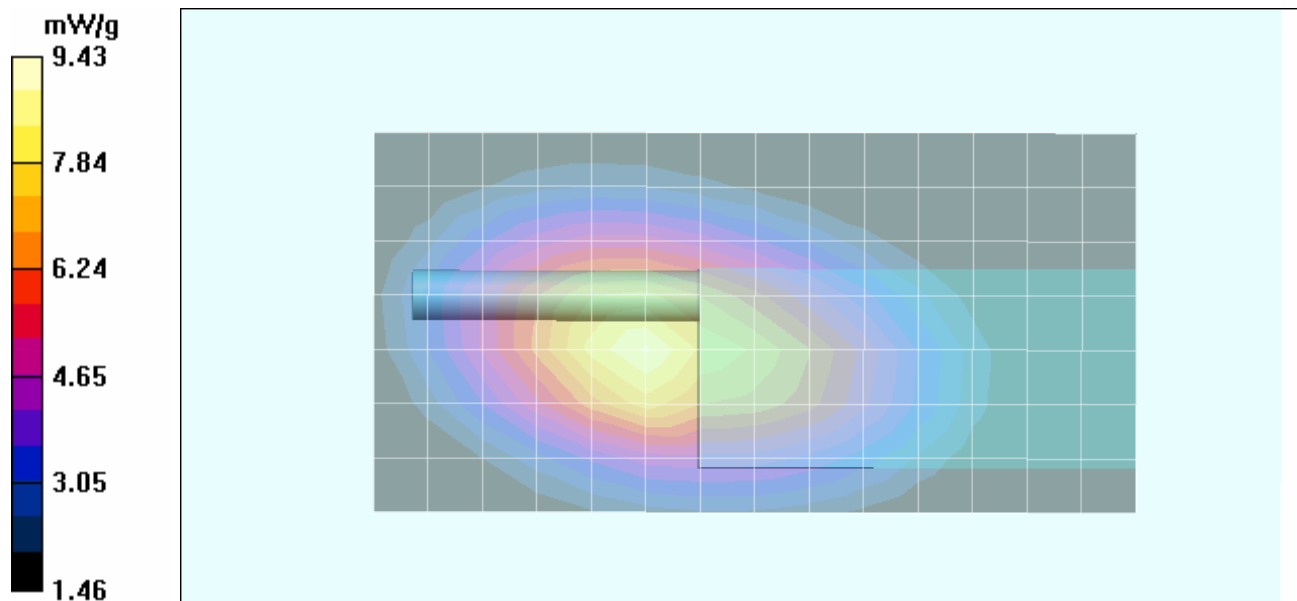
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 104.8 V/m; Power Drift = -0.729 dB



Peak SAR (extrapolated) = 13.4 W/kg

**SAR(1 g) = 8.99 mW/g; SAR(10 g) 6.39 mW/g**

Maximum value of SAR (measured) = 9.43 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #42 (A42)

Date Tested: 08/12/2010

### 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: 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):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 58$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.60 mW/g

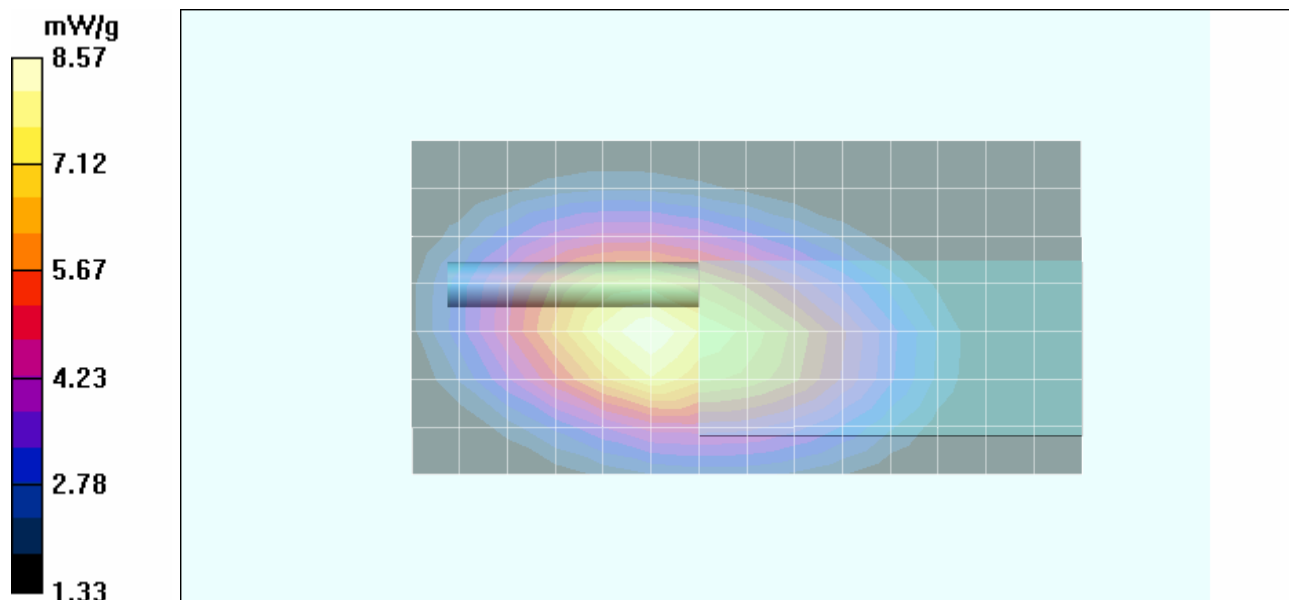
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 99.8 V/m; Power Drift = -0.688 dB



Peak SAR (extrapolated) = 12.0 W/kg

**SAR(1 g) = 8.12 mW/g; SAR(10 g) 5.79 mW/g**

Maximum value of SAR (measured) = 8.57 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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## Audio Accessory SAR Plot #43 (A43)

Date Tested: 08/11/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.95 mW/g

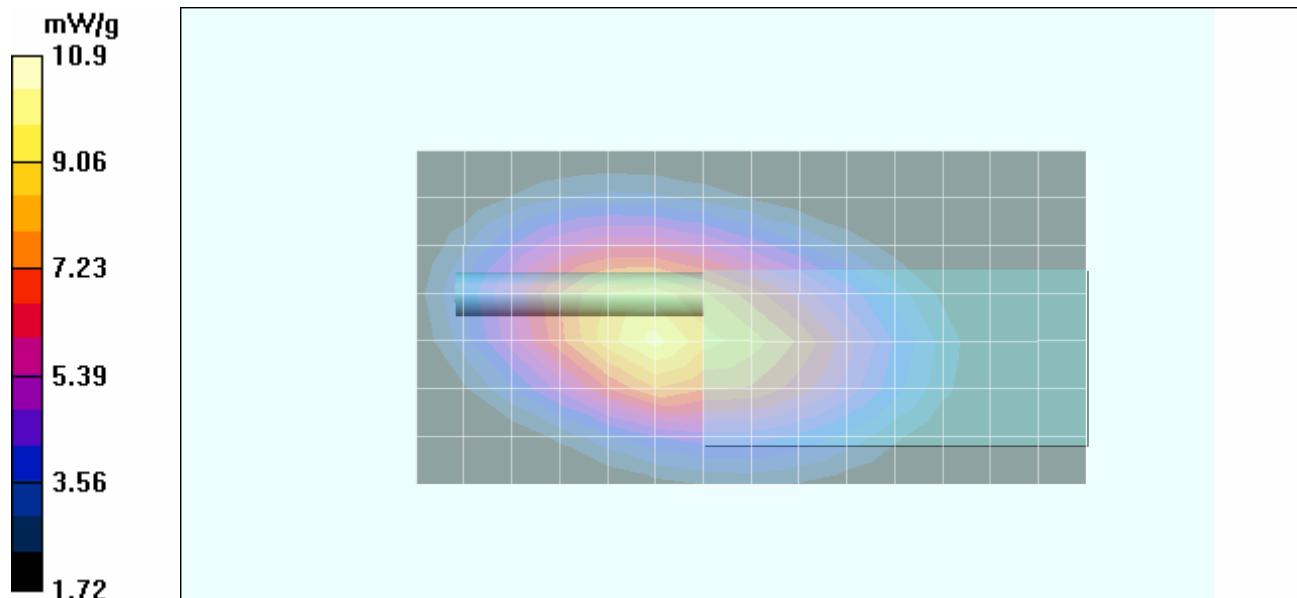
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.8 V/m; Power Drift = -0.955 dB



Peak SAR (extrapolated) = 15.2 W/kg

**SAR(1 g) = 10.3 mW/g; SAR(10 g) 7.41 mW/g**

Maximum value of SAR (measured) = 10.9 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #44 (A44)

Date Tested: 08/16/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 55$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.11 mW/g

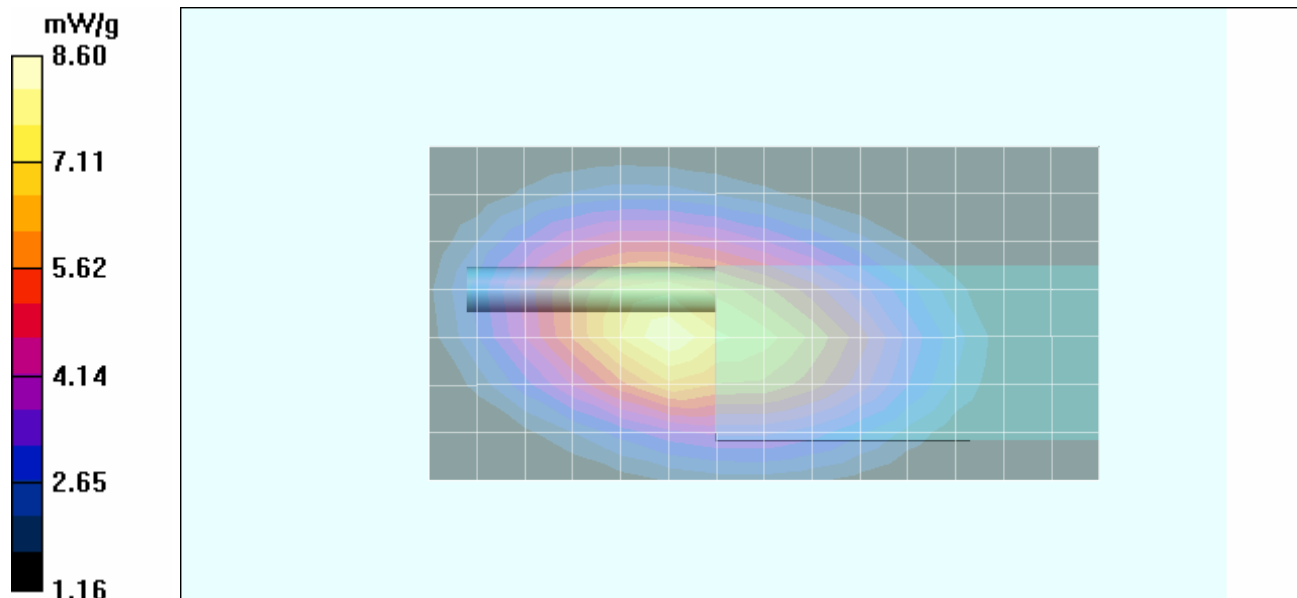
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 98.7 V/m; Power Drift = -0.817 dB

Peak SAR (extrapolated) = 12.1 W/kg



**SAR(1 g) = 8.09 mW/g; SAR(10 g) 5.68 mW/g**

Maximum value of SAR (measured) = 8.60 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #45 (A45)

Date Tested: 08/11/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.3 mW/g

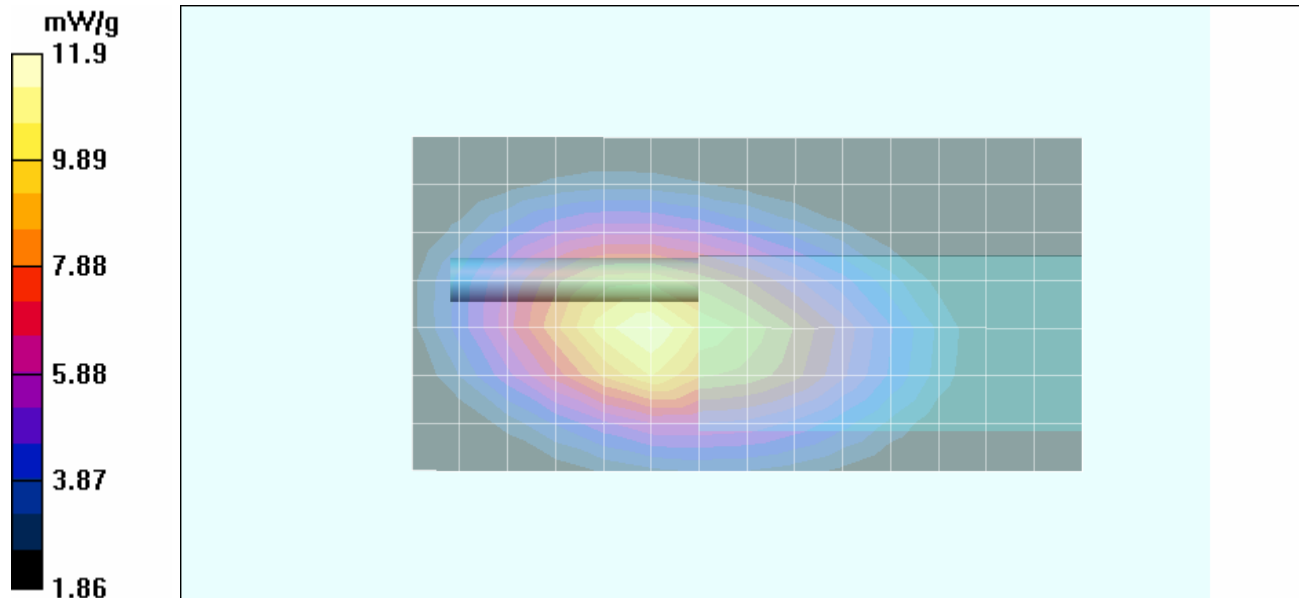
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 123.3 V/m; Power Drift = -1.08 dB

Peak SAR (extrapolated) = 16.8 W/kg



**SAR(1 g) = 11.3 mW/g; SAR(10 g) 8.06 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #46 (A46)

Date Tested: 08/16/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 55$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.15 mW/g

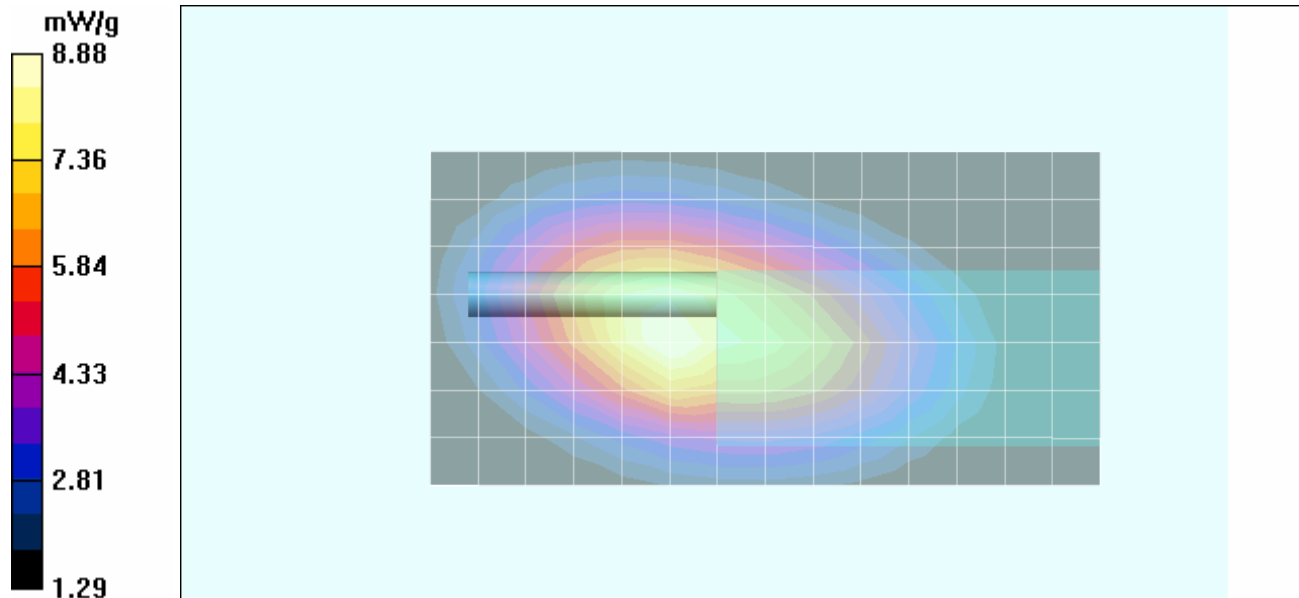
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 101.2 V/m; Power Drift = -0.841 dB



Peak SAR (extrapolated) = 12.5 W/kg

**SAR(1 g) = 8.46 mW/g; SAR(10 g) 6.04 mW/g**

Maximum value of SAR (measured) = 8.88 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #47 (A47)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: 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: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.97 \text{ mho/m}$ ;  $\epsilon_r = 54.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.83 mW/g

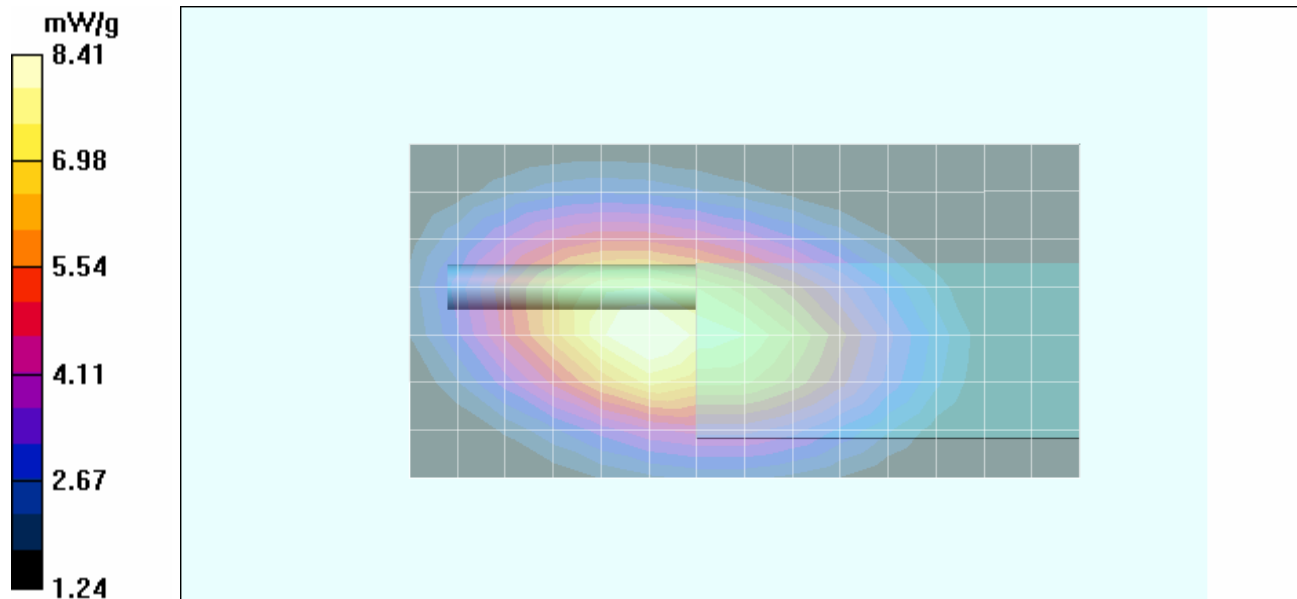
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 96.9 V/m; Power Drift = -0.597 dB



Peak SAR (extrapolated) = 11.8 W/kg

**SAR(1 g) = 8.04 mW/g; SAR(10 g) 5.8 mW/g**

Maximum value of SAR (measured) = 8.41 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #448 (A48)

Date Tested: 08/16/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 54.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.80 mW/g

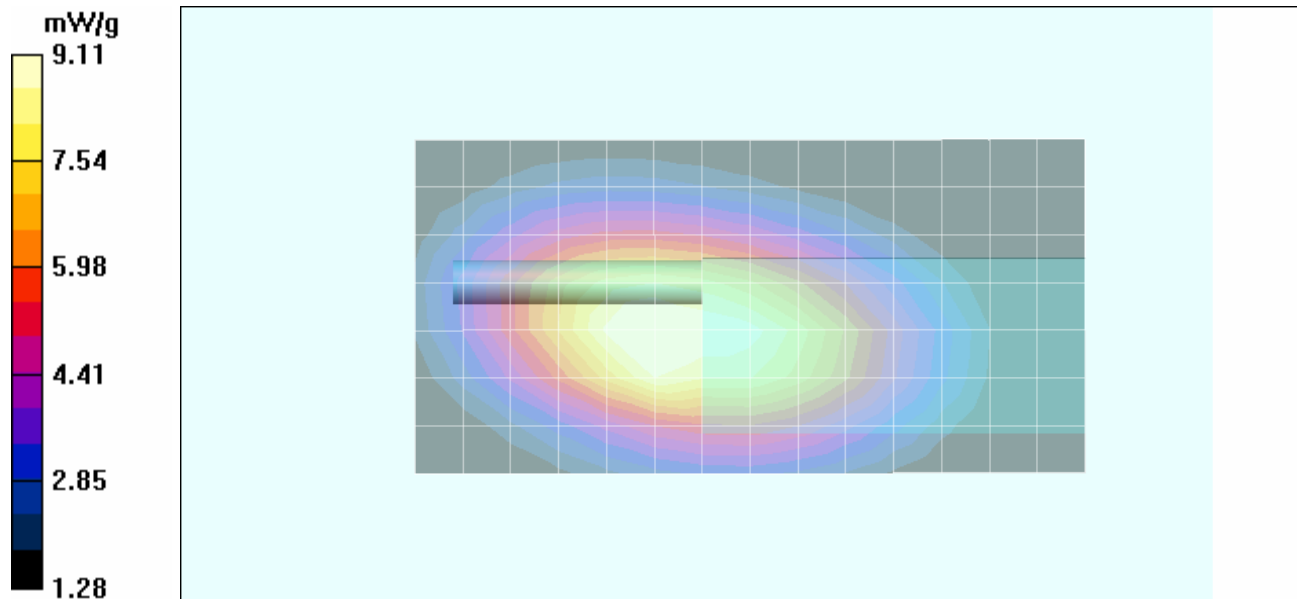
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.7 V/m; Power Drift = -1.08 dB



Peak SAR (extrapolated) = 12.9 W/kg

**SAR(1 g) = 8.64 mW/g; SAR(10 g) 6.13 mW/g**

Maximum value of SAR (measured) = 9.11 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #49 (A49)

Date Tested: 09/1/2010

### 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: Ear-Bud P/N: KHS-25**

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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: Fibreglas 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) = 10.7 mW/g

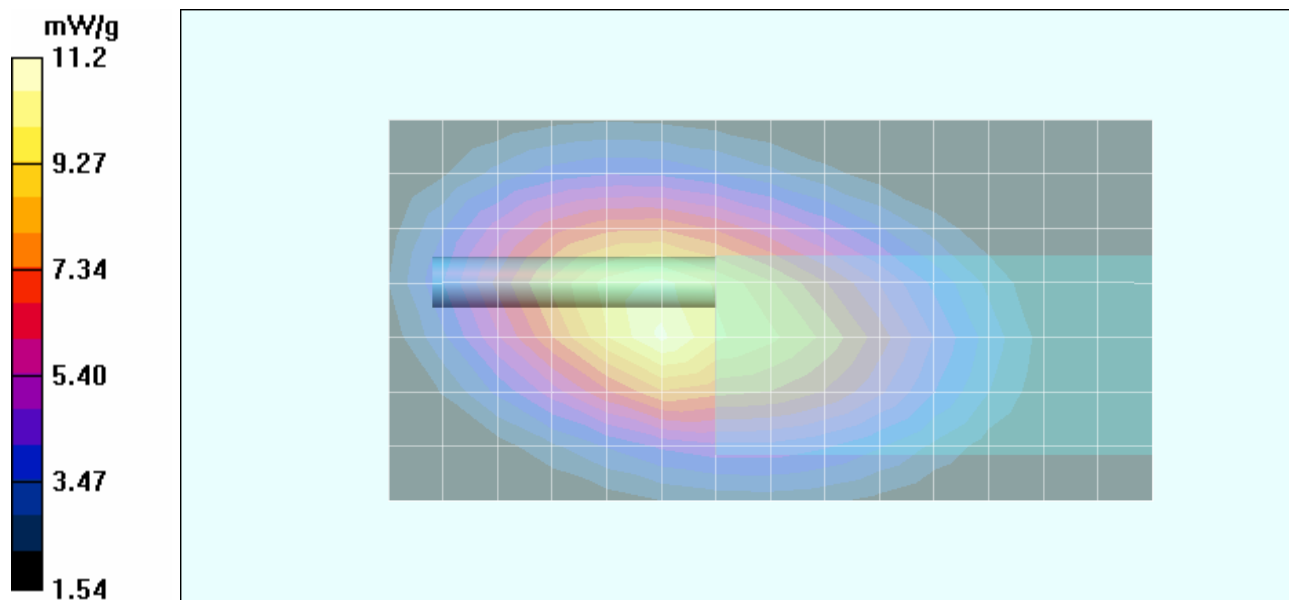
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 114.7 V/m; Power Drift = -0.871 dB



Peak SAR (extrapolated) = 15.9 W/kg

**SAR(1 g) = 10.6 mW/g; SAR(10 g) 7.53 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #50 (A50)

Date Tested: 09/1/2010

### 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: Ear-Bud P/N: KHS-25**

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):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.62 mW/g

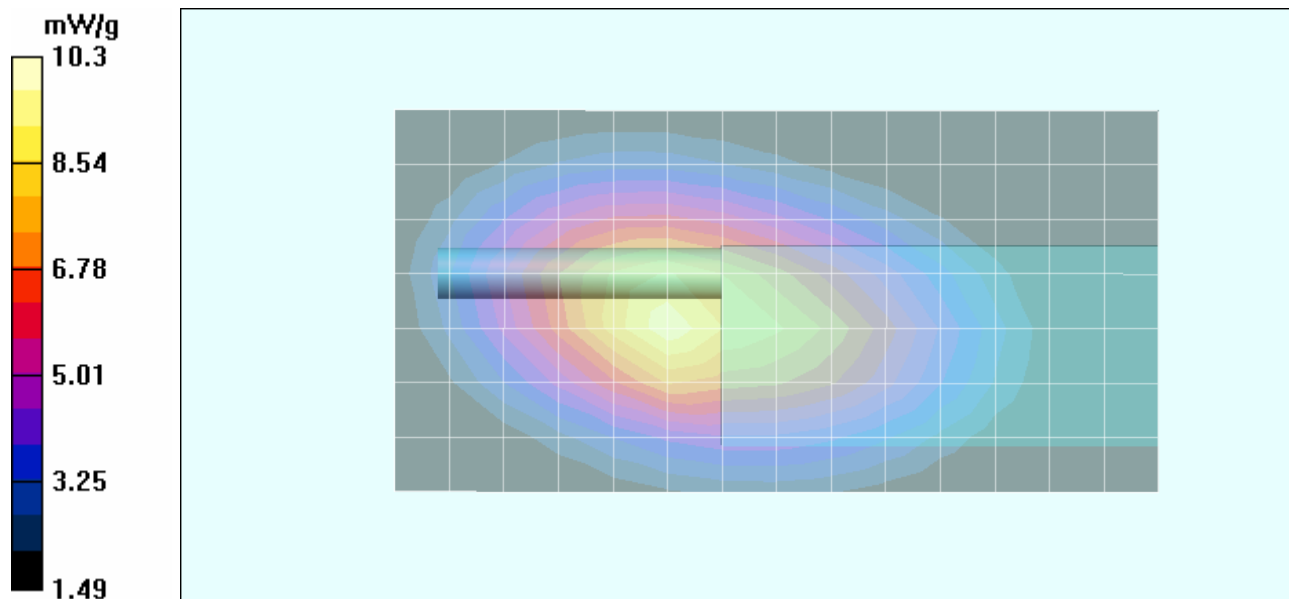
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.7 V/m; Power Drift = -1.09 dB



Peak SAR (extrapolated) = 14.5 W/kg

**SAR(1 g) = 9.76 mW/g; SAR(10 g) 6.93 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #51 (A51)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: Ear-Bud P/N: KHS-25**

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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.946 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 7.72 mW/g

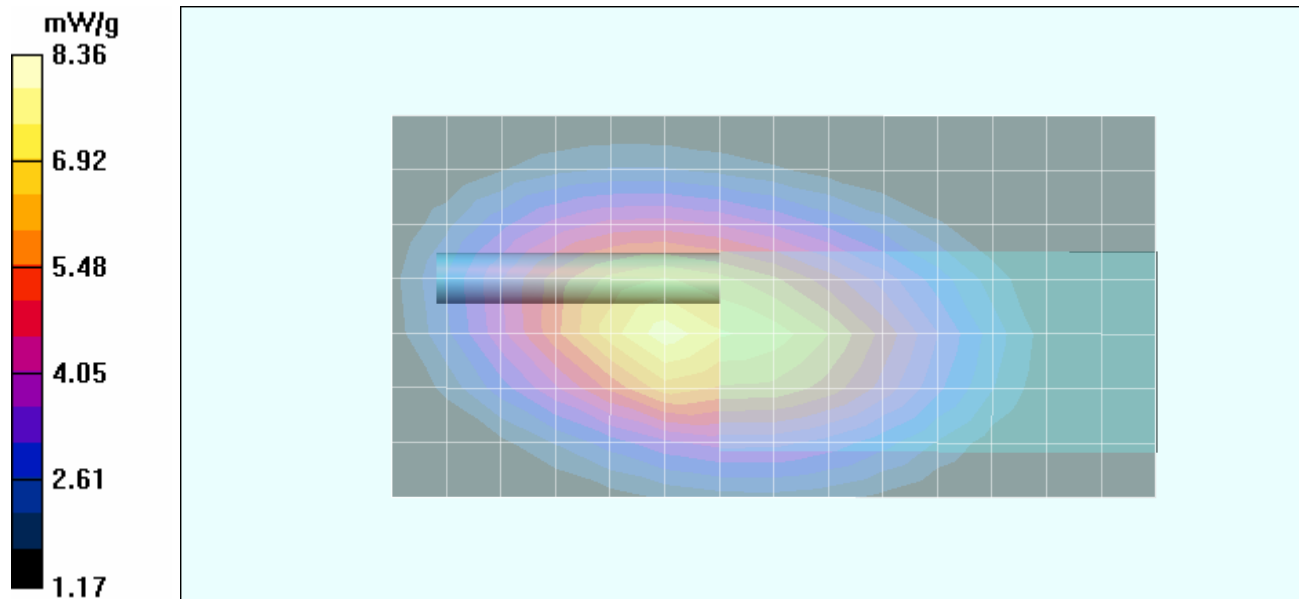
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 93.8 V/m; Power Drift = -0.613 dB



Peak SAR (extrapolated) = 11.7 W/kg

**SAR(1 g) = 7.95 mW/g; SAR(10 g) 5.67 mW/g**

Maximum value of SAR (measured) = 8.36 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #52 (A52)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: Ear-Bud P/N: KHS-25**

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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.94 mW/g

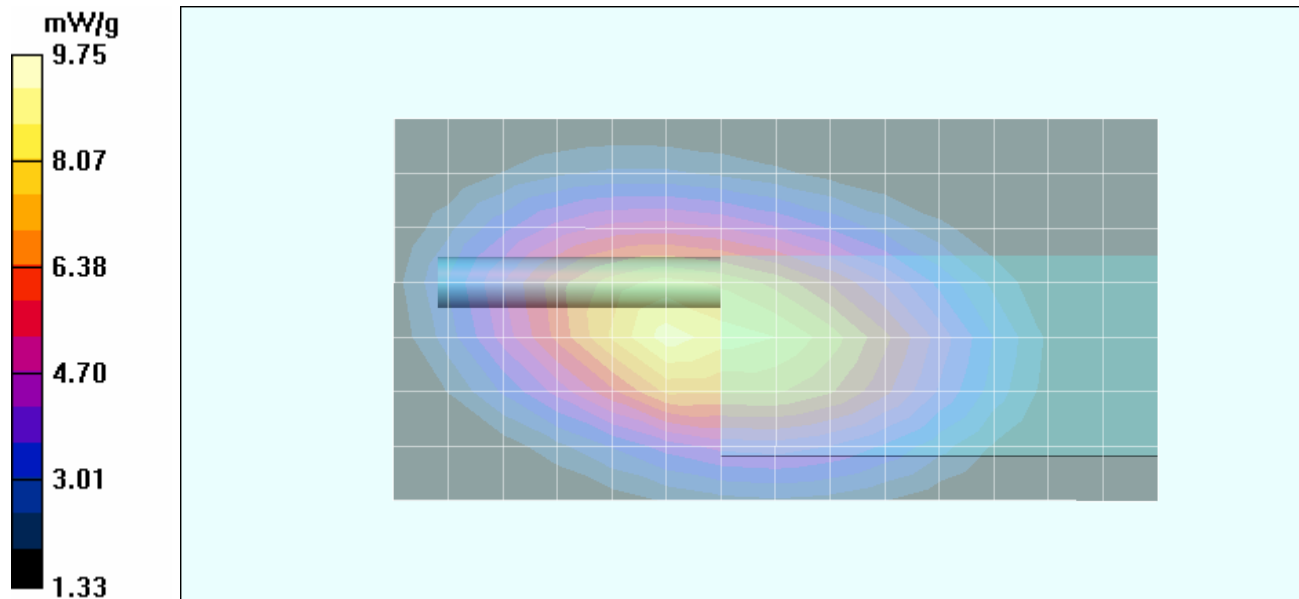
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 107.7 V/m; Power Drift = -1.54 dB

Peak SAR (extrapolated) = 13.8 W/kg



**SAR(1 g) = 9.24 mW/g; SAR(10 g) 6.59 mW/g**

Maximum value of SAR (measured) = 9.75 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #53 (A53)

Date Tested: 09/1/2010

### 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: Ear-Bud P/N: KHS-26**

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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.38 mW/g

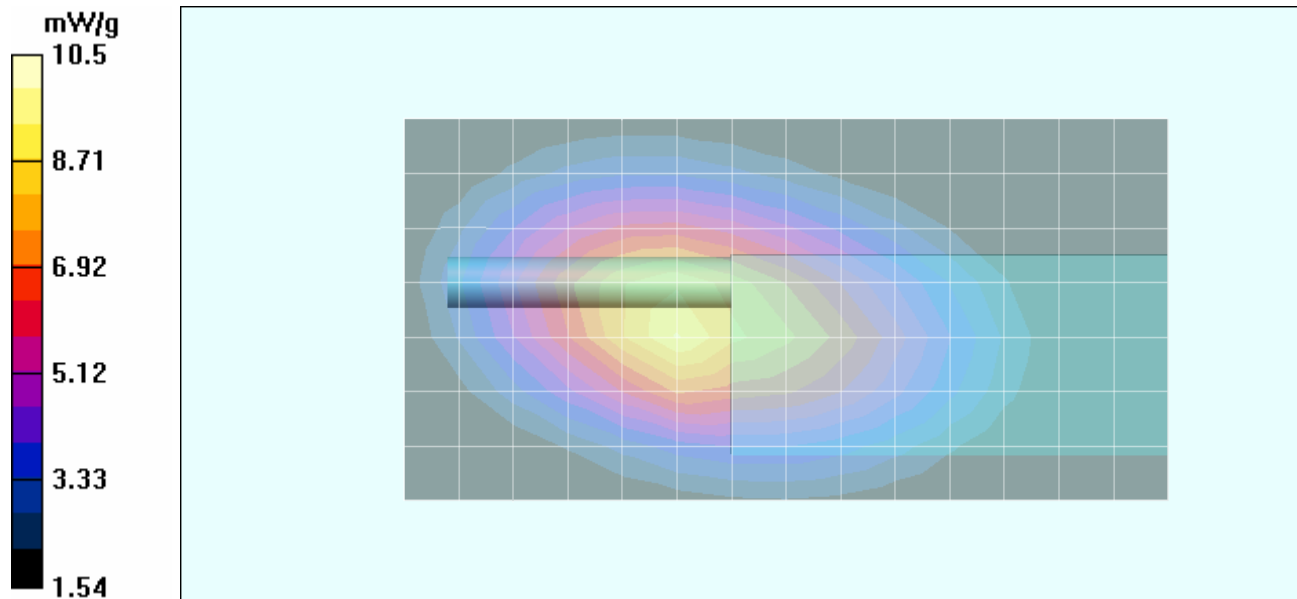
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 111.5 V/m; Power Drift = -1.03 dB



Peak SAR (extrapolated) = 14.8 W/kg

**SAR(1 g) = 9.94 mW/g; SAR(10 g) 7.03 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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|--|--|---|---|--|
|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #54 (A54)

Date Tested: 09/1/2010

### 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: Ear-Bud P/N: KHS-26

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):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.66 mW/g

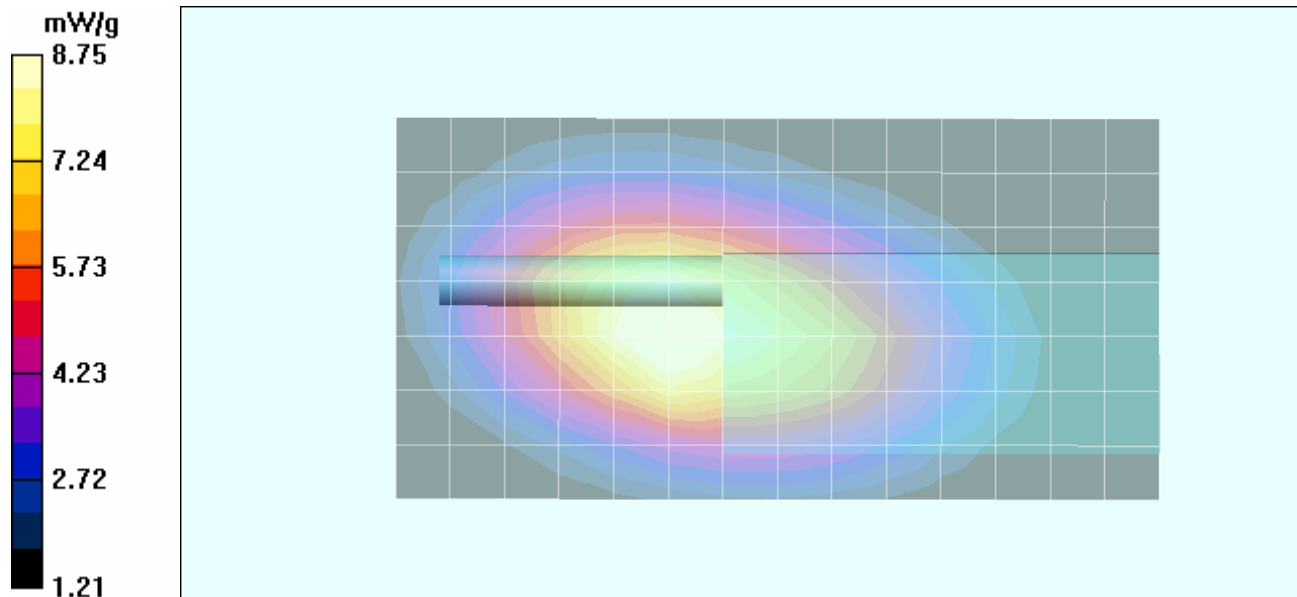
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 97.0 V/m; Power Drift = -0.638 dB



Peak SAR (extrapolated) = 12.3 W/kg

**SAR(1 g) = 8.3 mW/g; SAR(10 g) 5.89 mW/g**

Maximum value of SAR (measured) = 8.75 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #55 (A55)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: Ear-Bud P/N: KHS-26

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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.946 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 7.03 mW/g

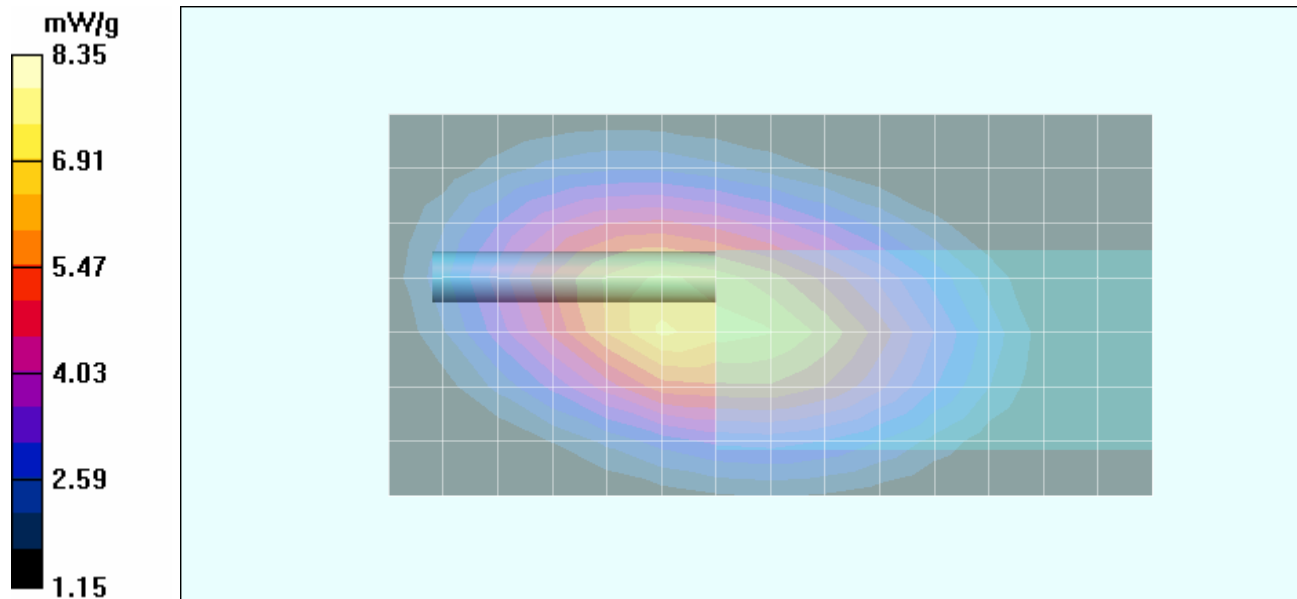
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 94.3 V/m; Power Drift = -0.533 dB



Peak SAR (extrapolated) = 11.8 W/kg

**SAR(1 g) = 7.89 mW/g; SAR(10 g) 5.61 mW/g**

Maximum value of SAR (measured) = 8.35 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #56 (A56)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: Ear-Bud P/N: KHS-26

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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.49 mW/g

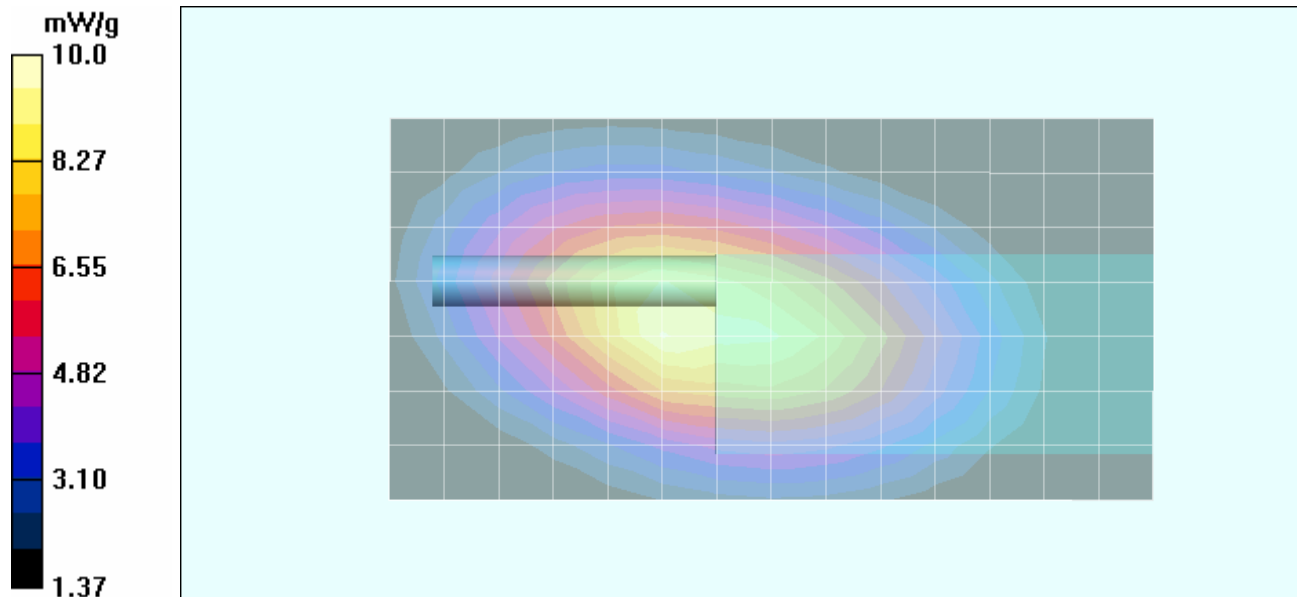
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.4 V/m; Power Drift = -1.62 dB

Peak SAR (extrapolated) = 14.1 W/kg

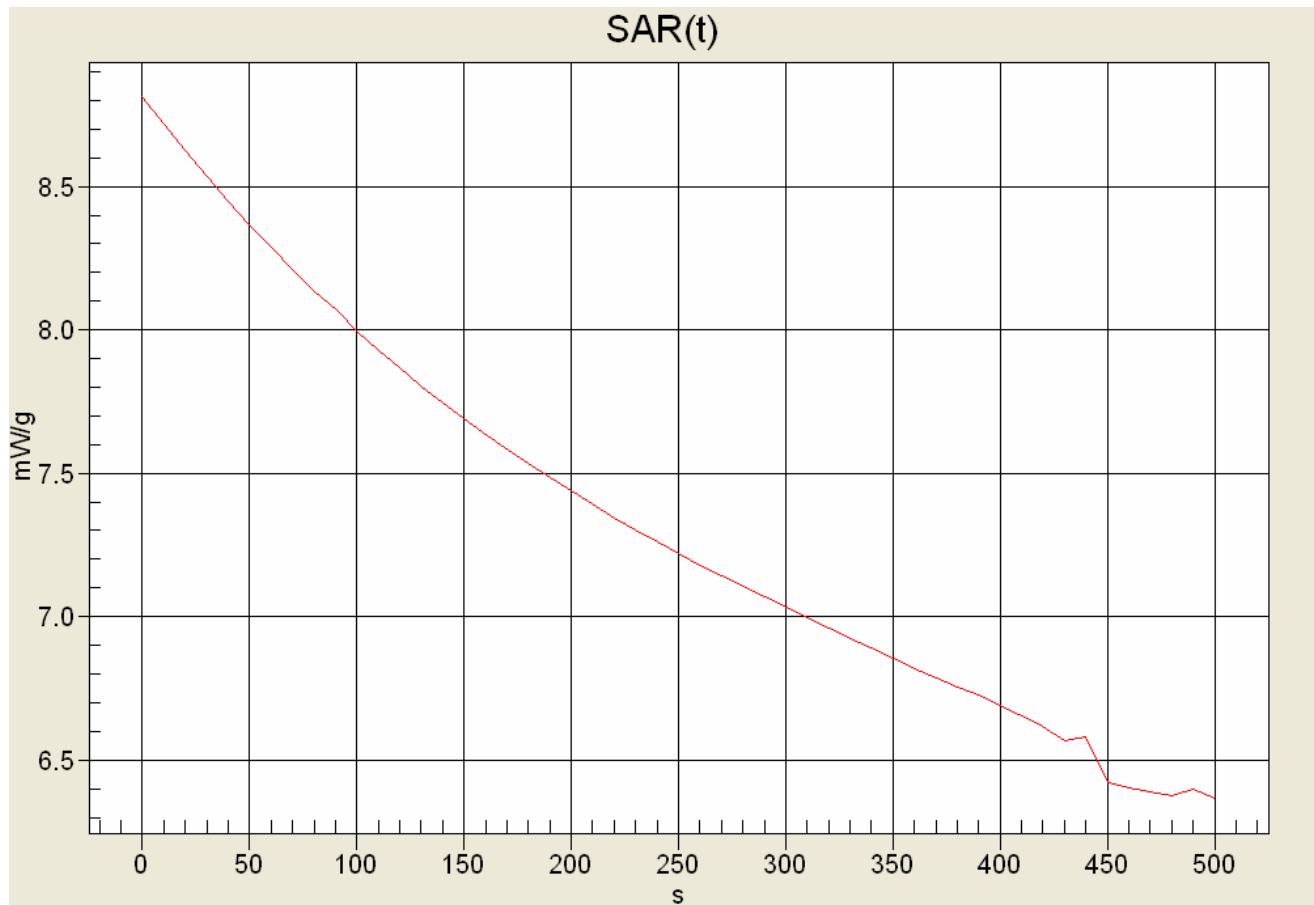
**SAR(1 g) = 9.52 mW/g; SAR(10 g) 6.84 mW/g**

Maximum value of SAR (measured) = 10.0 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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### SAR Droop Evaluation (SAR-versus-Time)



**SAR - Start – 8.812 mW/g**  
**SAR - 340s – 6.889 mW/g (-1.069 dB)**  
**SAR - 500s – 6.368 mW/g (-1.411 dB)**

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

## Audio Accessory SAR Plot #57 (A57)

Date Tested: 09/1/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.1 mW/g

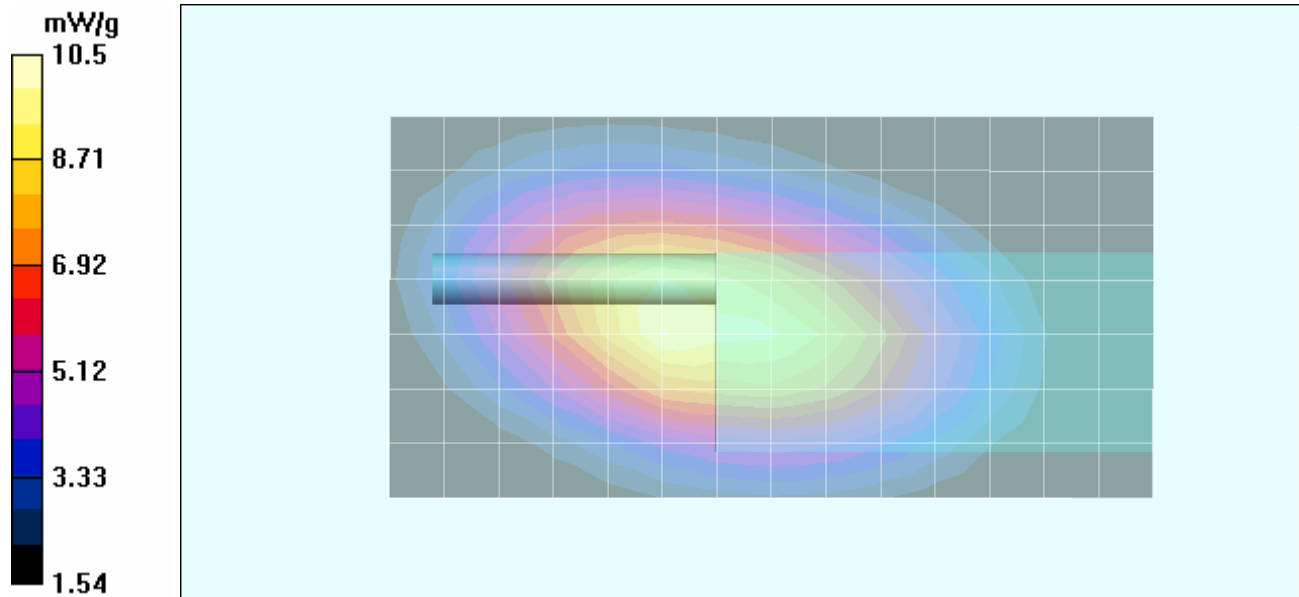
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 107.8 V/m; Power Drift = -0.699 dB



Peak SAR (extrapolated) = 14.5 W/kg

**SAR(1 g) = 9.81 mW/g; SAR(10 g) 6.99 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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|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #58 (A58)

Date Tested: 09/1/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.54 mW/g

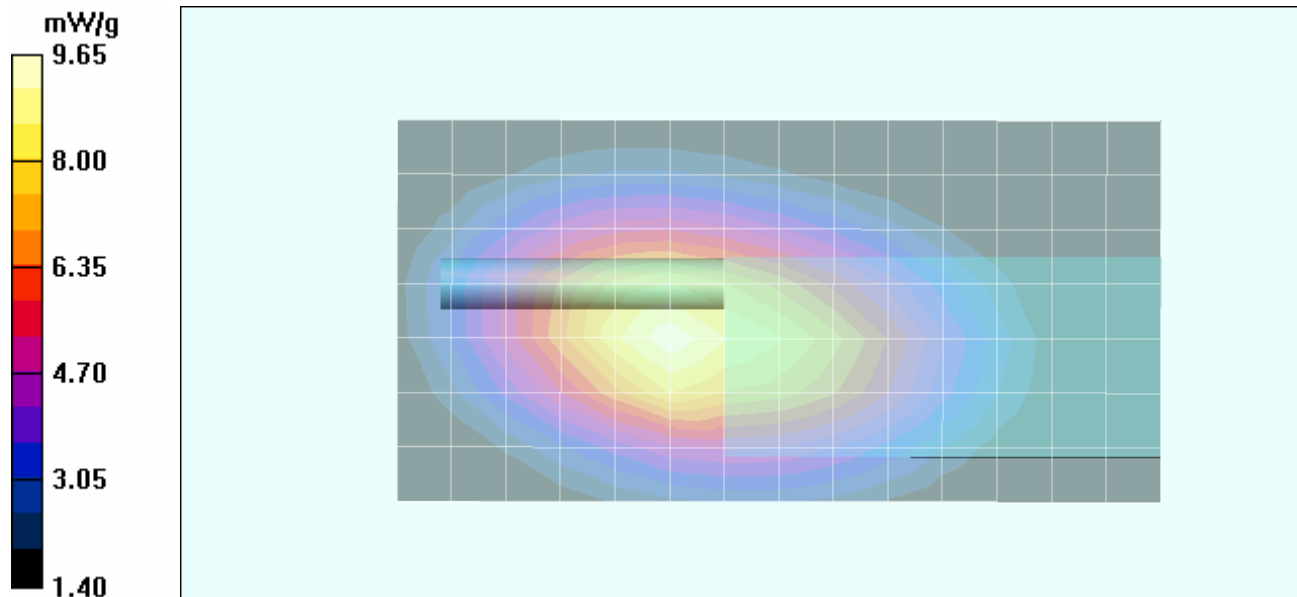
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.5 V/m; Power Drift = -0.937 dB

Peak SAR (extrapolated) = 13.5 W/kg



**SAR(1 g) = 9.2 mW/g; SAR(10 g) 6.57 mW/g**

Maximum value of SAR (measured) = 9.65 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   | <b>TK-3317-1</b>                  |                 |
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|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #59 (A59)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: 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: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.946 \text{ mho/m}$ ;  $\epsilon_r = 55.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 7.26 mW/g

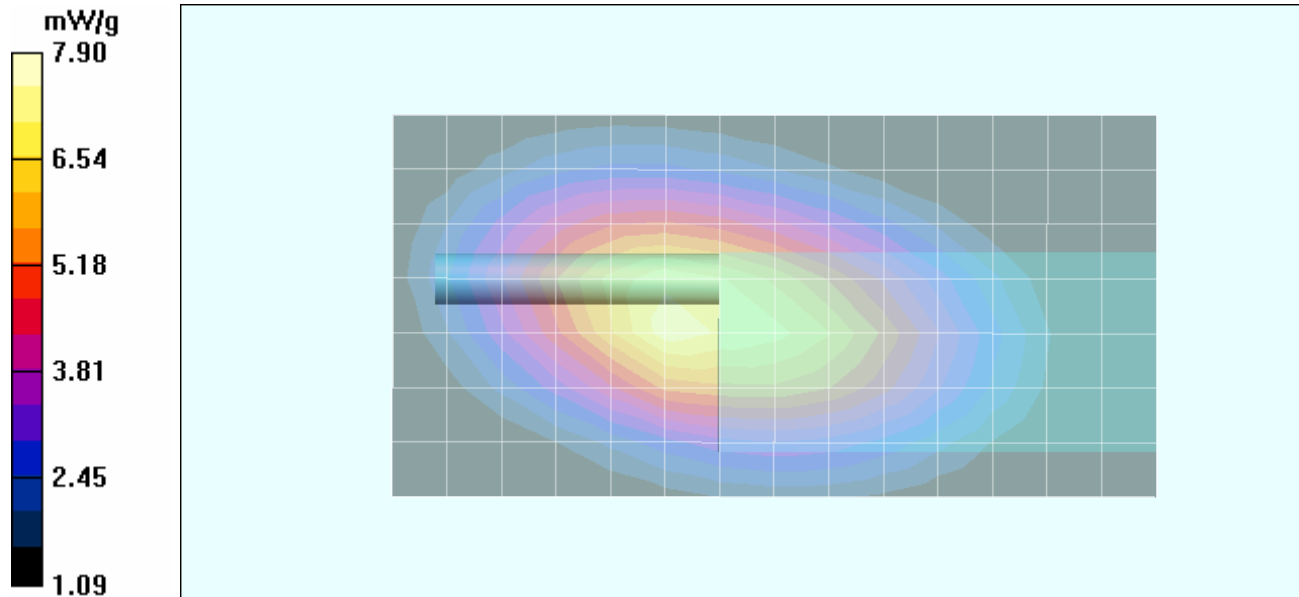
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 92.7 V/m; Power Drift = -0.479 dB



Peak SAR (extrapolated) = 11.1 W/kg

**SAR(1 g) = 7.49 mW/g; SAR(10 g) 5.35 mW/g**

Maximum value of SAR (measured) = 7.90 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #60 (A60)

Date Tested: 09/1/2010

### Body-worn SAR – Ni-MH Battery KNB-29N - 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.93 mW/g

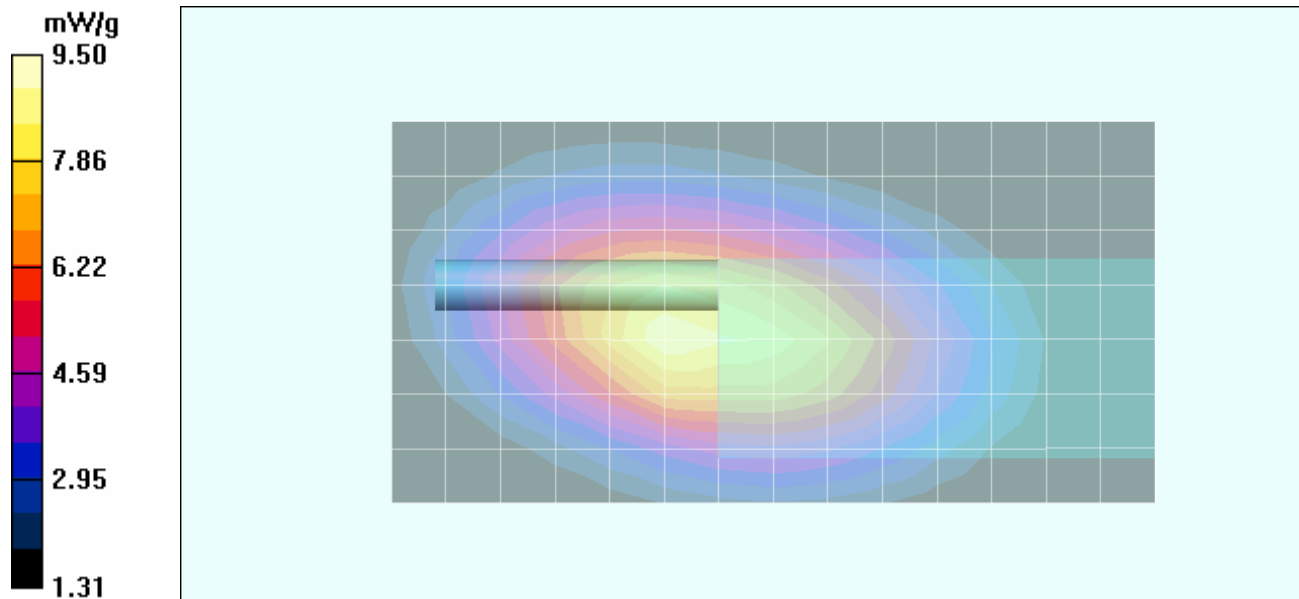
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 107.4 V/m; Power Drift = -1.57 dB



Peak SAR (extrapolated) = 13.4 W/kg

**SAR(1 g) = 9.04 mW/g; SAR(10 g) 6.48 mW/g**

Maximum value of SAR (measured) = 9.50 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #61 (A61)

Date Tested: 08/11/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.9 mW/g

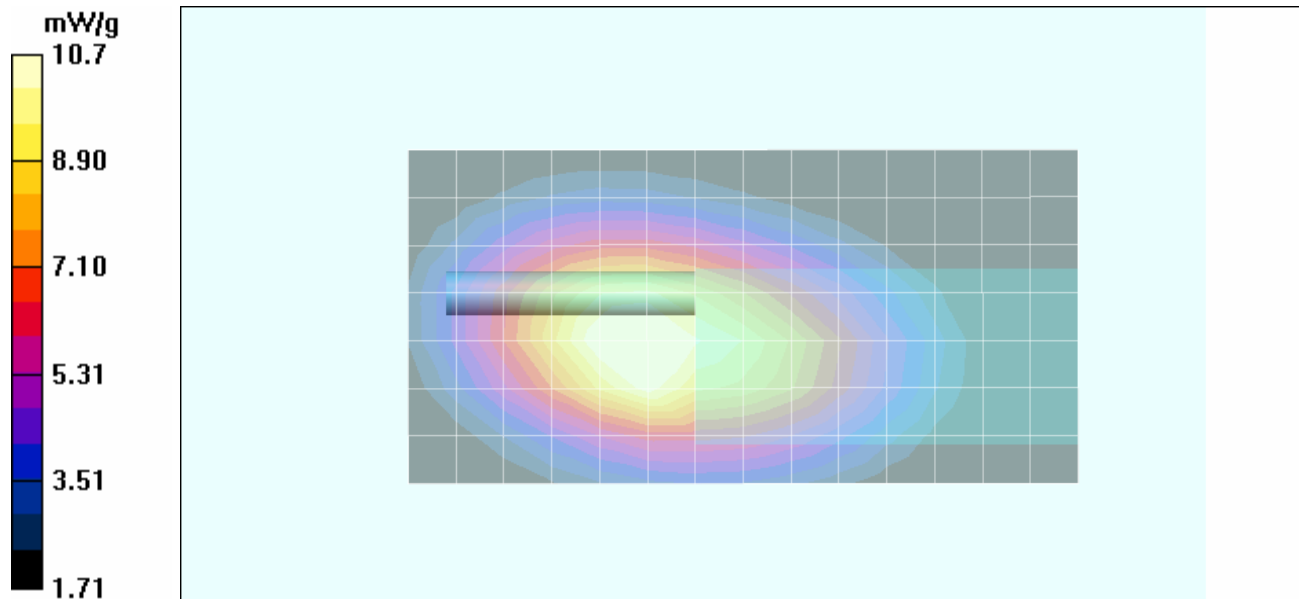
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.5 V/m; Power Drift = -0.643 dB



Peak SAR (extrapolated) = 14.9 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #62 (A62)

Date Tested: 08/11/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.2 mW/g

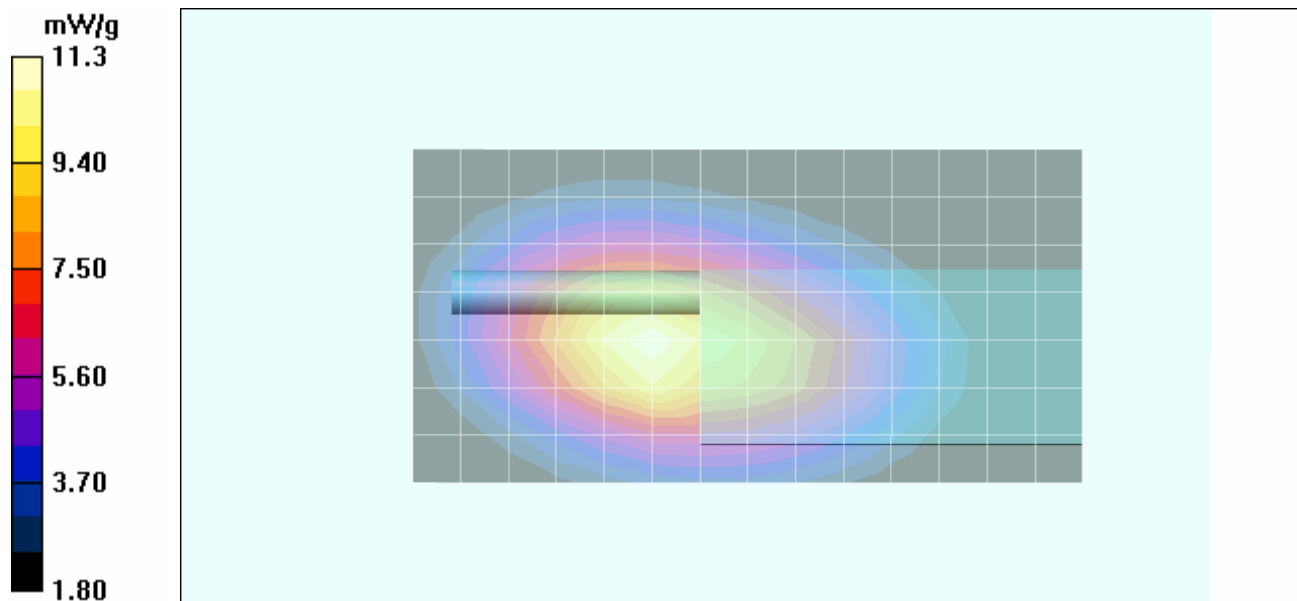
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 117.3 V/m; Power Drift = -0.948 dB



Peak SAR (extrapolated) = 15.9 W/kg

**SAR(1 g) = 10.8 mW/g; SAR(10 g) 7.74 mW/g**

Maximum value of SAR (measured) = 11.3 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #63 (A63)

Date Tested: 08/16/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 55$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 8.76 mW/g

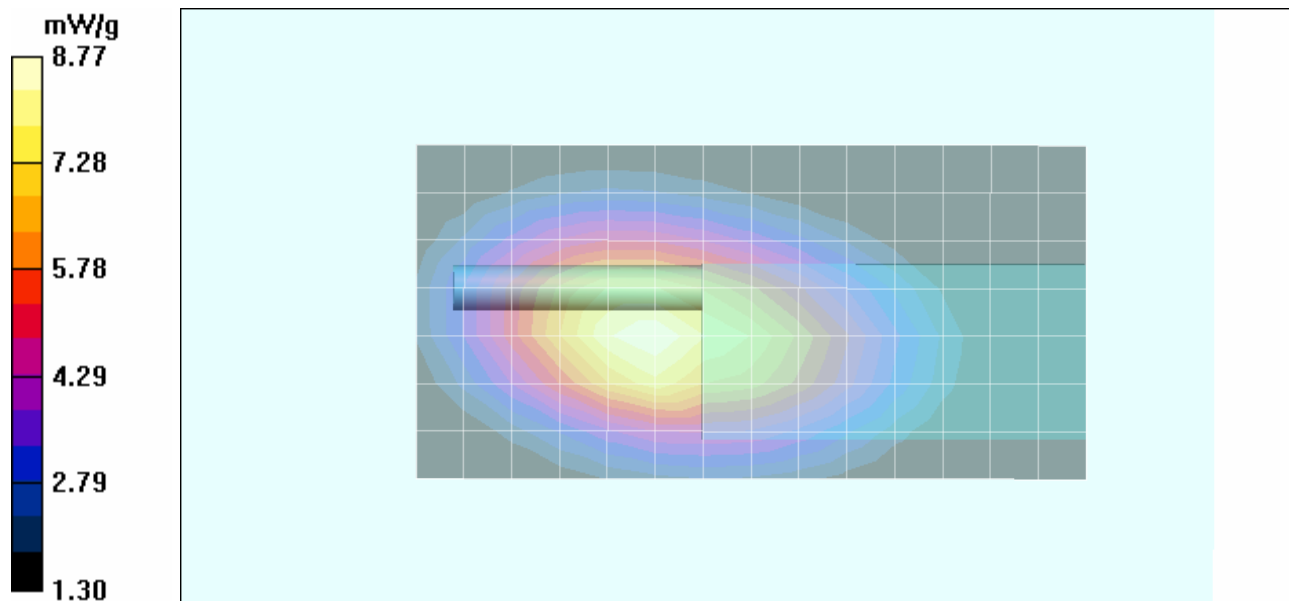
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 103.4 V/m; Power Drift = -0.972 dB



Peak SAR (extrapolated) = 12.3 W/kg

**SAR(1 g) = 8.38 mW/g; SAR(10 g) 6.01 mW/g**

Maximum value of SAR (measured) = 8.77 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #64 (A64)

Date Tested: 08/12/2010

### 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: 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: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 58.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.03 mW/g

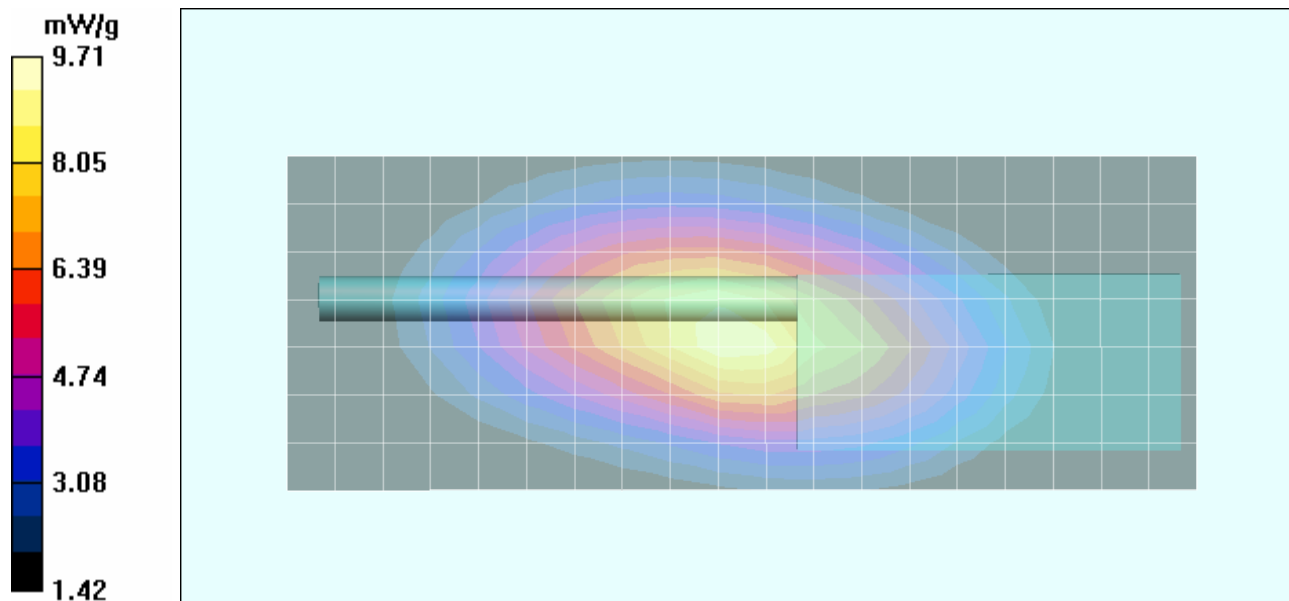
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 101.8 V/m; Power Drift = -0.610 dB



Peak SAR (extrapolated) = 13.6 W/kg

**SAR(1 g) = 9.29 mW/g; SAR(10 g) 6.64 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #65 (A65)

Date Tested: 08/12/2010

### 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: 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: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 58.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.52 mW/g

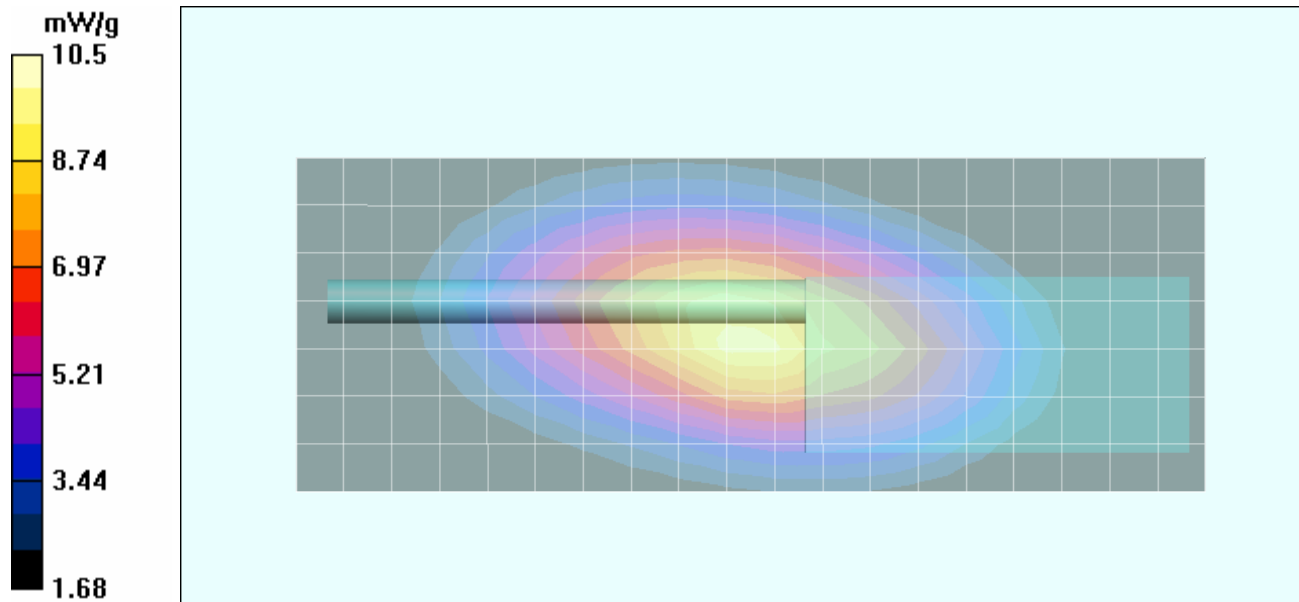
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.3 V/m; Power Drift = -0.577 dB

Peak SAR (extrapolated) = 14.8 W/kg



**SAR(1 g) = 10.1 mW/g; SAR(10 g) 7.72 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #66 (A66)

Date Tested: 08/12/2010

### 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: 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: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 58.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.13 mW/g

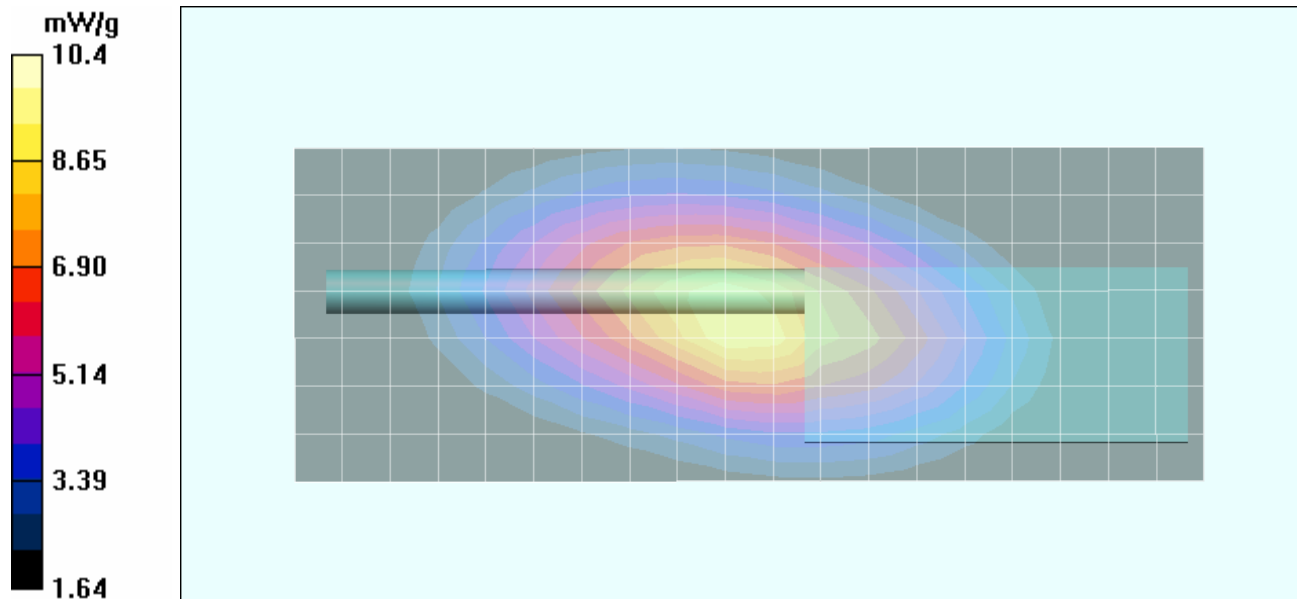
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 109.5 V/m; Power Drift = -0.550 dB



Peak SAR (extrapolated) = 14.6 W/kg

**SAR(1 g) = 9.99 mW/g; SAR(10 g) 7.18 mW/g**

Maximum value of SAR (measured) = 10.4 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #67 (A67)

Date Tested: 08/12/2010

### 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: 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: 463.3 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 463.3$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 58.0$ ;  $\rho = 1000$  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) = 9.29 mW/g

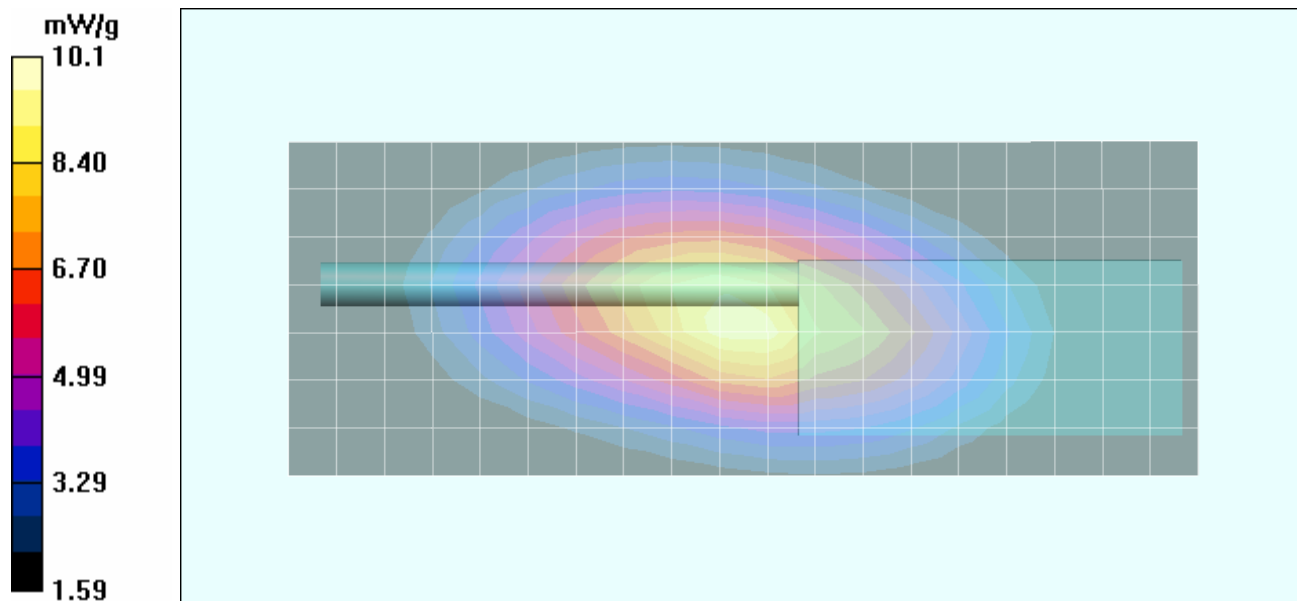
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 105.1 V/m; Power Drift = -0.510 dB



Peak SAR (extrapolated) = 14.2 W/kg

**SAR(1 g) = 9.63 mW/g; SAR(10 g) 6.9 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #68 (A68)

Date Tested: 08/12/2010

### 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: 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: 470.0 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470.0$  MHz;  $\sigma = 0.93$  mho/m;  $\epsilon_r = 57.3$ ;  $\rho = 1000$  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) = 11.0 mW/g

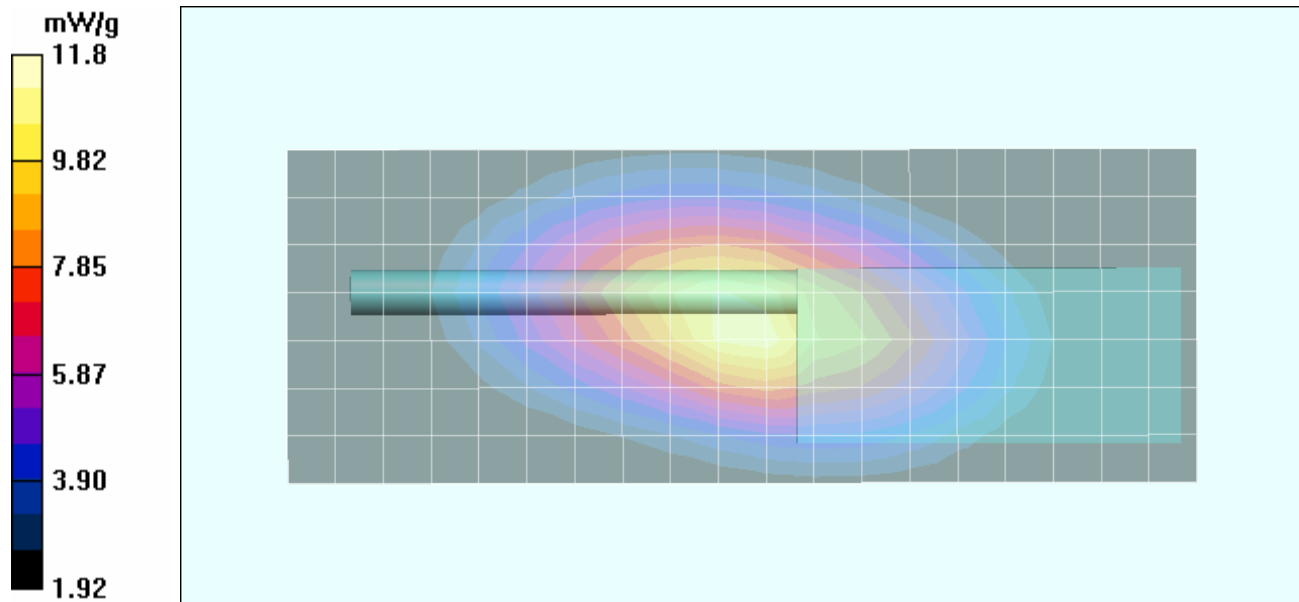
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 113.9 V/m; Power Drift = -0.467 dB



Peak SAR (extrapolated) = 16.5 W/kg

**SAR(1 g) = 11.3 mW/g; SAR(10 g) 8.07 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #69 (A69)

Date Tested: 08/12/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.3 mW/g

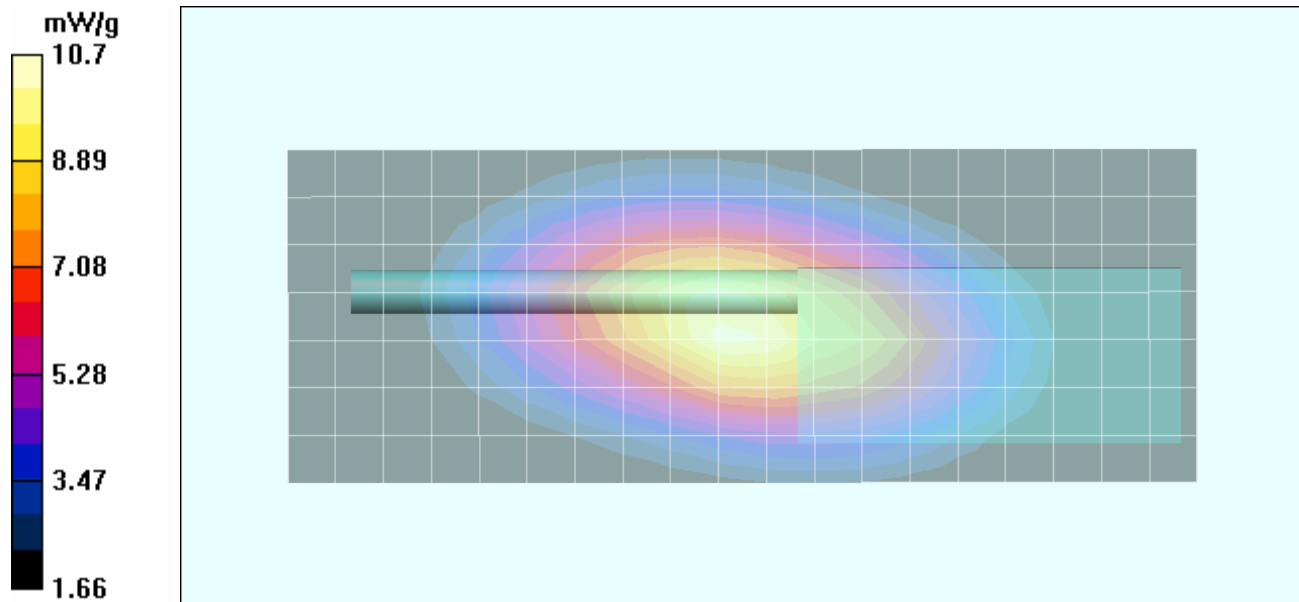
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.4 V/m; Power Drift = -0.771 dB



Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.32 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #70 (A70)

Date Tested: 08/12/2010

### 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: 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: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.948 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.4 mW/g

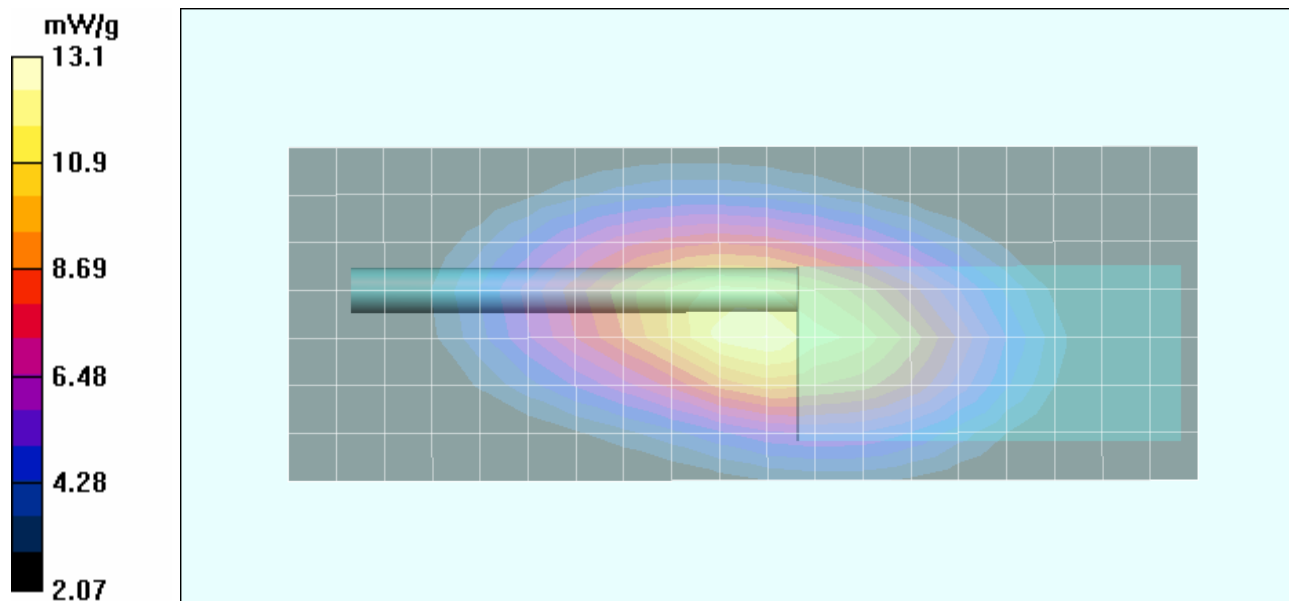
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.3 V/m; Power Drift = -0.609 dB



Peak SAR (extrapolated) = 18.2 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.86 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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|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #71 (A71)

Date Tested: 08/12/2010

### 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 57.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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

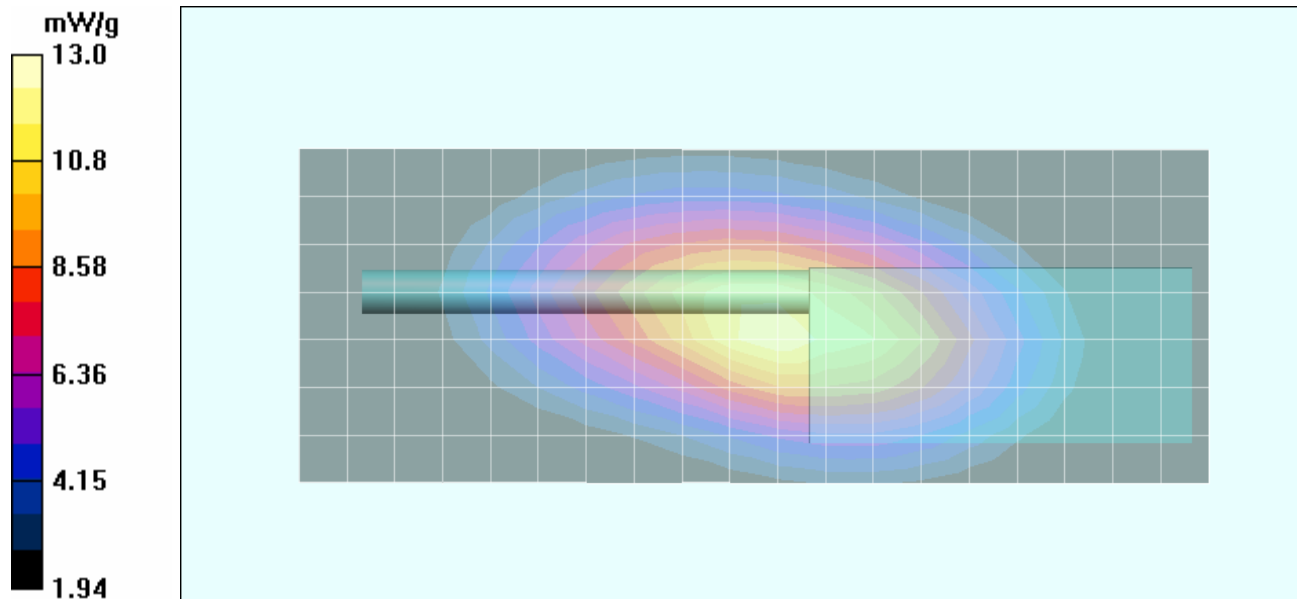
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.8 V/m; Power Drift = -0.608 dB



Peak SAR (extrapolated) = 18.0 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.93 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #72 (A72)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-21**

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

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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

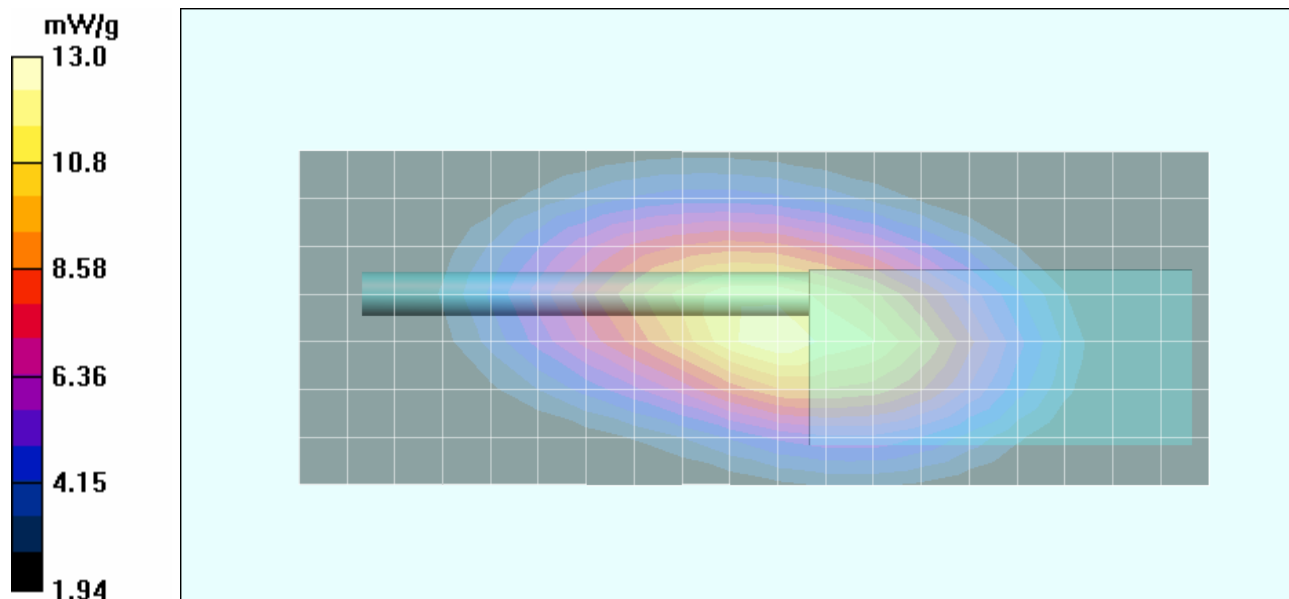
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.9 V/m; Power Drift = -0.383 dB

Peak SAR (extrapolated) = 15.0 W/kg



**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.93 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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|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #73 (A73)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-21**

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

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.5 mW/g

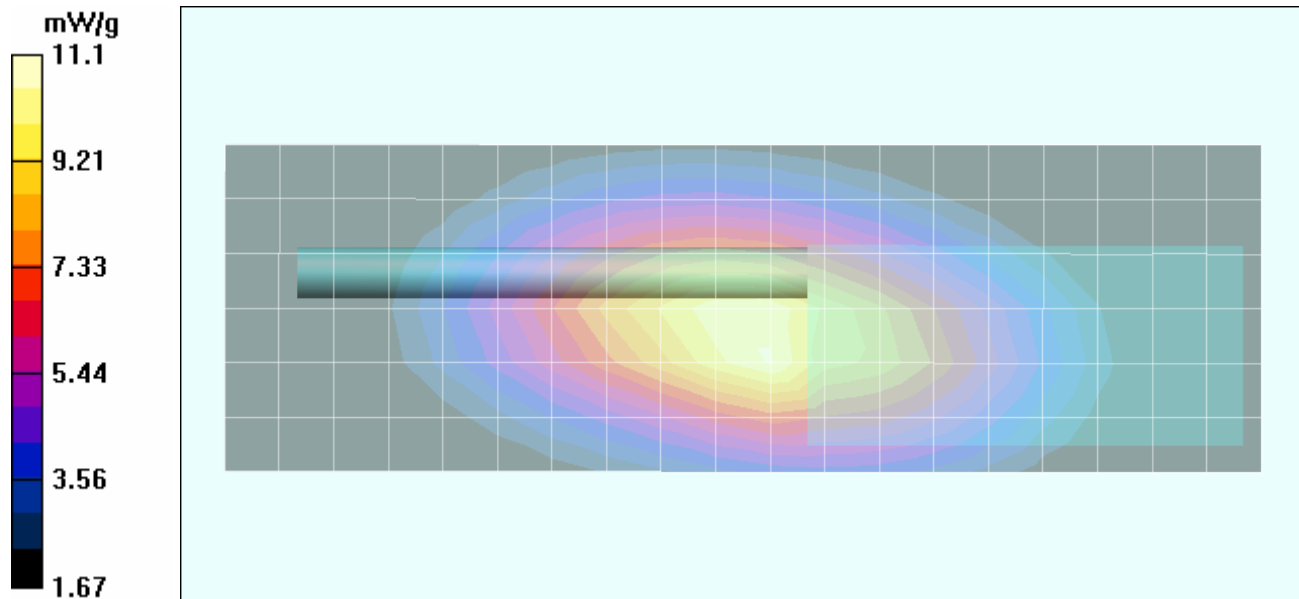
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.2 V/m; Power Drift = -0.654 dB



Peak SAR (extrapolated) = 15.6 W/kg

**SAR(1 g) = 10.6 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #74 (A74)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-21**

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

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.9 mW/g

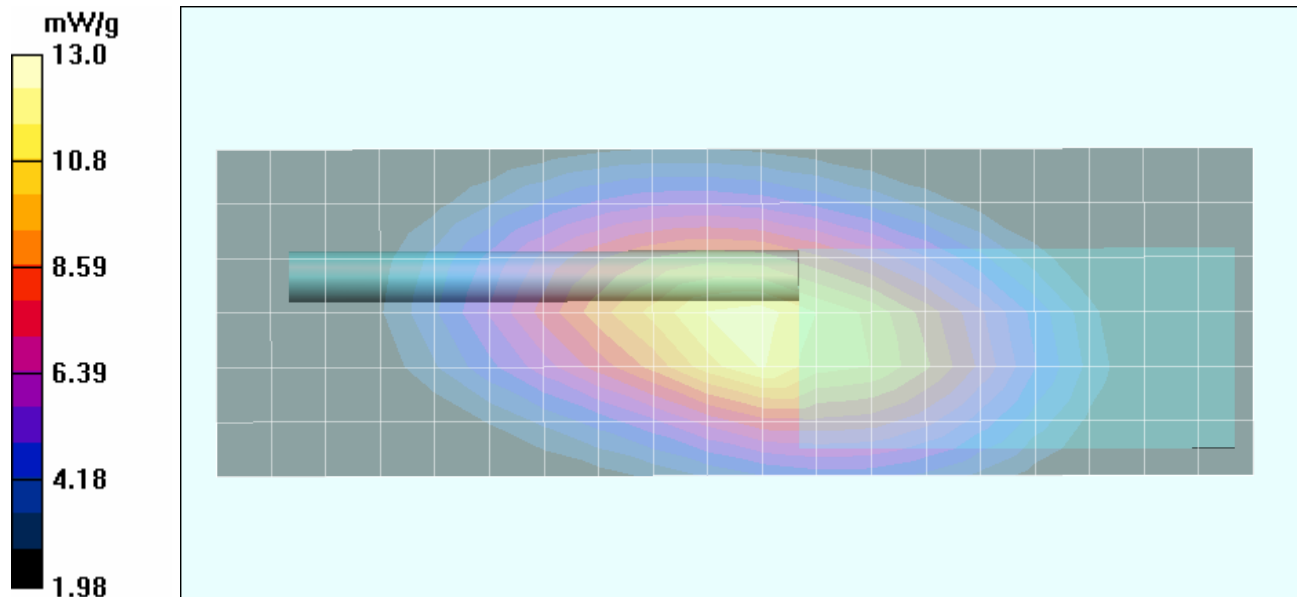
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 122.5 V/m; Power Drift = -0.660 dB



Peak SAR (extrapolated) = 18.2 W/kg

**SAR(1 g) = 12.3 mW/g; SAR(10 g) 8.82 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   | <b>TK-3317-1</b>                  |                 |
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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #75 (A75)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-21**

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

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.3 mW/g

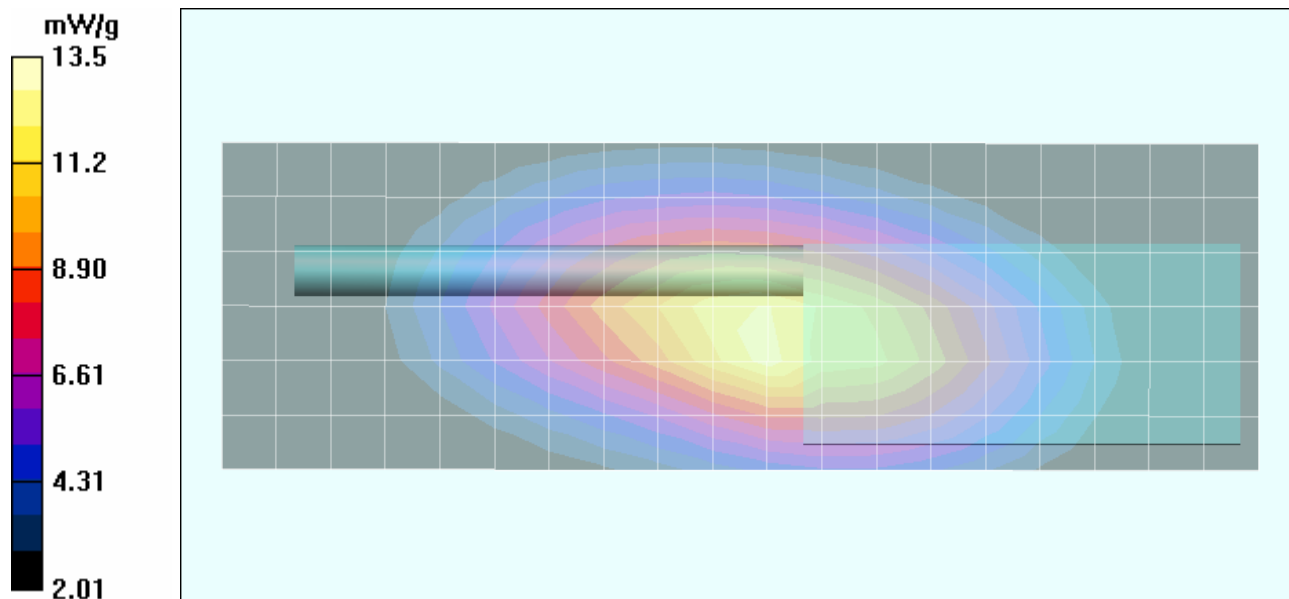
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 123.8 V/m; Power Drift = -0.664 dB

Peak SAR (extrapolated) = 18.9 W/kg

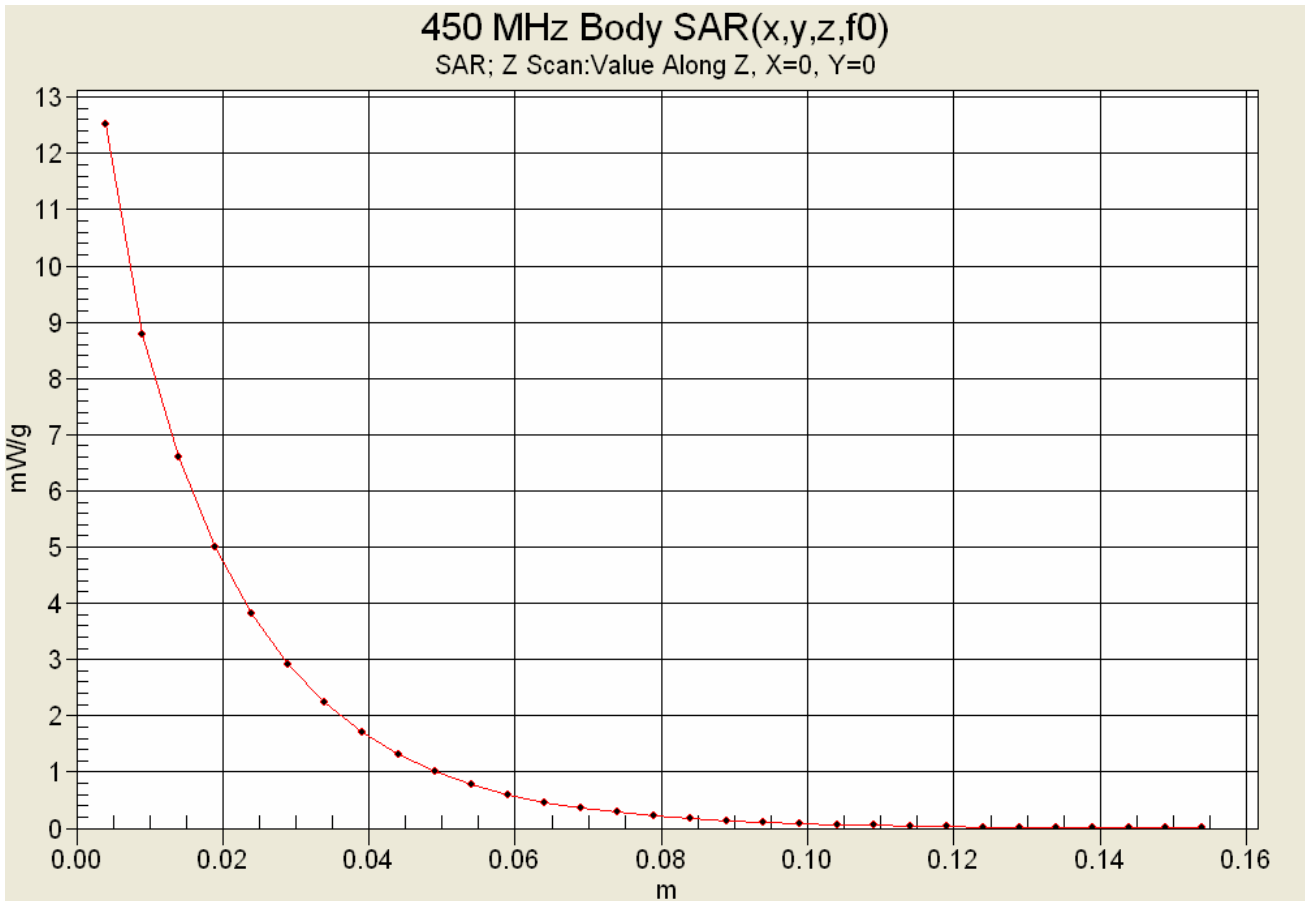
**SAR(1 g) = 12.7 mW/g; SAR(10 g) 9.07 mW/g**



Maximum value of SAR (measured) = 13.5 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



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

## Audio Accessory SAR Plot #76 (A76)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-10-BH**

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

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.5 mW/g

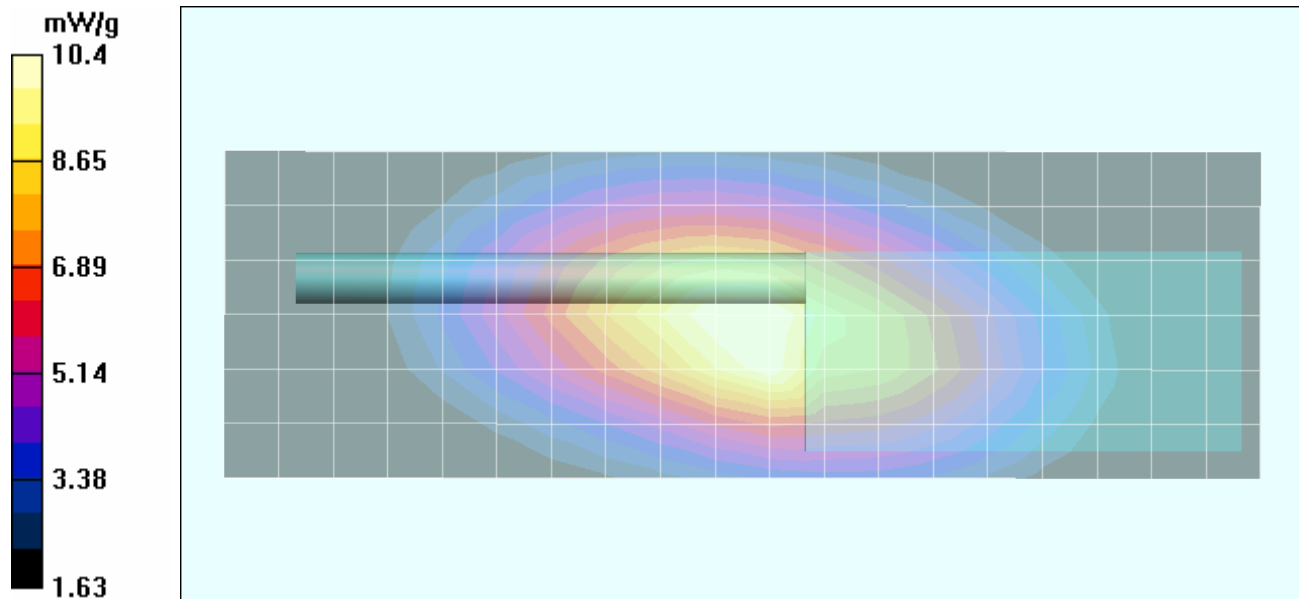
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.5 V/m; Power Drift = -0.425 dB



Peak SAR (extrapolated) = 14.6 W/kg

**SAR(1 g) = 9.95 mW/g; SAR(10 g) 7.11 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #77 (A77)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-10-BH**

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

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.96 mW/g

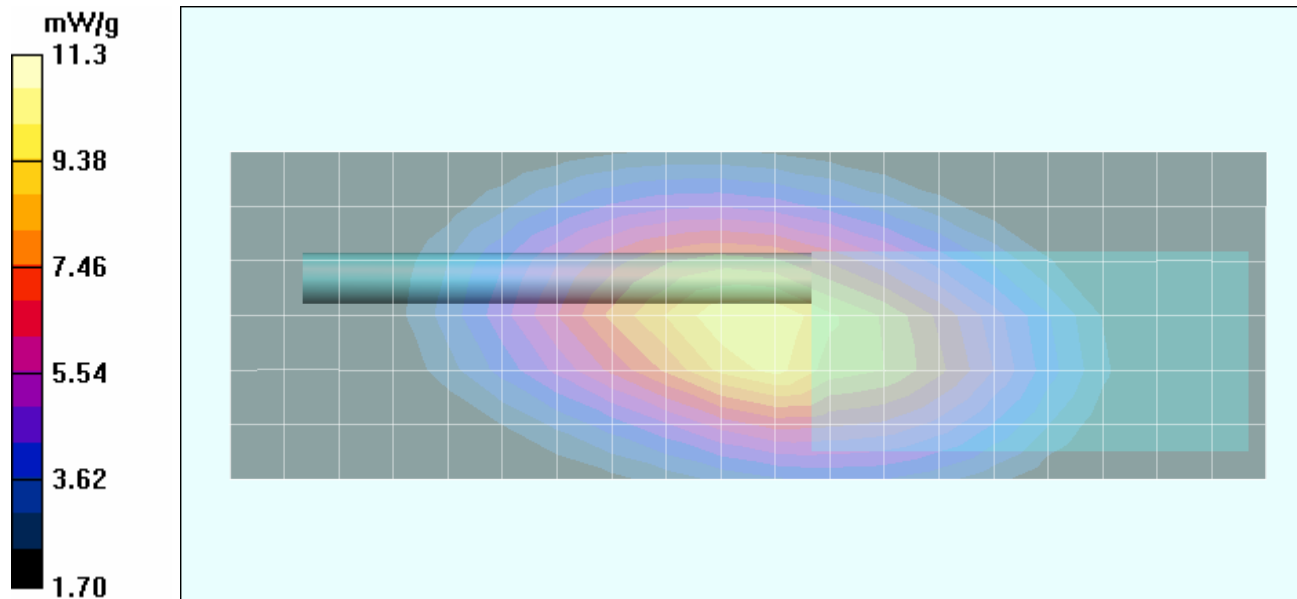
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.3 V/m; Power Drift = -0.655 dB



Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 10.7 mW/g; SAR(10 g) 7.66 mW/g**

Maximum value of SAR (measured) = 11.3 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #78 (A78)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-10-BH**

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

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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) = 11.9 mW/g

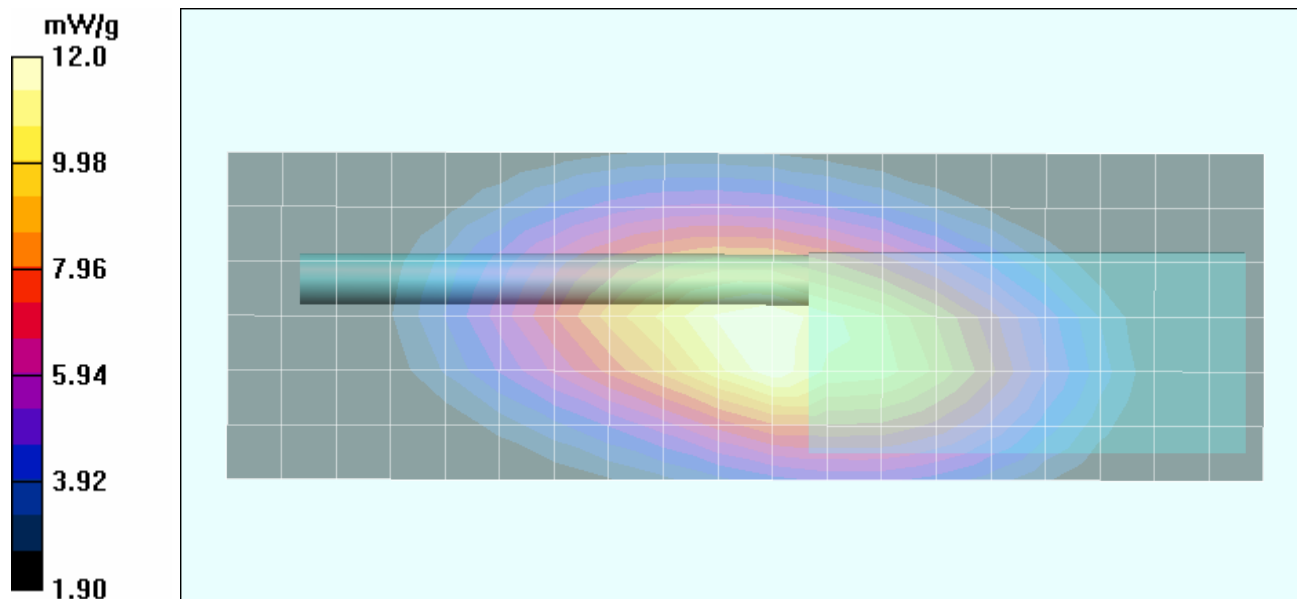
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 119.0 V/m; Power Drift = -0.632 dB

Peak SAR (extrapolated) = 16.9 W/kg



**SAR(1 g) = 11.5 mW/g; SAR(10 g) 8.2 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #79 (A79)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-10-BH**

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

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.5 mW/g

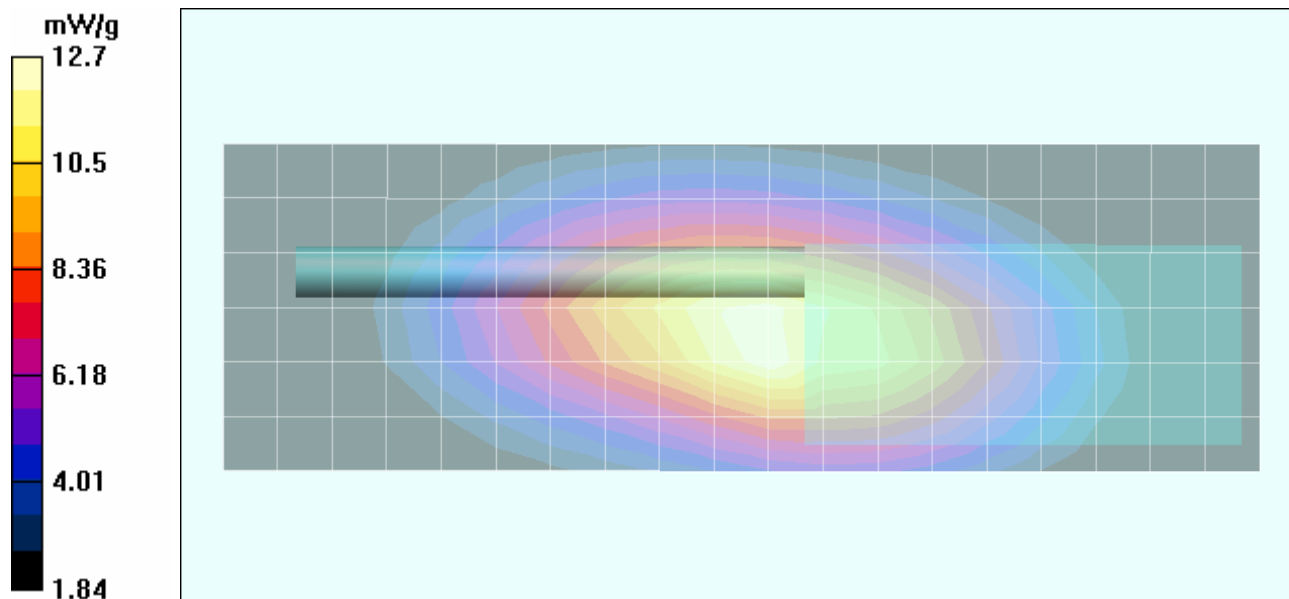
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.2 V/m; Power Drift = -0.633 dB



Peak SAR (extrapolated) = 17.9 W/kg

**SAR(1 g) = 12 mW/g; SAR(10 g) 8.53 mW/g**

Maximum value of SAR (measured) = 12.7 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #80 (A80)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-22**

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

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.6 mW/g

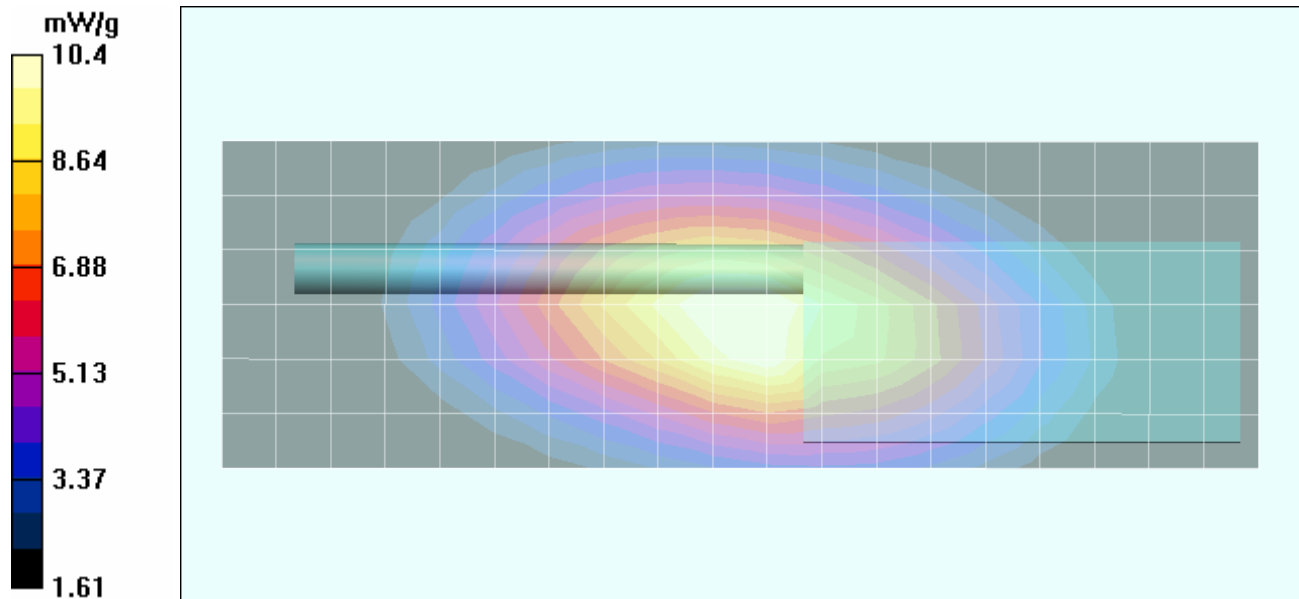
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.5 V/m; Power Drift = -0.435 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.84 mW/g; SAR(10 g) 7.05 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #81 (A81)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-22

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

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.6 mW/g

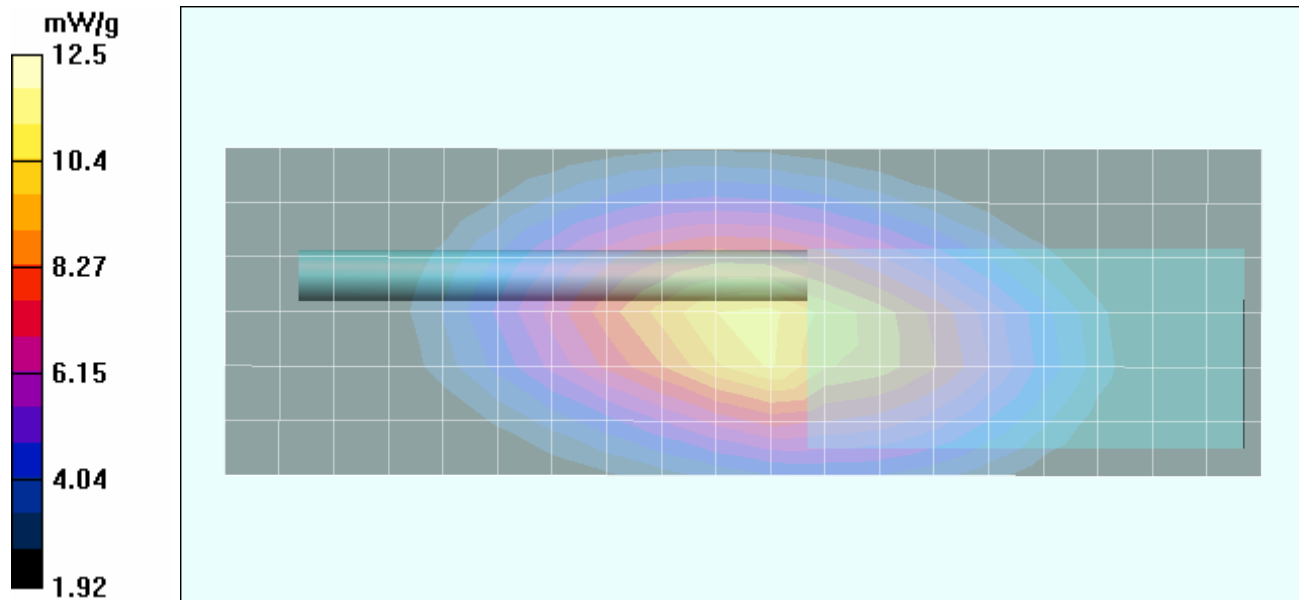
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.6 V/m; Power Drift = -0.414 dB



Peak SAR (extrapolated) = 17.5 W/kg

**SAR(1 g) = 11.8 mW/g; SAR(10 g) 8.42 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #82 (A82)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-22**

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

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.1 mW/g

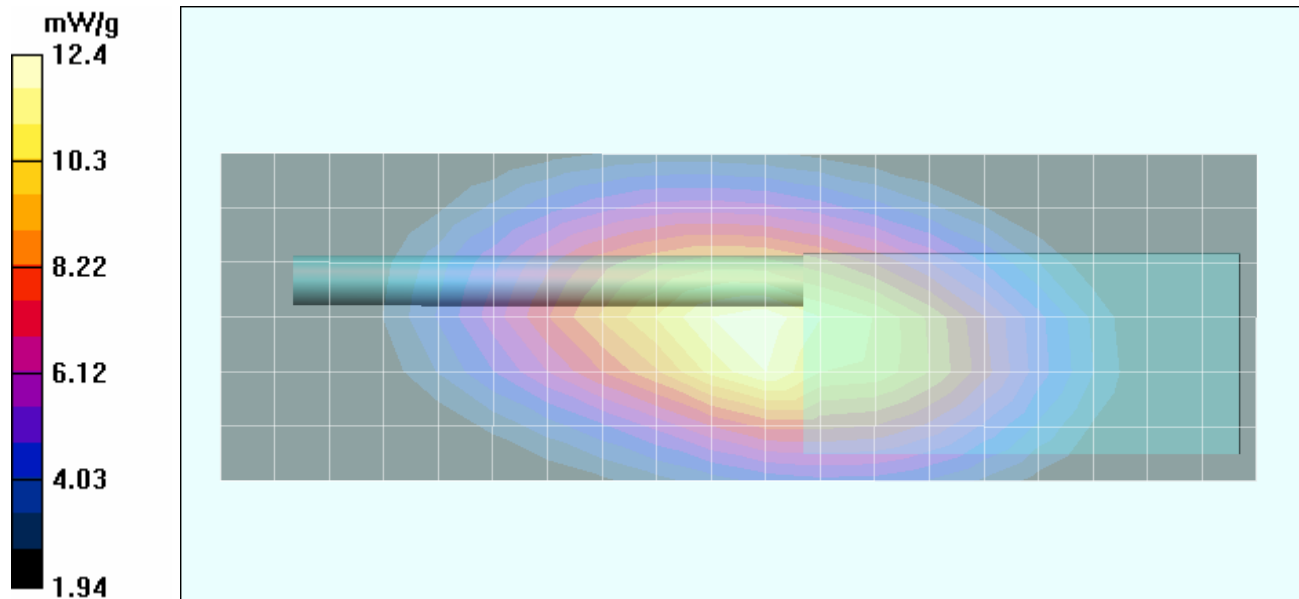
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.1 V/m; Power Drift = -0.653 dB



Peak SAR (extrapolated) = 17.5 W/kg

**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.51 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #83 (A83)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-22

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

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.4$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.5 mW/g

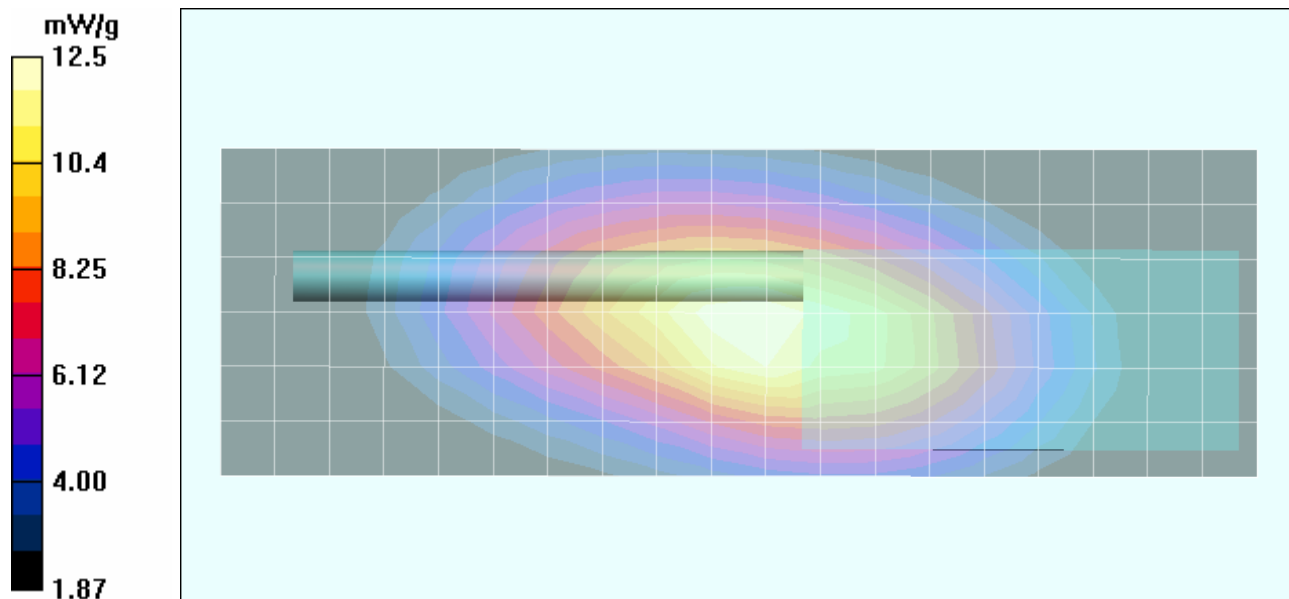
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 119.9 V/m; Power Drift = -0.667 dB



Peak SAR (extrapolated) = 17.5 W/kg

**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.49 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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|--|--|---|---|--|
|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #84 (A84)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-7**

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

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.5 mW/g

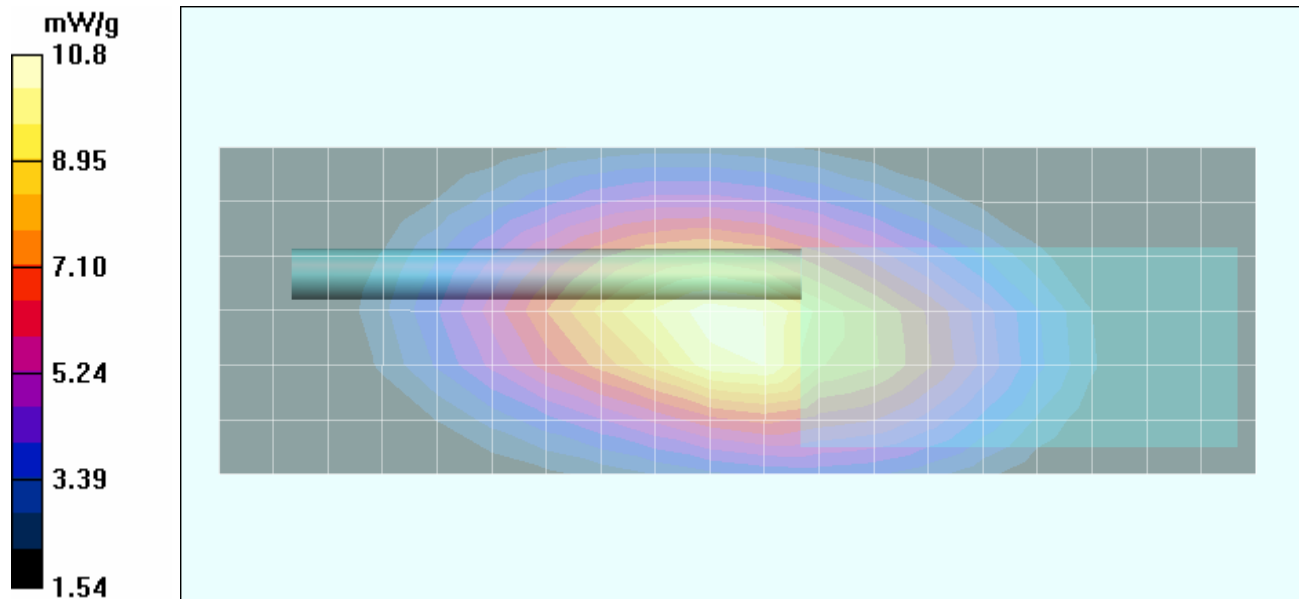
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 111.1 V/m; Power Drift = -0.467 dB



Peak SAR (extrapolated) = 15.2 W/kg

**SAR(1 g) = 10.3 mW/g; SAR(10 g) = 7.29 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #85 (A85)

Date Tested: 09/2/2010

### 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: Headset P/N: KHS-7

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

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 57$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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=20mm, dy=20mm

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

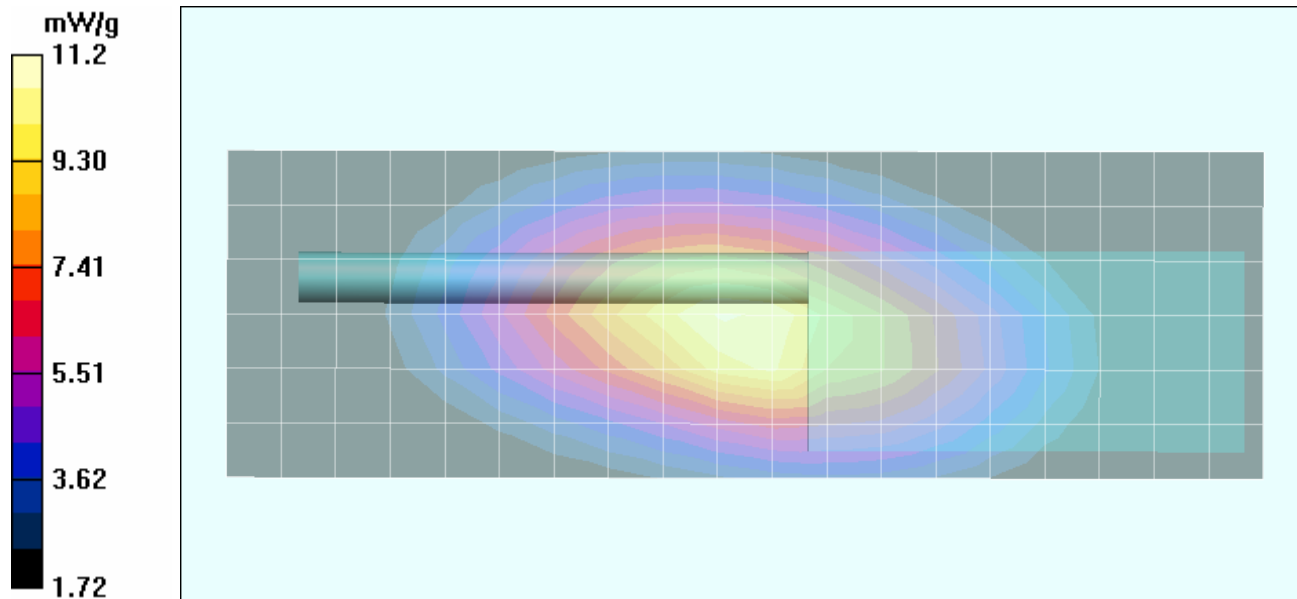
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 113.7 V/m; Power Drift = -0.620 dB

Peak SAR (extrapolated) = 15.6 W/kg



**SAR(1 g) = 10.7 mW/g; SAR(10 g) = 7.16 mW/g**

Maximum value of SAR (measured) = 11.2 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #86 (A86)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7**

Ambient Temp: 23.0°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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.966 \text{ mho/m}$ ;  $\epsilon_r = 56.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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

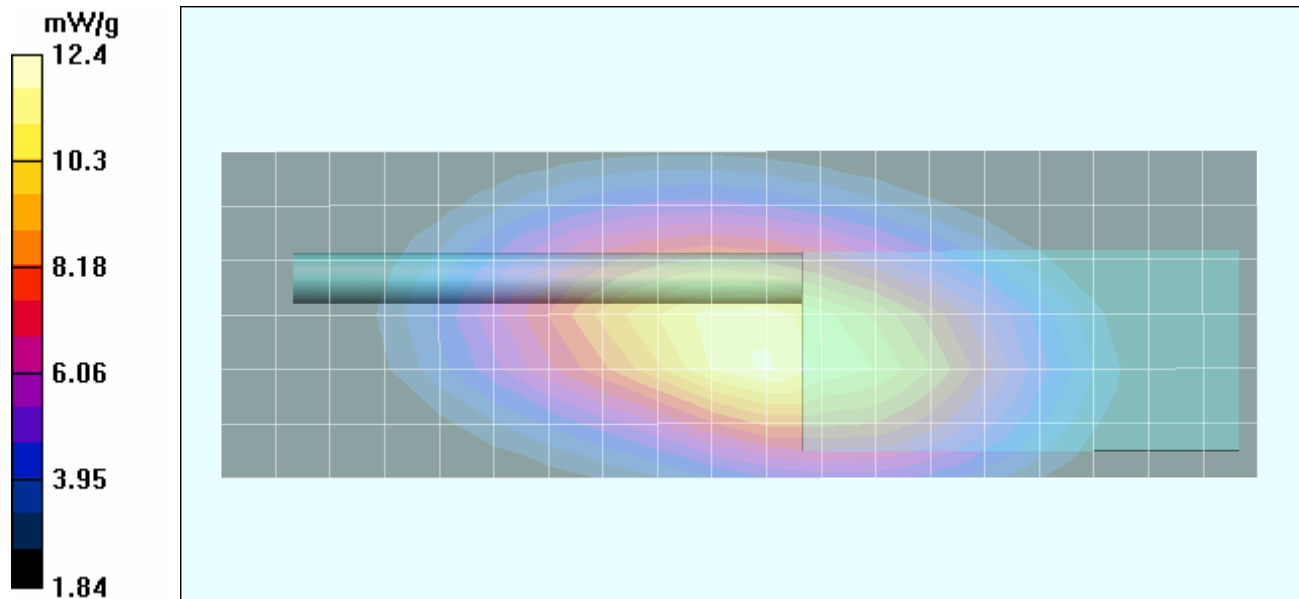
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 117.6 V/m; Power Drift = -0.529 dB



Peak SAR (extrapolated) = 17.4 W/kg

**SAR(1 g) = 11.8 mW/g; SAR(10 g) = 8.39 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #87 (A87)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7

Ambient Temp: 23.0°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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.4 mW/g

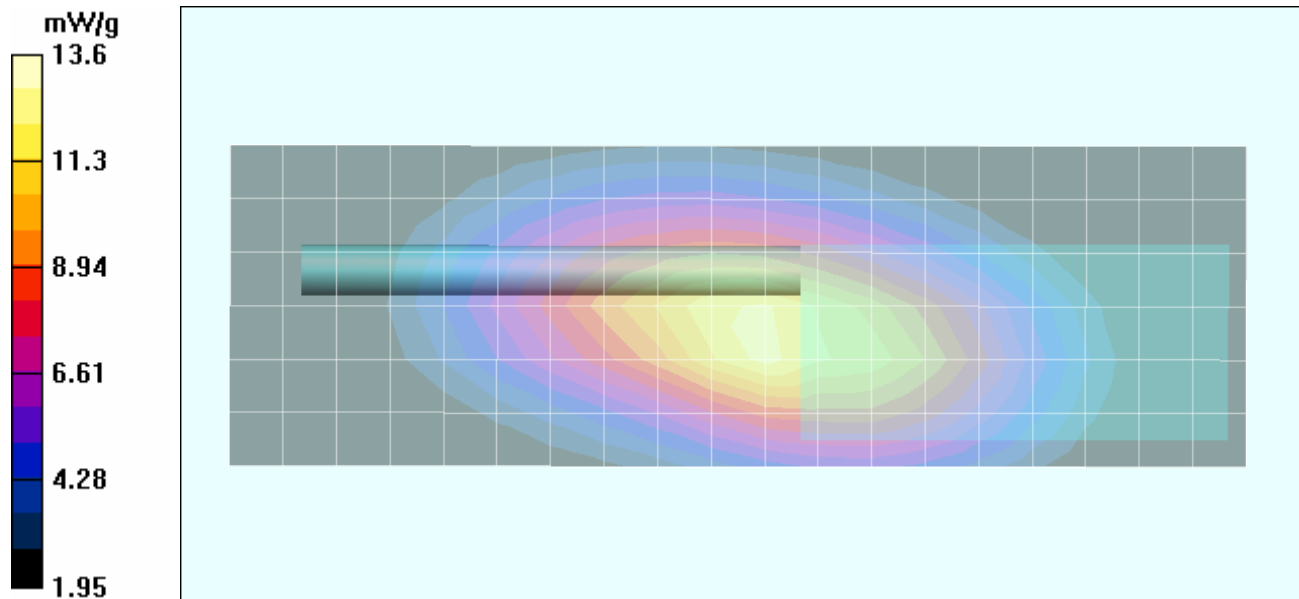
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 122.5 V/m; Power Drift = -0.661 dB

Peak SAR (extrapolated) = 19.3 W/kg

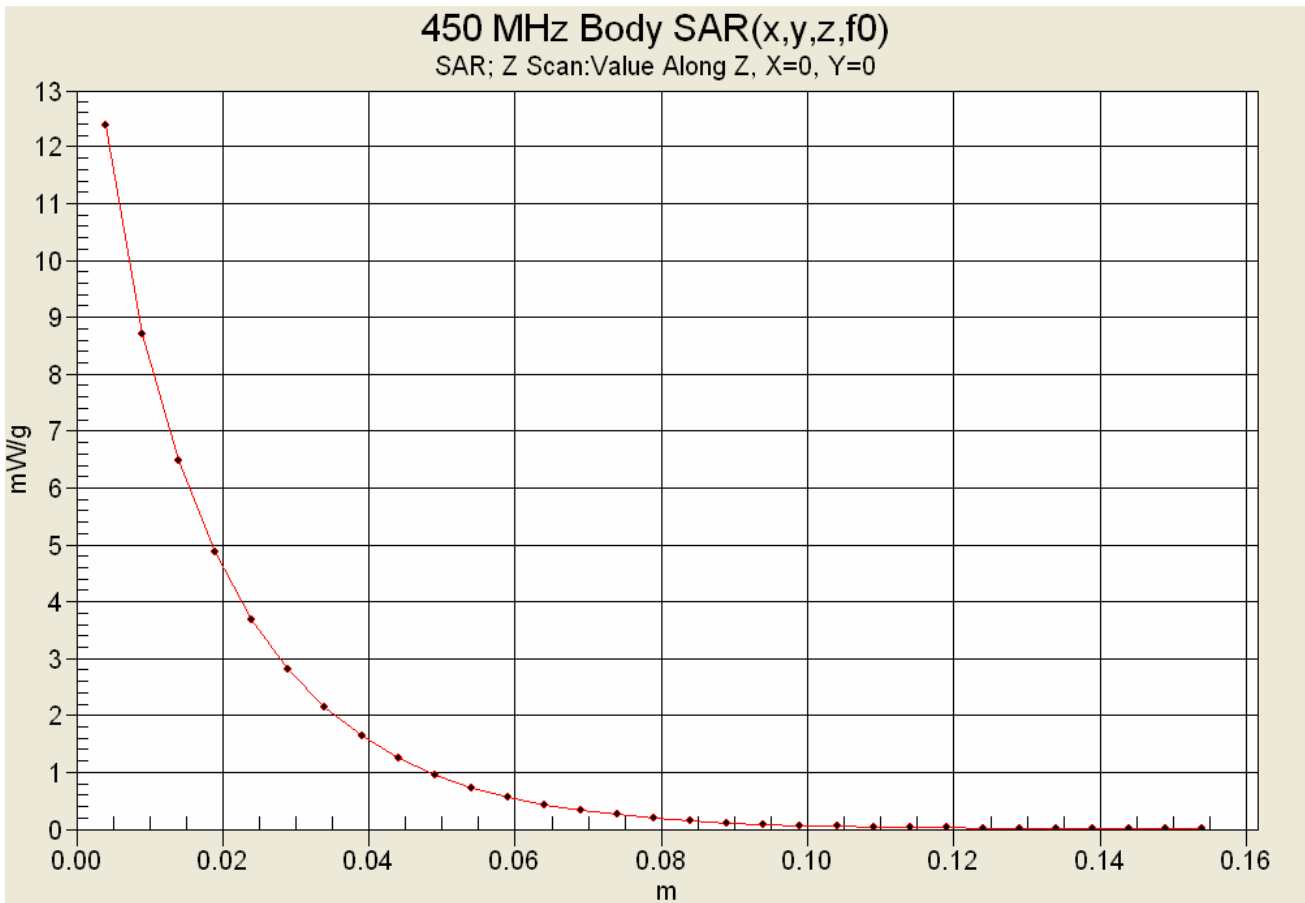
**SAR(1 g) = 13 mW/g; SAR(10 g) = 9.23 mW/g**



Maximum value of SAR (measured) = 13.6 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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### Z-Axis Scan



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

## Audio Accessory SAR Plot #88 (A88)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7A**

Ambient Temp: 23.0°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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.3 mW/g

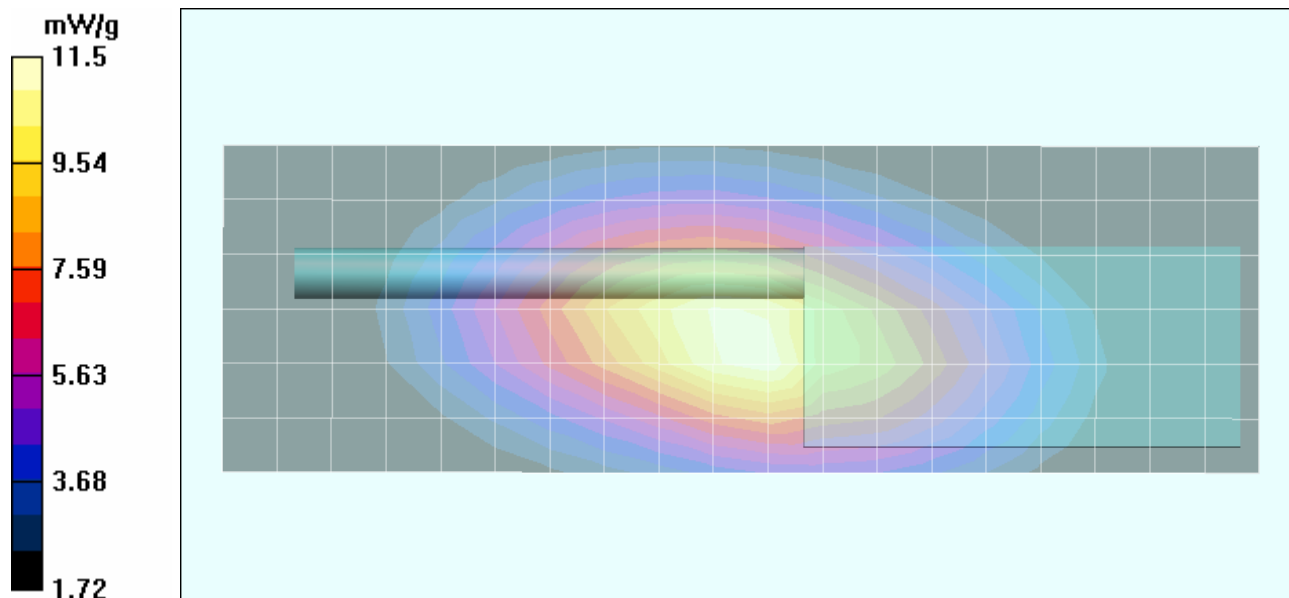
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.0 V/m; Power Drift = -0.467 dB



Peak SAR (extrapolated) = 16.1 W/kg

**SAR(1 g) = 10.9 mW/g; SAR(10 g) = 7.73 mW/g**

Maximum value of SAR (measured) = 11.5 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #89 (A89)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7A

Ambient Temp: 23.0°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):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.84 mW/g

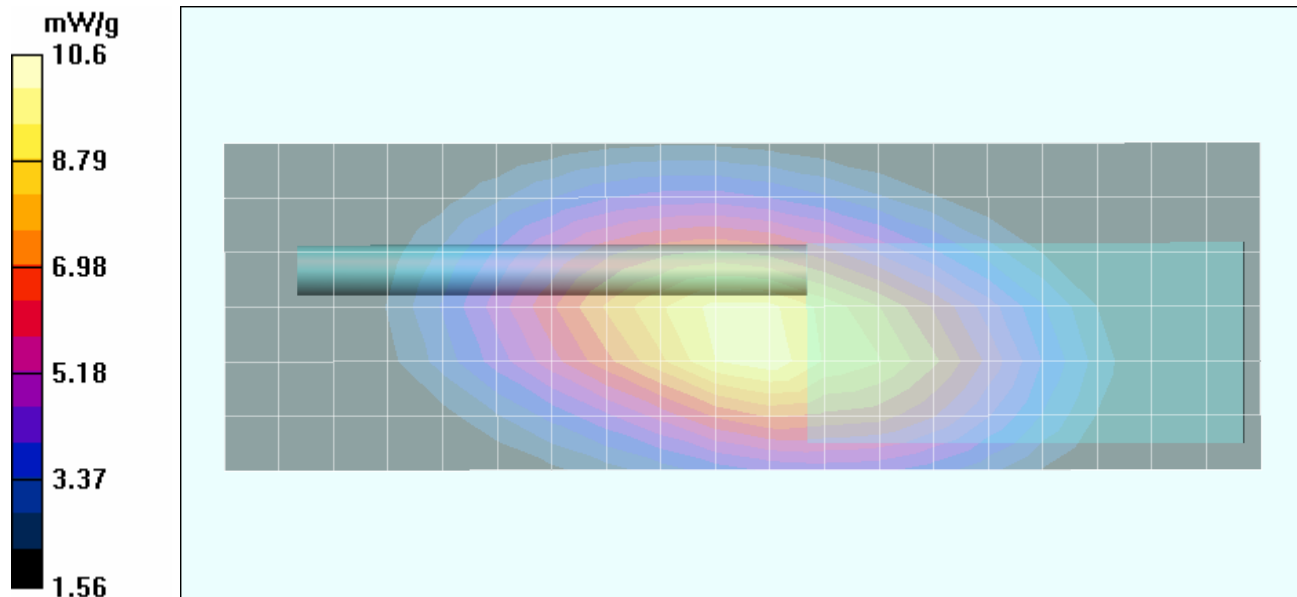
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.6 V/m; Power Drift = -0.717 dB



Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 7.2 mW/g**

Maximum value of SAR (measured) = 10.6 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #90 (A90)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7A

Ambient Temp: 23.0°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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.966 \text{ mho/m}$ ;  $\epsilon_r = 56.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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=20mm, dy=20mm

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

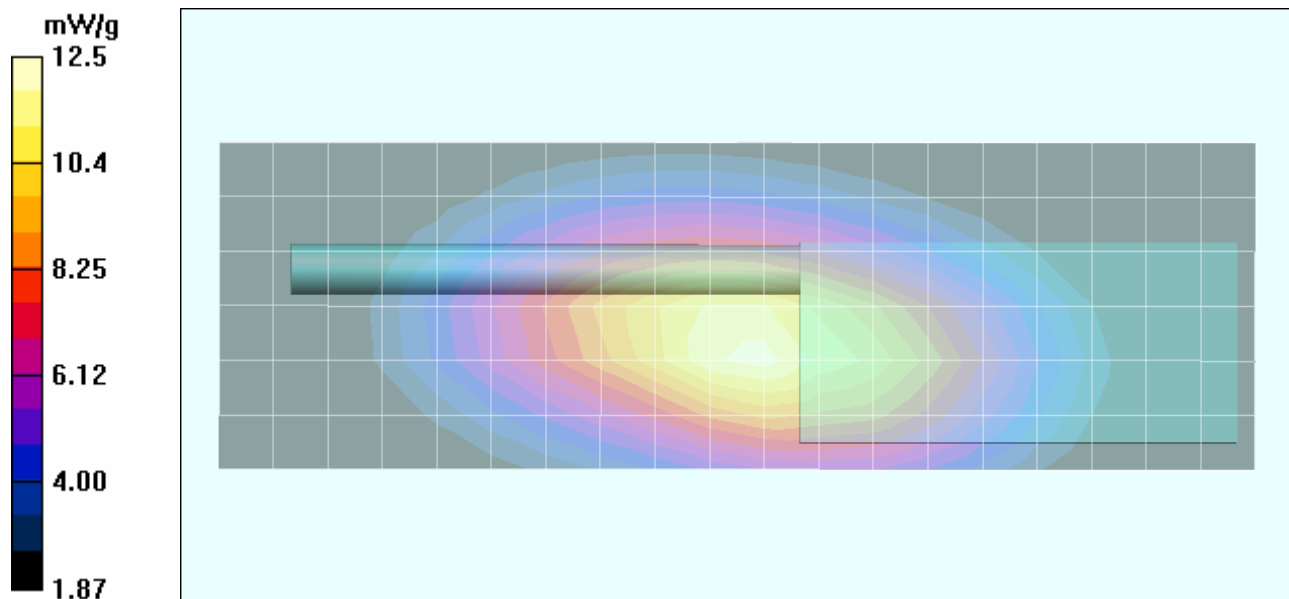
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 120.5 V/m; Power Drift = -0.753 dB



Peak SAR (extrapolated) = 17.5 W/kg

**SAR(1 g) = 11.8 mW/g; SAR(10 g) = 8.41 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #91 (A91)

Date Tested: 09/3/2010

### 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: Headset P/N: KHS-7A**

Ambient Temp: 23.0°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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.3 mW/g

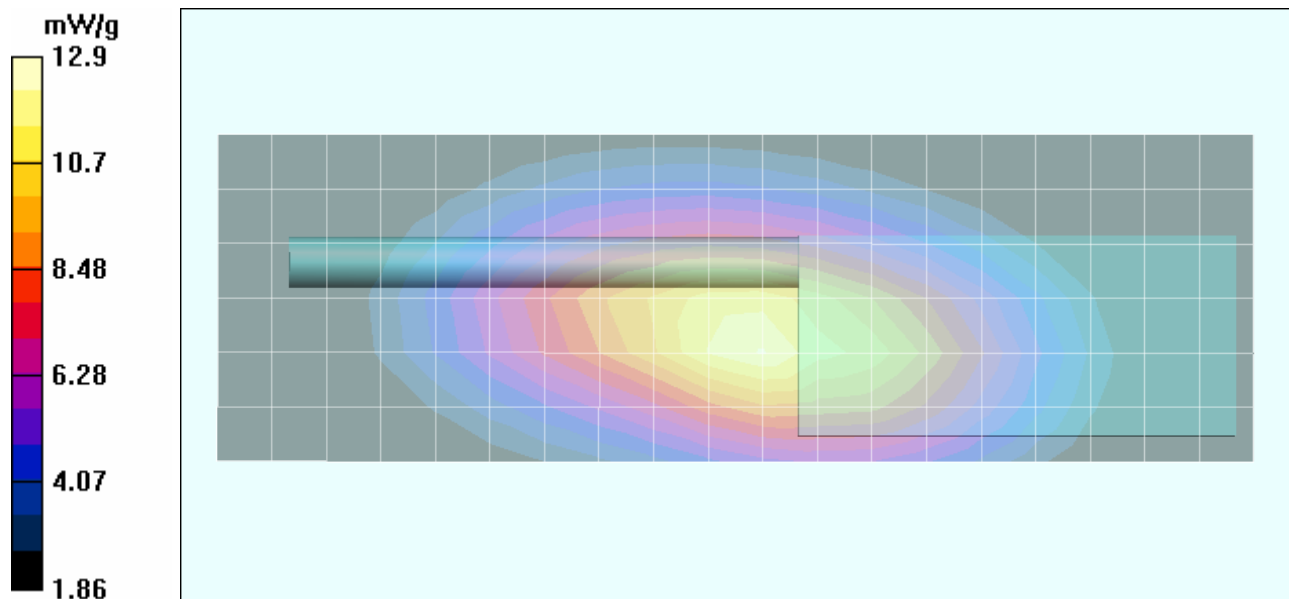
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 121.0 V/m; Power Drift = -0.754 dB

Peak SAR (extrapolated) = 18.3 W/kg



**SAR(1 g) = 12.3 mW/g; SAR(10 g) = 8.75 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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|--|--|---|---|--|
|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #92 (A92)

Date Tested: 08/12/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.4 mW/g

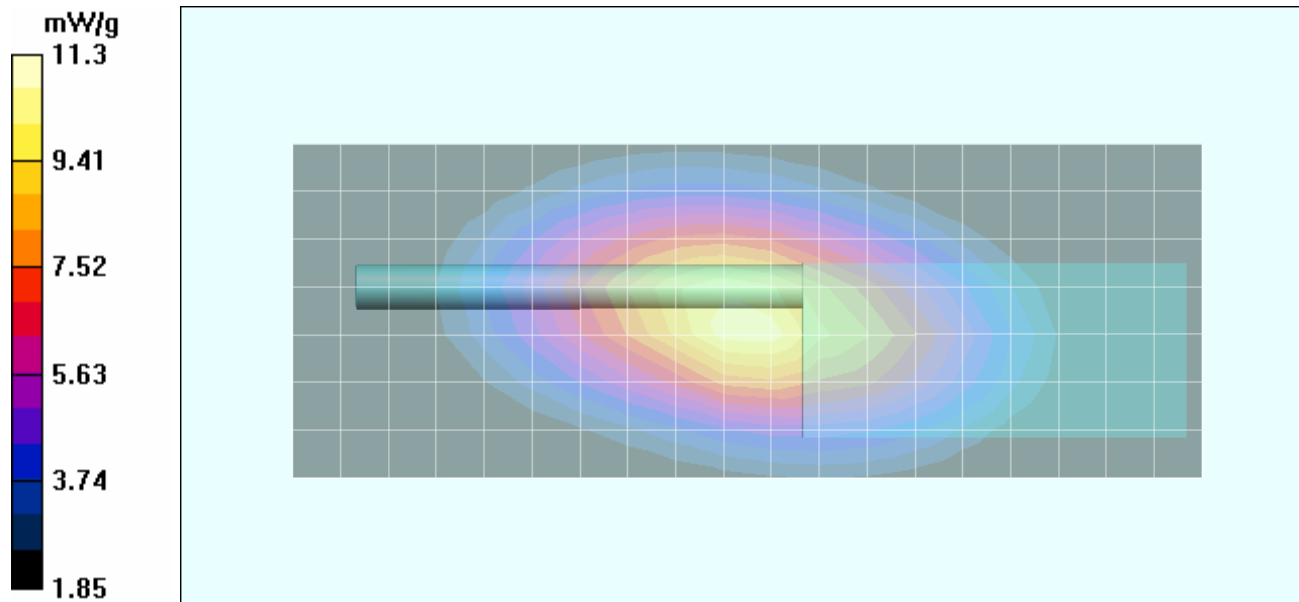
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.4 V/m; Power Drift = -0.444 dB



Peak SAR (extrapolated) = 15.9 W/kg

**SAR(1 g) = 10.8 mW/g; SAR(10 g) 7.72 mW/g**

Maximum value of SAR (measured) = 11.3 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #93 (A93)

Date Tested: 08/12/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.5 mW/g

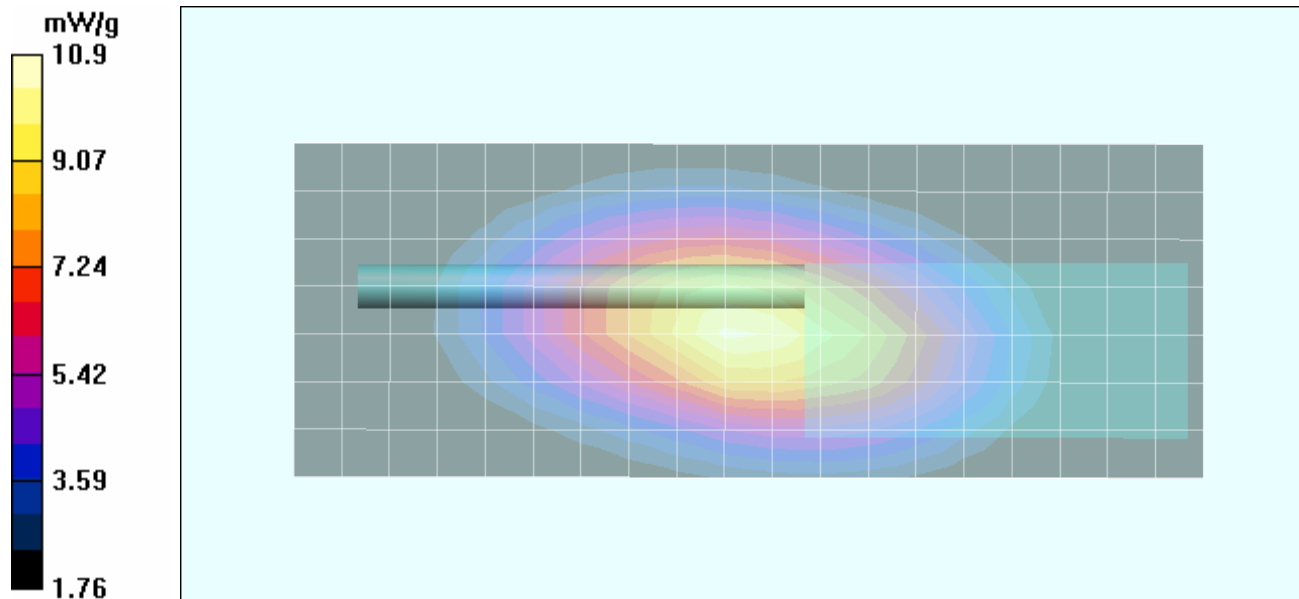
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.8 V/m; Power Drift = -0.723 dB



Peak SAR (extrapolated) = 15.3 W/kg

**SAR(1 g) = 10.4 mW/g; SAR(10 g) 7.5 mW/g**

Maximum value of SAR (measured) = 10.9 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #94 (A94)

Date Tested: 08/12/2010

### 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: 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: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.948 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.6 mW/g

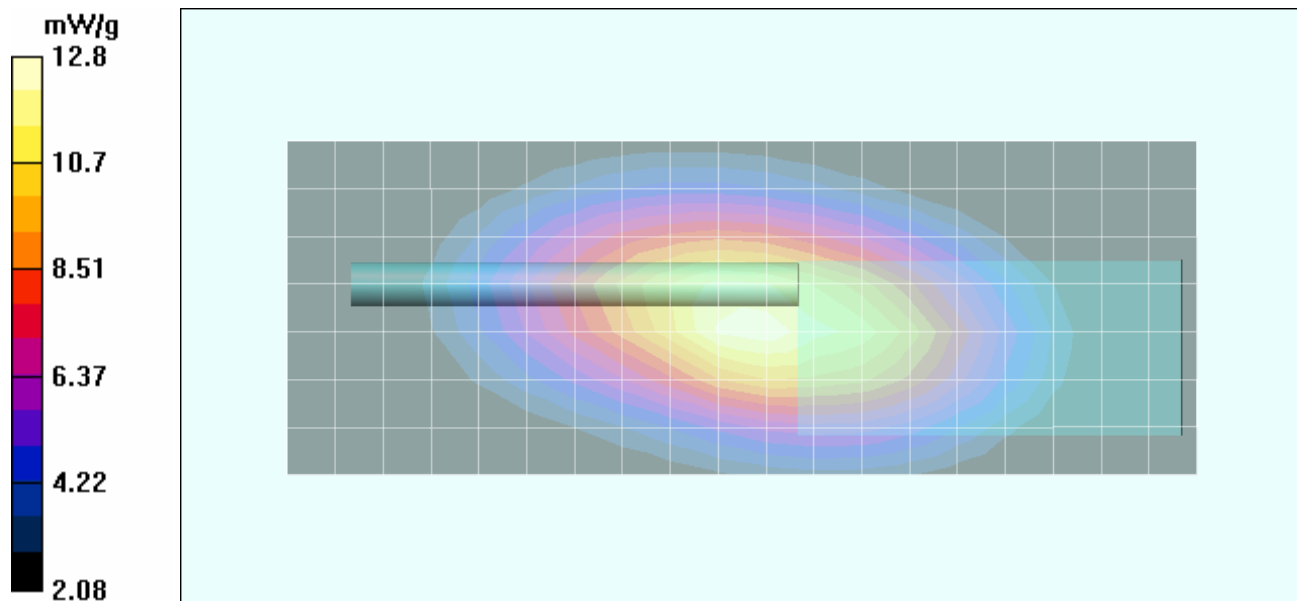
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.7 V/m; Power Drift = -0.623 dB



Peak SAR (extrapolated) = 17.9 W/kg

**SAR(1 g) = 12.2 mW/g; SAR(10 g) 8.76 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #95 (A95)

Date Tested: 08/12/2010

### 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 57.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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) = 12.2 mW/g

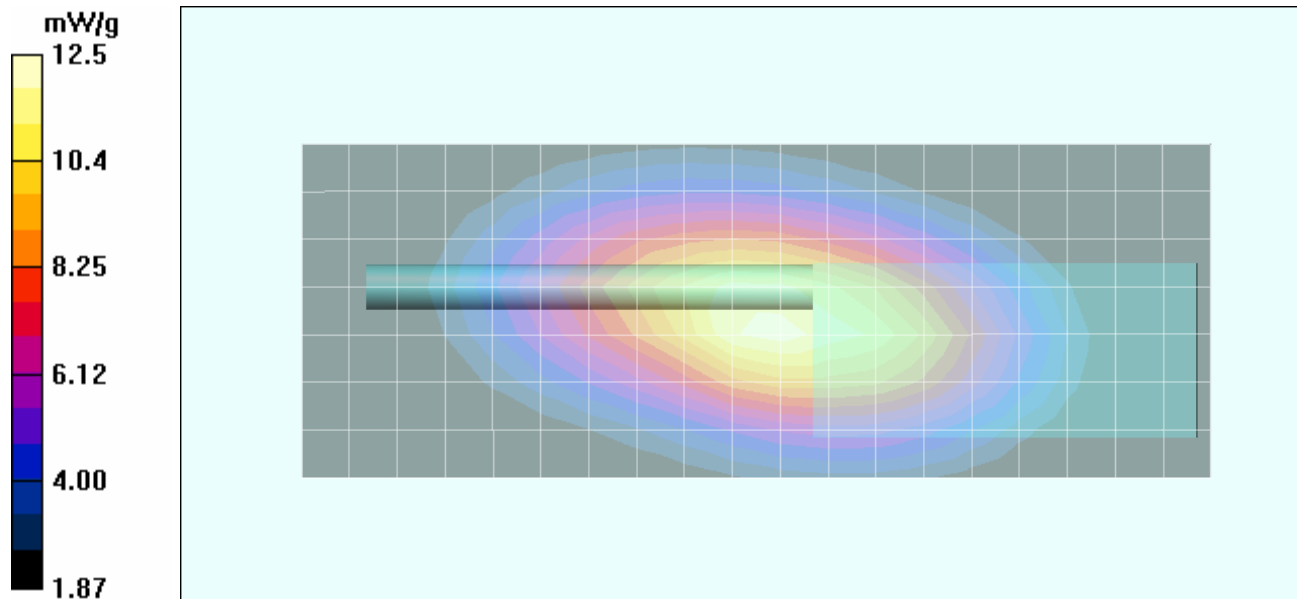
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 119.3 V/m; Power Drift = -0.757 dB



Peak SAR (extrapolated) = 17.5 W/kg

**SAR(1 g) = 12.0 mW/g; SAR(10 g) 8.65 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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|  | <u>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #96 (A96)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-25

Ambient Temp: 23.0°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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.1 mW/g

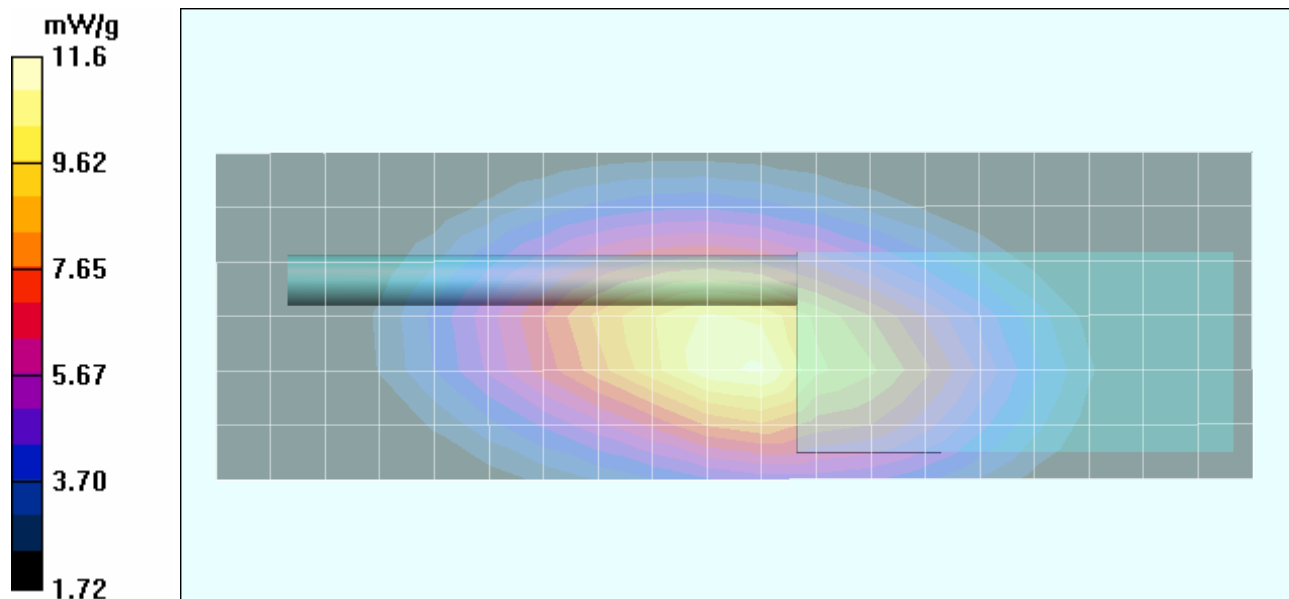
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 114.4 V/m; Power Drift = -0.521 dB



Peak SAR (extrapolated) = 16.3 W/kg

**SAR(1 g) = 10.9 mW/g; SAR(10 g) 7.75 mW/g**

Maximum value of SAR (measured) = 11.6 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #97 (A97)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-25**

Ambient Temp: 23.0°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):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.8 mW/g

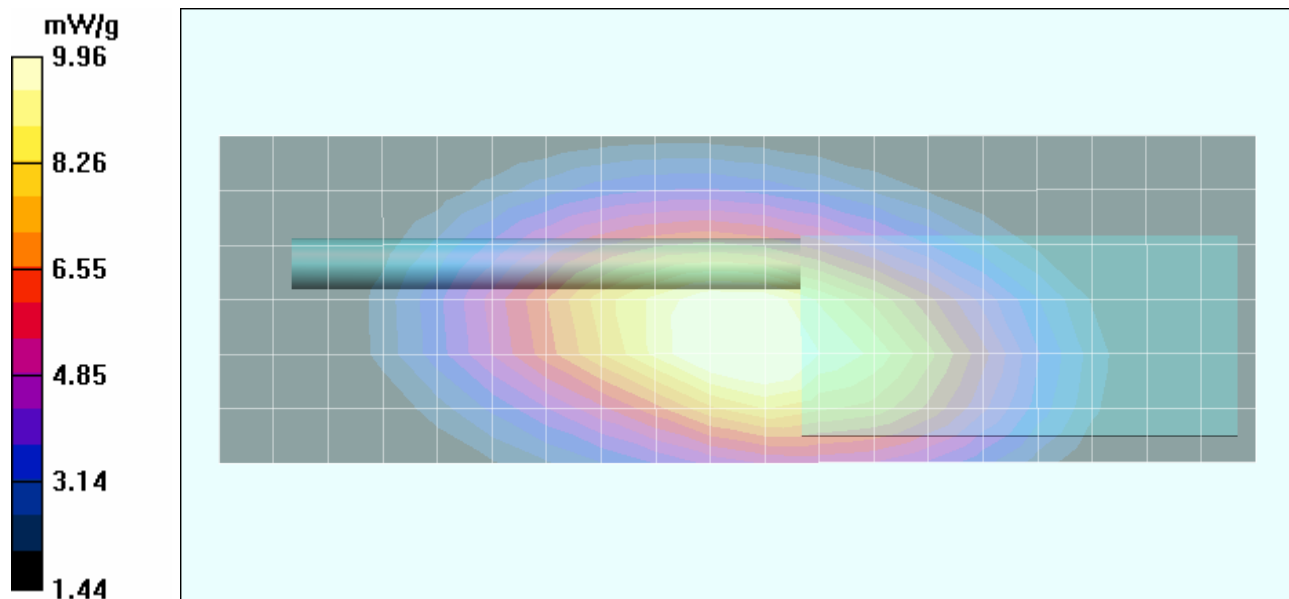
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.9 V/m; Power Drift = -0.772 dB



Peak SAR (extrapolated) = 14.1 W/kg

**SAR(1 g) = 9.54 mW/g; SAR(10 g) 6.78 mW/g**

Maximum value of SAR (measured) = 9.96 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #98 (A98)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-25**

Ambient Temp: 23.0°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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.966 \text{ mho/m}$ ;  $\epsilon_r = 56.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.3 mW/g

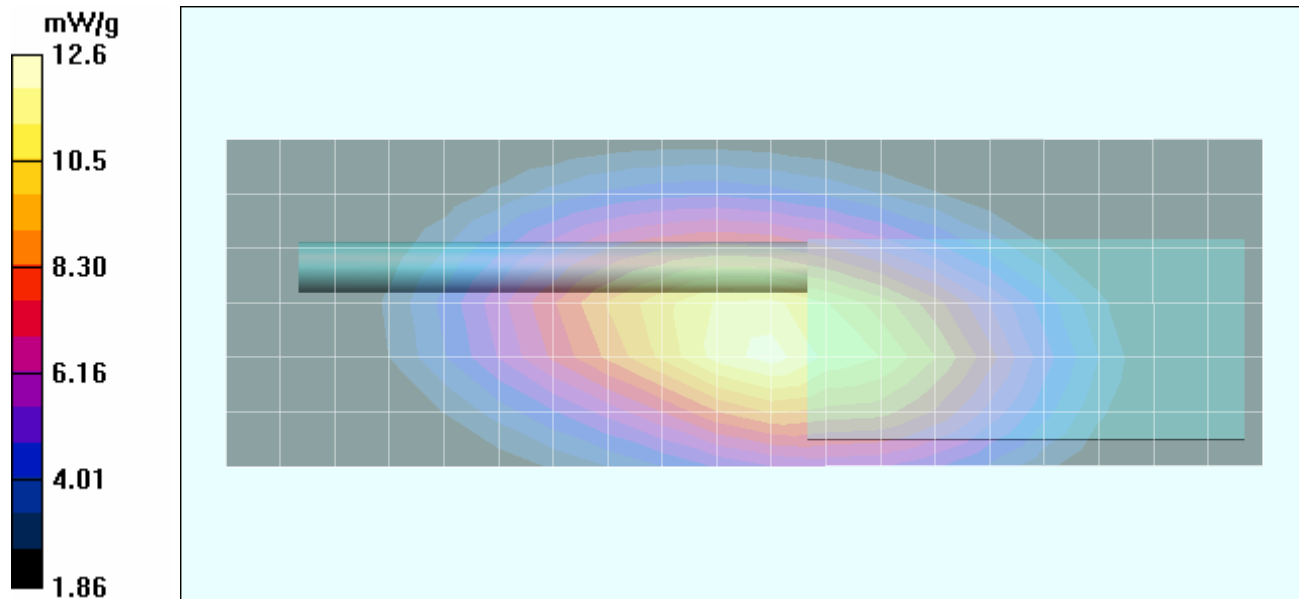
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.9 V/m; Power Drift = -0.542 dB

Peak SAR (extrapolated) = 17.7 W/kg



**SAR(1 g) = 12 mW/g; SAR(10 g) 8.59 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #99 (A99)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-25**

Ambient Temp: 23.0°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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.8 mW/g

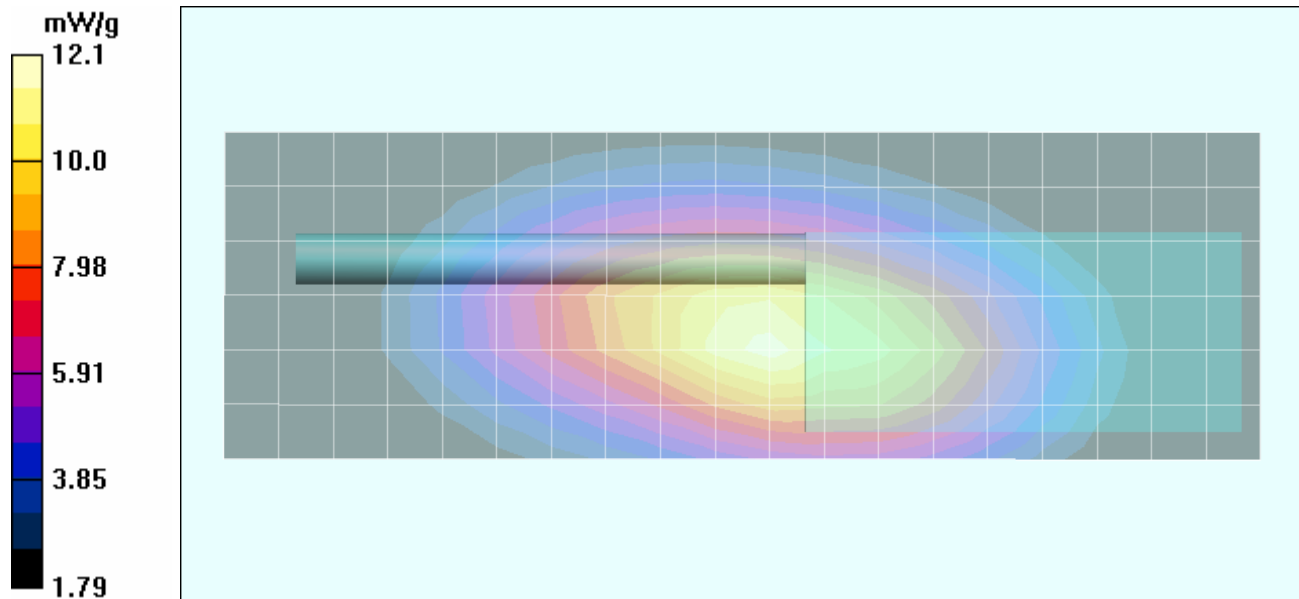
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.5 V/m; Power Drift = -0.796 dB



Peak SAR (extrapolated) = 17.0 W/kg

**SAR(1 g) = 11.5 mW/g; SAR(10 g) 8.15 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #100 (A100)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-26

Ambient Temp: 23.0°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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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

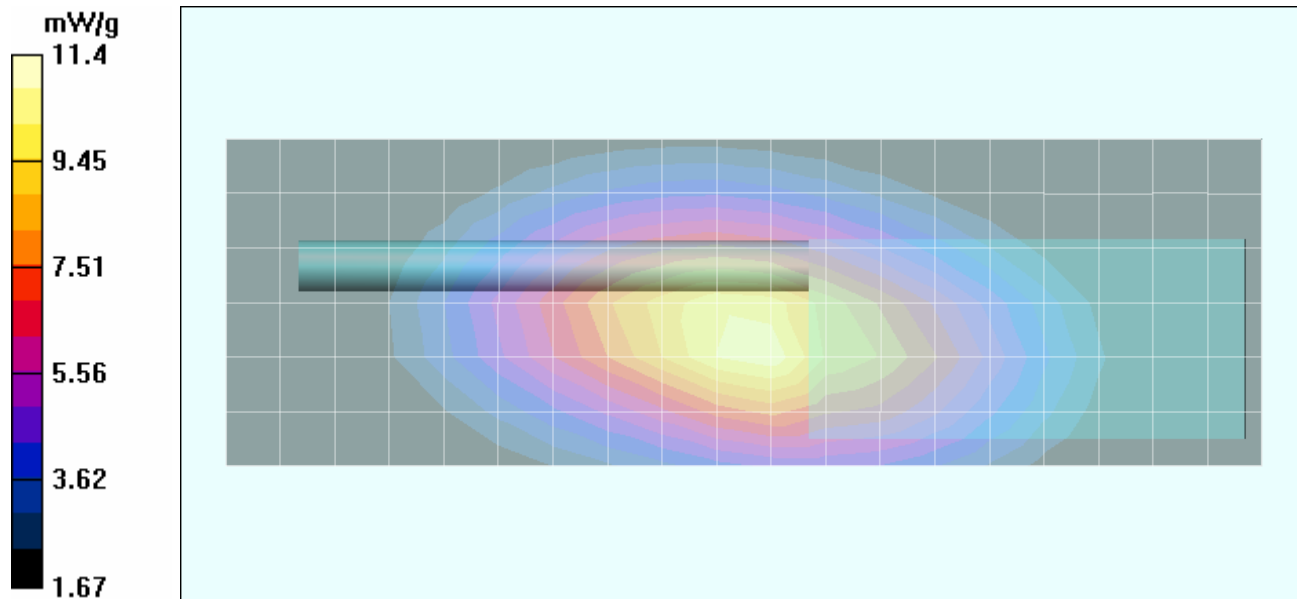
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 111.8 V/m; Power Drift = -0.350 dB



Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 10.8 mW/g; SAR(10 g) 7.67**

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

## Audio Accessory SAR Plot #101 (A101)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-26**

Ambient Temp: 23.0°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):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: Fiberglas 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) = 10.7 mW/g

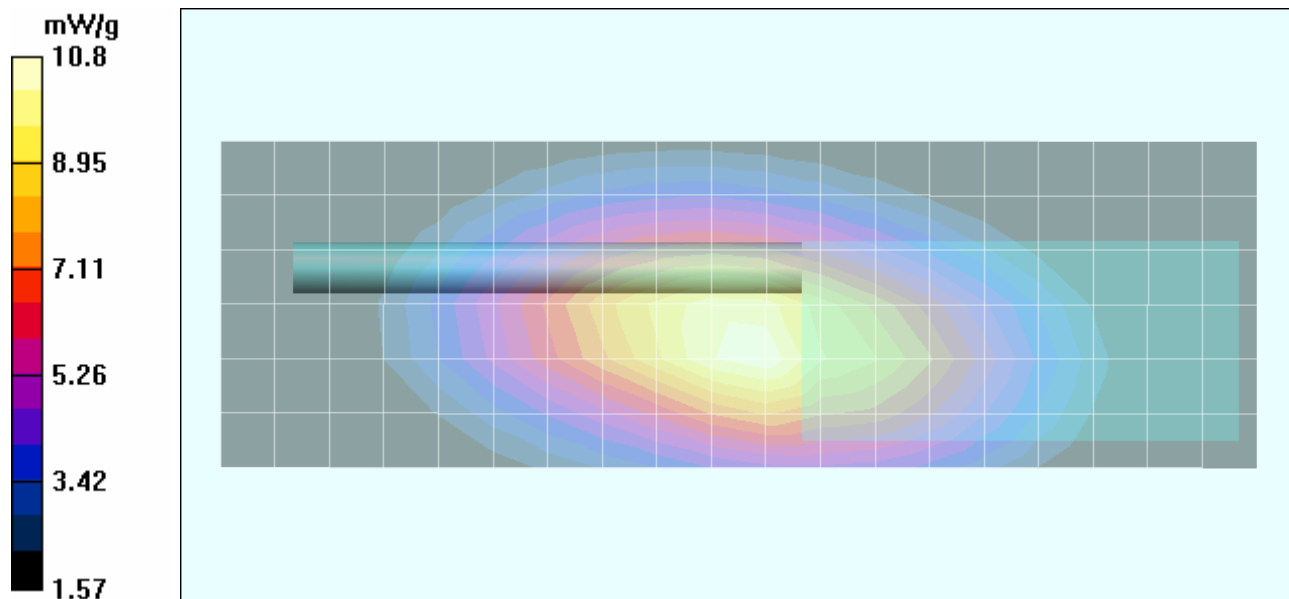
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 114.3 V/m; Power Drift = -0.820 dB



Peak SAR (extrapolated) = 15.2 W/kg

**SAR(1 g) = 10.3 mW/g; SAR(10 g) 7.32**

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

## Audio Accessory SAR Plot #102 (A102)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-26**

Ambient Temp: 23.0°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):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.966 \text{ mho/m}$ ;  $\epsilon_r = 56.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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

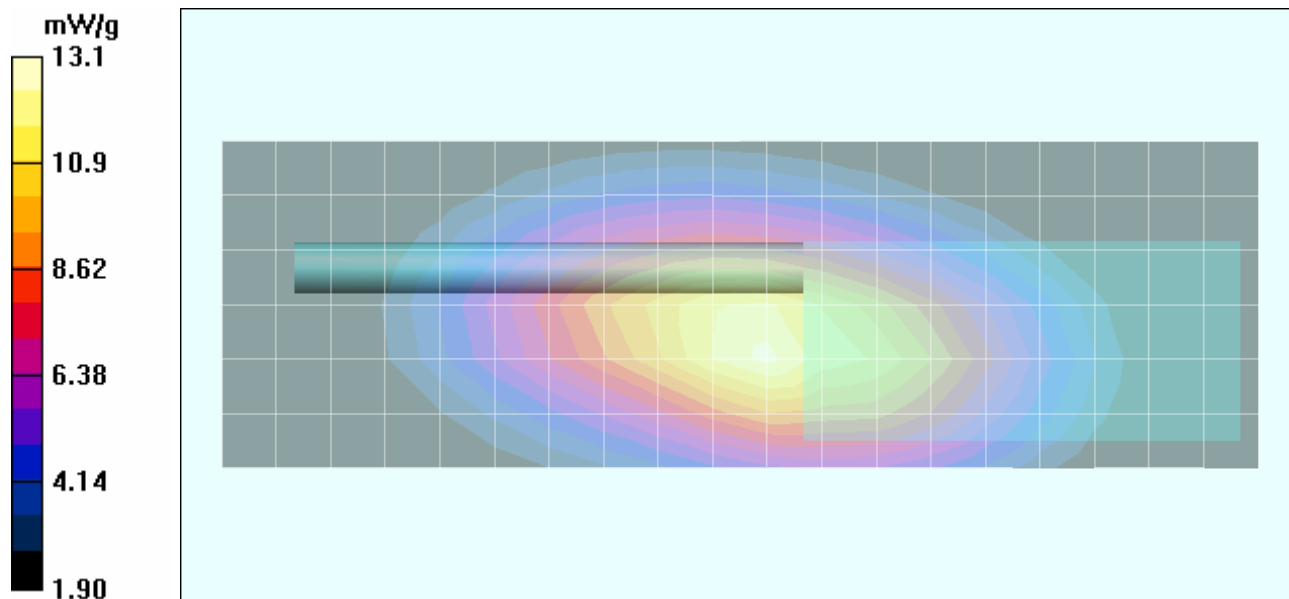
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.3 V/m; Power Drift = -0.550 dB



Peak SAR (extrapolated) = 18.4 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.8**

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

## Audio Accessory SAR Plot #103 (A103)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-26**

Ambient Temp: 23.0°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):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.5 mW/g

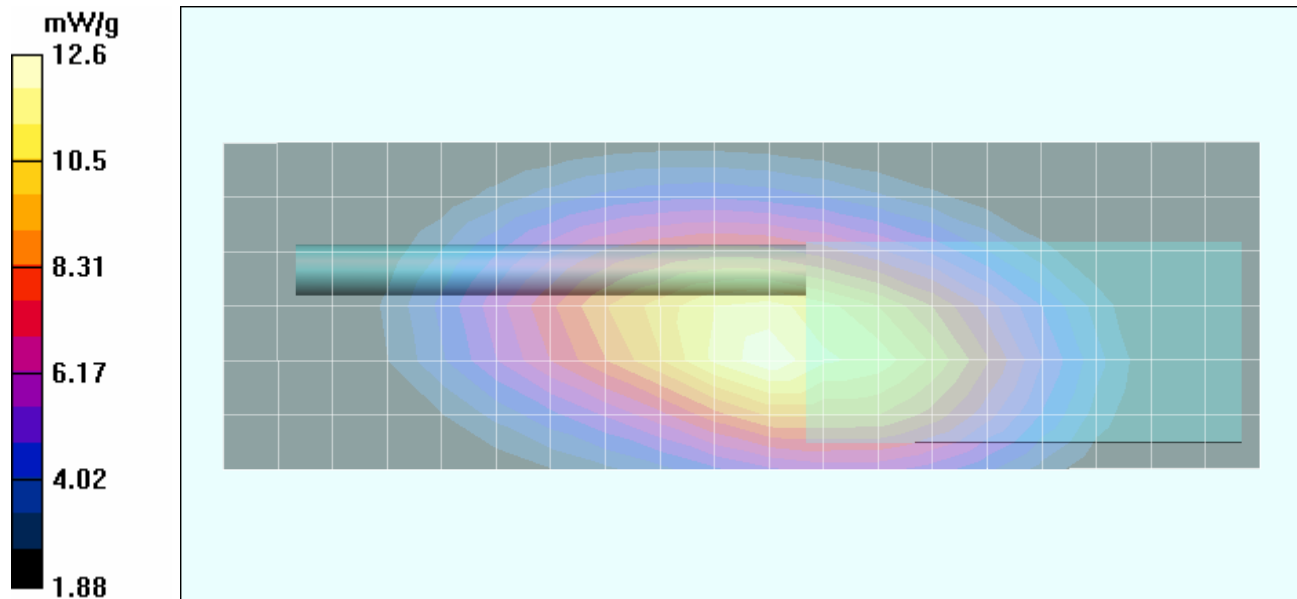
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.1 V/m; Power Drift = -0.697 dB



Peak SAR (extrapolated) = 17.7 W/kg

**SAR(1 g) = 11.9 mW/g; SAR(10 g) 8.47**

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

## Audio Accessory SAR Plot #104 (A104)

Date Tested: 09/3/2010

### 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: Ear-Bud P/N: KHS-27

Ambient Temp: 23.0°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:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.95 \text{ mho/m}$ ;  $\epsilon_r = 56.0$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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

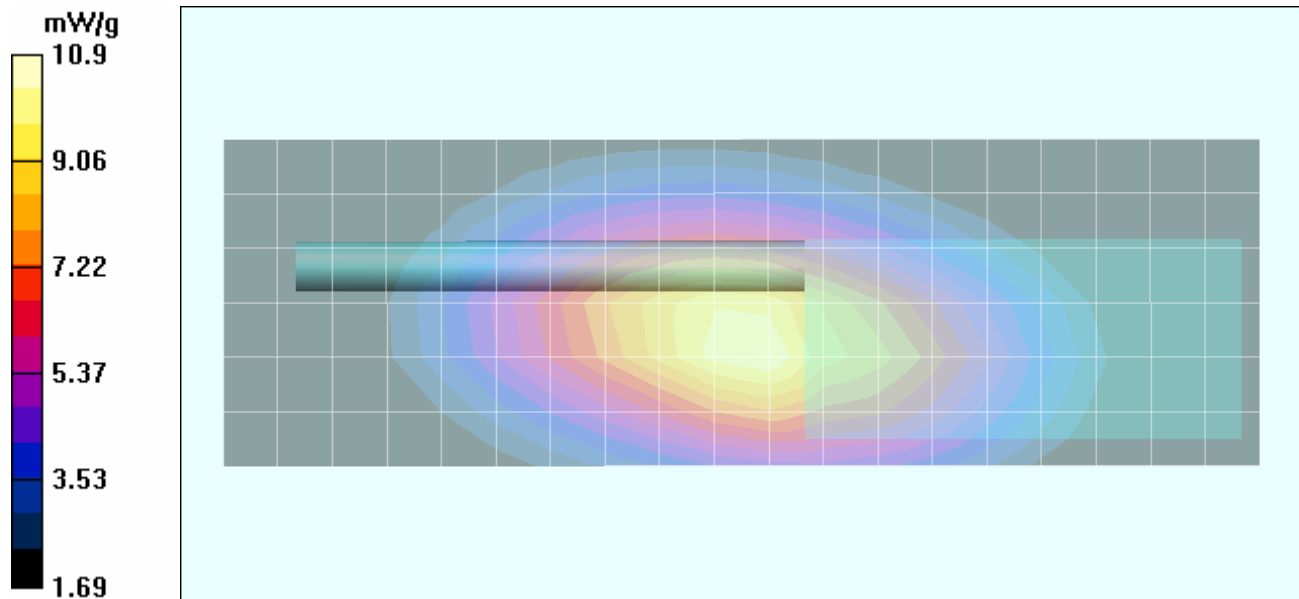
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.9 V/m; Power Drift = -0.440 dB



Peak SAR (extrapolated) = 15.2 W/kg

**SAR(1 g) = 10.4 mW/g; SAR(10 g) 7.4**

Maximum value of SAR (measured) = 10.9 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #105 (A105)

Date Tested: 09/7/2010

### 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: Ear-Bud P/N: KHS-27

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.2 mW/g

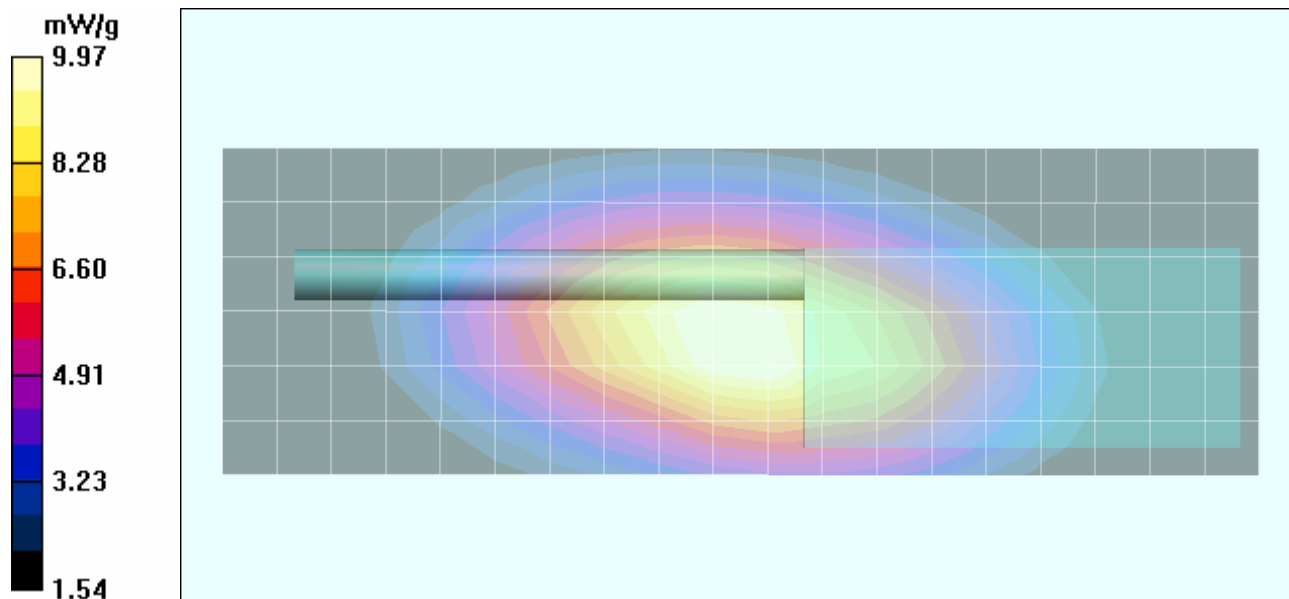
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.2 V/m; Power Drift = -0.549 dB

Peak SAR (extrapolated) = 13.9 W/kg



**SAR(1 g) = 9.46 mW/g; SAR(10 g) 6.74**

Maximum value of SAR (measured) = 9.97 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #106 (A106)

Date Tested: 09/7/2010

### 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: Ear-Bud P/N: KHS-27**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 498 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.2 mW/g

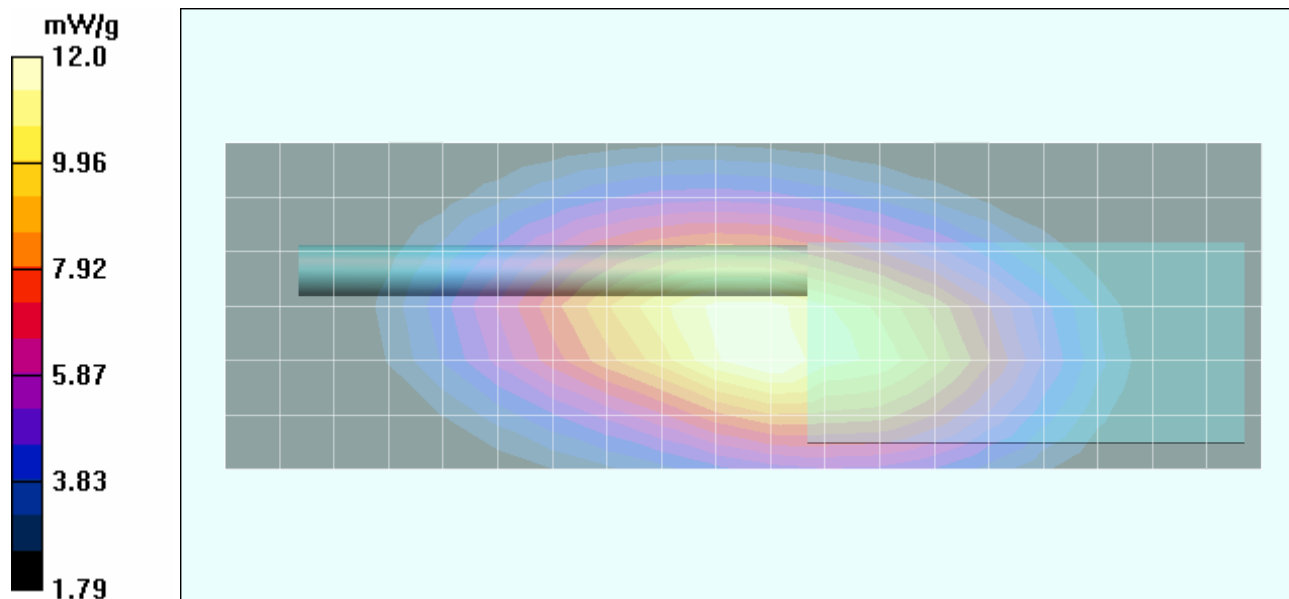
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.1 V/m; Power Drift = -0.620 dB



Peak SAR (extrapolated) = 16.8 W/kg

**SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.07**

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

## Audio Accessory SAR Plot #107 (A107)

Date Tested: 09/7/2010

### 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: Ear-Bud P/N: KHS-27

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.1 mW/g

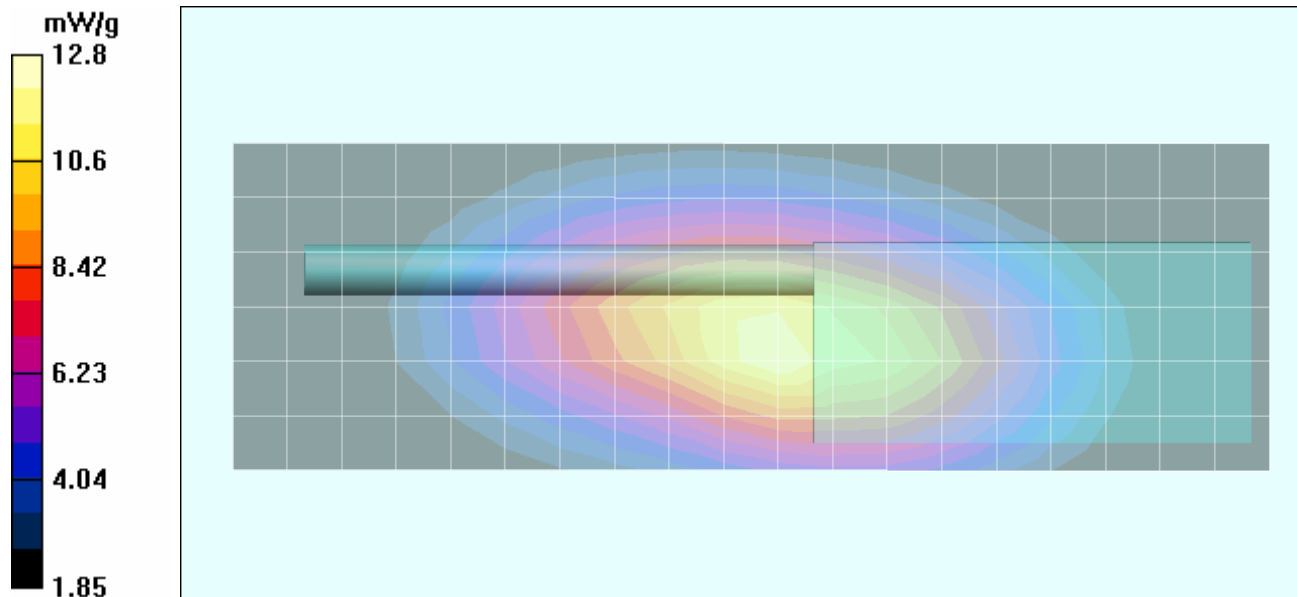
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 122.0 V/m; Power Drift = -0.779 dB



Peak SAR (extrapolated) = 18.0 W/kg

**SAR(1 g) = 12.1 mW/g; SAR(10 g) 8.59**

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

## Audio Accessory SAR Plot #108 (A108)

Date Tested: 08/12/2010

### 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: 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: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.93 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.7 mW/g

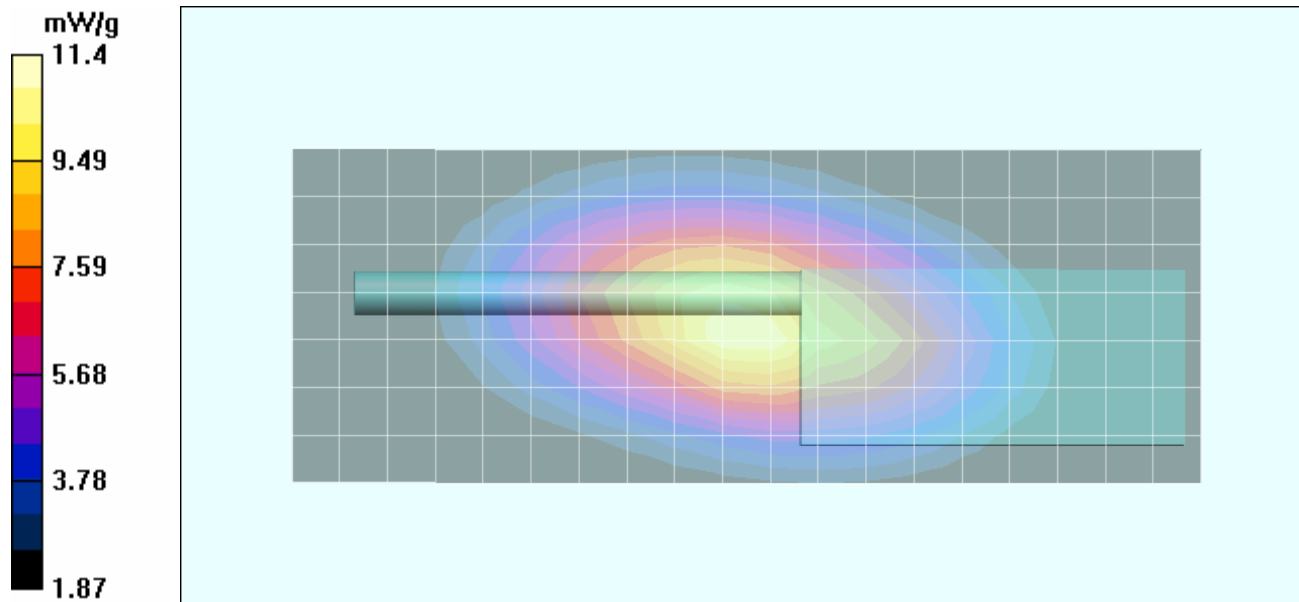
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.7 V/m; Power Drift = -0.415 dB



Peak SAR (extrapolated) = 15.7 W/kg

**SAR(1 g) = 10.7 mW/g; SAR(10 g) 7.71 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #109 (A109)

Date Tested: 08/12/2010

### 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: 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: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 57.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.98 mW/g

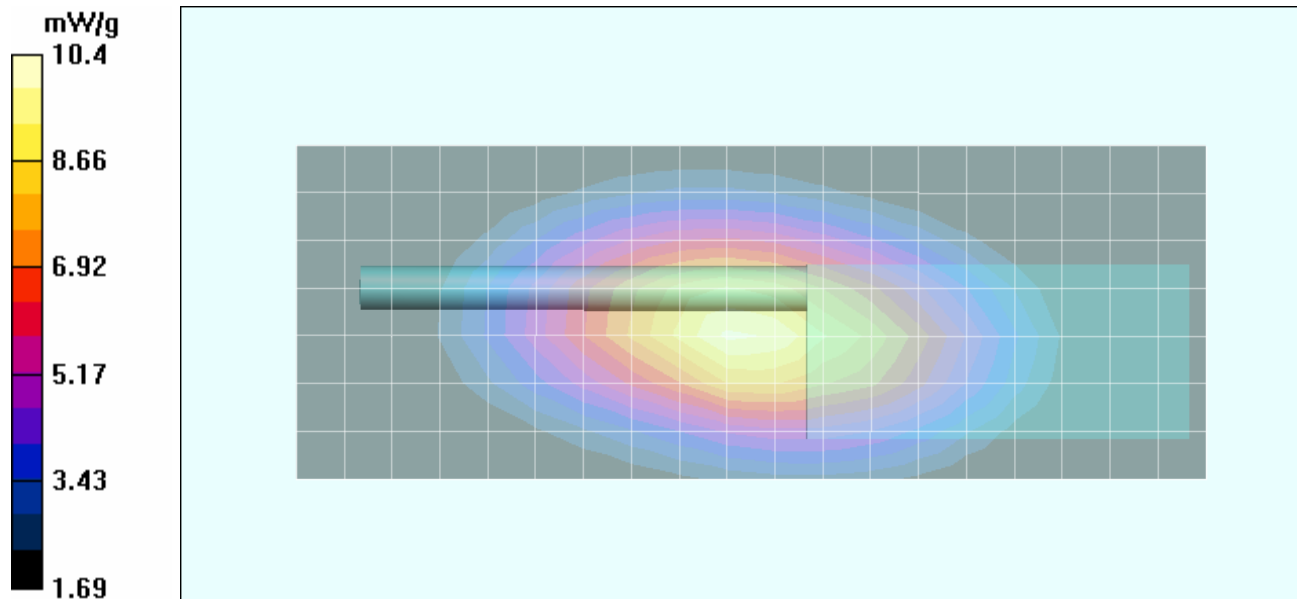
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.7 V/m; Power Drift = -0.644 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.89 mW/g; SAR(10 g) 7.14 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #110 (A110)

Date Tested: 08/12/2010

### 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: 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: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.948 \text{ mho/m}$ ;  $\epsilon_r = 57.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.4 mW/g

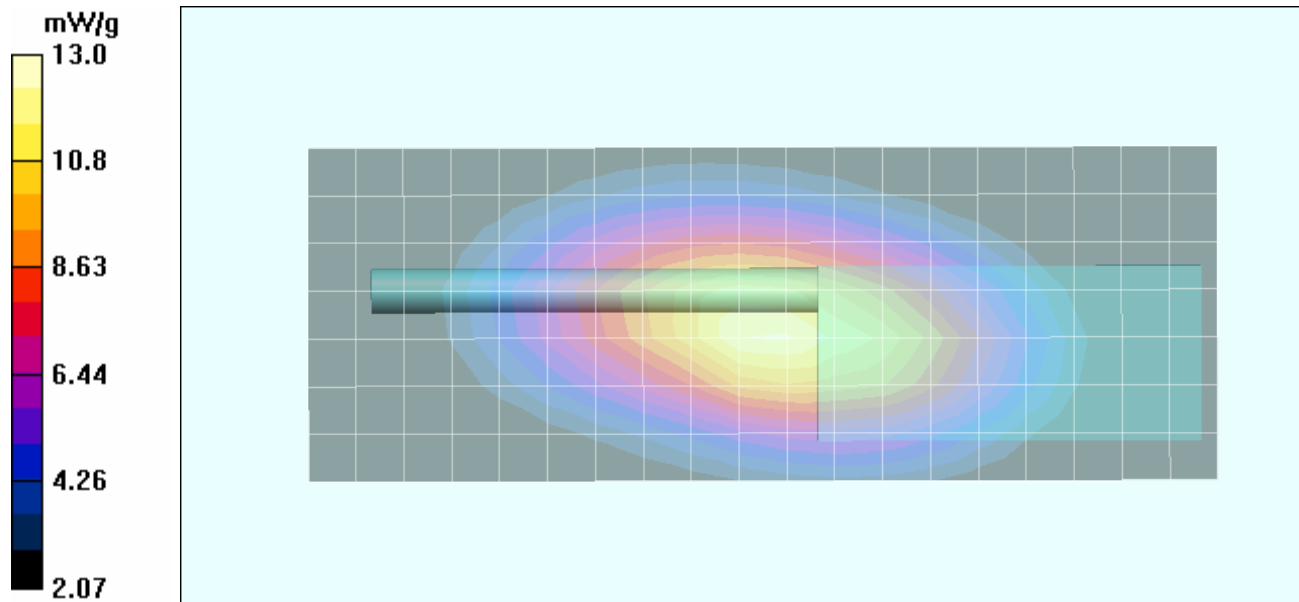
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 121.6 V/m; Power Drift = -0.597 dB



Peak SAR (extrapolated) = 18.1 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.96 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #111 (A111)

Date Tested: 08/12/2010

### 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 57.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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

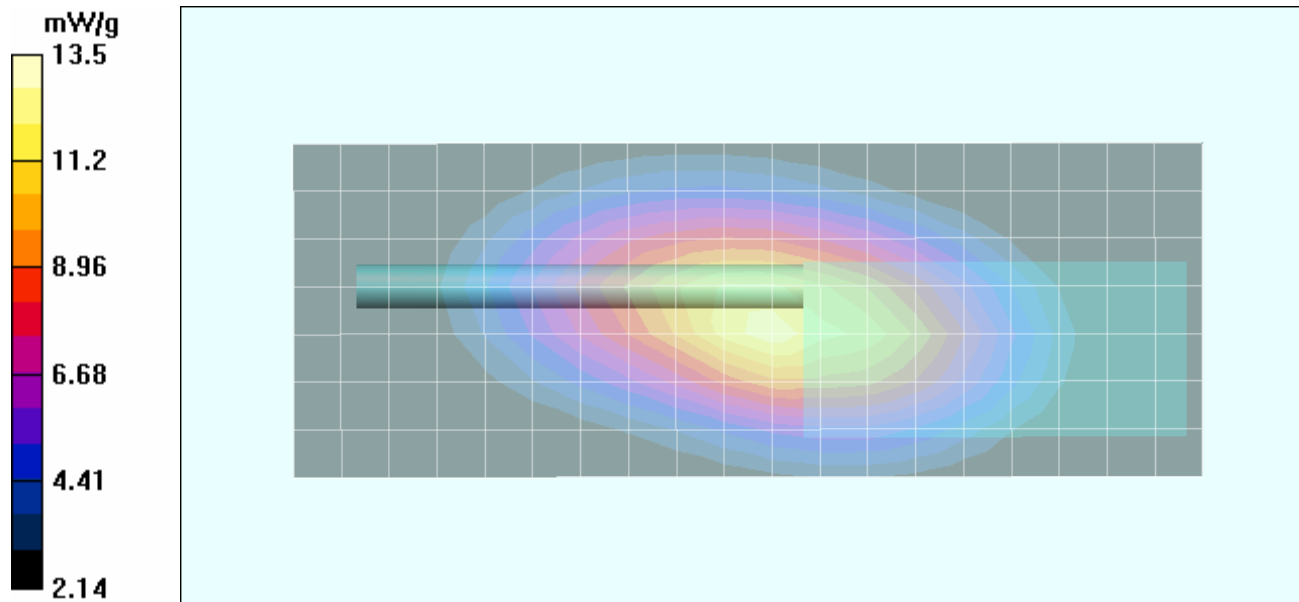
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 120.5 V/m; Power Drift = -0.636 dB

Peak SAR (extrapolated) = 18.8 W/kg

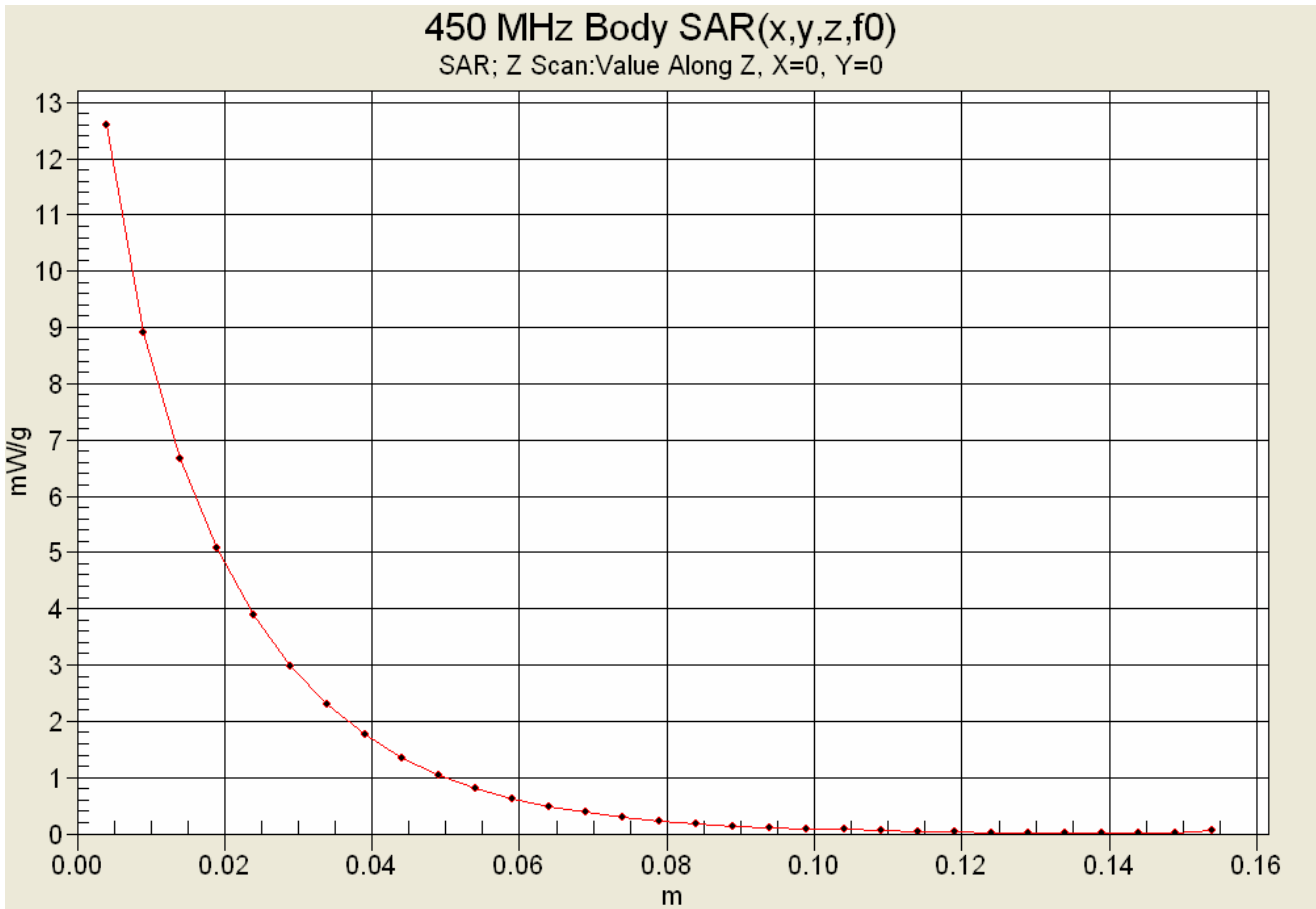
**SAR(1 g) = 12.8 mW/g; SAR(10 g) 9.16 mW/g**

Maximum value of SAR (measured) = 13.5 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #112 (A112)

Date Tested: 09/07/2010

### 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: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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) = 9.98 mW/g

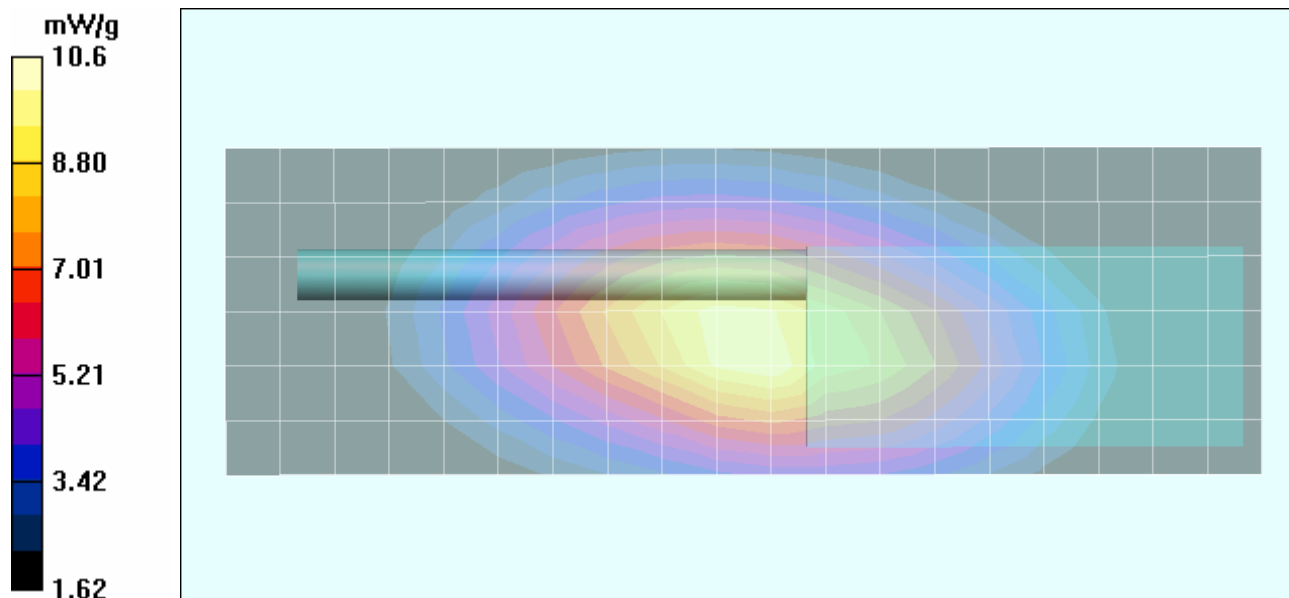
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.3 V/m; Power Drift = -0.367 dB



Peak SAR (extrapolated) = 14.7 W/kg

**SAR(1 g) = 10 mW/g; SAR(10 g) 7.14 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #113 (A113)

Date Tested: 09/07/2010

### 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: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.58 mW/g

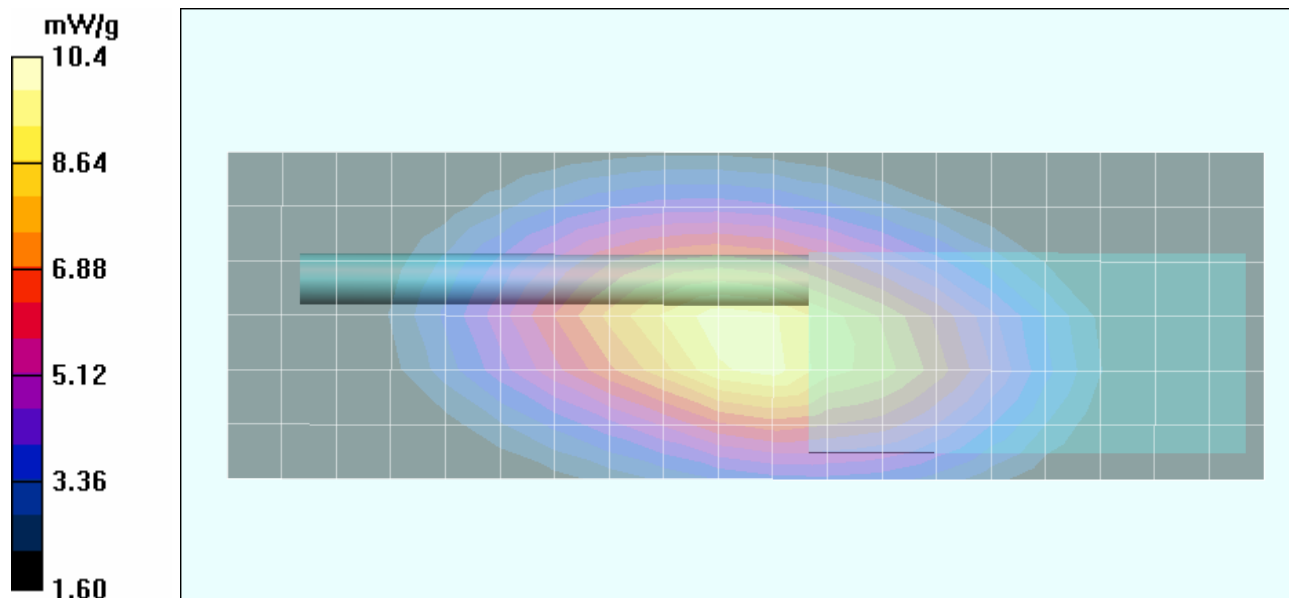
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 113.2 V/m; Power Drift = -0.883 dB



Peak SAR (extrapolated) = 14.6 W/kg

**SAR(1 g) = 9.92 mW/g; SAR(10 g) 7.08 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #114 (A114)

Date Tested: 09/07/2010

### 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: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.2 mW/g

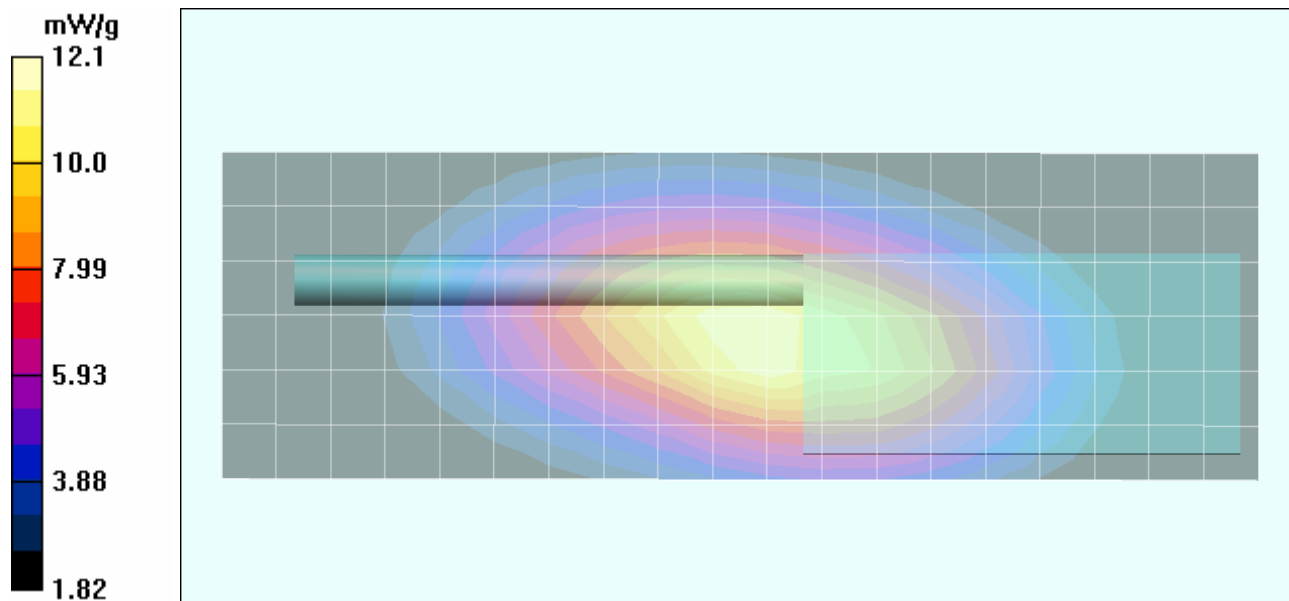
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 116.5 V/m; Power Drift = -0.587 dB



Peak SAR (extrapolated) = 16.7 W/kg

**SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.17 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #115 (A115)

Date Tested: 09/07/2010

### 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: Palm-Microphone P/N: KHS-9BL**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 12.0 mW/g

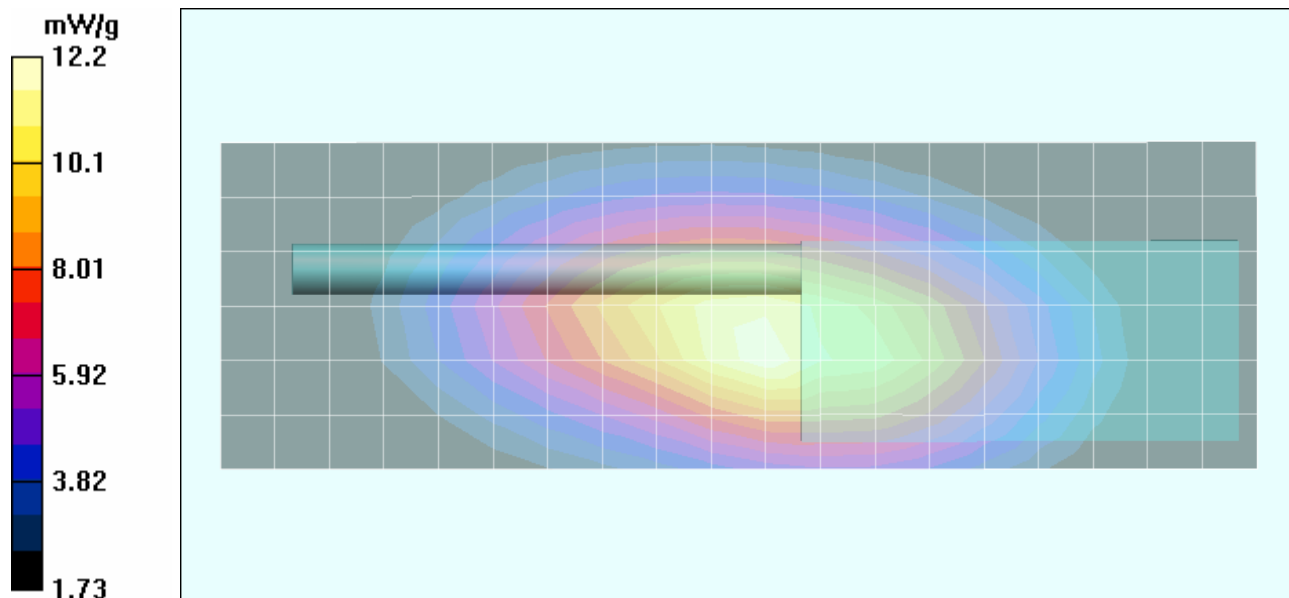
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 118.7 V/m; Power Drift = -0.822 dB



Peak SAR (extrapolated) = 17.2 W/kg

**SAR(1 g) = 11.5 mW/g; SAR(10 g) 8.19 mW/g**

Maximum value of SAR (measured) = 12.2 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #116 (A116)

Date Tested: 08/13/2010

### 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: Speaker-Microphone P/N: KMC-48GPS**

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 55.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.71 mW/g

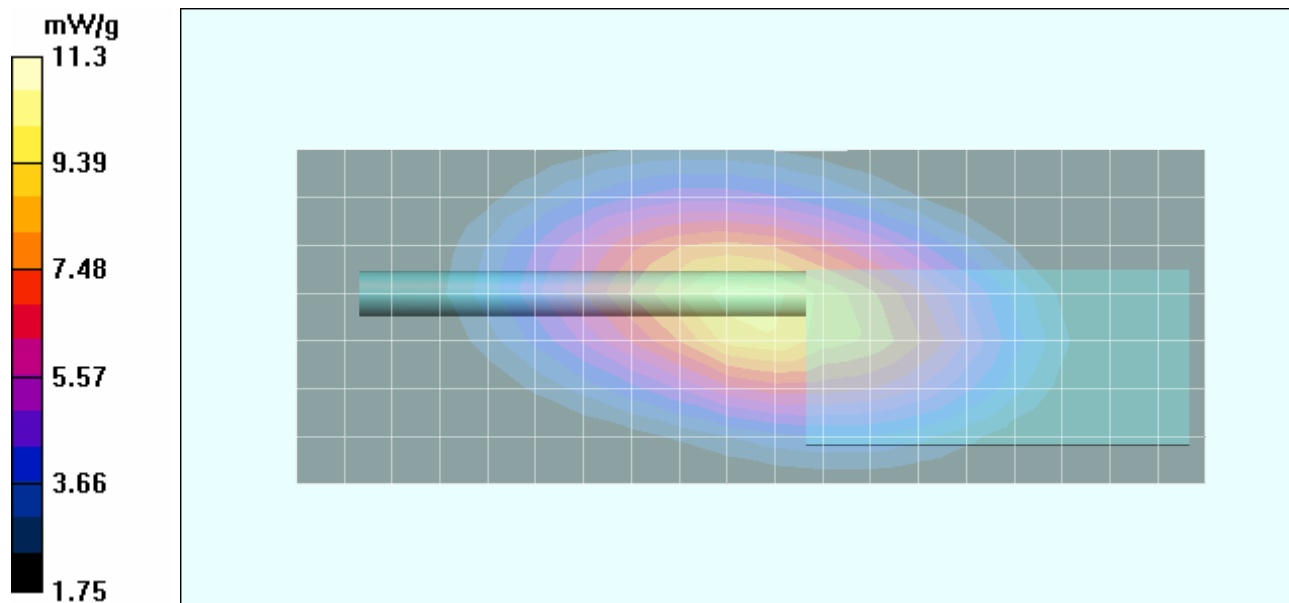
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 104.6 V/m; Power Drift = -0.461 dB



Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 10.7 mW/g; SAR(10 g) 7.66 mW/g**

Maximum value of SAR (measured) = 11.3 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #117 (A117)

Date Tested: 08/13/2010

### 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: Speaker-Microphone P/N: KMC-48GPS

Ambient Temp: 22.0°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.934 \text{ mho/m}$ ;  $\epsilon_r = 55.1$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.65 mW/g

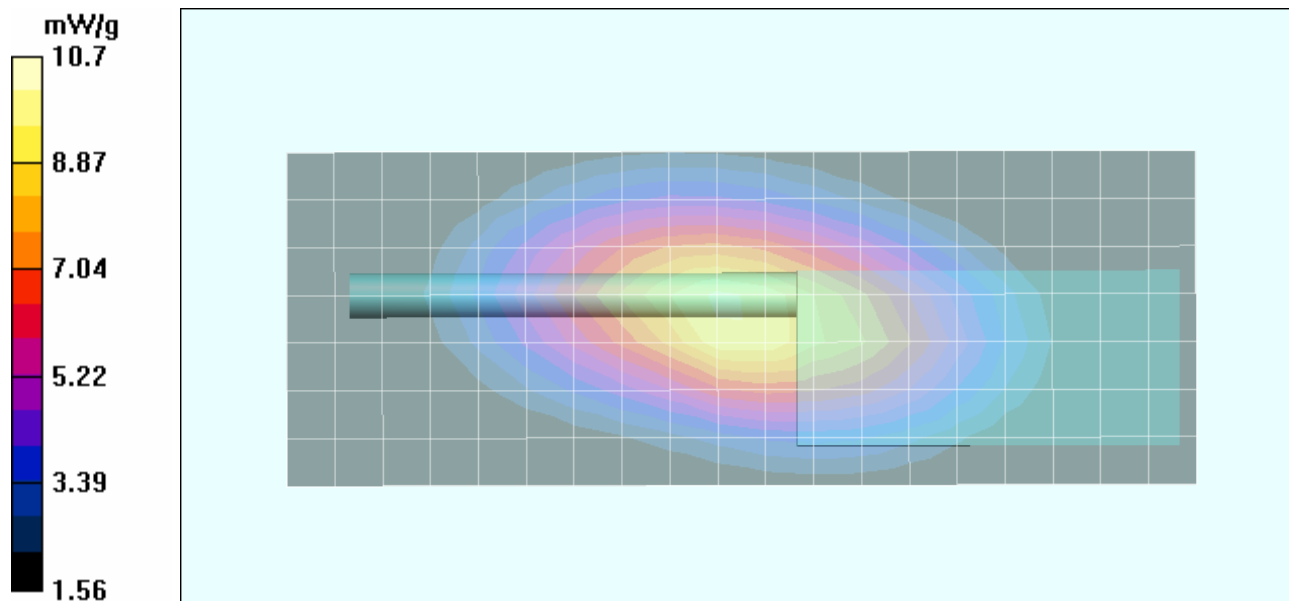
Zoom Scan (5x5x7)/Cube 0: Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 102.8 V/m; Power Drift = -0.796 dB



Peak SAR (extrapolated) = 15.1 W/kg

**SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.22 mW/g**

Maximum value of SAR (measured) = 10.7 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><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #118 (A118)

Date Tested: 08/13/2010

### 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: Speaker-Microphone P/N: KMC-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: 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) = 11.9 mW/g

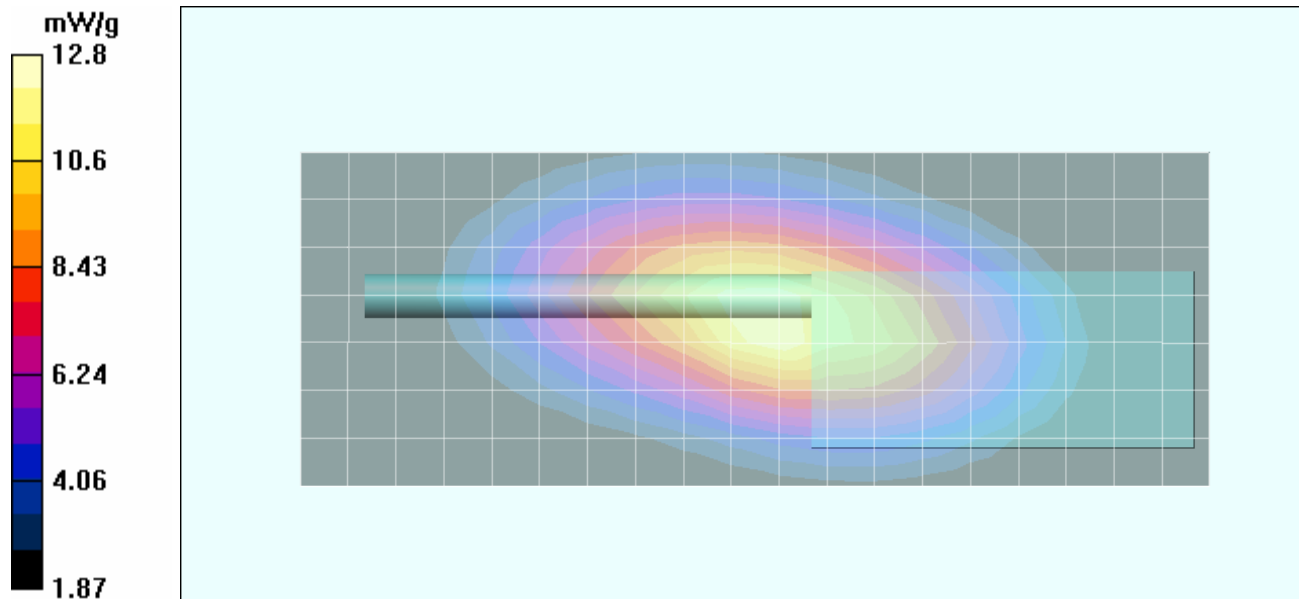
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 110.2 V/m; Power Drift = -0.501 dB

Peak SAR (extrapolated) = 17.8 W/kg

**SAR(1 g) = 12.1 mW/g; SAR(10 g) 8.65 mW/g**

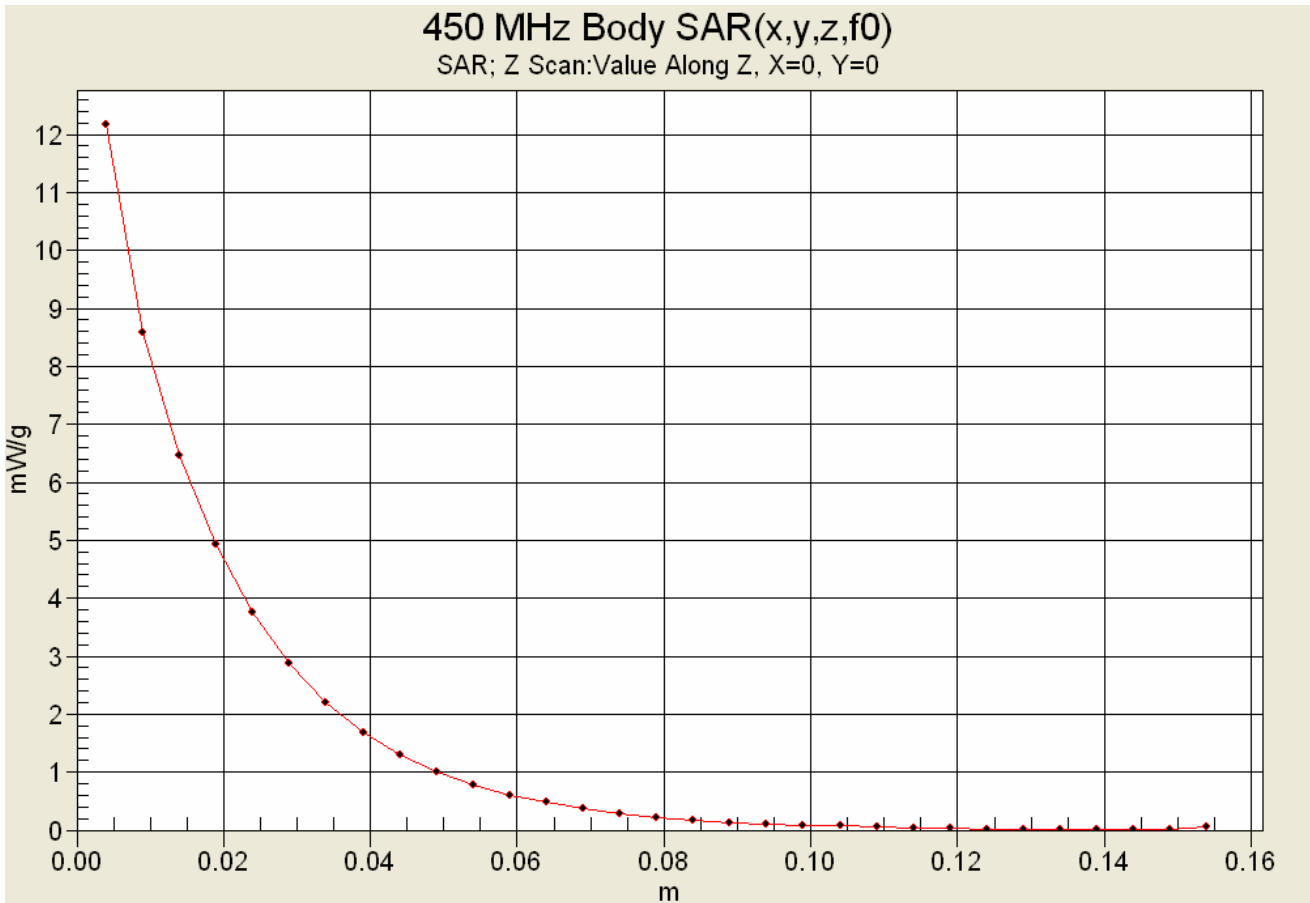
Maximum value of SAR (measured) = 12.8 mW/g





|                         |                                       |  |           |                     |               |                 |
|-------------------------|---------------------------------------|--|-----------|---------------------|---------------|-----------------|
| <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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### Z-Axis Scan



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

## Audio Accessory SAR Plot #119 (A119)

Date Tested: 08/12/2010

### 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: 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: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 57.2$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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: 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) = 12.5 mW/g

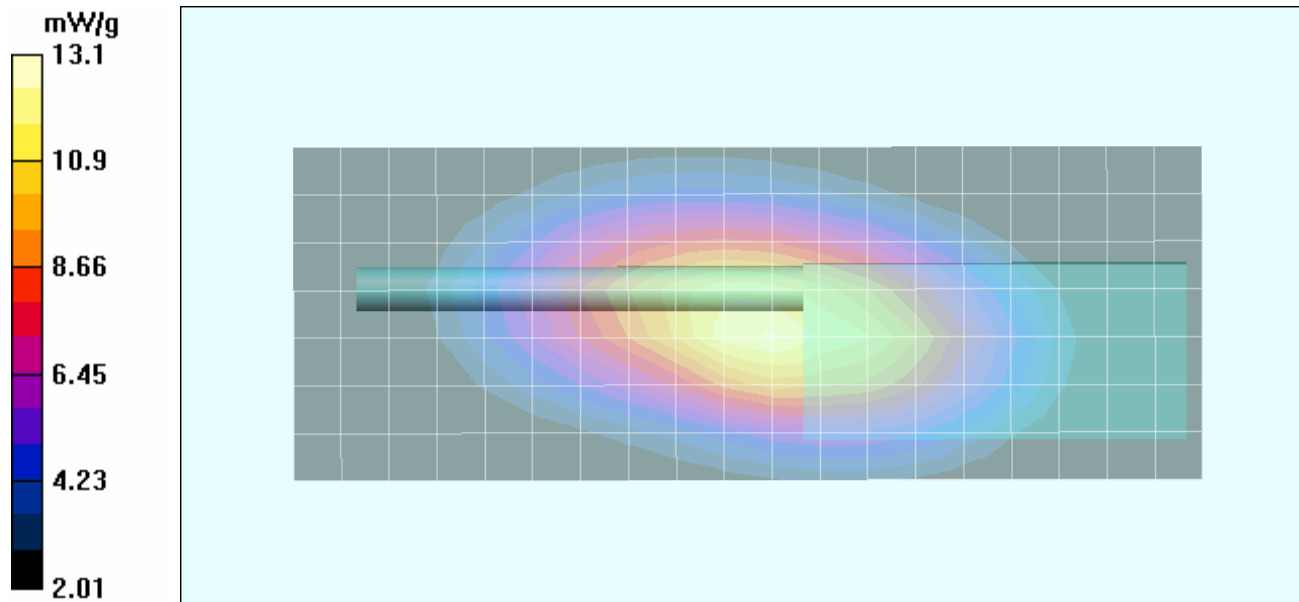
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 117.8 V/m; Power Drift = -0.681 dB



Peak SAR (extrapolated) = 18.3 W/kg

**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.89 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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|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #120 (A120)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-45

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.70 mW/g

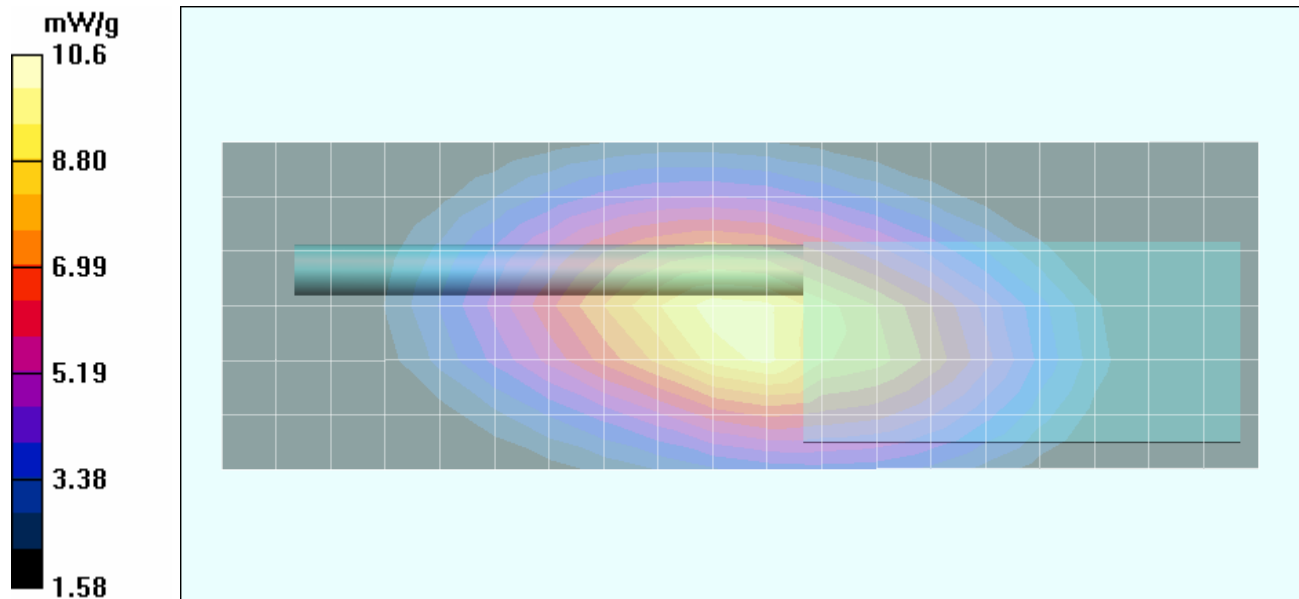
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 109.0 V/m; Power Drift = -0.353 dB



Peak SAR (extrapolated) = 14.9 W/kg

**SAR(1 g) = 10 mW/g; SAR(10 g) 7.14 mW/g**

Maximum value of SAR (measured) = 10.6 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><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #121 (A121)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-45**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.67 mW/g

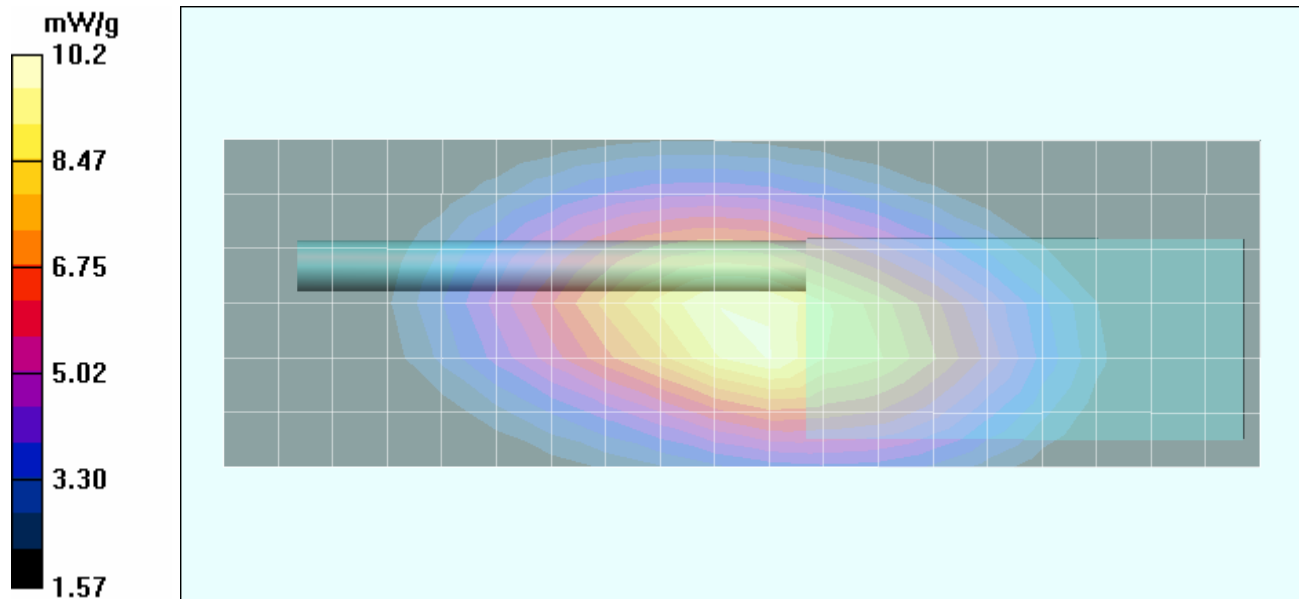
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 111.4 V/m; Power Drift = -0.799 dB



Peak SAR (extrapolated) = 14.2 W/kg

**SAR(1 g) = 9.7 mW/g; SAR(10 g) 6.91 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #122 (A122)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-45**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.9 mW/g

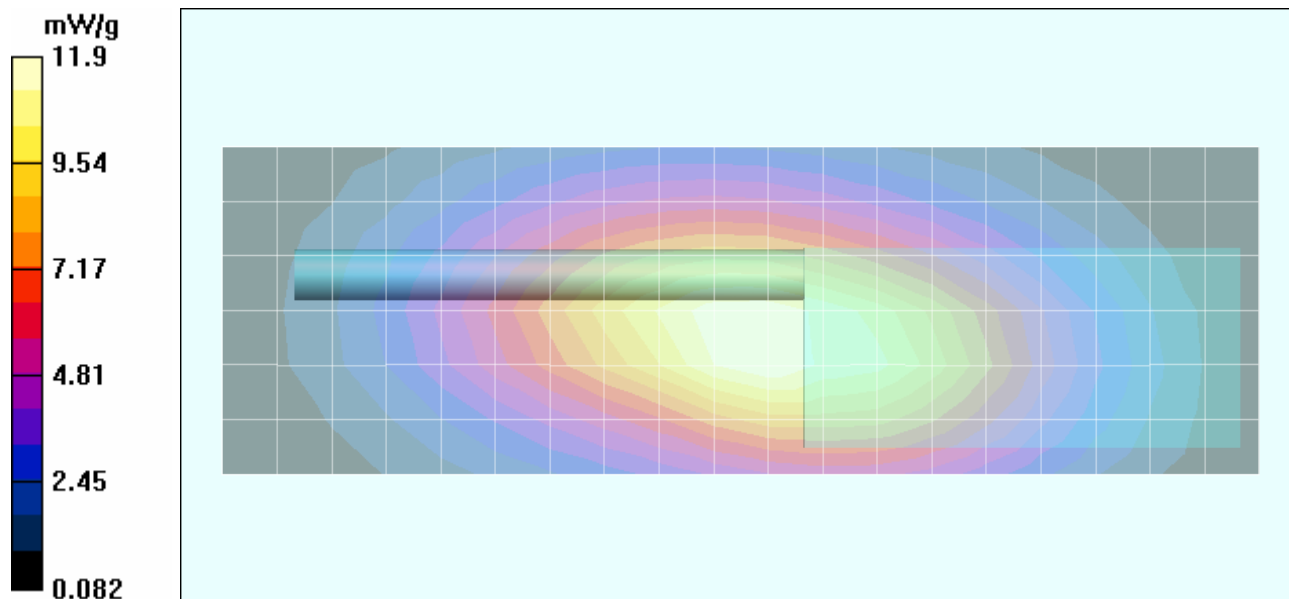
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.4 V/m; Power Drift = -0.386 dB



Peak SAR (extrapolated) = 15.6 W/kg

**SAR(1 g) = 10.6 mW/g; SAR(10 g) 7.58 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #123 (A123)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-45**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.3 mW/g

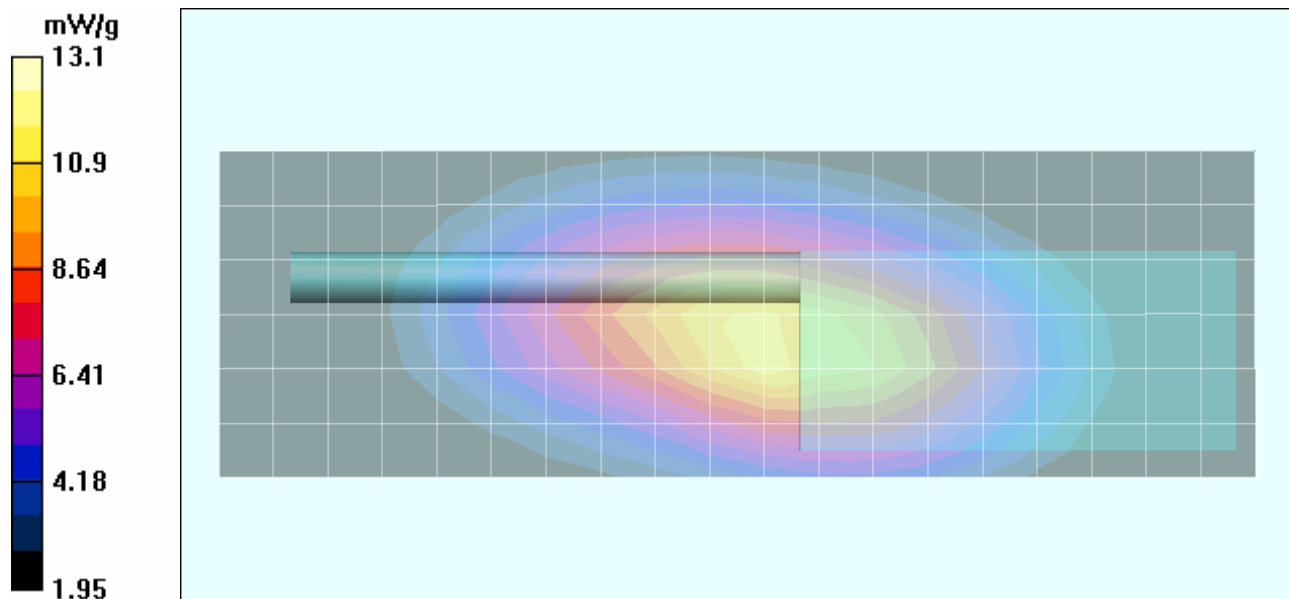
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 123.1 V/m; Power Drift = -0.771 dB

Peak SAR (extrapolated) = 18.5 W/kg

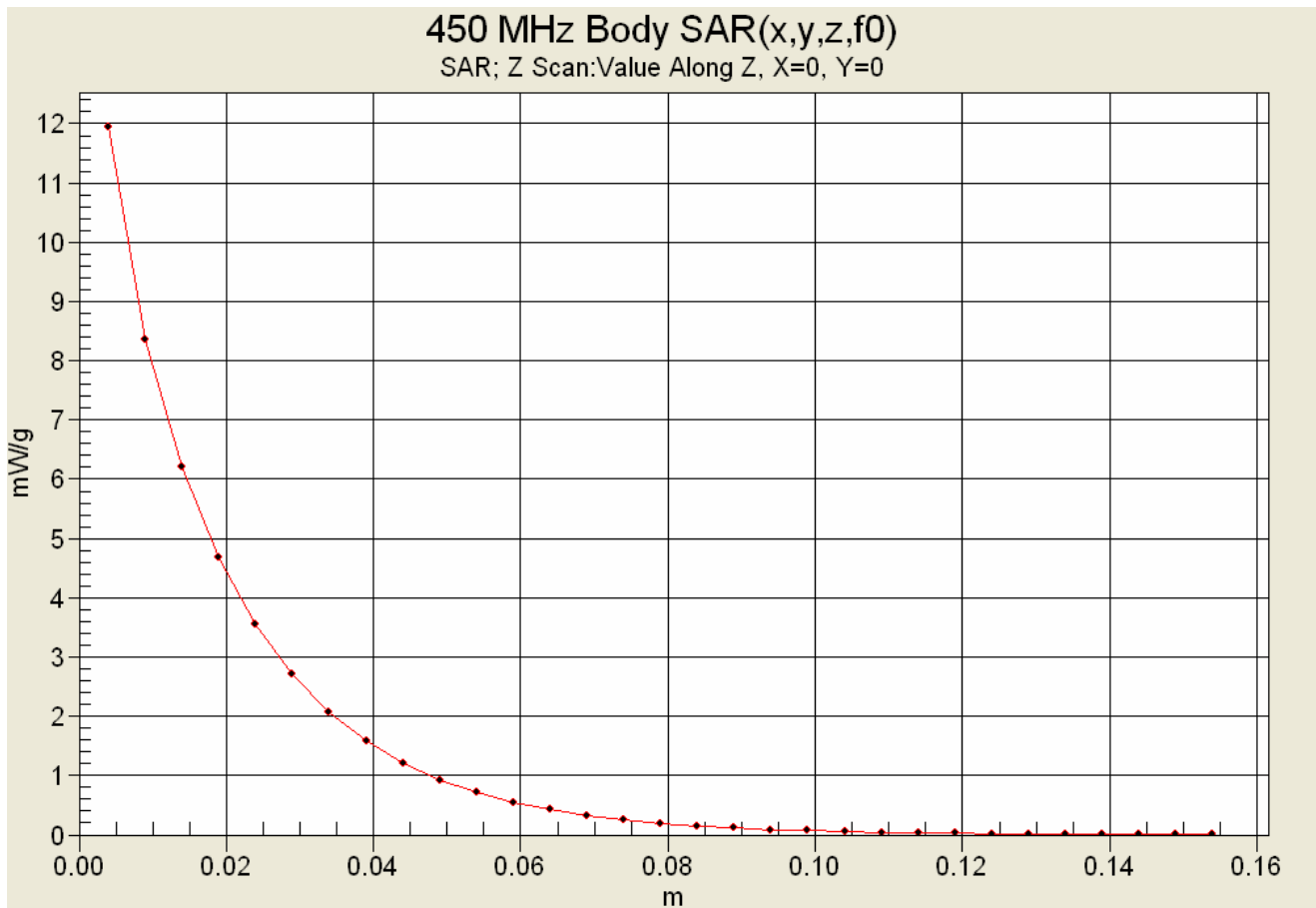
**SAR(1 g) = 12.4 mW/g; SAR(10 g) 8.76 mW/g**

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

## Audio Accessory SAR Plot #124 (A124)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-21**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used:  $f = 470 \text{ MHz}$ ;  $\sigma = 0.92 \text{ mho/m}$ ;  $\epsilon_r = 57.3$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 10.1 mW/g

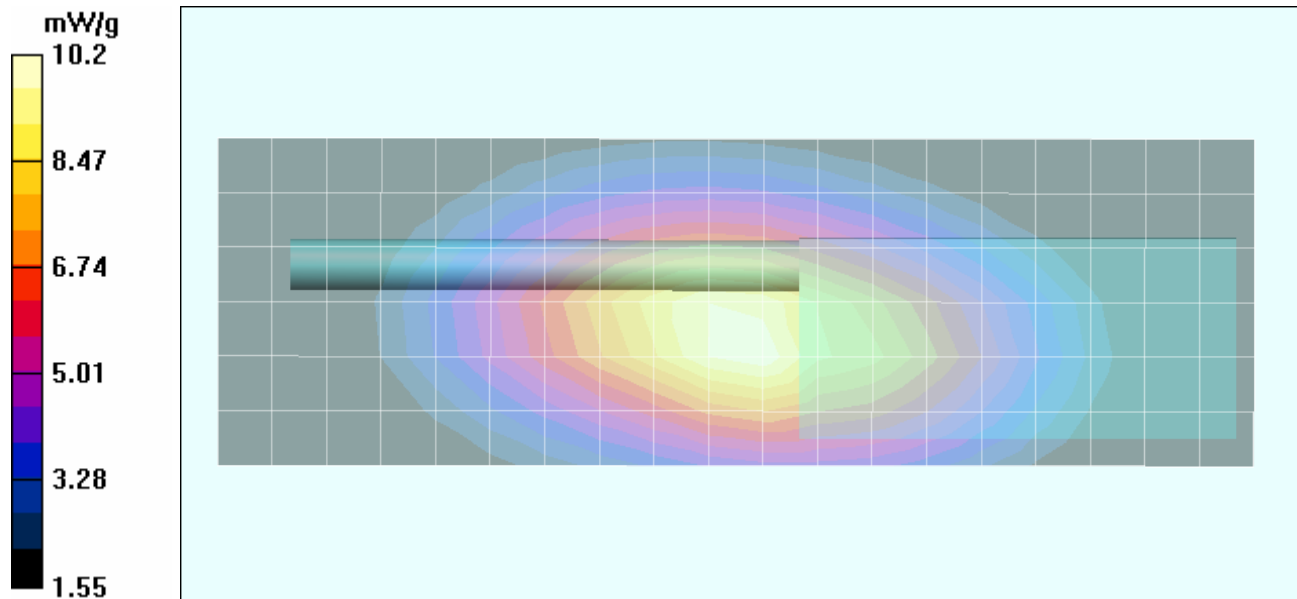
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 108.8 V/m; Power Drift = -0.355 dB



Peak SAR (extrapolated) = 14.3 W/kg

**SAR(1 g) = 9.71 mW/g; SAR(10 g) 6.91 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) | <br>Test Lab Certificate No. 2470.01 |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #125 (A125)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-21**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 484 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 484 \text{ MHz}$ ;  $\sigma = 0.918 \text{ mho/m}$ ;  $\epsilon_r = 56.8$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 9.60 mW/g

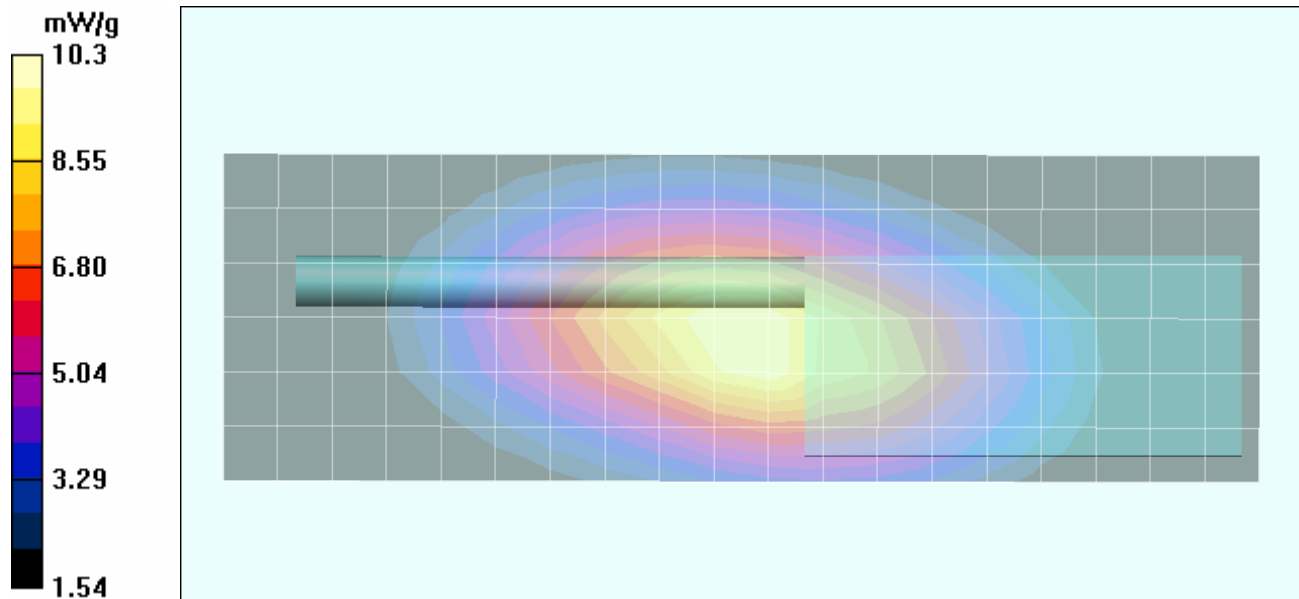
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 112.4 V/m; Power Drift = -0.745 dB



Peak SAR (extrapolated) = 14.4 W/kg

**SAR(1 g) = 9.83 mW/g; SAR(10 g) 7.02 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #126 (A126)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-21**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 498 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 498 \text{ MHz}$ ;  $\sigma = 0.938 \text{ mho/m}$ ;  $\epsilon_r = 56.5$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.9 mW/g

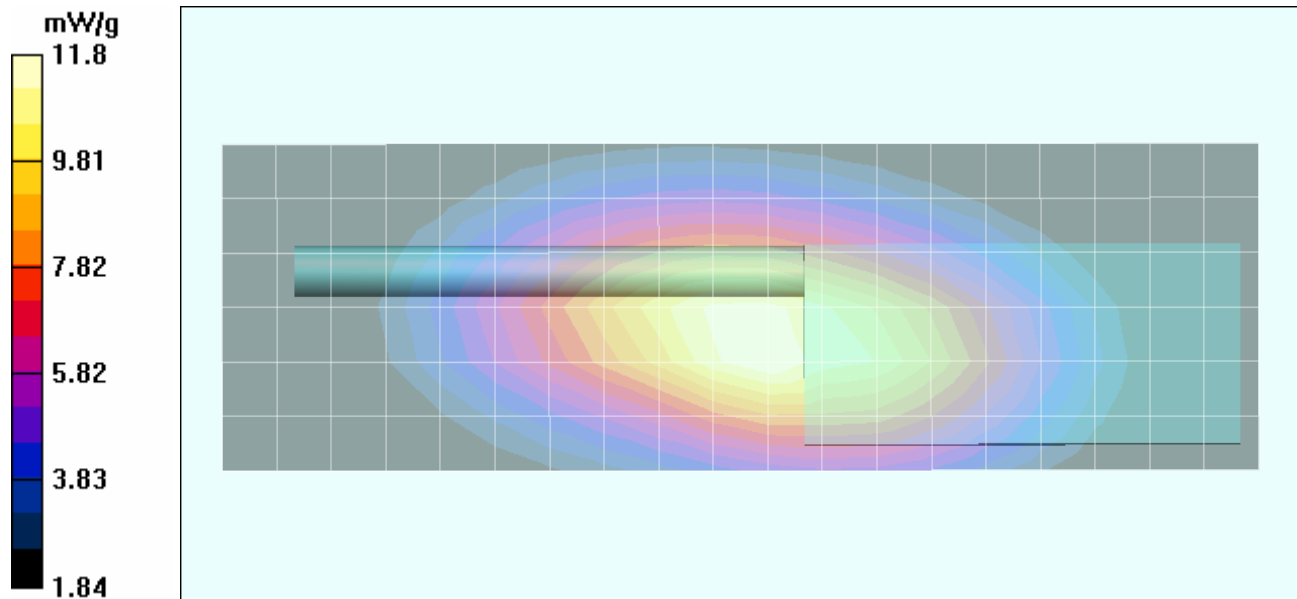
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 117.5 V/m; Power Drift = -0.616 dB



Peak SAR (extrapolated) = 16.5 W/kg

**SAR(1 g) = 11.3 mW/g; SAR(10 g) 8.06 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>Date(s) of Evaluation</u><br>Aug. 05 - Sept. 07, 2010 | <u>Test Report Serial No.</u><br>080310ALH-T1037-S90U     | <u>Test Report Revision No.</u><br>Rev. 1.0 (Initial Release) |  |
|  | <u>Test Report Issue Date</u><br>October 26, 2010        | <u>Description of Test(s)</u><br>Specific Absorption Rate | <u>RF Exposure Category</u><br>Occupational (Controlled)      |  |

## Audio Accessory SAR Plot #127 (A127)

Date Tested: 09/07/2010

### 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: Speaker-Microphone P/N: KMC-21**

Ambient Temp: 21.5°C; Fluid Temp: 22.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 512 MHz; Duty Cycle: 1:1

Medium: M450 Medium parameters used (interpolated):  $f = 512 \text{ MHz}$ ;  $\sigma = 0.944 \text{ mho/m}$ ;  $\epsilon_r = 56.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- 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) = 11.6 mW/g

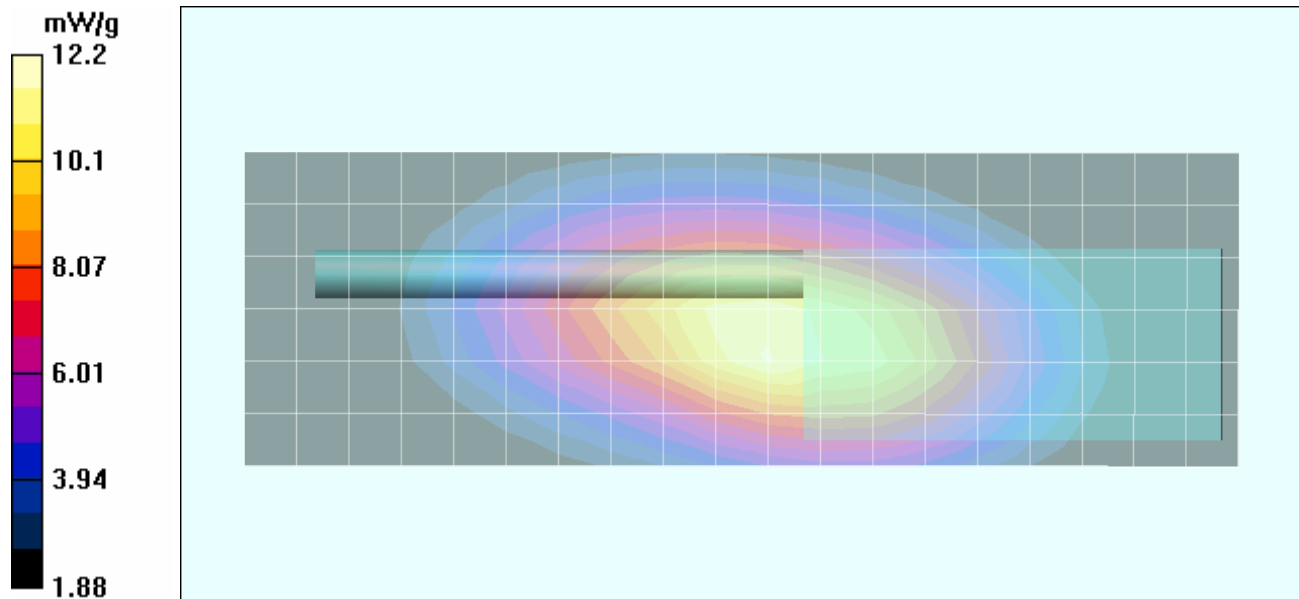
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 119.7 V/m; Power Drift = -0.746 dB

Peak SAR (extrapolated) = 17.1 W/kg

**SAR(1 g) = 11.6 mW/g; SAR(10 g) 8.31 mW/g**

Maximum value of SAR (measured) = 12.2 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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