

	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	  Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

APPENDIX A - SAR MEASUREMENT DATA

Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 11.2 mW/g

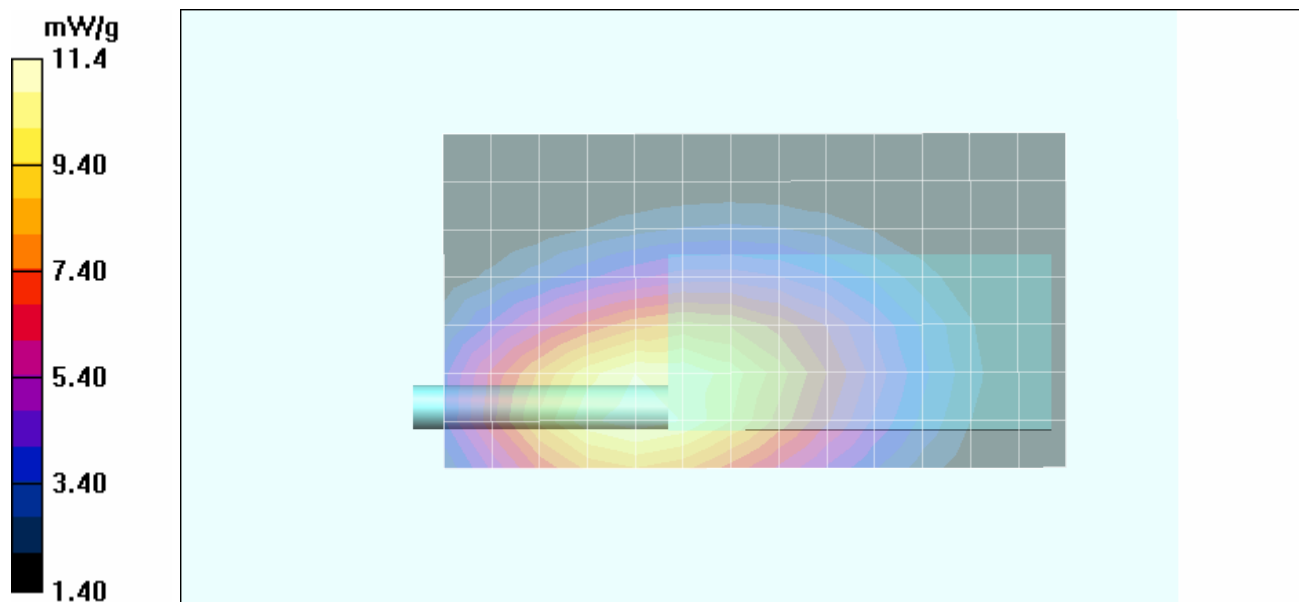
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 114.7 V/m; Power Drift = -0.340 dB

Peak SAR (extrapolated) = 15.6 W/kg

SAR(1 g) = 10.9 mW/g; SAR(10 g) = 7.66 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR – Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 12.5 mW/g

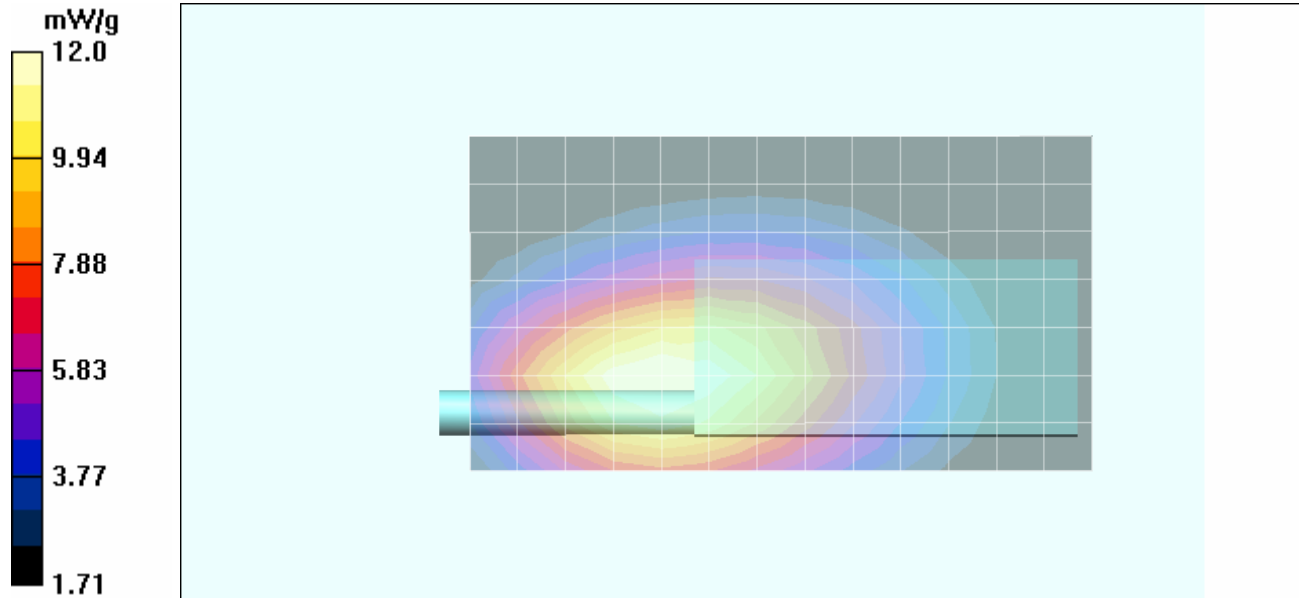
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 114.5 V/m; Power Drift = -0.400 dB

Peak SAR (extrapolated) = 16.4 W/kg

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

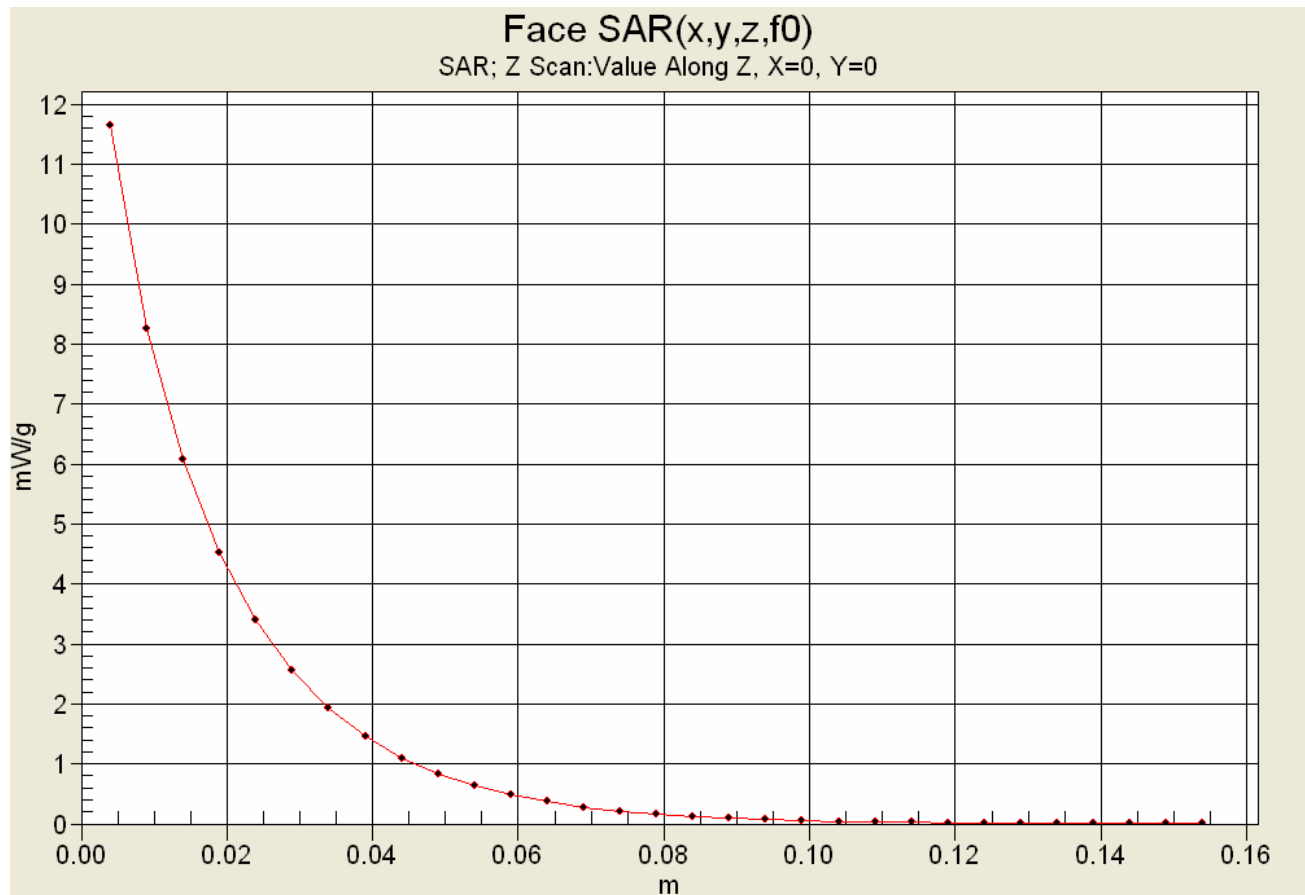
Maximum value of SAR (measured) = 12.0 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 9.31 mW/g

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

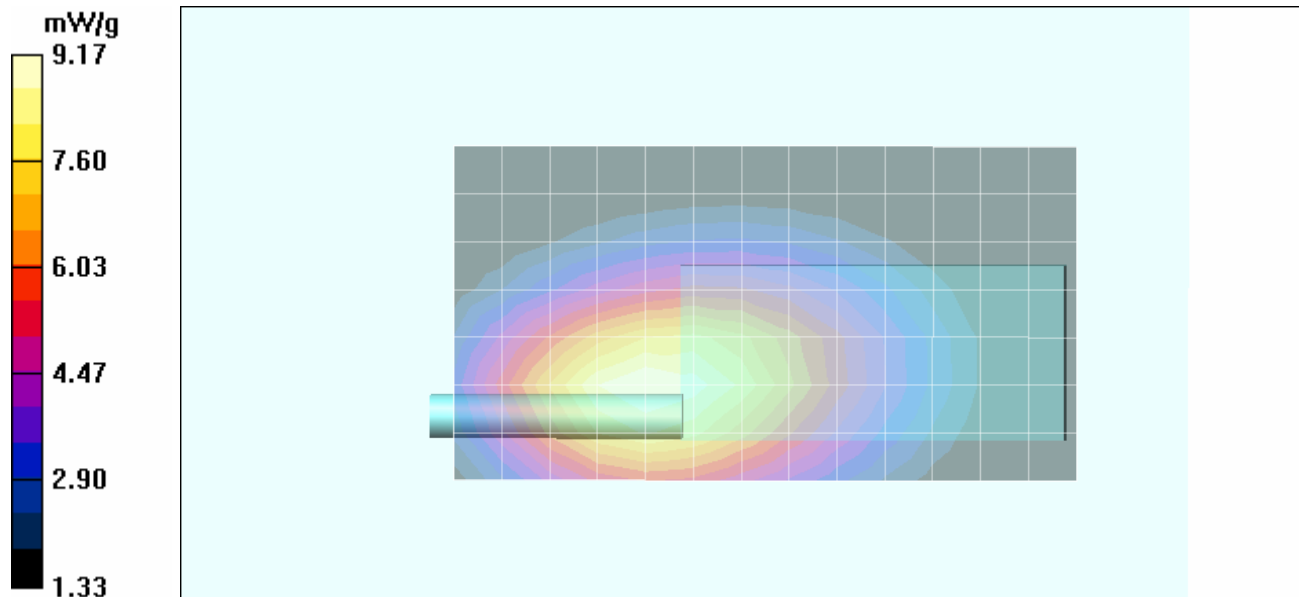
Reference Value = 103.3 V/m; Power Drift = -0.607 dB

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 8.73 mW/g; SAR(10 g) = 6.25 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

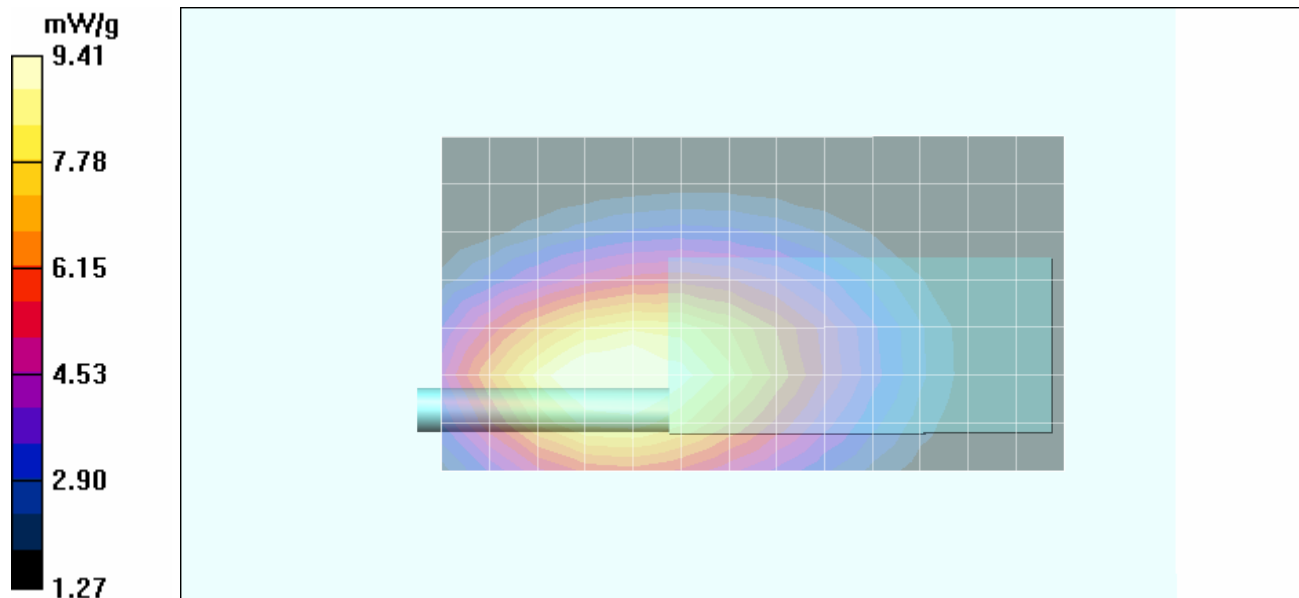
Reference Value = 99.3 V/m; Power Drift = -0.421 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.95 mW/g; SAR(10 g) = 6.42 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.41 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/02/2010

Face-held SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.84 \text{ mho/m}$; $\epsilon_r = 45.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 8.48 mW/g

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

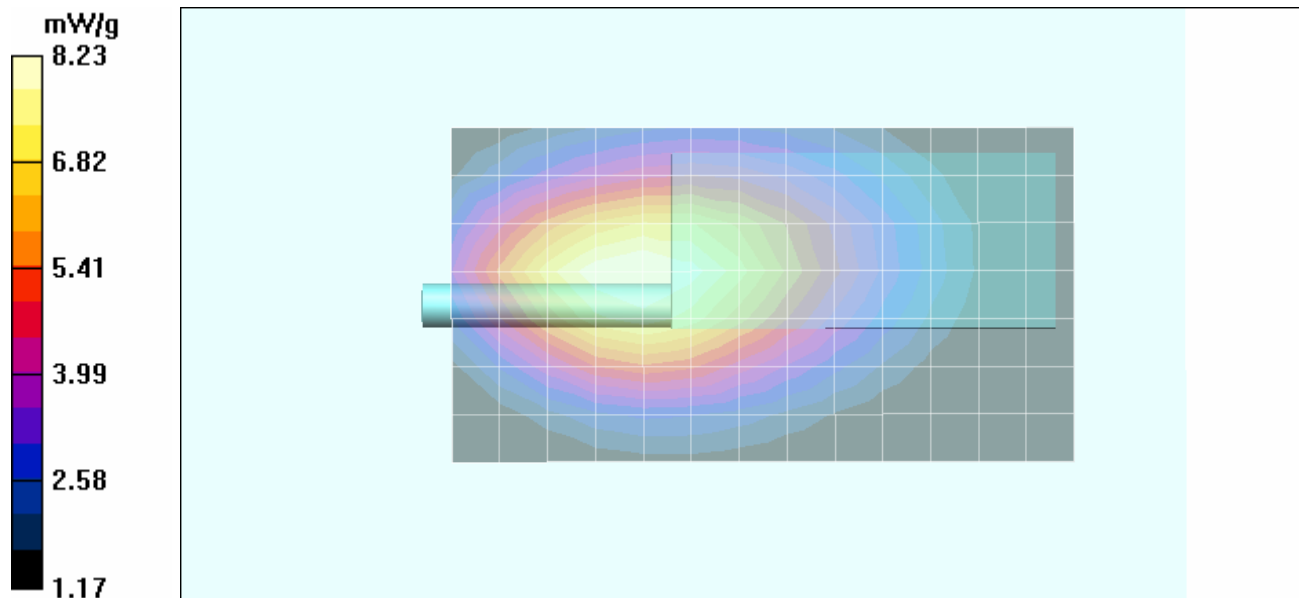
Reference Value = 102.4 V/m; Power Drift = -1.21 dB

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 7.88 mW/g; SAR(10 g) 5.7 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 8.23 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.84 \text{ mho/m}$; $\epsilon_r = 45.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 9.25 mW/g

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

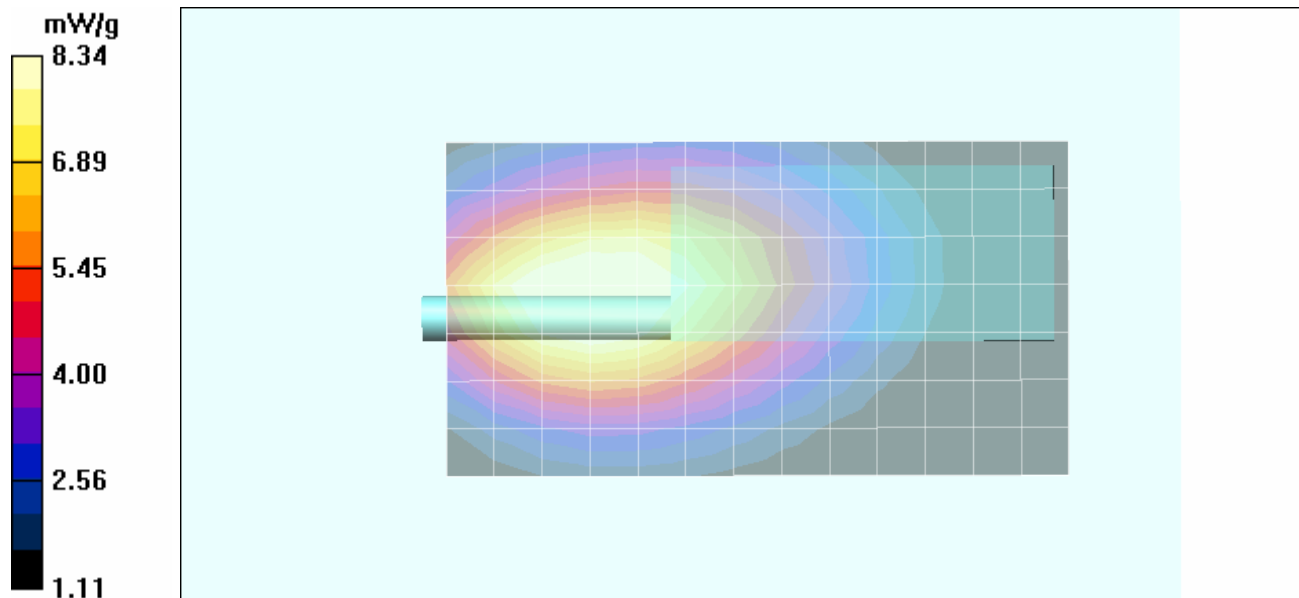
Reference Value = 101.3 V/m; Power Drift = -0.643 dB

Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 7.97 mW/g; SAR(10 g) 5.69 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 8.34 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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Date Tested: 07/02/2010

Face-held SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.27mW/g

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

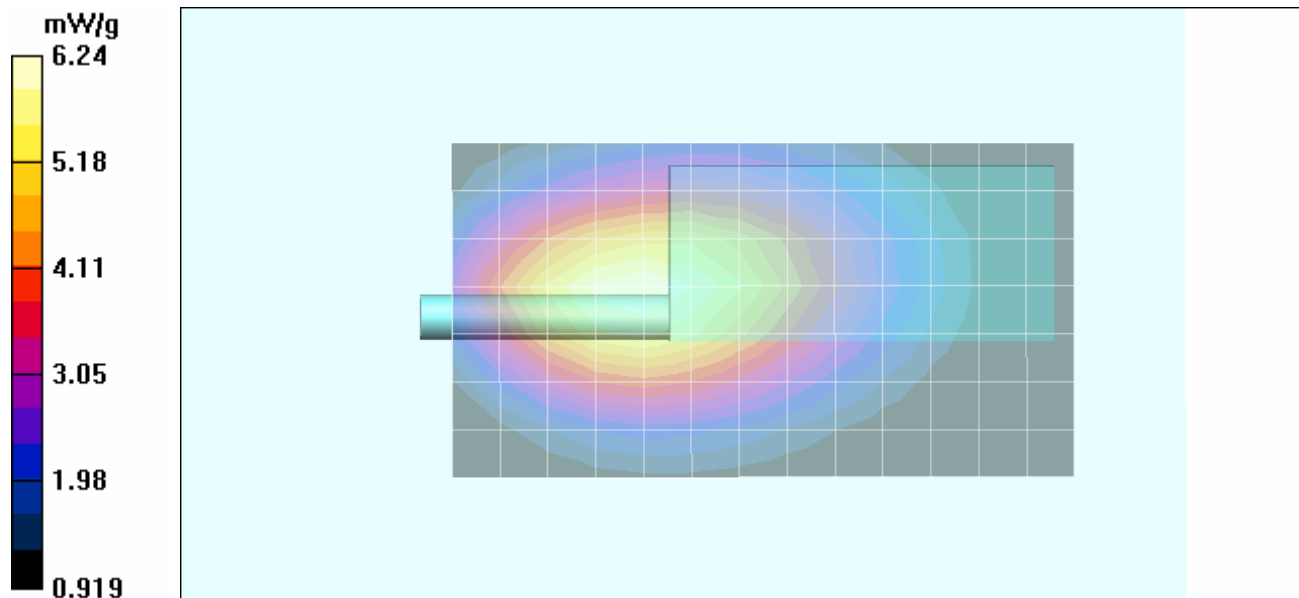
Reference Value = 87.2 V/m; Power Drift = -0.758 dB

Peak SAR (extrapolated) = 8.46 W/kg

SAR(1 g) = 5.94 mW/g; SAR(10 g) 4.28 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.24 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.49mW/g

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

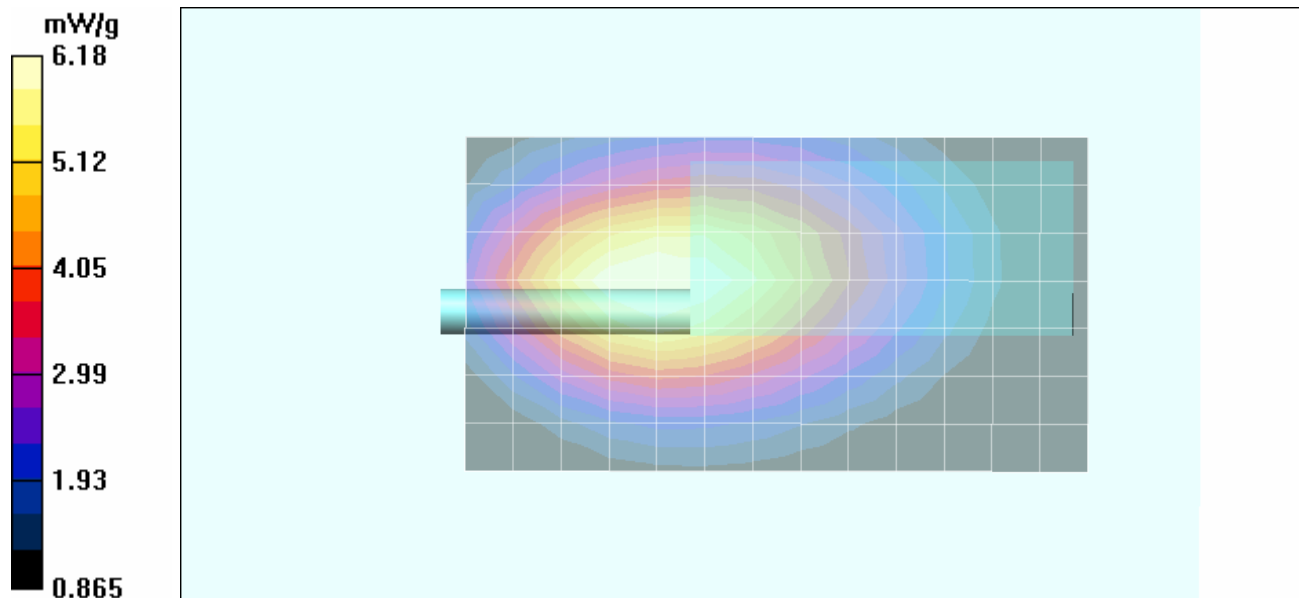
Reference Value = 85.2 V/m; Power Drift = -0.298 dB

Peak SAR (extrapolated) = 8.40 W/kg

SAR(1 g) = 5.87 mW/g; SAR(10 g) 4.21 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.18 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.74 mW/g

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

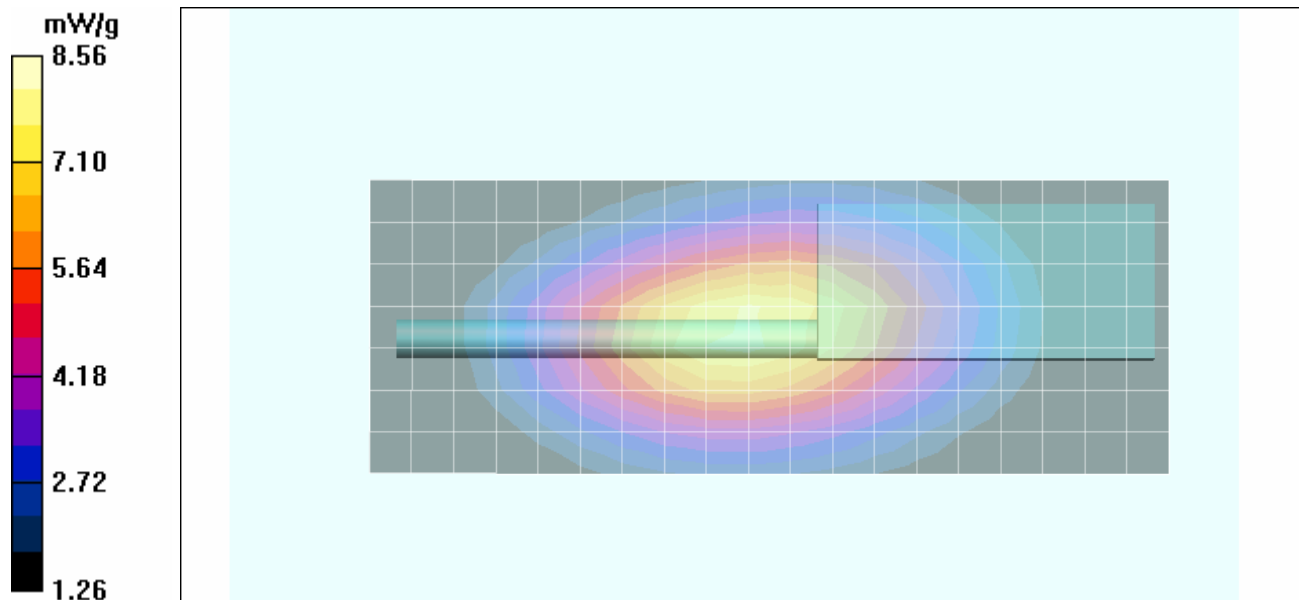
Reference Value = 91.3 V/m; Power Drift = -0.632 dB

Peak SAR (extrapolated) = 11.3 W/kg

SAR(1 g) = 8.13 mW/g; SAR(10 g) 5.9 mW/g

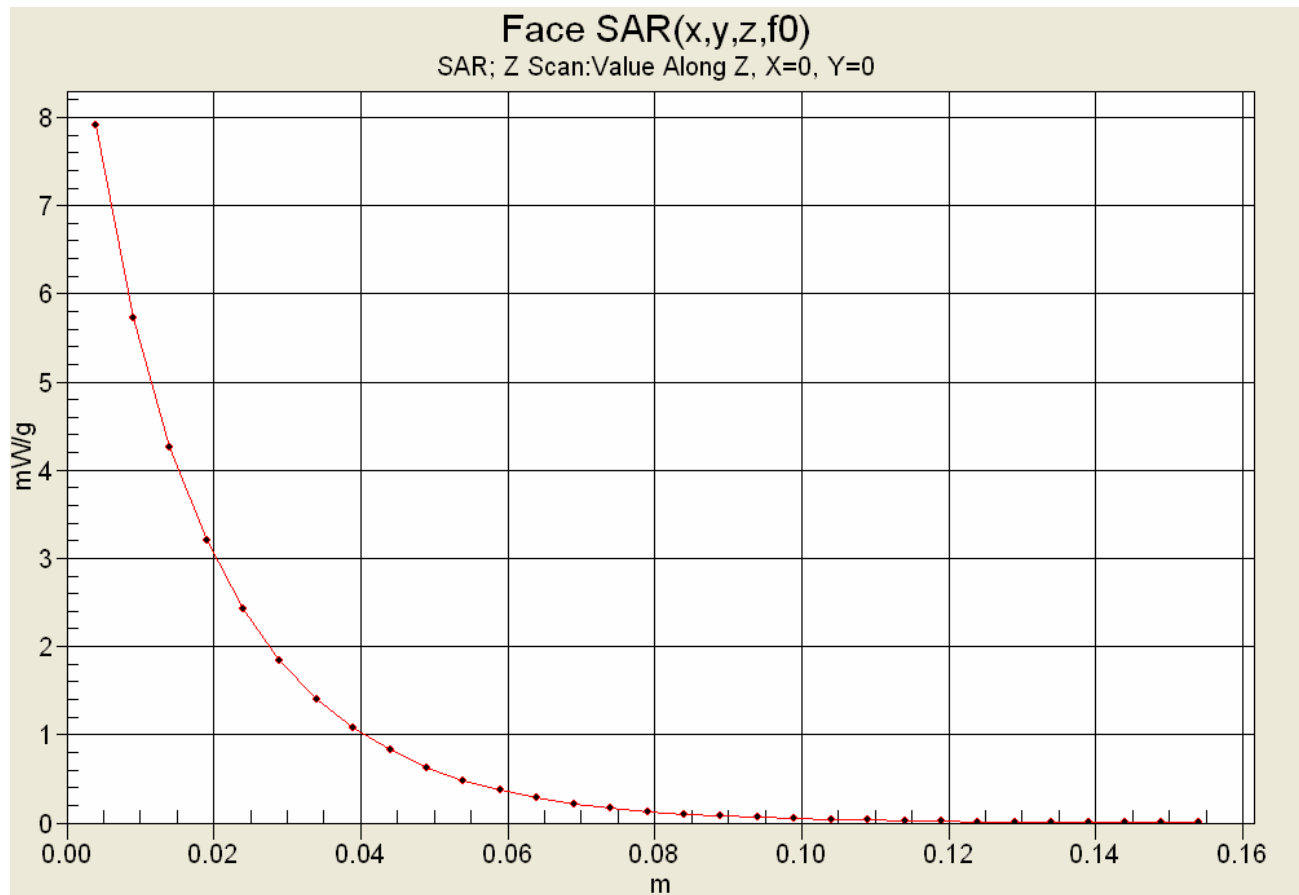
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.56 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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Z-Axis Scan



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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/03/2010

Face-held SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 7.49 mW/g

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

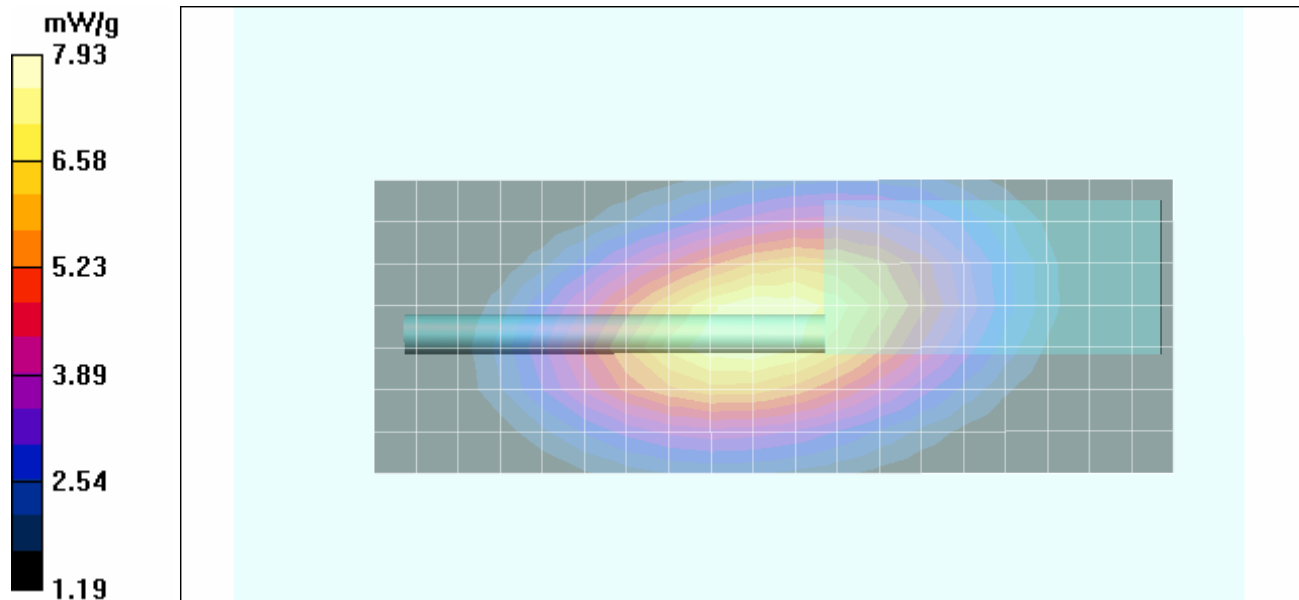
Reference Value = 90.8 V/m; Power Drift = -0.217 dB

Peak SAR (extrapolated) = 10.6 W/kg

SAR(1 g) = 7.56 mW/g; SAR(10 g) 5.48 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 7.93 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.86 \text{ mho/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.59 mW/g

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

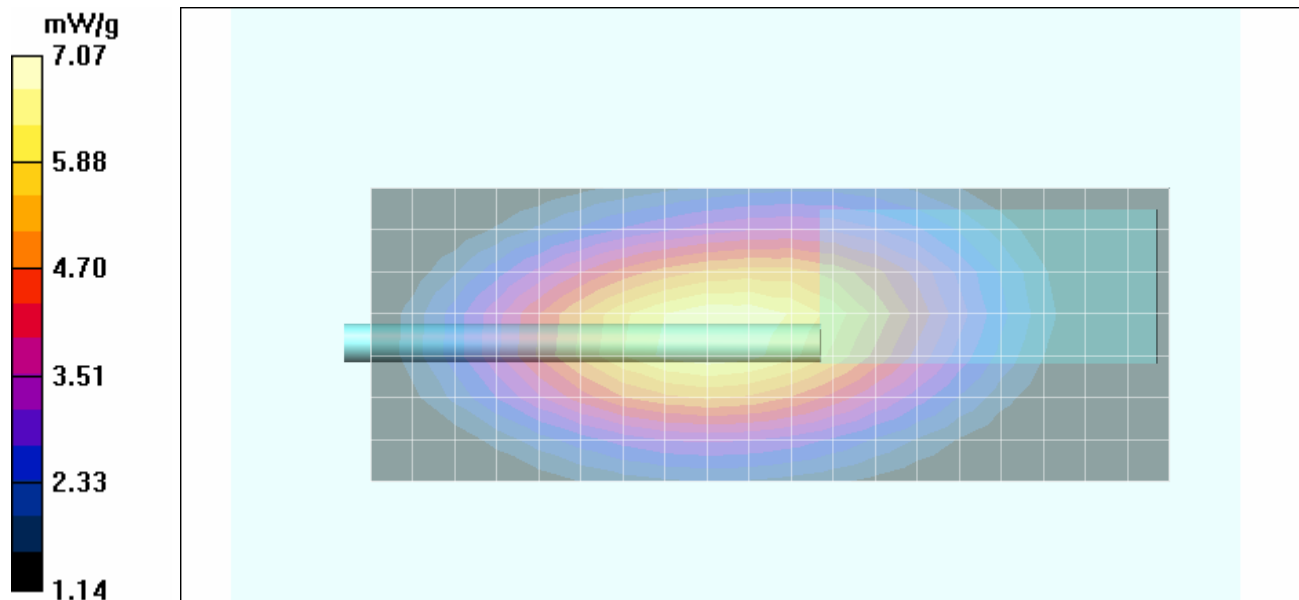
Reference Value = 88.5 V/m; Power Drift = -0.151 dB

Peak SAR (extrapolated) = 9.37 W/kg

SAR(1 g) = 6.74 mW/g; SAR(10 g) 4.94 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 7.07 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.86 \text{ mho/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.56 mW/g

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

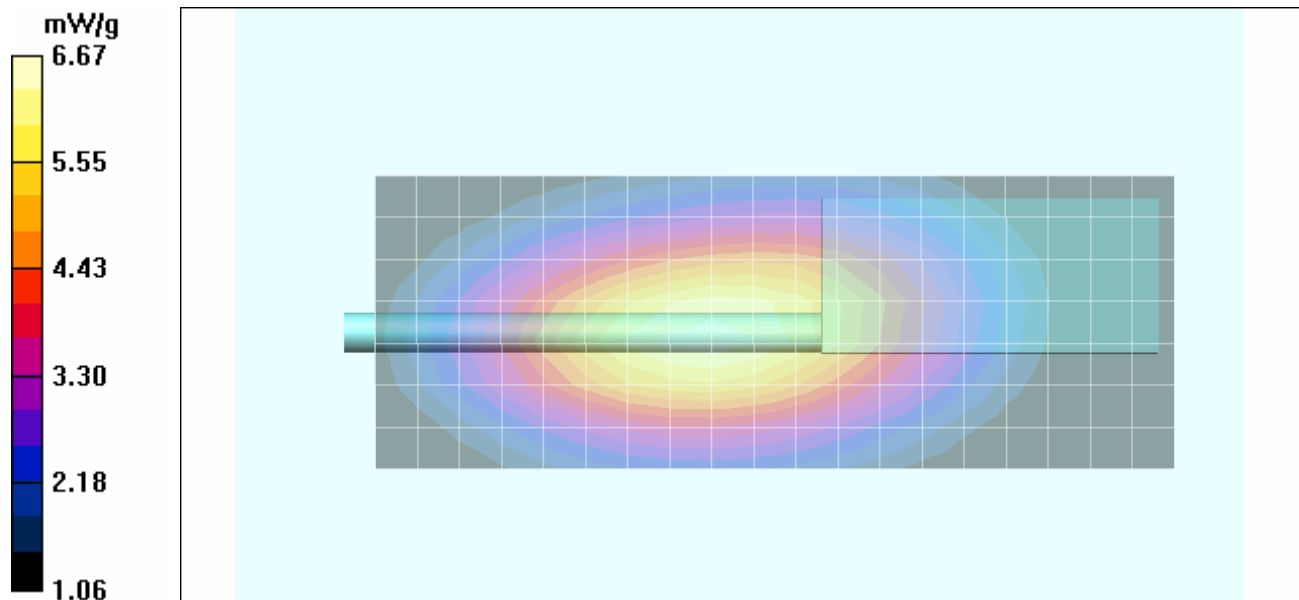
Reference Value = 84.6 V/m; Power Drift = -0.190 dB

Peak SAR (extrapolated) = 8.86 W/kg

SAR(1 g) = 6.38 mW/g; SAR(10 g) 4.66 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.67 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 4.77 mW/g

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

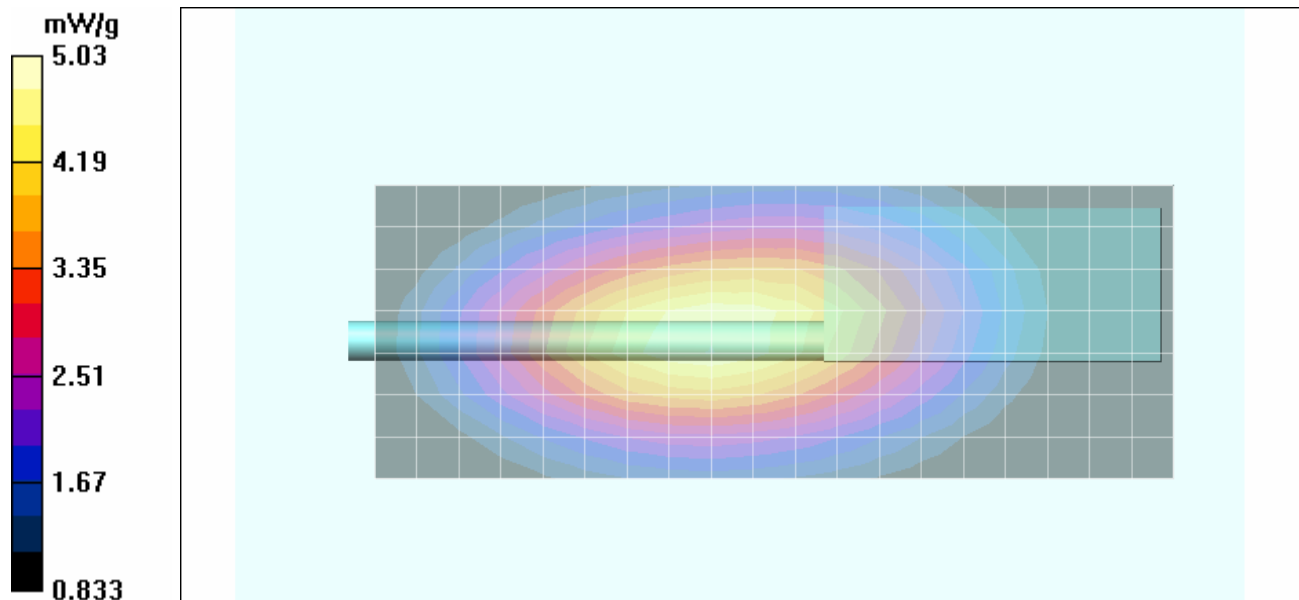
Reference Value = 72.9 V/m; Power Drift = -0.210 dB

Peak SAR (extrapolated) = 6.64 W/kg

SAR(1 g) = 4.79 mW/g; SAR(10 g) 3.51 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 5.03 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 4.87 mW/g

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

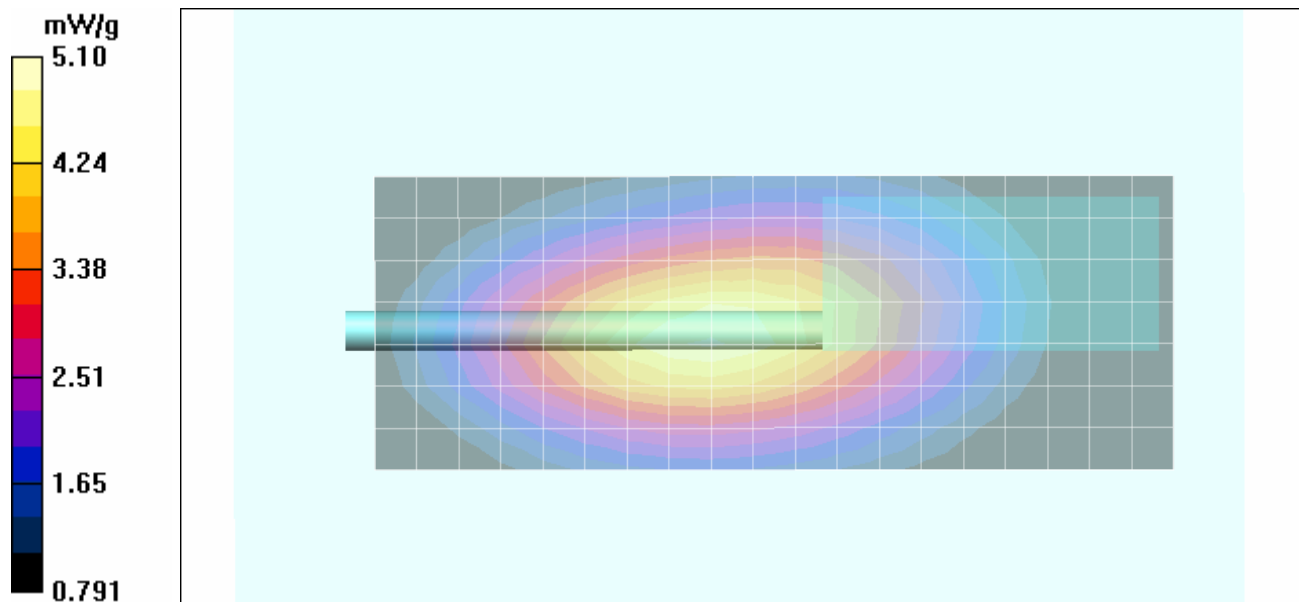
Reference Value = 74.9 V/m; Power Drift = -0.215 dB

Peak SAR (extrapolated) = 6.79 W/kg

SAR(1 g) = 4.87 mW/g; SAR(10 g) 3.56 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 5.10 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 450.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.87 \text{ mho/m}$; $\epsilon_r = 44.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 8.19 mW/g

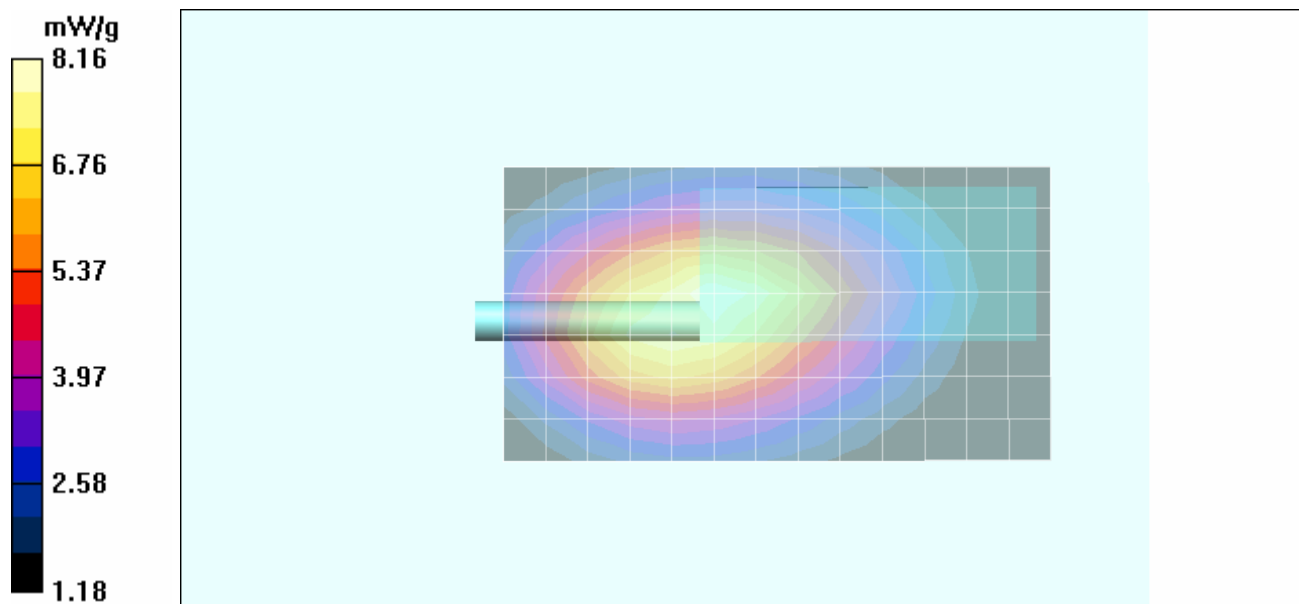
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 87.1 V/m; Power Drift = -0.384 dB

Peak SAR (extrapolated) = 10.8 W/kg

SAR(1 g) = 7.75 mW/g; SAR(10 g) 5.57 mW/g

Maximum value of SAR (measured) = 8.16 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 44.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 9.80 mW/g

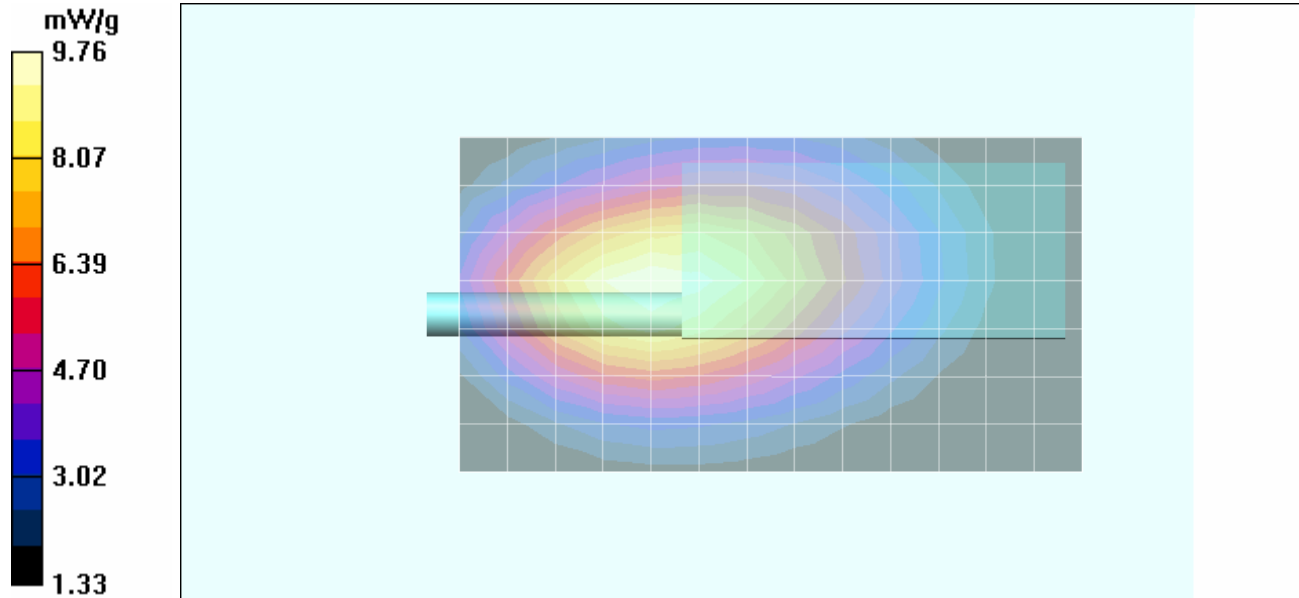
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 101.2 V/m; Power Drift = -0.303 dB

Peak SAR (extrapolated) = 13.2 W/kg

SAR(1 g) = 9.28 mW/g; SAR(10 g) 6.64 mW/g

Maximum value of SAR (measured) = 9.76 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 440.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 440 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 440 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

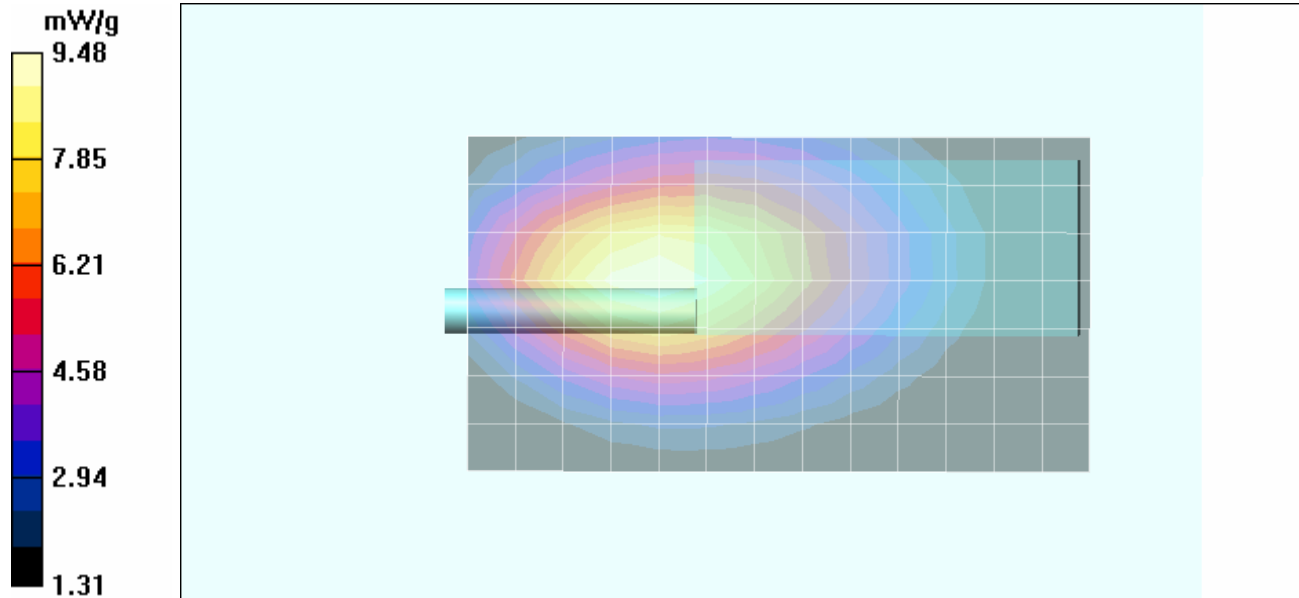
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 102.1 V/m; Power Drift = -0.249 dB

Peak SAR (extrapolated) = 12.9 W/kg

SAR(1 g) = 9.02 mW/g; SAR(10 g) 6.46 mW/g

Maximum value of SAR (measured) = 9.48 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 44.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 7.72 mW/g

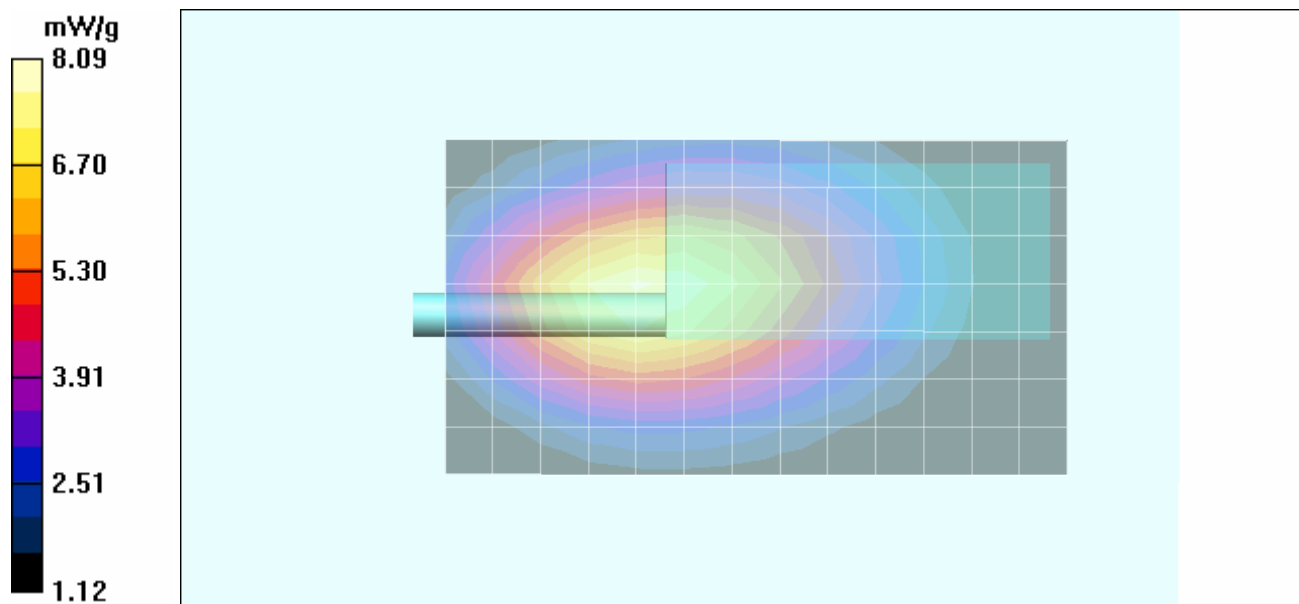
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 92.0 V/m; Power Drift = -0.437 dB

Peak SAR (extrapolated) = 11.0 W/kg

SAR(1 g) = 7.74 mW/g; SAR(10 g) 5.53 mW/g

Maximum value of SAR (measured) = 8.09 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 406.1 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 406.1 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 406.1 \text{ MHz}$; $\sigma = 0.83 \text{ mho/m}$; $\epsilon_r = 45.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.20 mW/g

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

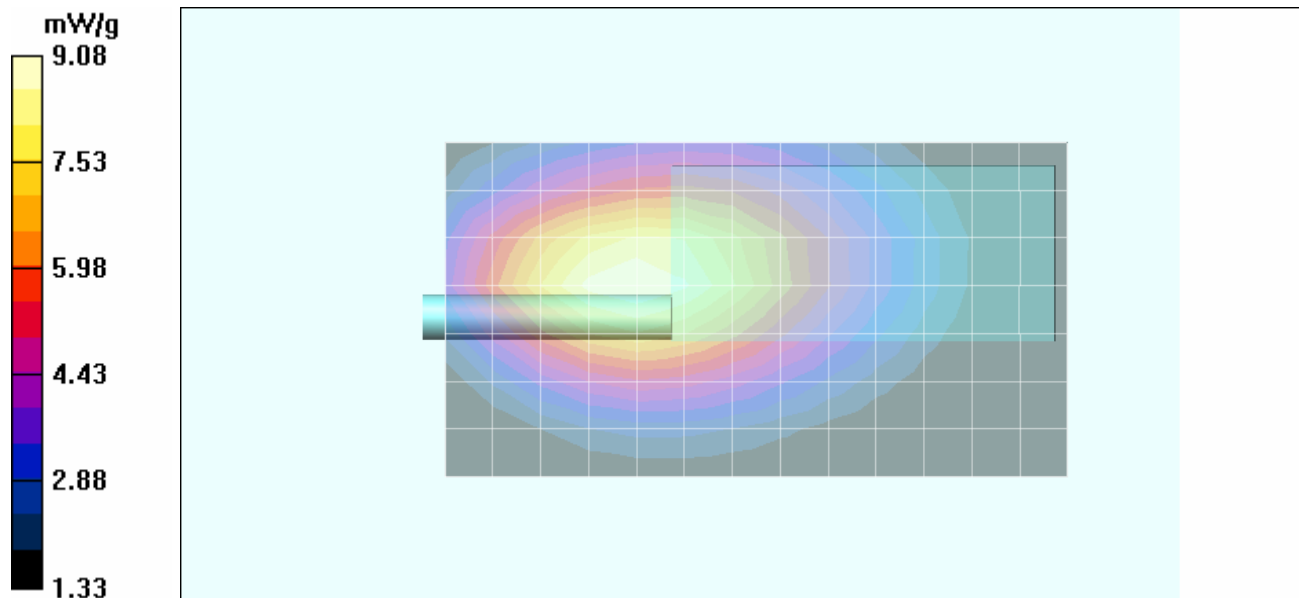
Reference Value = 104.8 V/m; Power Drift = -0.502 dB

Peak SAR (extrapolated) = 12.4 W/kg

SAR(1 g) = 8.59 mW/g; SAR(10 g) 6.15 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Face-held SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 450.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 450.0 \text{ MHz}$; $\sigma = 0.87 \text{ mho/m}$; $\epsilon_r = 44.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 9.75 mW/g

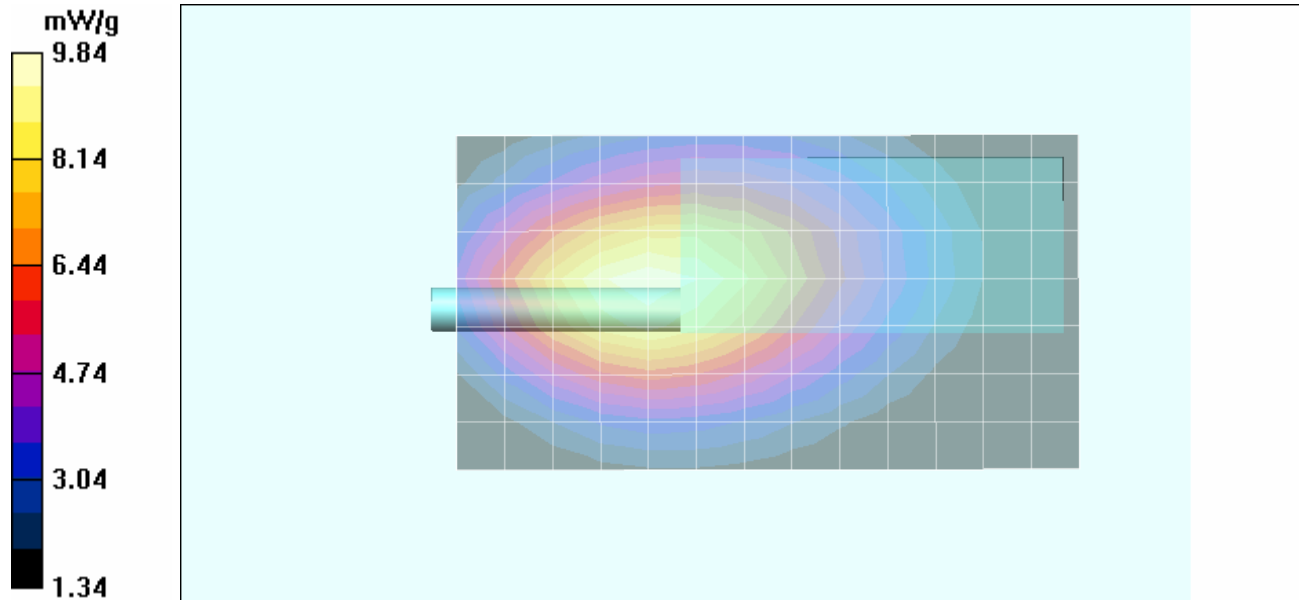
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 103.9 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 13.4 W/kg

SAR(1 g) = 9.43 mW/g; SAR(10 g) 6.79 mW/g

Maximum value of SAR (measured) = 9.84 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 440.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 440 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 440.0 \text{ MHz}$; $\sigma = 0.85 \text{ mho/m}$; $\epsilon_r = 45.4$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 6.67 mW/g

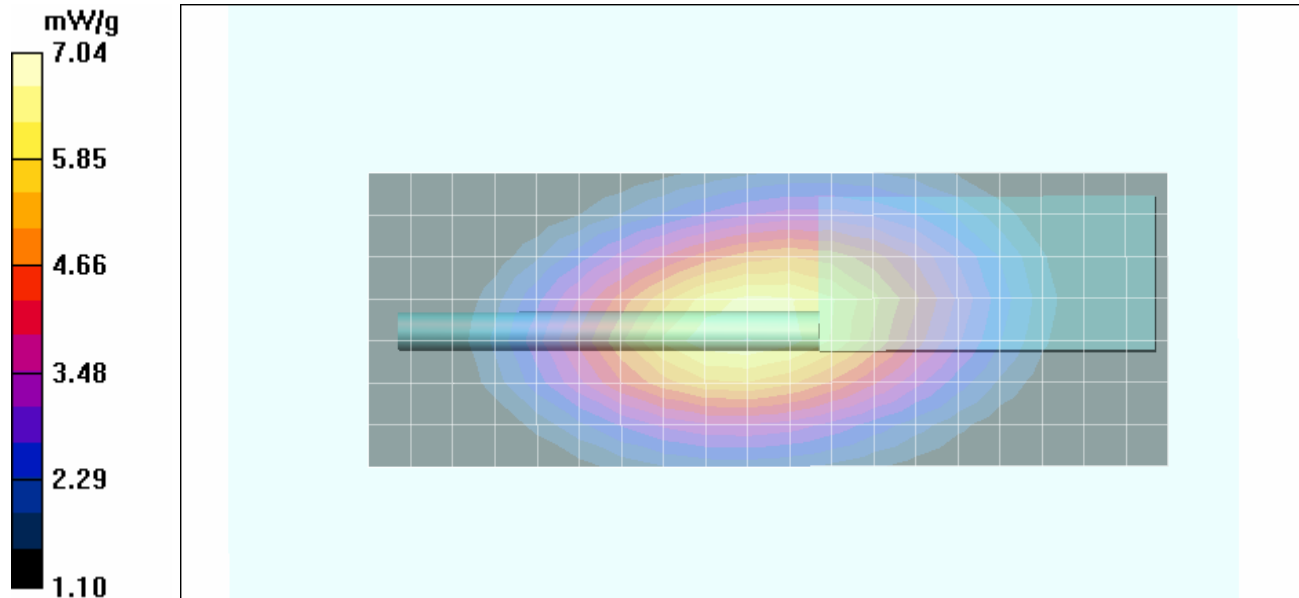
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 80.8 V/m; Power Drift = -0.315 dB

Peak SAR (extrapolated) = 9.32 W/kg

SAR(1 g) = 6.74 mW/g; SAR(10 g) 4.94 mW/g

Maximum value of SAR (measured) = 7.04 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 470.0 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 44.6$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 7.53 mW/g

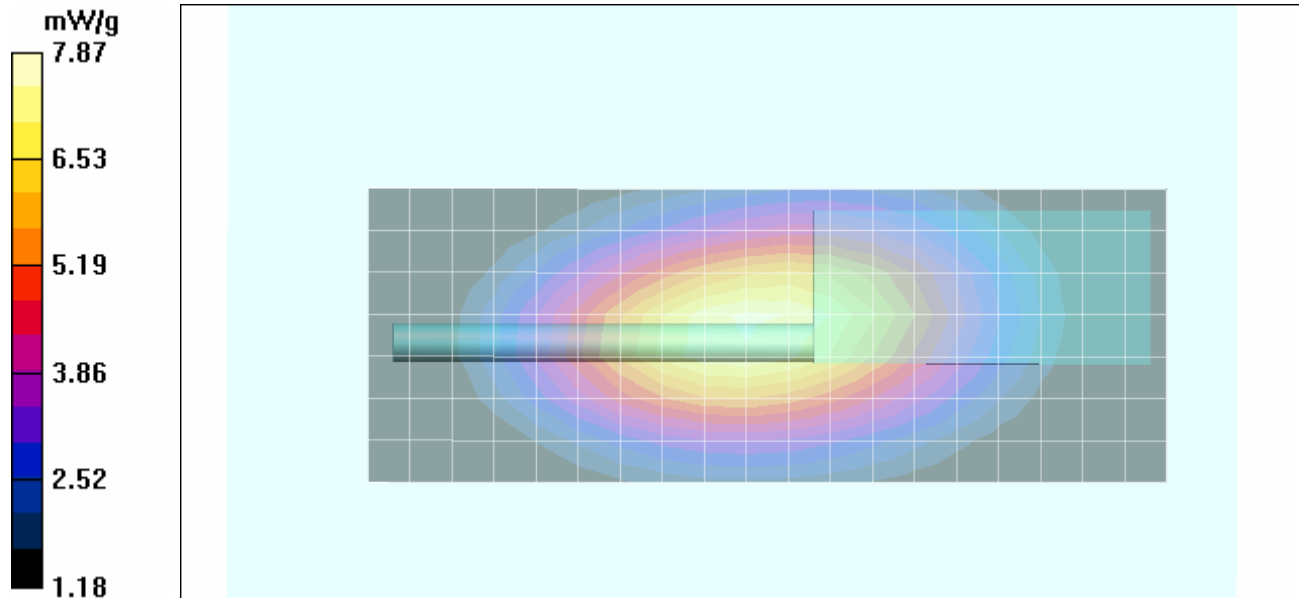
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 88.2 V/m; Power Drift = -0.402 dB

Peak SAR (extrapolated) = 10.4 W/kg

SAR(1 g) = 7.5 mW/g; SAR(10 g) 5.46 mW/g

Maximum value of SAR (measured) = 7.87mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 406.1 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 406.1 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used (interpolated): $f = 406.1 \text{ MHz}$; $\sigma = 0.83 \text{ mho/m}$; $\epsilon_r = 45.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.61 mW/g

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

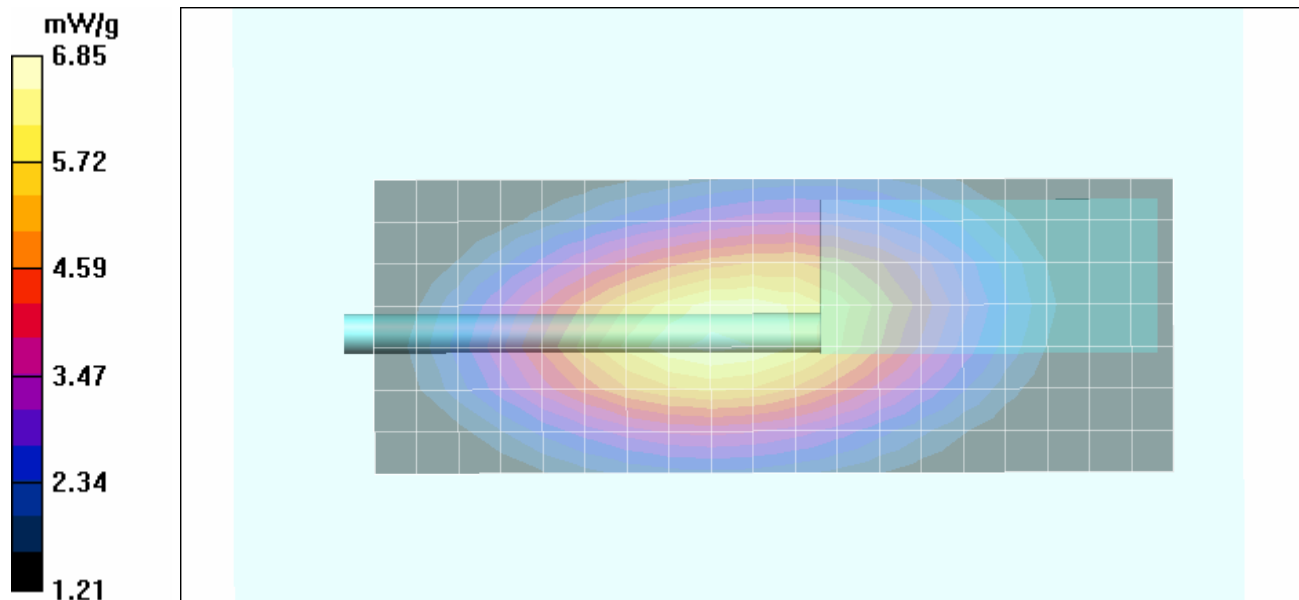
Reference Value = 88.0 V/m; Power Drift = -0.535 dB

Peak SAR (extrapolated) = 8.97 W/kg

SAR(1 g) = 6.54 mW/g; SAR(10 g) 4.84 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.85 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/03/2010

Face-held SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 450 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: HSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 45.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

Maximum value of SAR (measured) = 4.50 mW/g

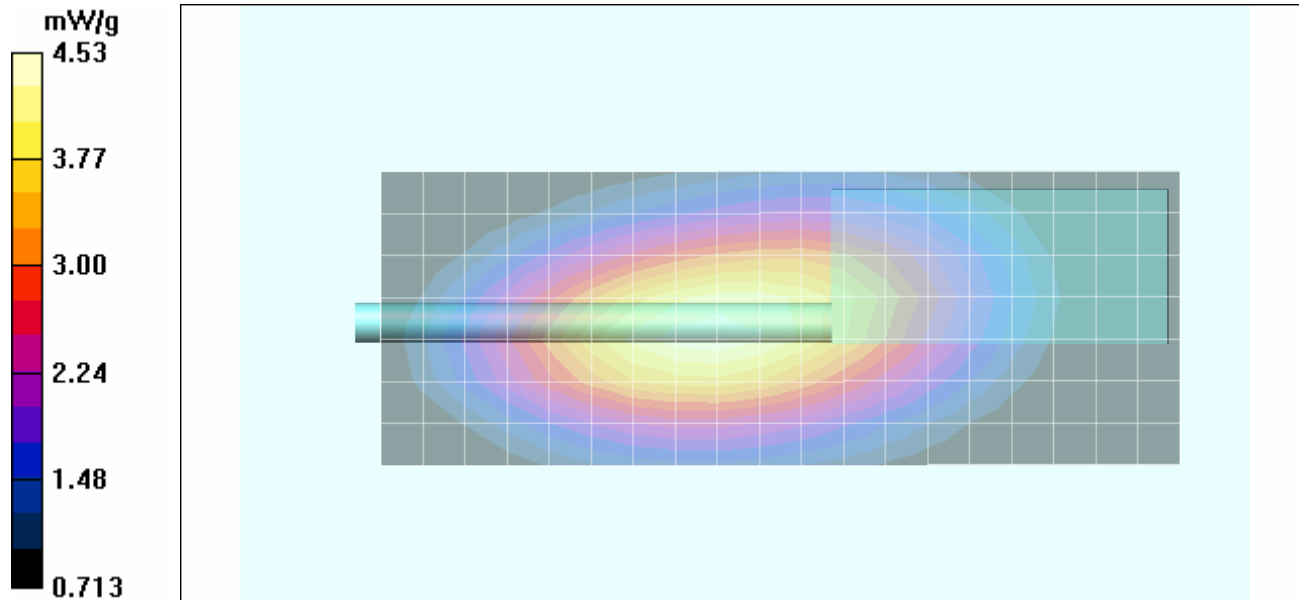
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 67.5 V/m; Power Drift = -0.351 dB

Peak SAR (extrapolated) = 5.97 W/kg

SAR(1 g) = 4.29 mW/g; SAR(10 g) 3.12 mW/g

Maximum value of SAR (measured) = 4.53 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap 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

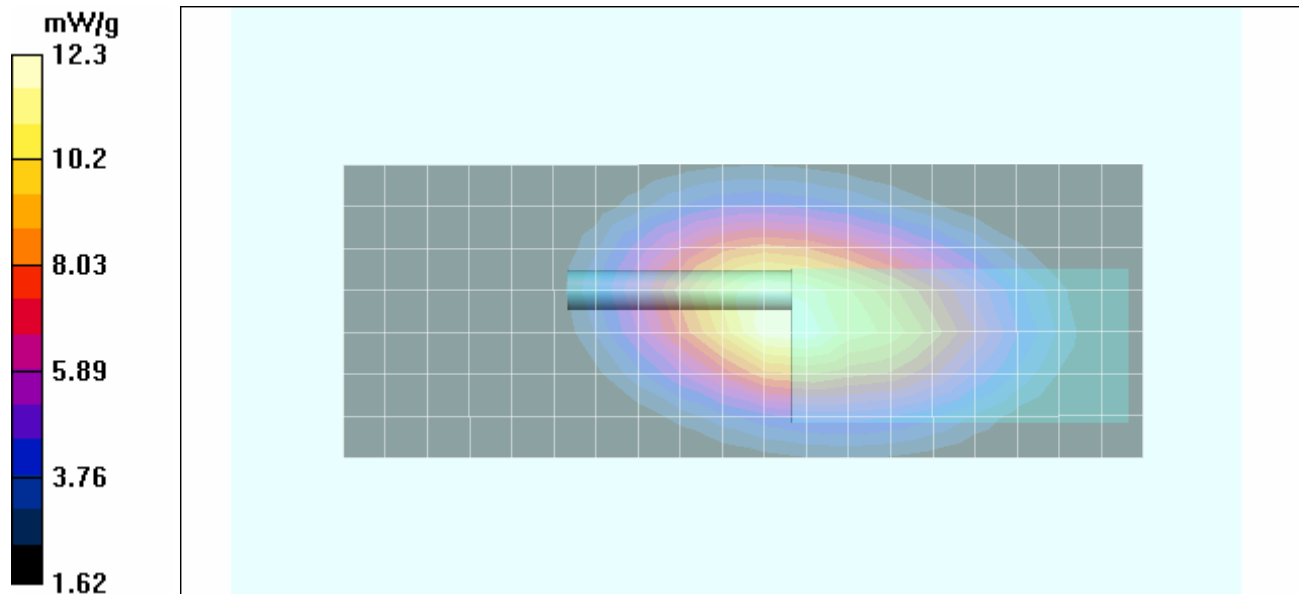
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 106.9 V/m; Power Drift = -0.466 dB

Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 11.6 mW/g; SAR(10 g) 8.2 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.78 mW/g

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

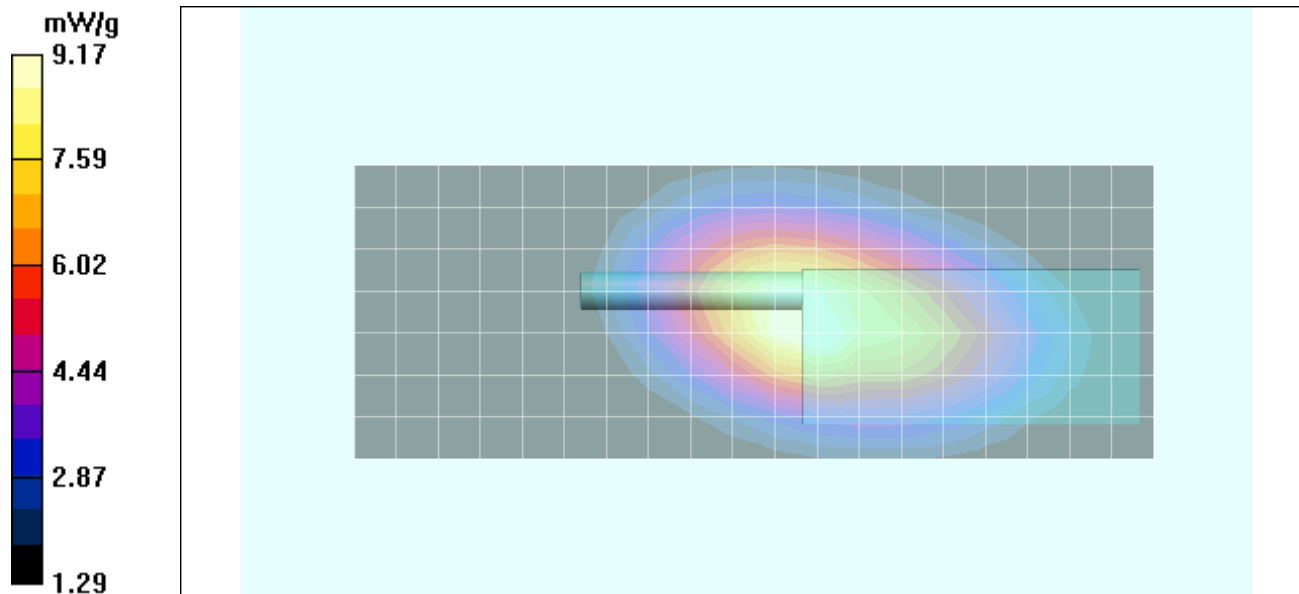
Reference Value = 89.8 V/m; Power Drift = -0.603 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.68 mW/g; SAR(10 g) 6.09 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.90 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.58 mW/g

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

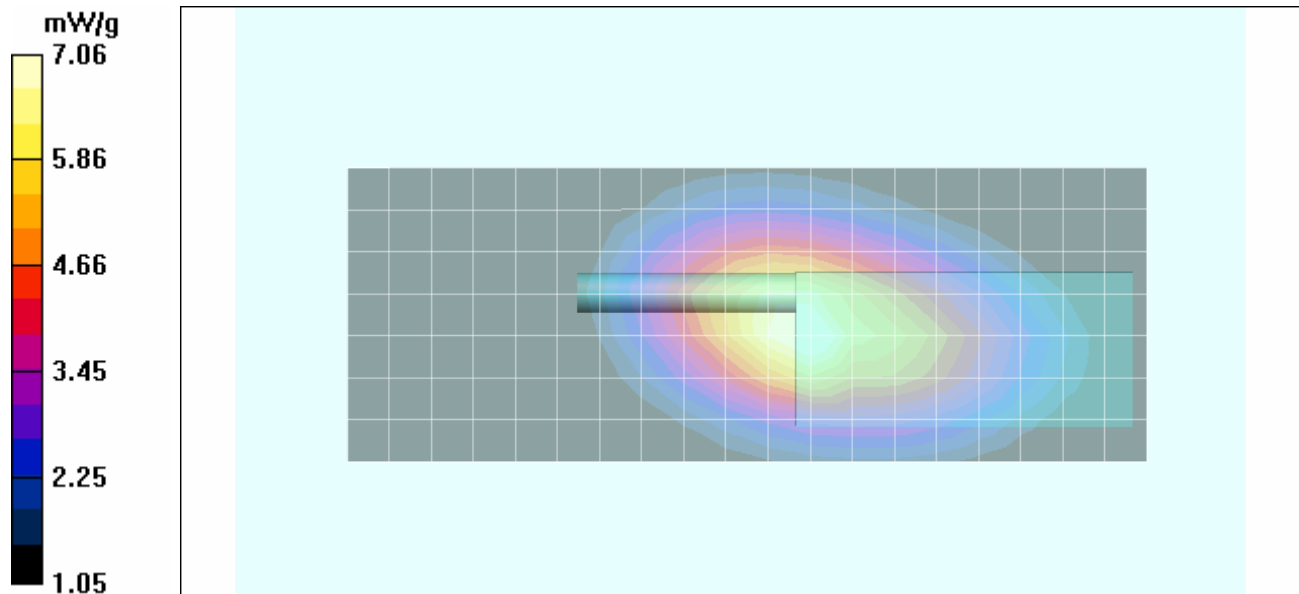
Reference Value = 81.1 V/m; Power Drift = -0.789 dB

Peak SAR (extrapolated) = 9.75 W/kg

SAR(1 g) = 6.67 mW/g; SAR(10 g) 4.72 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 56.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.07 mW/g

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

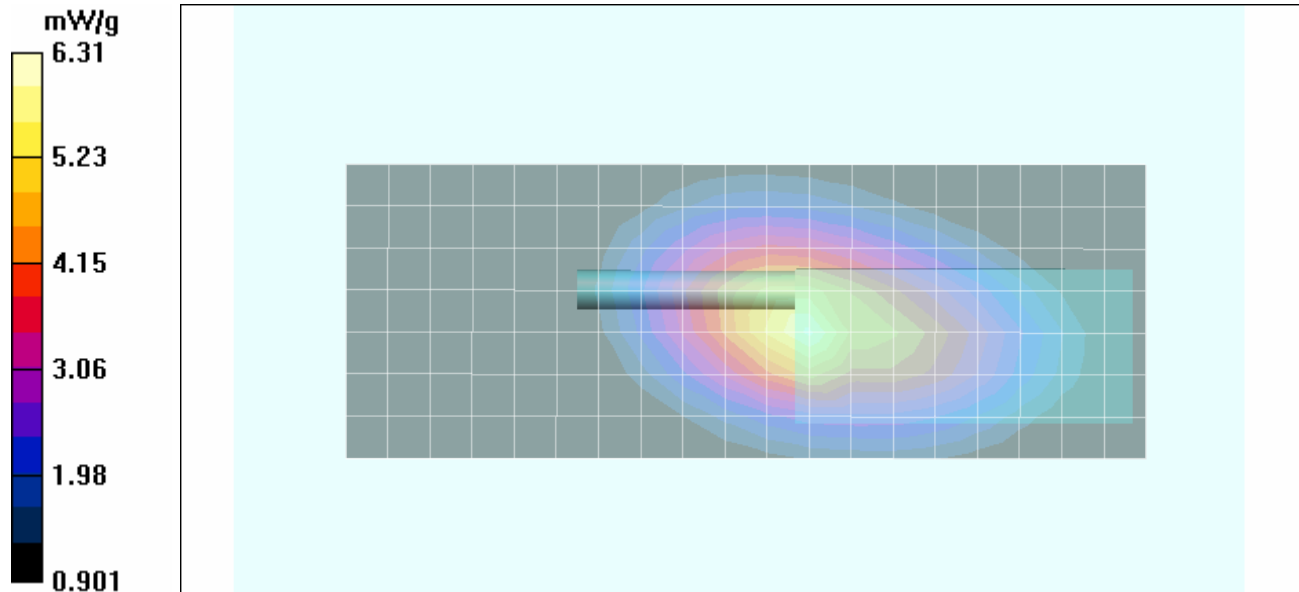
Reference Value = 78.9 V/m; Power Drift = -1.23 dB

Peak SAR (extrapolated) = 8.91 W/kg

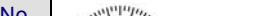
SAR(1 g) = 6.01 mW/g; SAR(10 g) 4.21 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.31 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

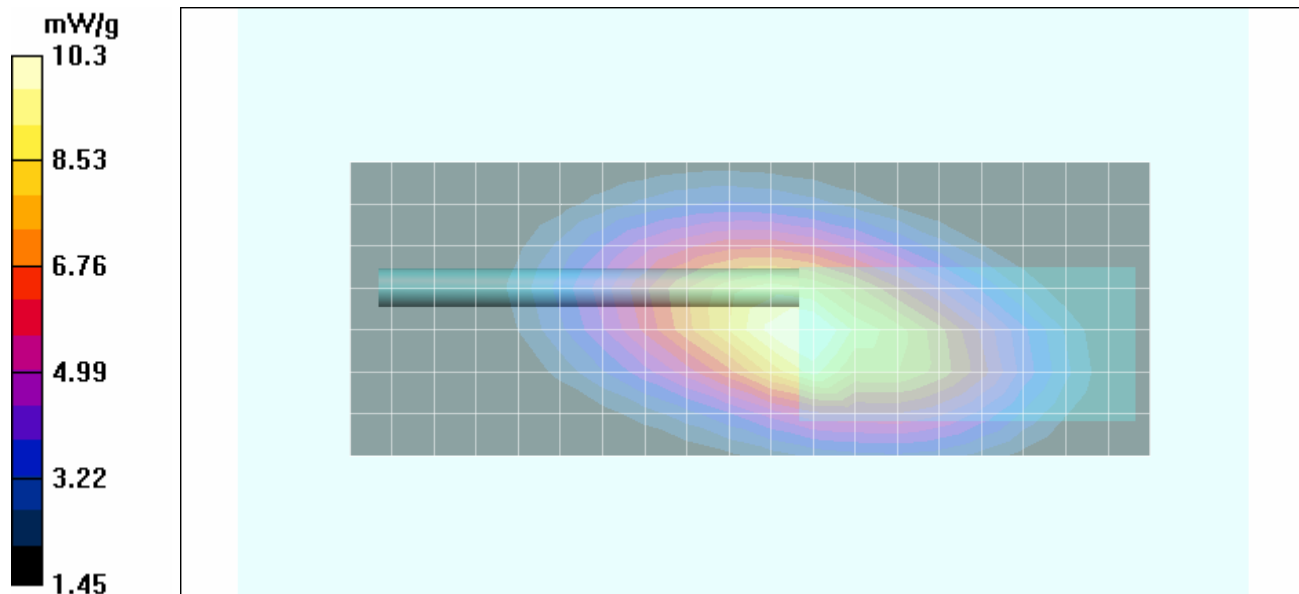
Reference Value = 98.9 V/m; Power Drift = -0.402 dB

Peak SAR (extrapolated) = 8.91 W/kg

SAR(1 g) = 9.72 mW/g; SAR(10 g) 6.91 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.90 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.24 mW/g

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

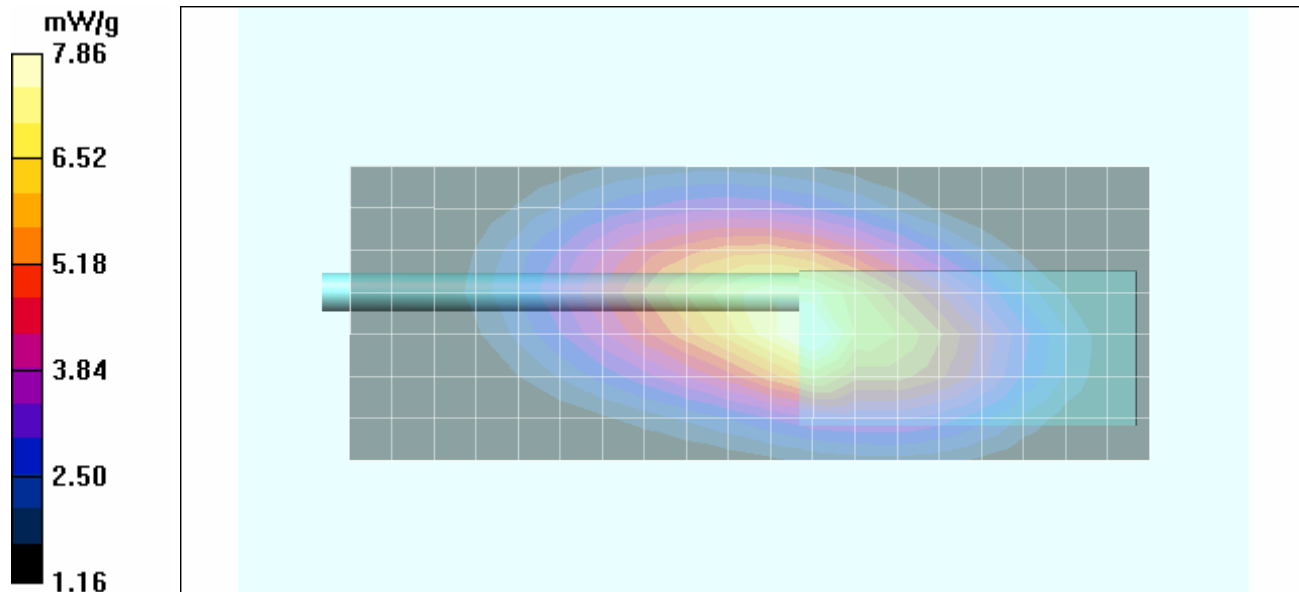
Reference Value = 89.3 V/m; Power Drift = -0.608 dB

Peak SAR (extrapolated) = 10.8 W/kg

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.86 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: None (Baseline only); Audio Accessory: None (Baseline only)

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 56.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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 Air-Gap Spacing from Back of DUT to Planar Phantom

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.36 mW/g

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

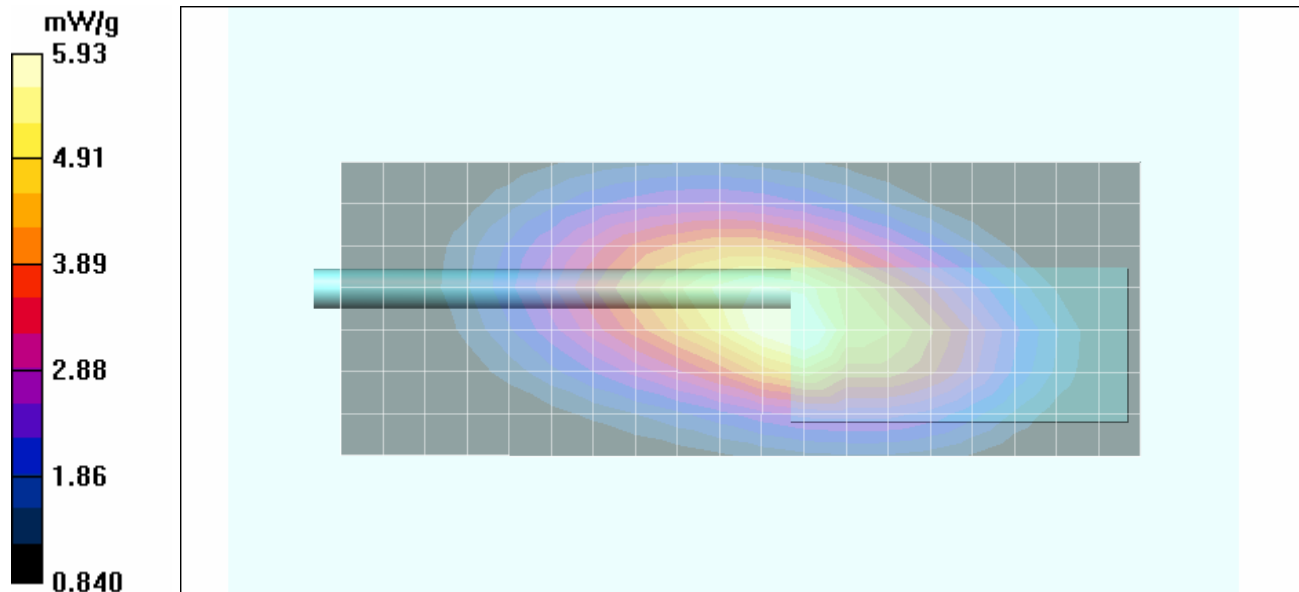
Reference Value = 72.8 V/m; Power Drift = -0.297 dB

Peak SAR (extrapolated) = 8.35 W/kg

SAR(1 g) = 5.64 mW/g; SAR(10 g) 3.99 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 5.93 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

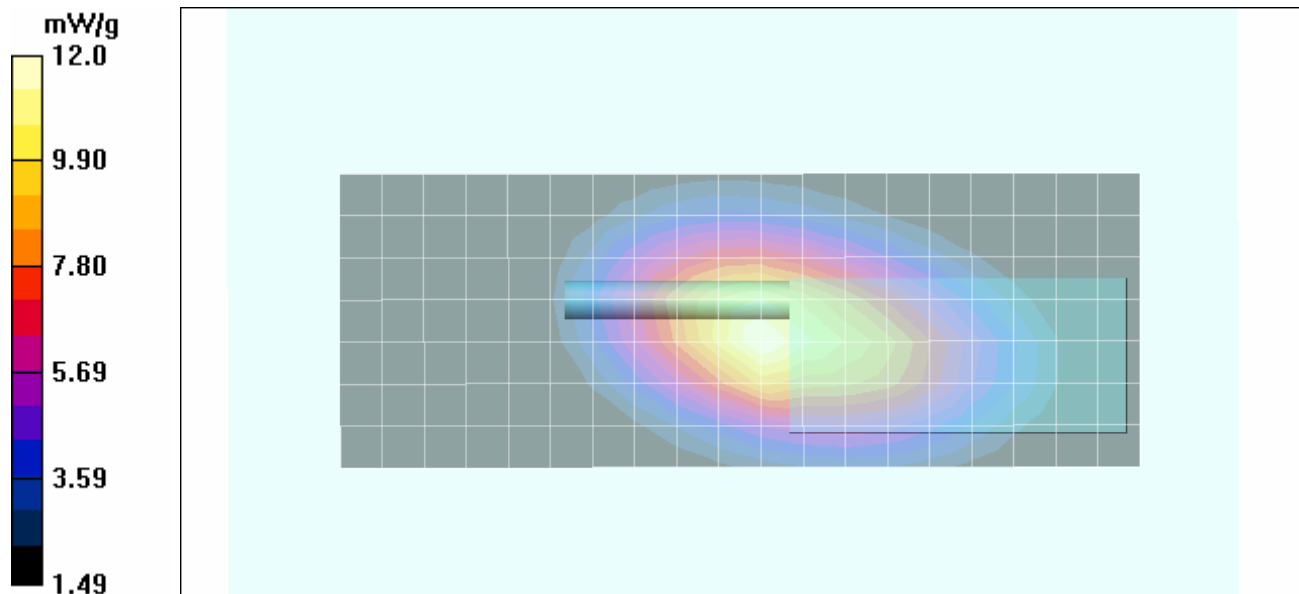
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 101.4 V/m; Power Drift = -0.558 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.04 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

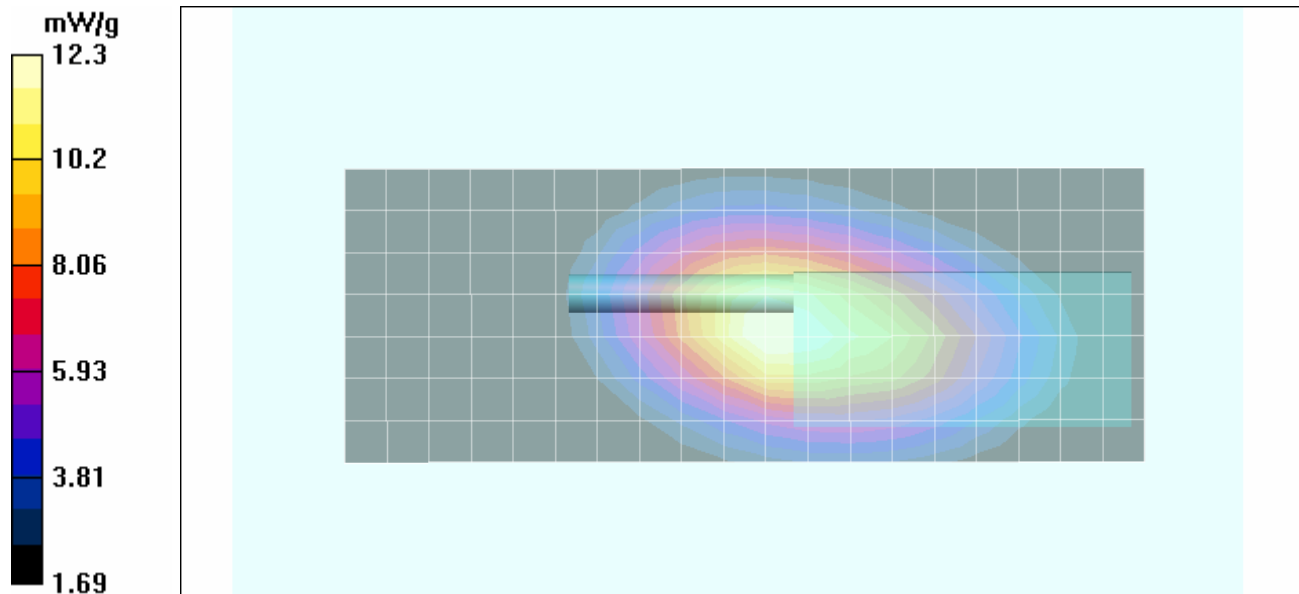
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 105.7 V/m; Power Drift = -0.635 dB

Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 11.7 mW/g; SAR(10 g) 8.29 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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) = 11.7 mW/g

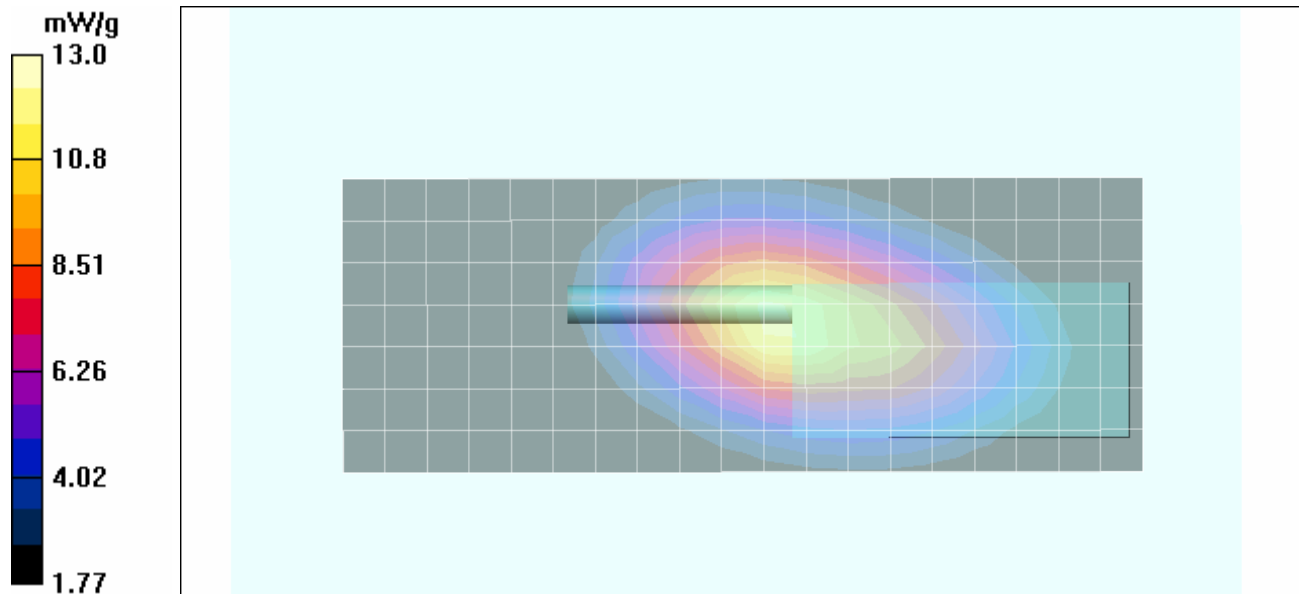
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 107.2 V/m; Power Drift = -0.722 dB

Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 12.3 mW/g; SAR(10 g) 8.7 mW/g

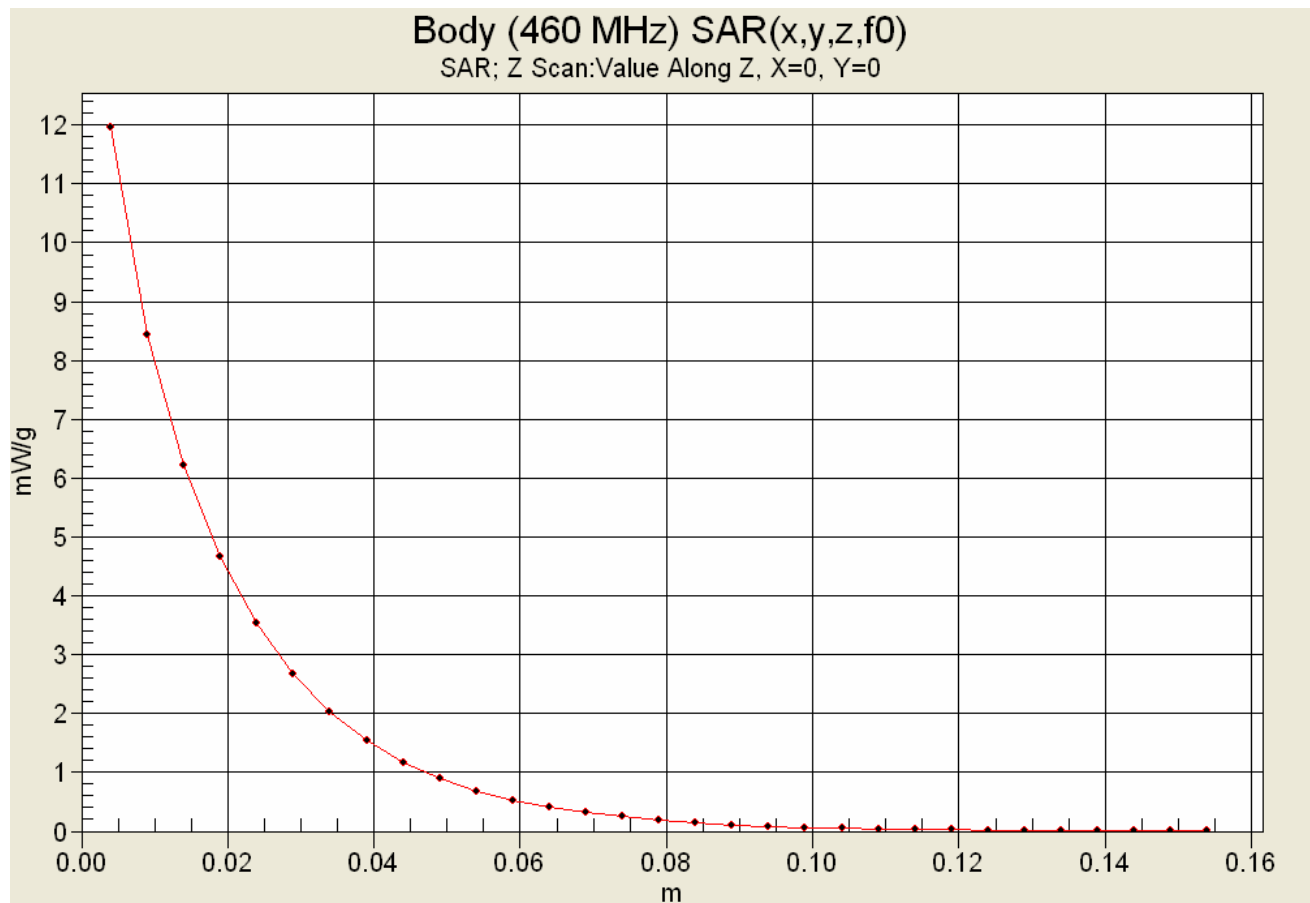
Maximum value of SAR (measured) = 13.0 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

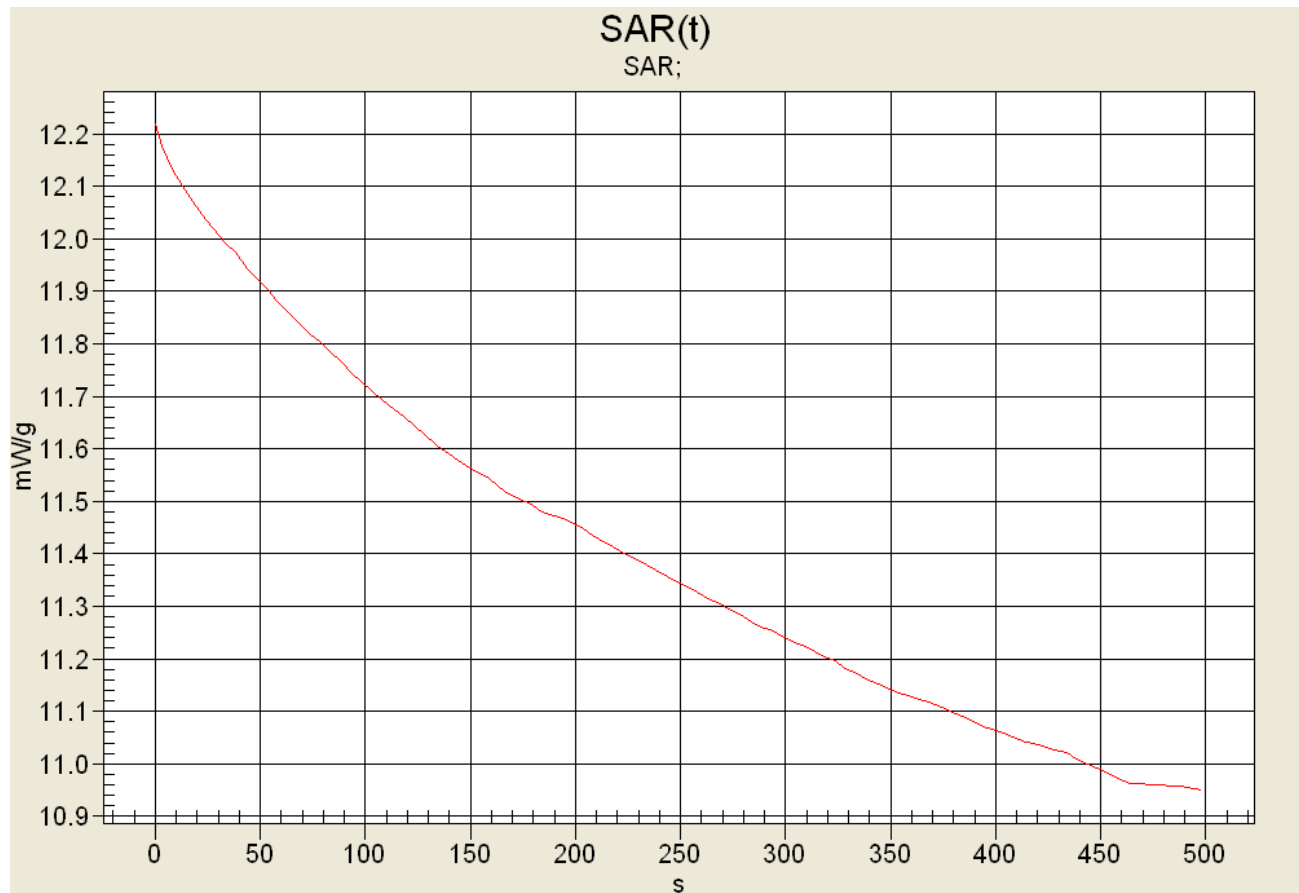
Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

SAR Droop Evaluation (SAR-versus-Time)



SAR - Start - 12.22 mW/g
SAR - 340s - 11.16 mW/g (-0.394 dB)
SAR - 500s - 10.95 mW/g (-0.477 dB)

Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

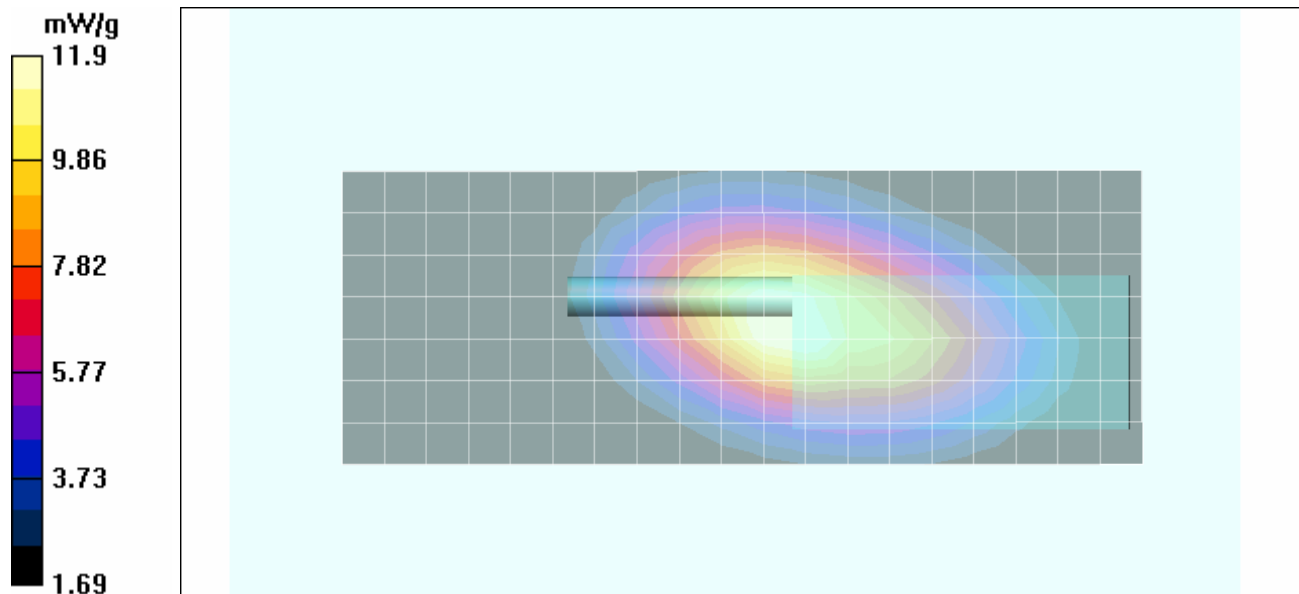
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 106.2 V/m; Power Drift = -0.464 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 11.2 mW/g; SAR(10 g) 7.92 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

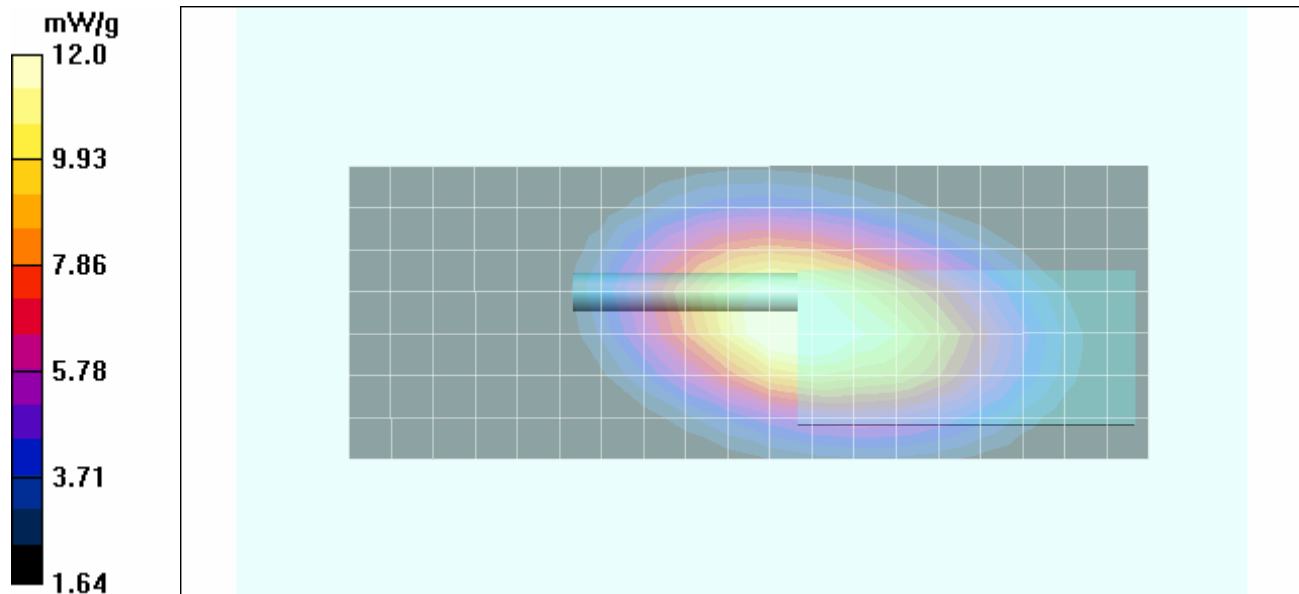
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 102.6 V/m; Power Drift = -0.334 dB

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.08 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

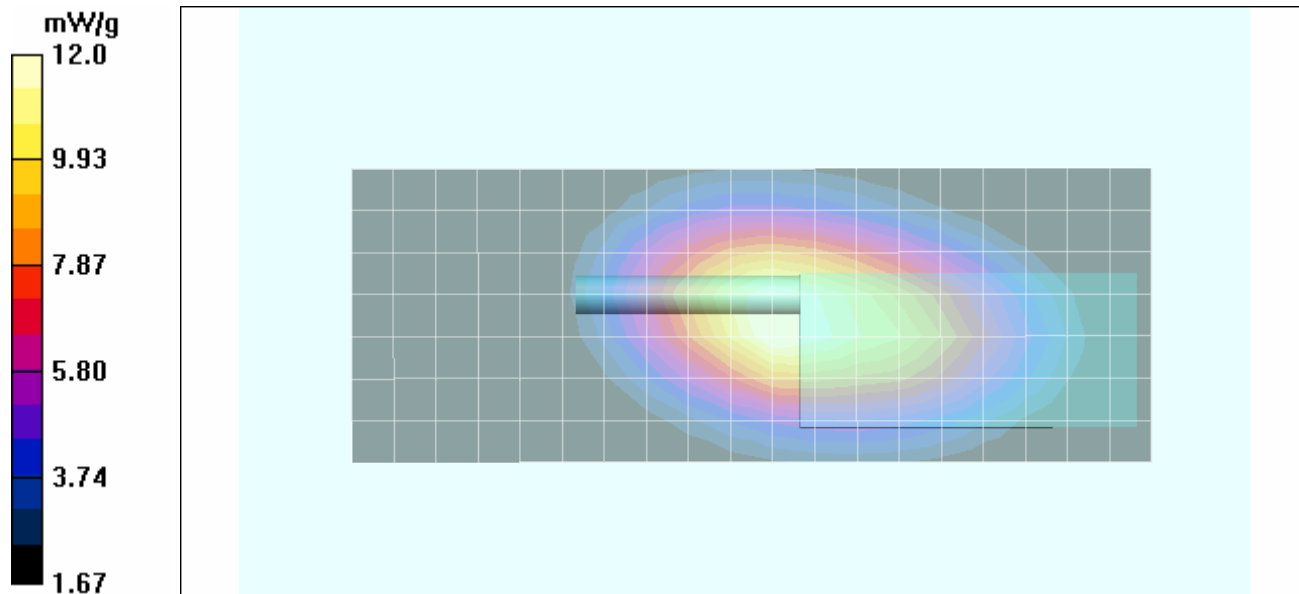
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 103.3 V/m; Power Drift = -0.299 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) 8.12 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

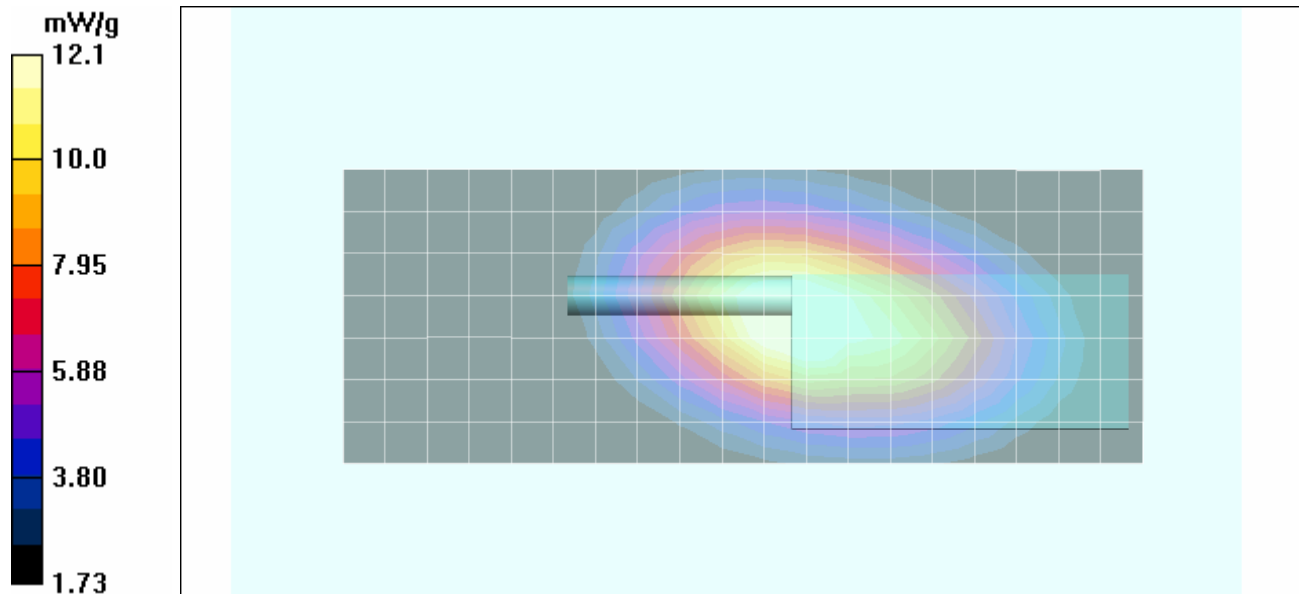
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 105.8 V/m; Power Drift = -0.349 dB

Peak SAR (extrapolated) = 17.0 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) 7.89 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-17M - 460.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 460 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 460 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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) = 13.6 mW/g

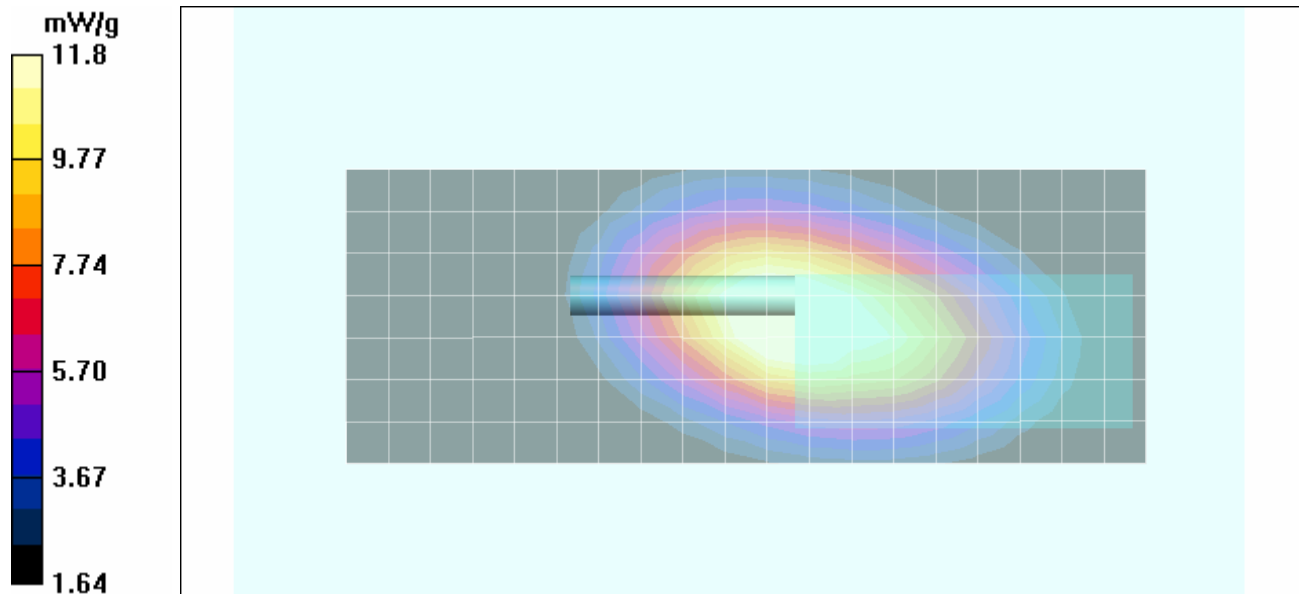
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 99.1 V/m; Power Drift = -0.406 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 11.3 mW/g; SAR(10 g) 7.95 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.94 mW/g

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

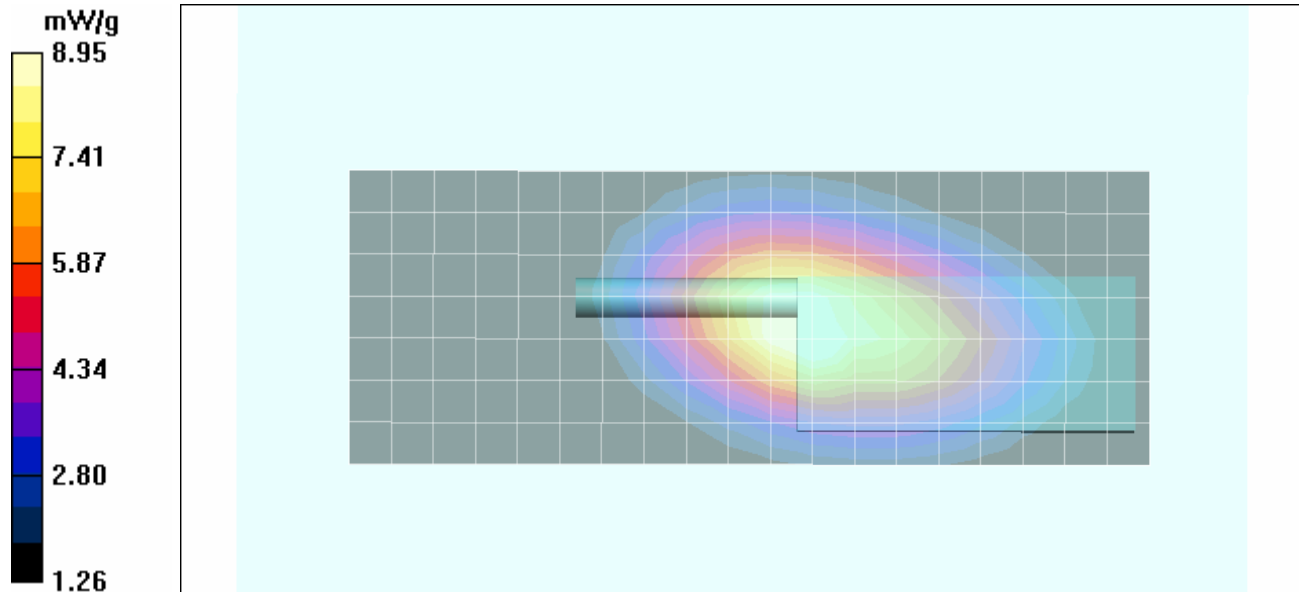
Reference Value = 94.7 V/m; Power Drift = -0.579 dB

Peak SAR (extrapolated) = 12.3 W/kg

SAR(1 g) = 8.47 mW/g; SAR(10 g) 5.89 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.95 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.67 mW/g

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

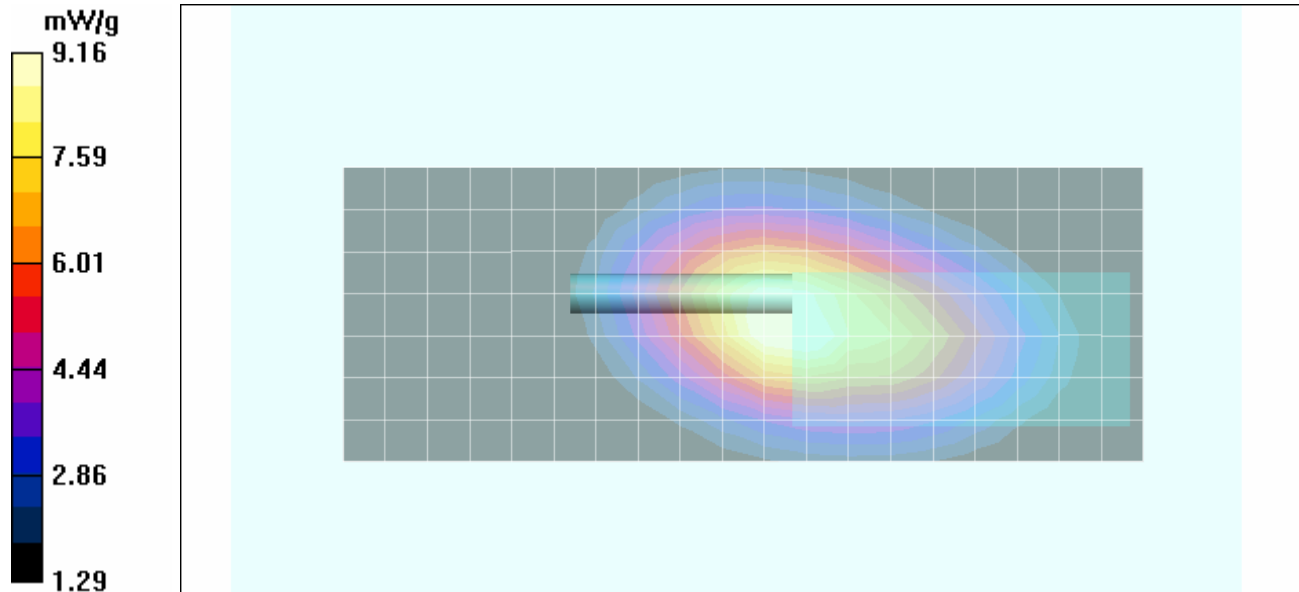
Reference Value = 94.5 V/m; Power Drift = -0.553 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.65 mW/g; SAR(10 g) 6.06 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.16 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

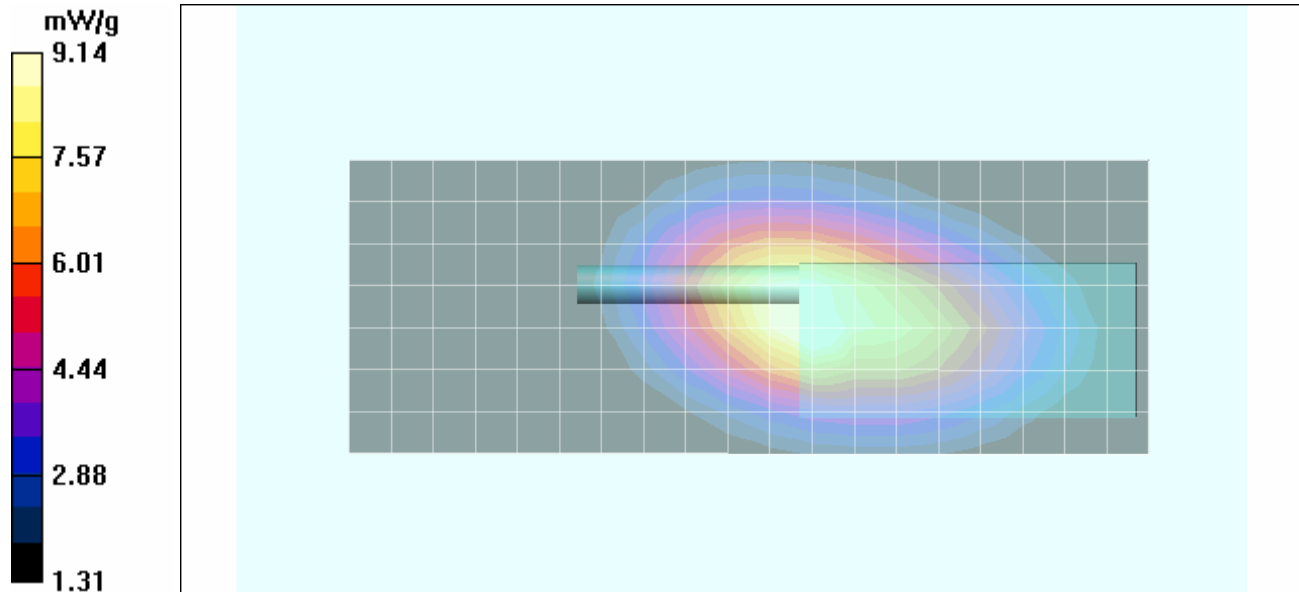
Reference Value = 89.8 V/m; Power Drift = -0.613 dB

Peak SAR (extrapolated) = 12.6 W/kg

SAR(1 g) = 8.63 mW/g; SAR(10 g) 6.07 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.14 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.55 mW/g

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

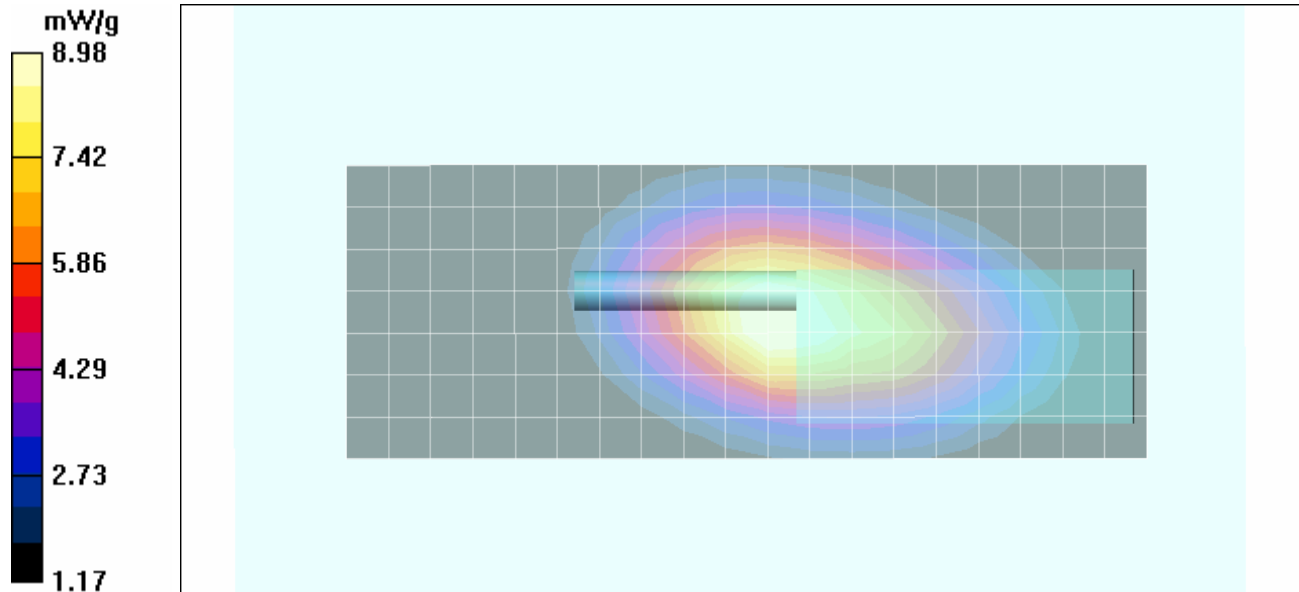
Reference Value = 89.5 V/m; Power Drift = -0.490 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.53 mW/g; SAR(10 g) 5.97 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.98 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.73 mW/g

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

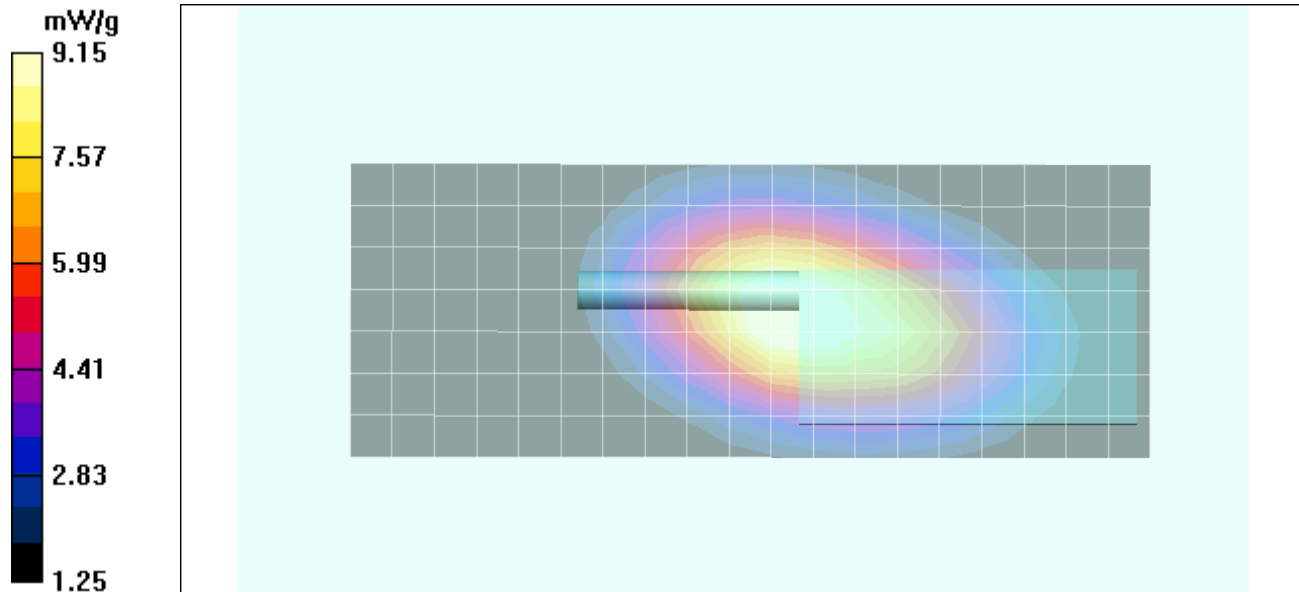
Reference Value = 89.3 V/m; Power Drift = -0.523 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.68 mW/g; SAR(10 g) 6.13 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.15 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 11.2 mW/g

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

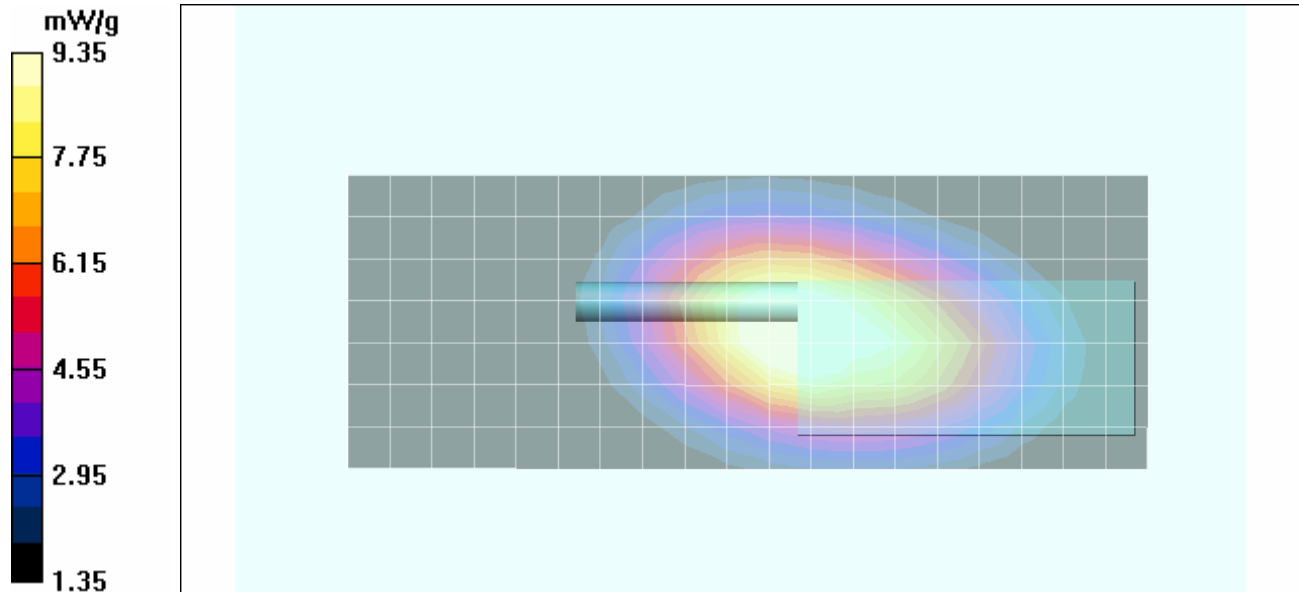
Reference Value = 91.2 V/m; Power Drift = -0.340 dB

Peak SAR (extrapolated) = 12.9 W/kg

SAR(1 g) = 8.84 mW/g; SAR(10 g) 6.25 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.35 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-23

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

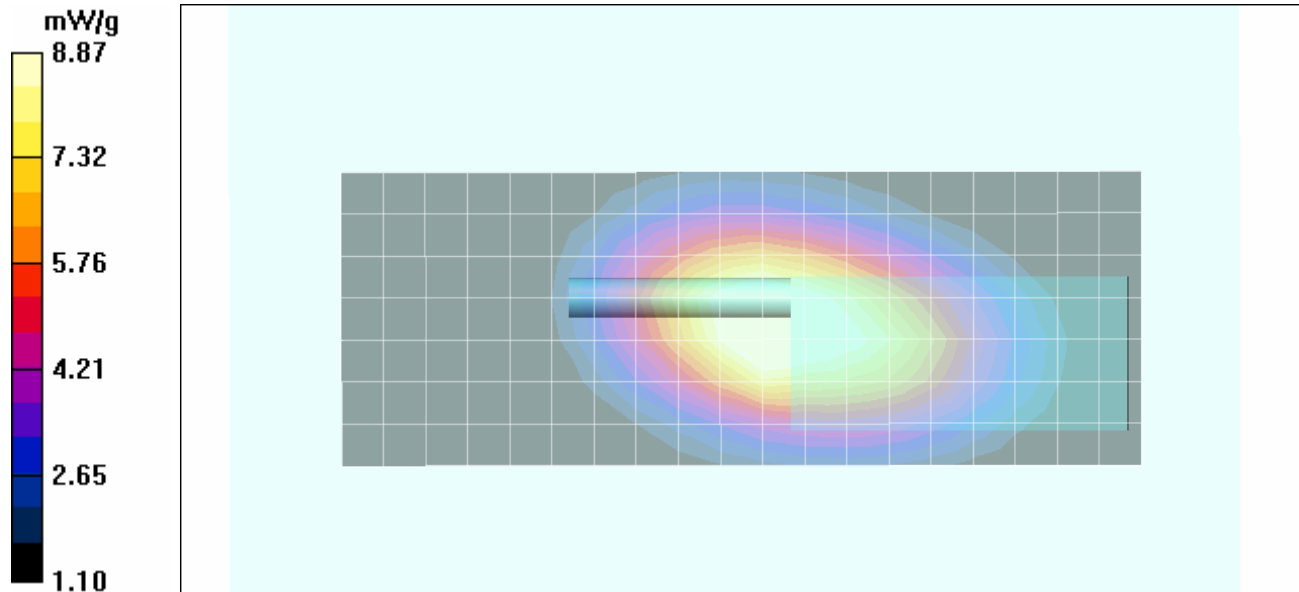
Reference Value = 87.5 V/m; Power Drift = -0.376 dB

Peak SAR (extrapolated) = 12.4 W/kg

SAR(1 g) = 8.45 mW/g; SAR(10 g) 5.93 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.87 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/29/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 55.7$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

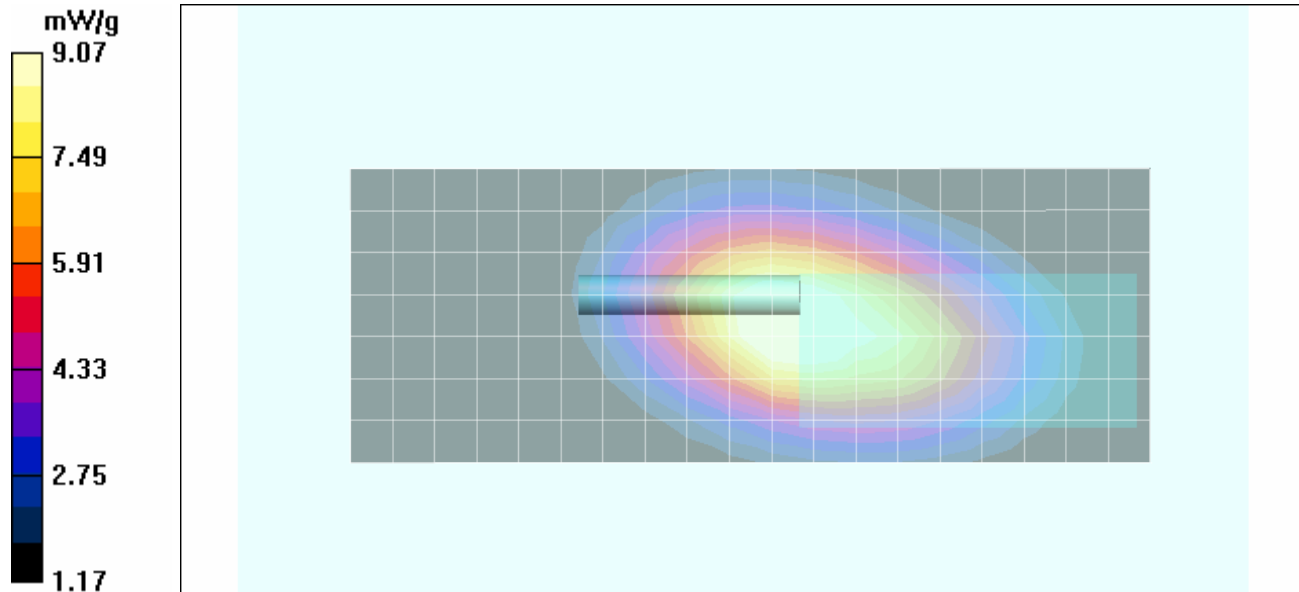
Reference Value = 87.5 V/m; Power Drift = -0.399 dB

Peak SAR (extrapolated) = 12.7 W/kg

SAR(1 g) = 8.62 mW/g; SAR(10 g) 6.05 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.07 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/29/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.90 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.10 mW/g

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

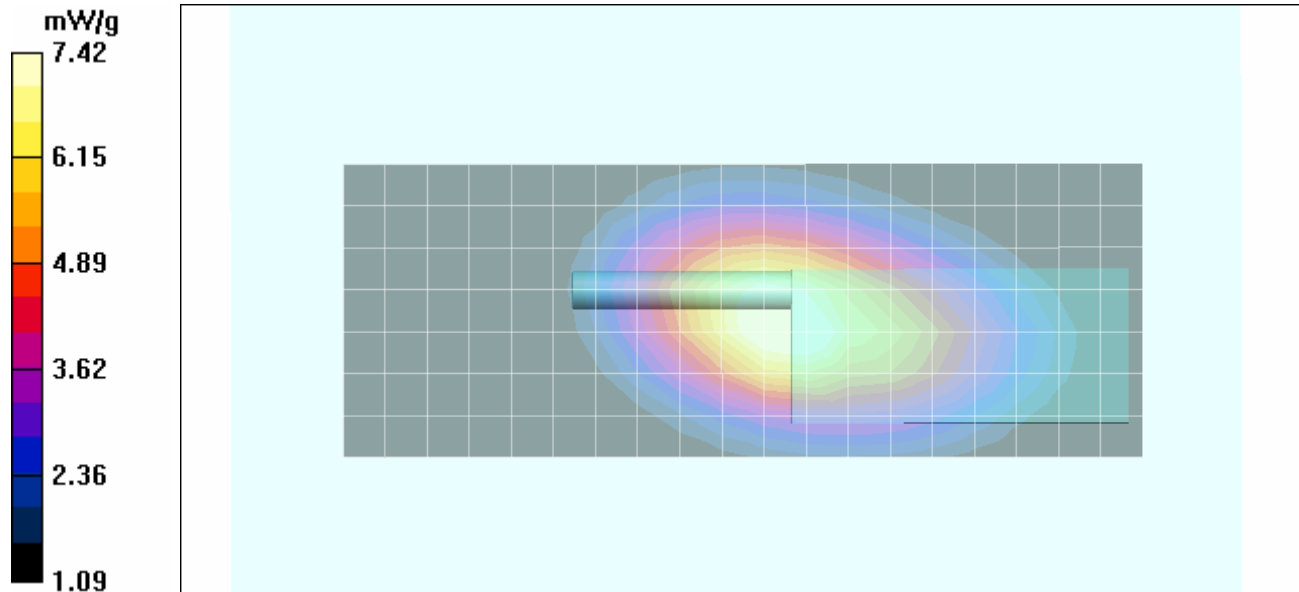
Reference Value = 84.6 V/m; Power Drift = -0.889 dB

Peak SAR (extrapolated) = 10.3 W/kg

SAR(1 g) = 7.03 mW/g; SAR(10 g) 4.97 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.42 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.46 mW/g

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

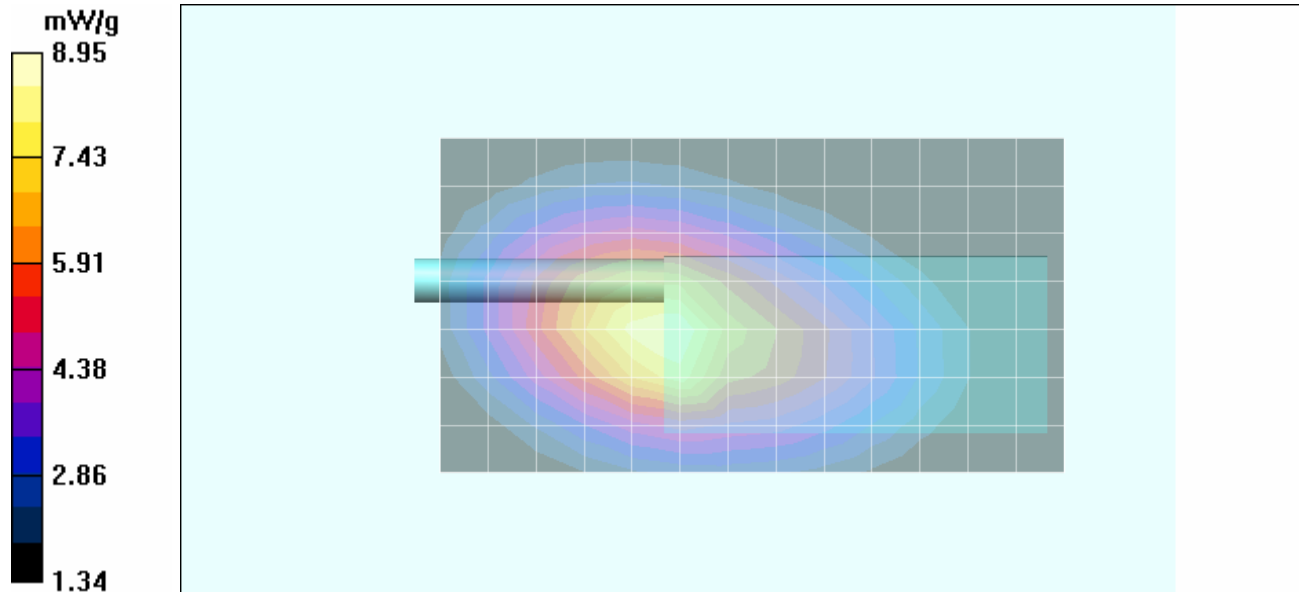
Reference Value = 94.3 V/m; Power Drift = -0.626 dB

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 8.48 mW/g; SAR(10 g) 6 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.95 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.03 mW/g

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

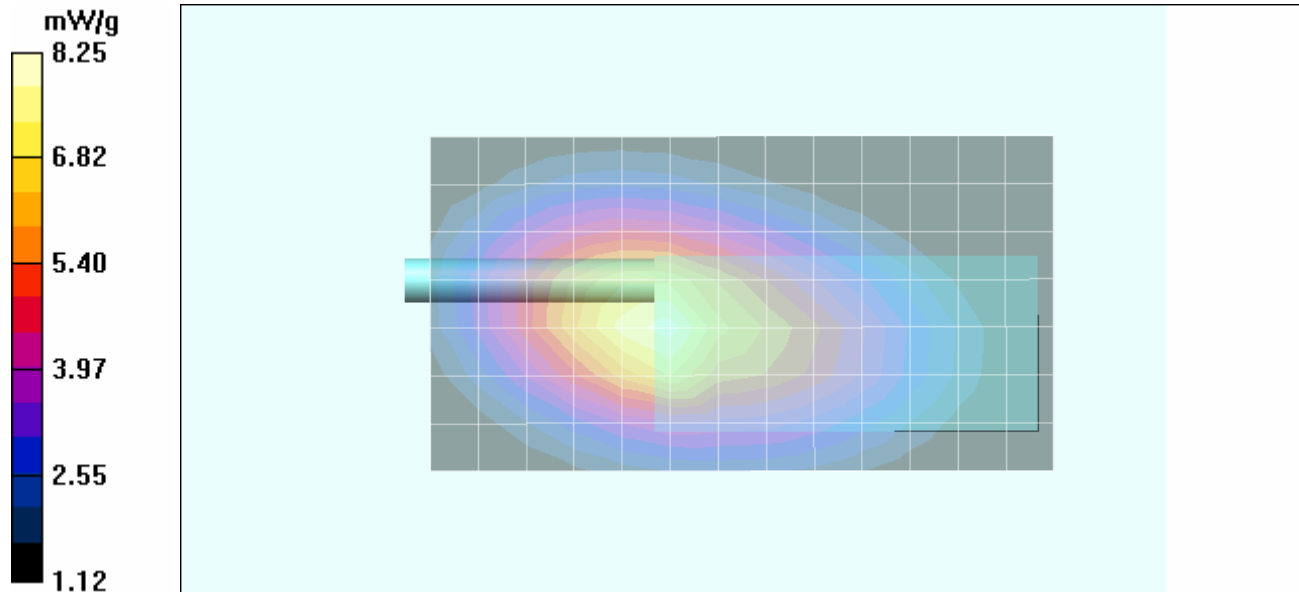
Reference Value = 94.1 V/m; Power Drift = -0.774 dB

Peak SAR (extrapolated) = 11.5 W/kg

SAR(1 g) = 7.78 mW/g; SAR(10 g) 5.53 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.41 mW/g

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

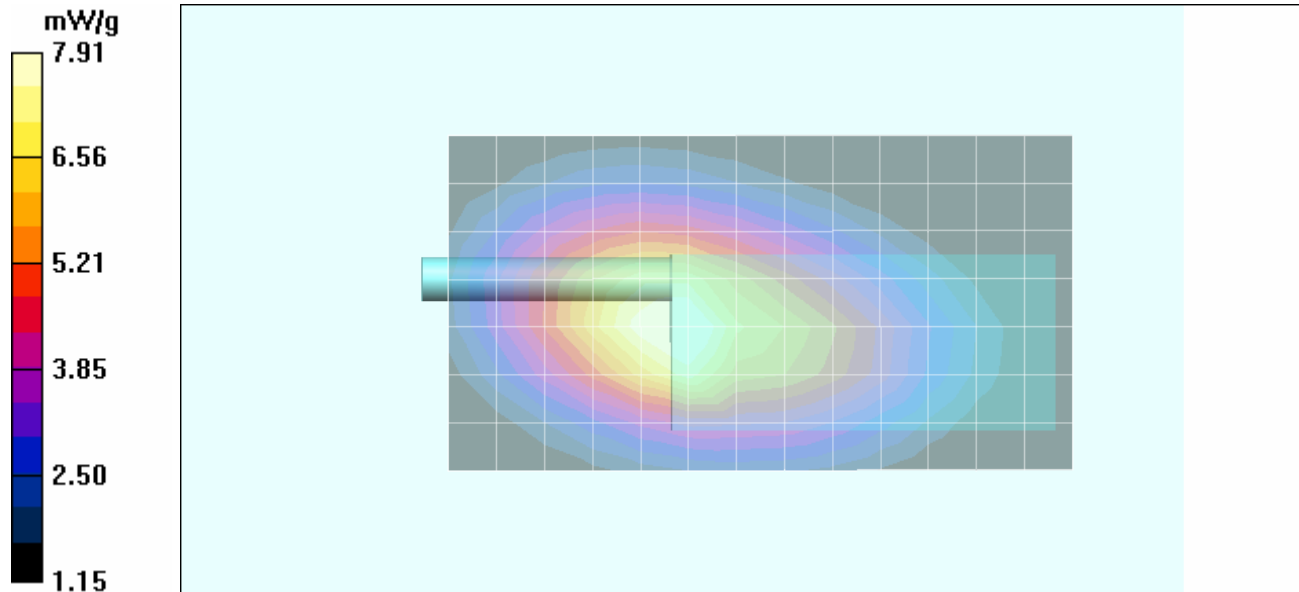
Reference Value = 94.1 V/m; Power Drift = -0.614dB

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 7.49 mW/g; SAR(10 g) 5.3 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.91 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.03 mW/g

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

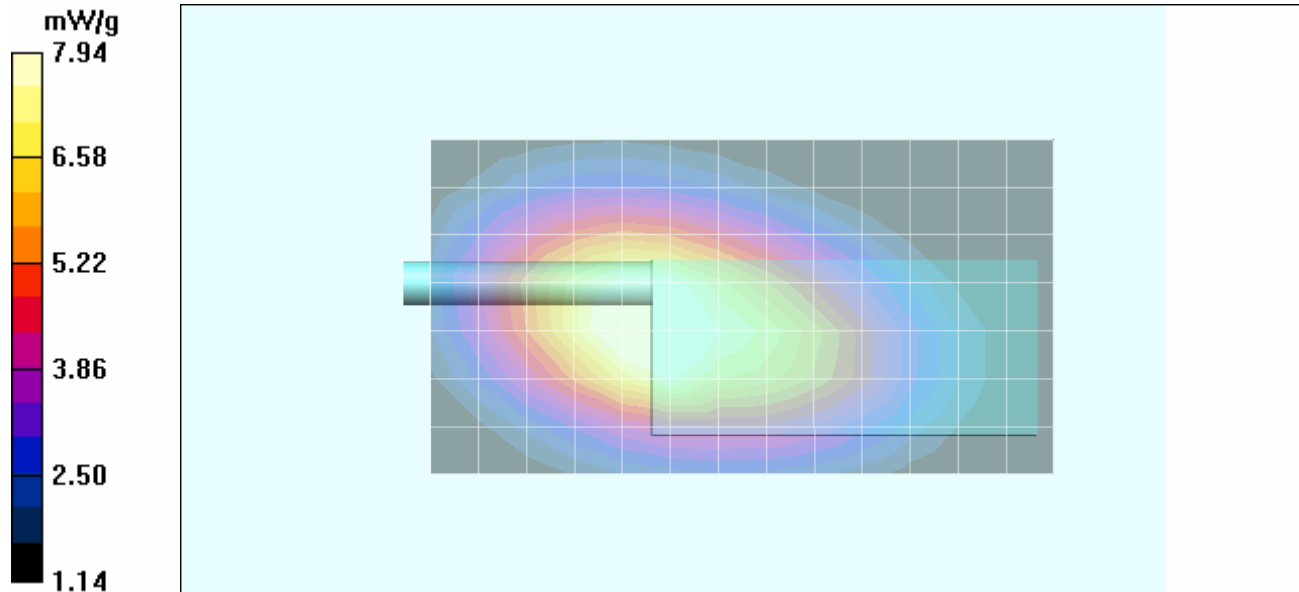
Reference Value = 80.8 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 7.51 mW/g; SAR(10 g) 5.3 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.94 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 10.03 mW/g

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

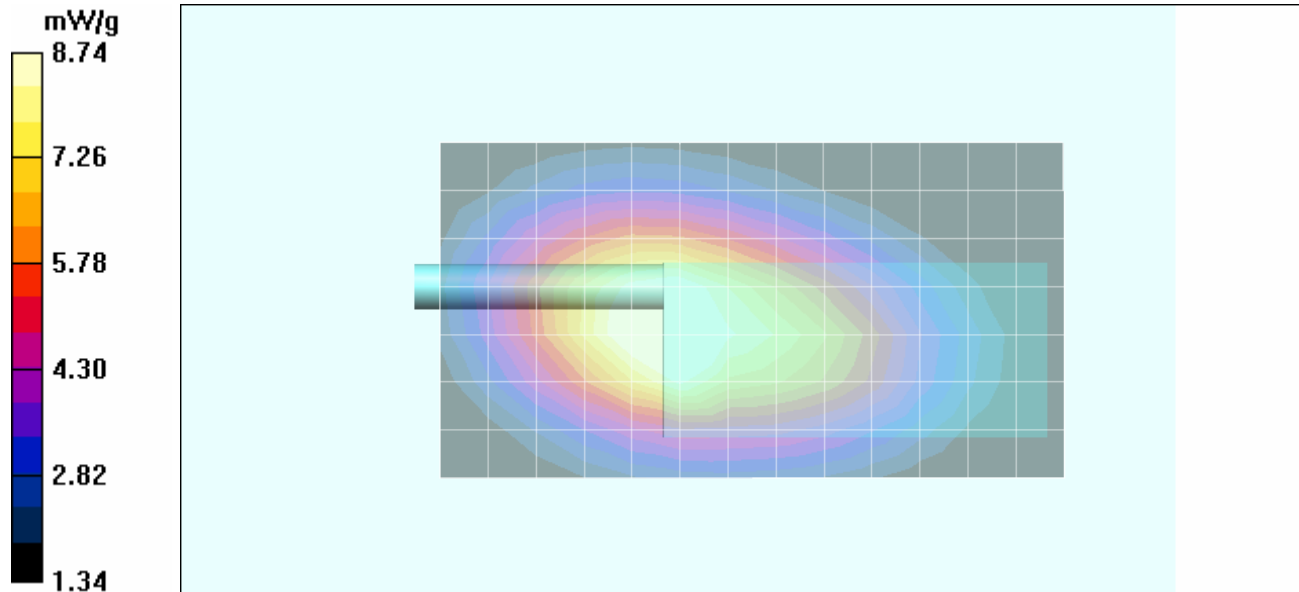
Reference Value = 87.9 V/m; Power Drift = -0.323 dB

Peak SAR (extrapolated) = 12.0 W/kg

SAR(1 g) = 8.29 mW/g; SAR(10 g) 5.93 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.21 mW/g

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

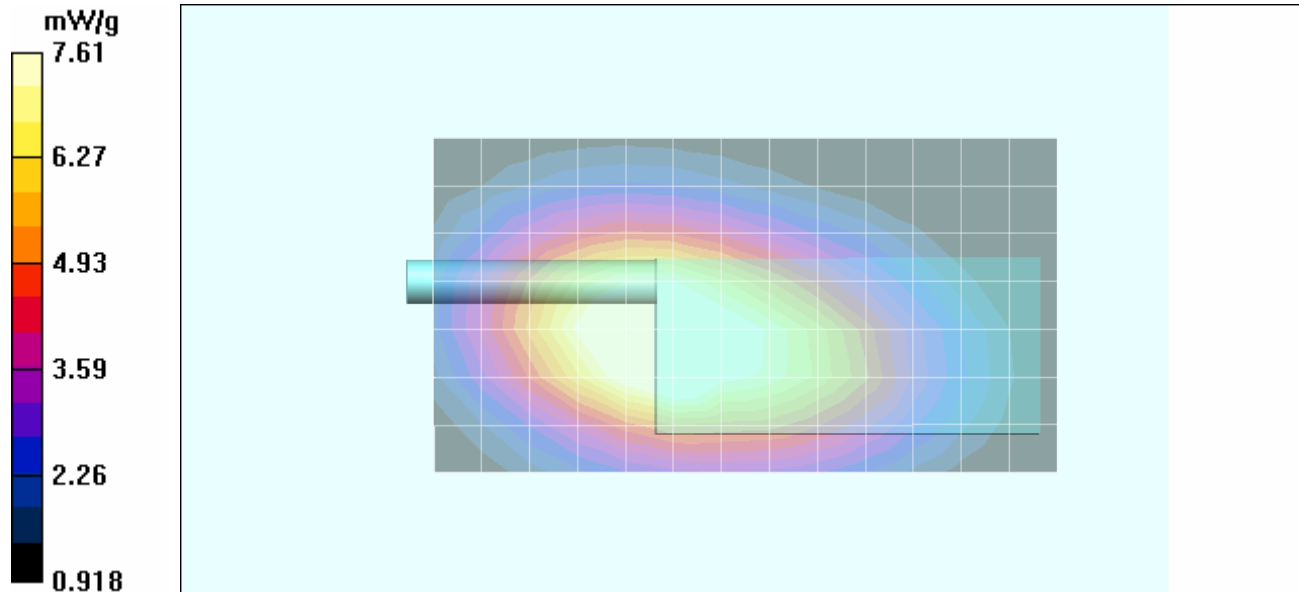
Reference Value = 79.6 V/m; Power Drift = -0.508 dB

Peak SAR (extrapolated) = 10.8 W/kg

SAR(1 g) = 7.26 mW/g; SAR(10 g) 5.03 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.61 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

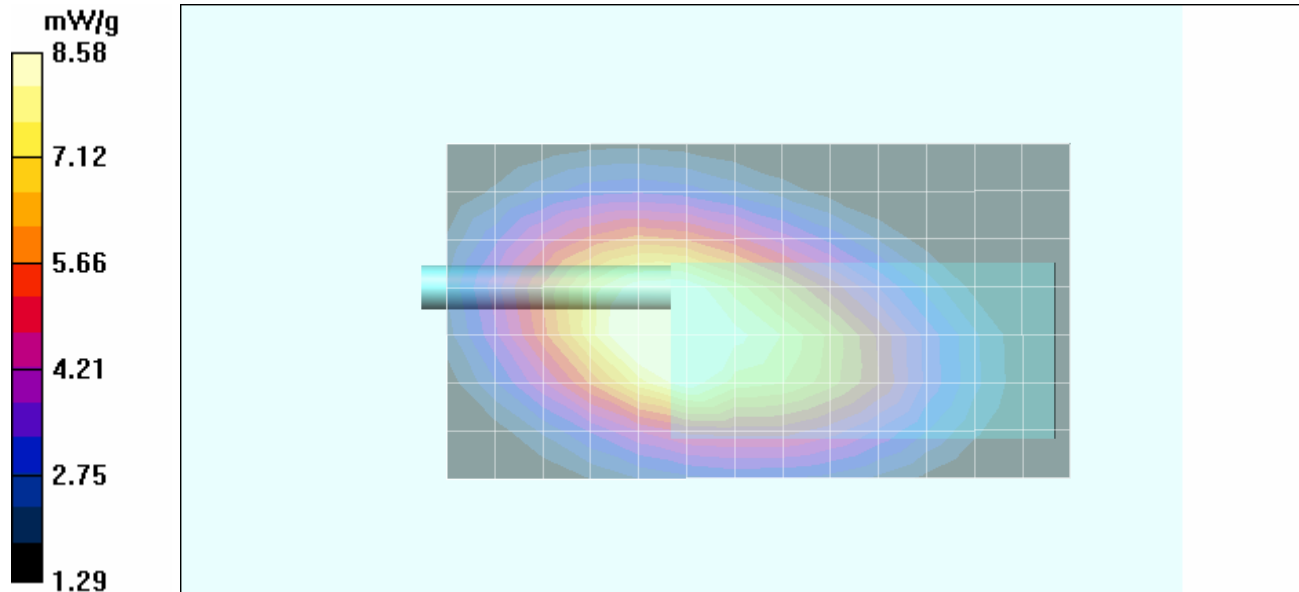
Reference Value = 89.5 V/m; Power Drift = -0.440 dB

Peak SAR (extrapolated) = 11.9 W/kg

SAR(1 g) = 8.14 mW/g; SAR(10 g) 5.77 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.21 mW/g

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

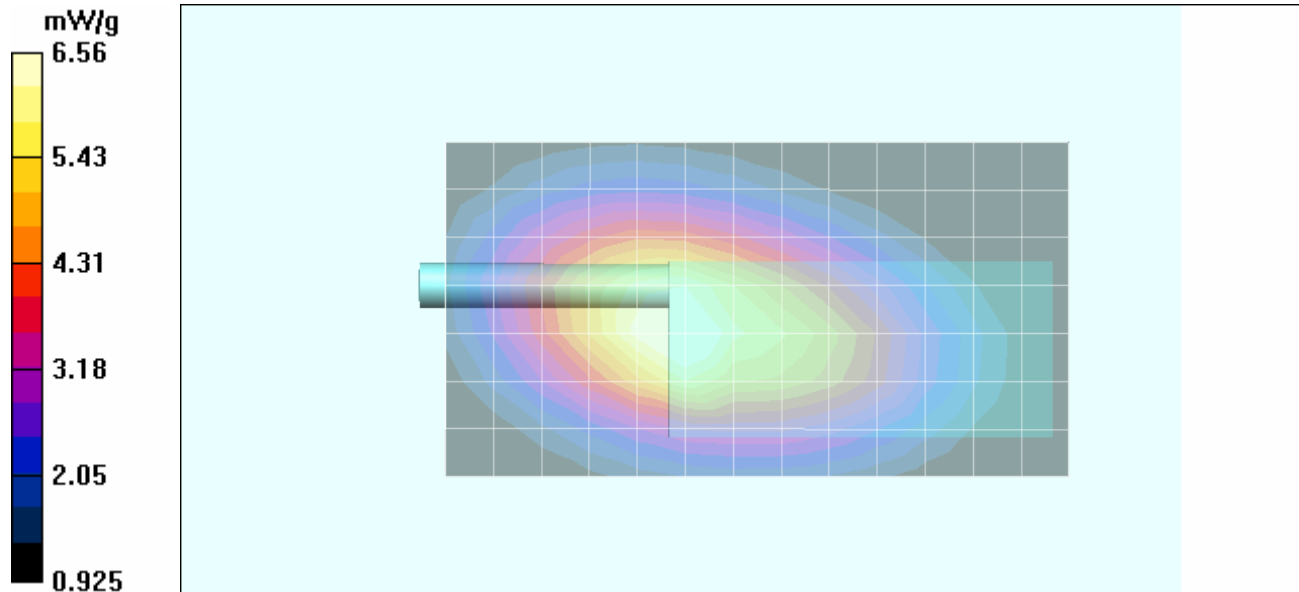
Reference Value = 80.6 V/m; Power Drift = -0.865 dB

Peak SAR (extrapolated) = 9.22 W/kg

SAR(1 g) = 6.24 mW/g; SAR(10 g) 4.41 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.56 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.44 mW/g

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

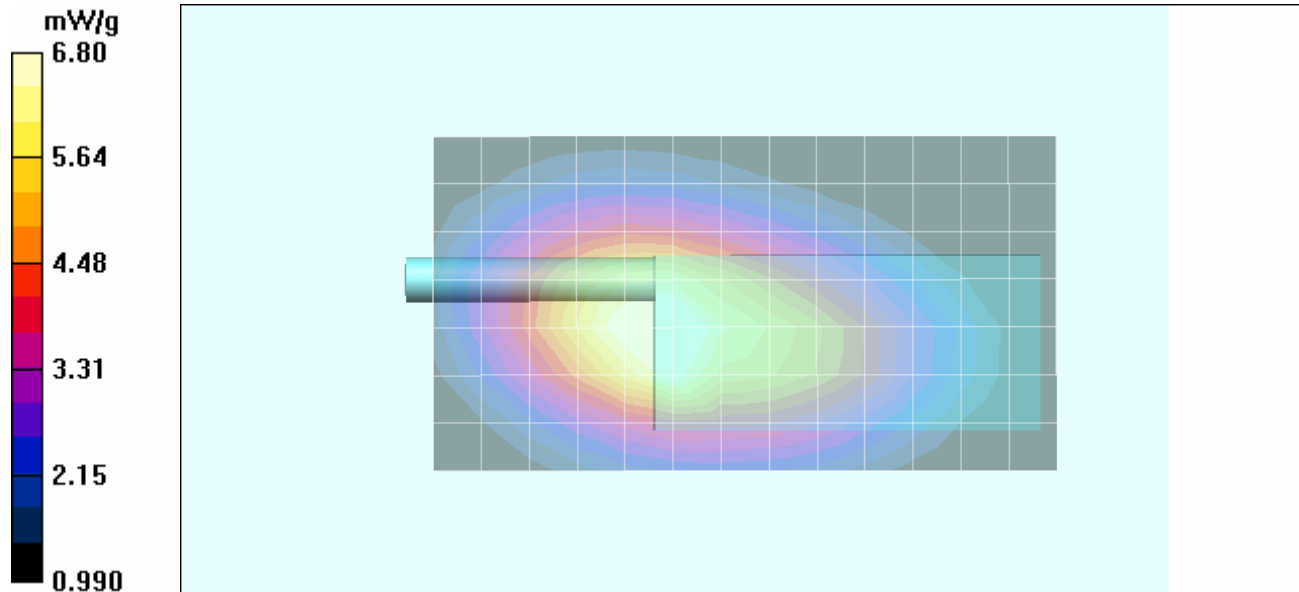
Reference Value = 78.3 V/m; Power Drift = -0.338 dB

Peak SAR (extrapolated) = 9.44 W/kg

SAR(1 g) = 6.44 mW/g; SAR(10 g) 4.57 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.80 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.01 mW/g

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

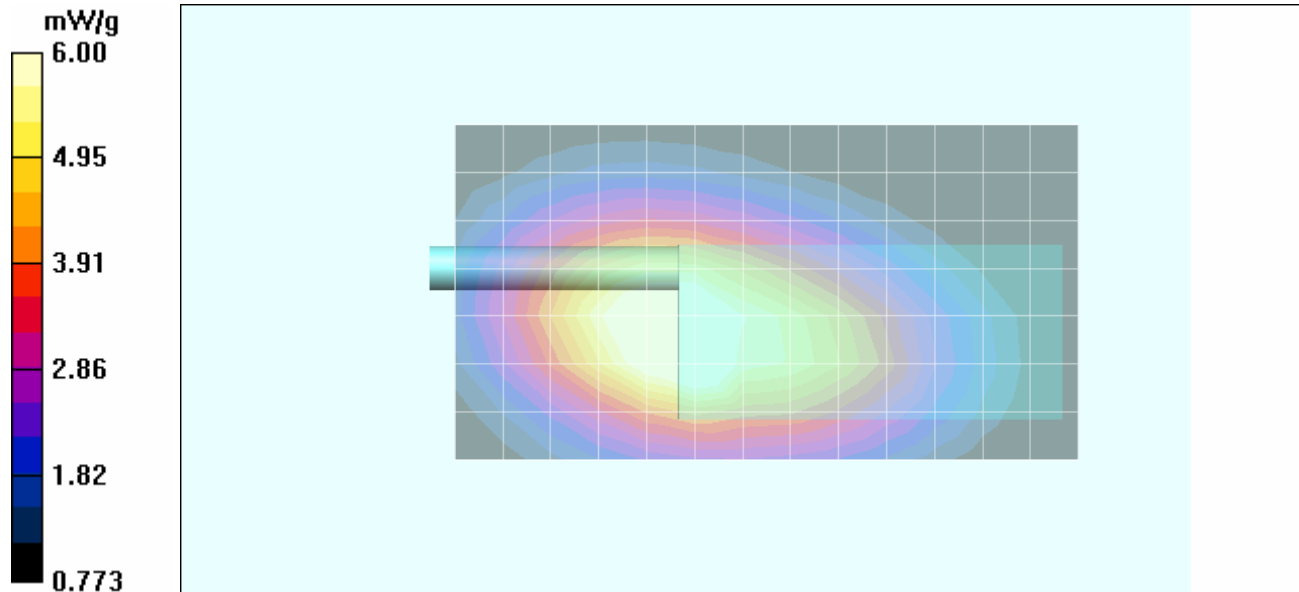
Reference Value = 75.1 V/m; Power Drift = -0.597 dB

Peak SAR (extrapolated) = 8.24 W/kg

SAR(1 g) = 5.69 mW/g; SAR(10 g) 3.99 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.00 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.88 mW/g

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

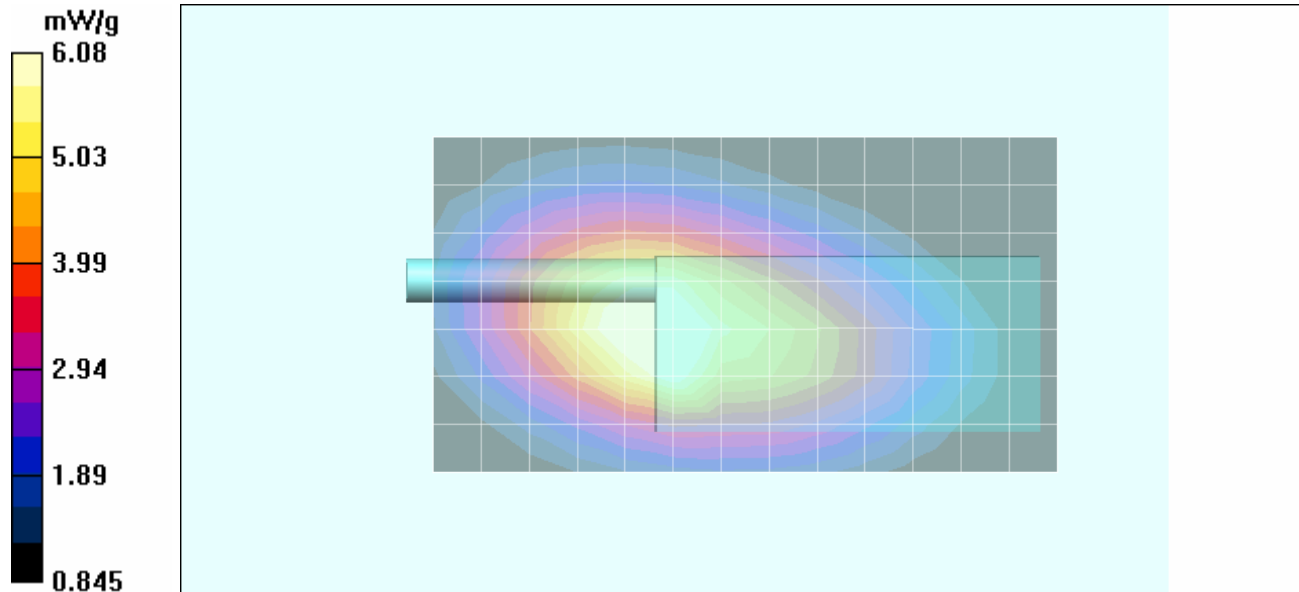
Reference Value = 73.7 V/m; Power Drift = -0.643 dB

Peak SAR (extrapolated) = 8.61 W/kg

SAR(1 g) = 5.74 mW/g; SAR(10 g) 4.03 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.08 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.58 mW/g

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

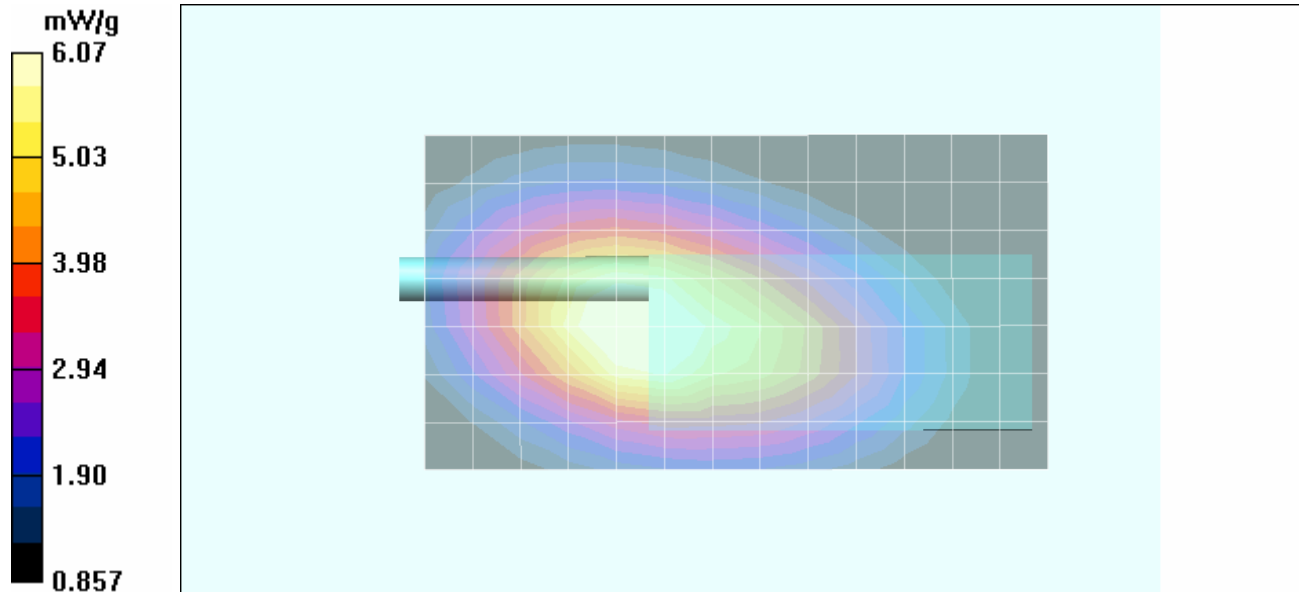
Reference Value = 76.3 V/m; Power Drift = -0.608 dB

Peak SAR (extrapolated) = 8.52 W/kg

SAR(1 g) = 5.78 mW/g; SAR(10 g) 4.1 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.07 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.59 mW/g

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

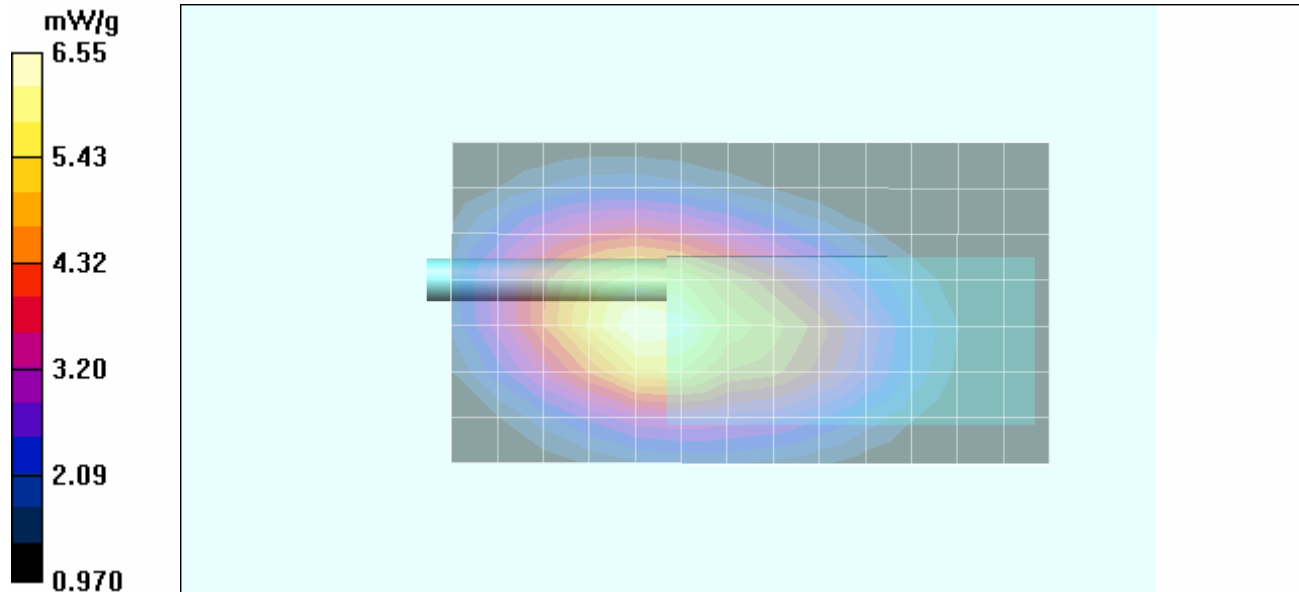
Reference Value = 81.8 V/m; Power Drift = -0.843 dB

Peak SAR (extrapolated) = 9.26 W/kg

SAR(1 g) = 6.26 mW/g; SAR(10 g) 4.43 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.55 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.29 mW/g

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

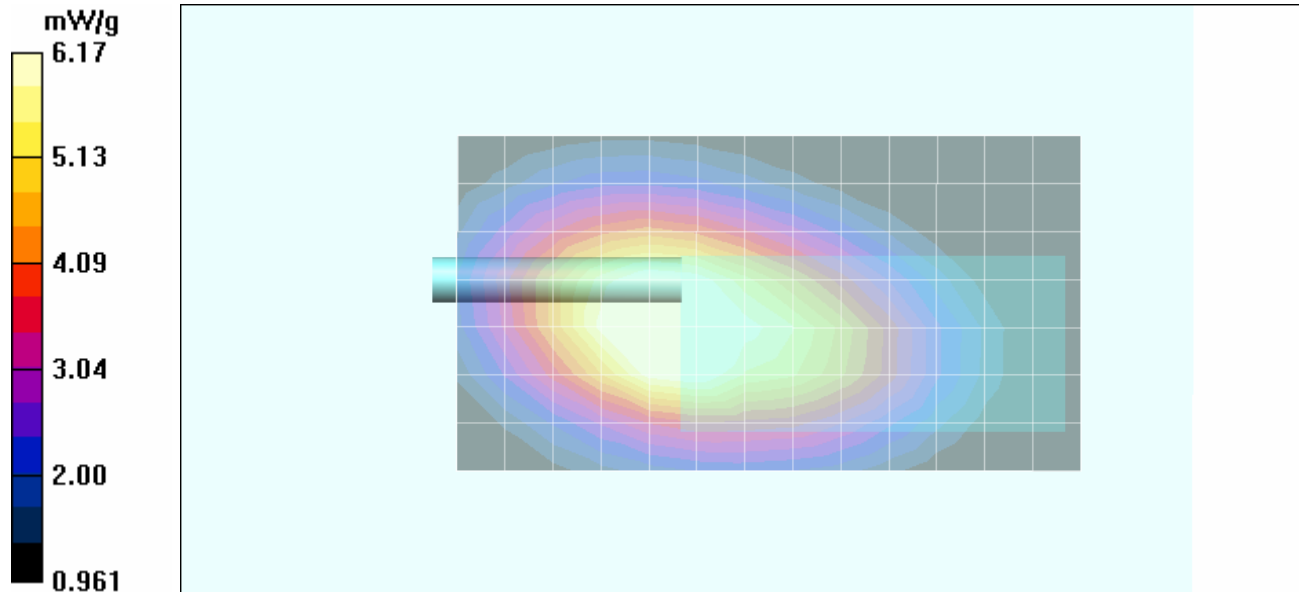
Reference Value = 80.5 V/m; Power Drift = -0.688 dB

Peak SAR (extrapolated) = 8.71 W/kg

SAR(1 g) = 5.88 mW/g; SAR(10 g) 4.15 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.17 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.83 mW/g

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

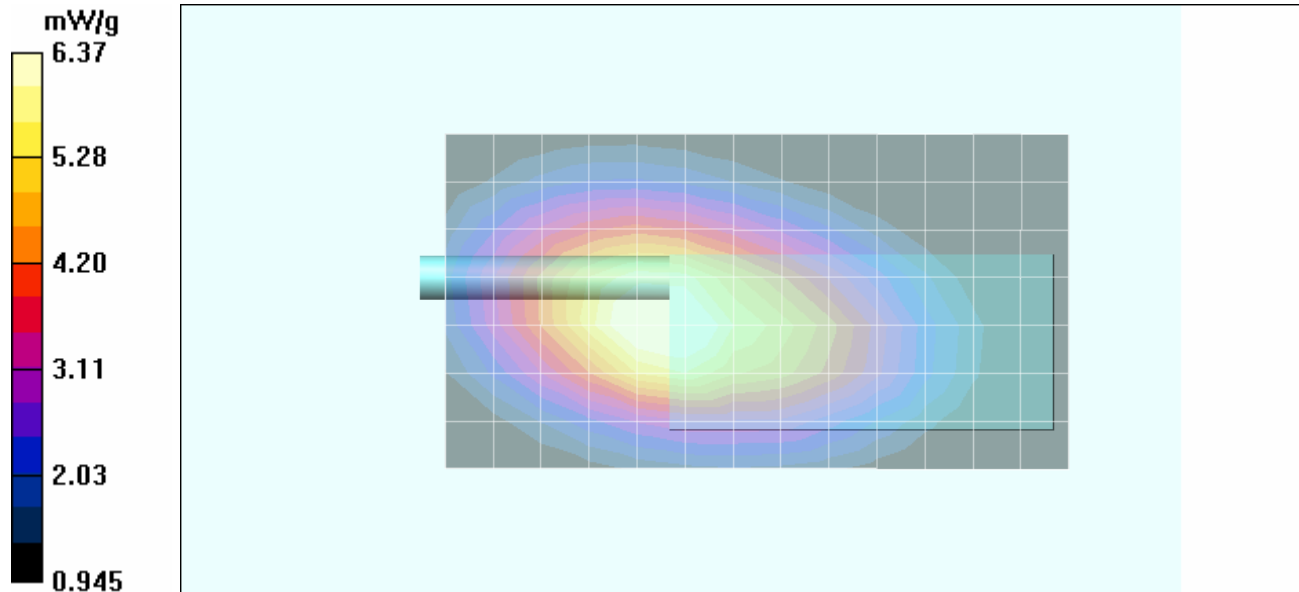
Reference Value = 76.0 V/m; Power Drift = -0.556 dB

Peak SAR (extrapolated) = 8.82 W/kg

SAR(1 g) = 6.05 mW/g; SAR(10 g) 4.28 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.37 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 11.5 mW/g

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

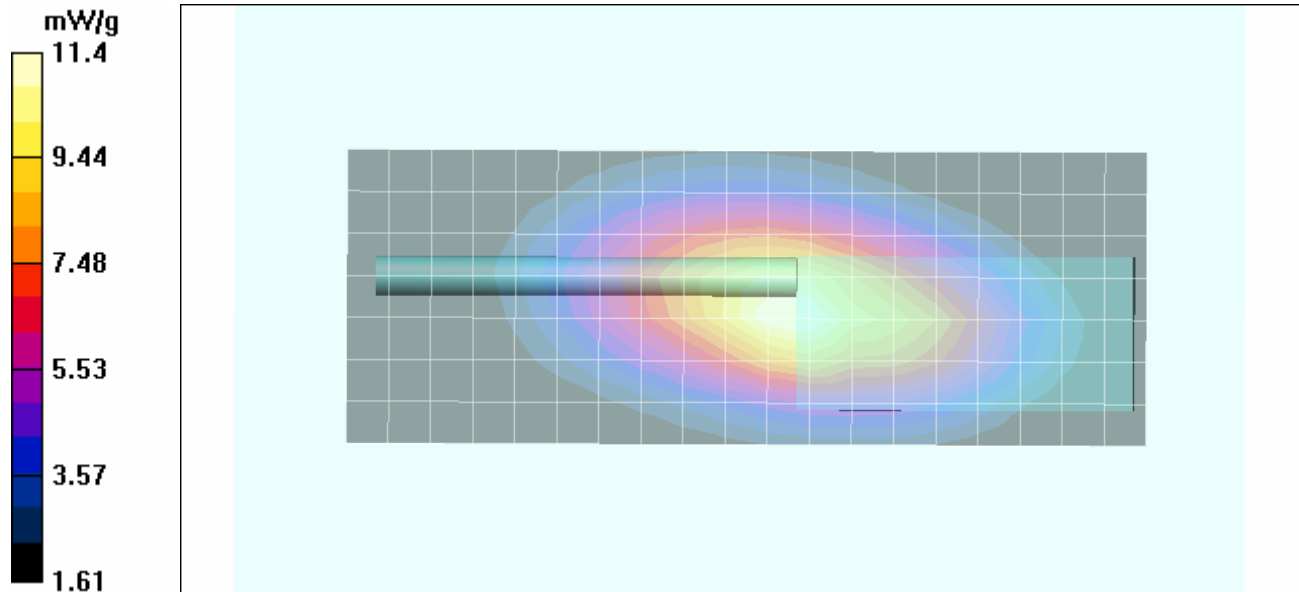
Reference Value = 109.6 V/m; Power Drift = -0.555 dB

Peak SAR (extrapolated) = 15.8 W/kg

SAR(1 g) = 10.9 mW/g; SAR(10 g) 7.74 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

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

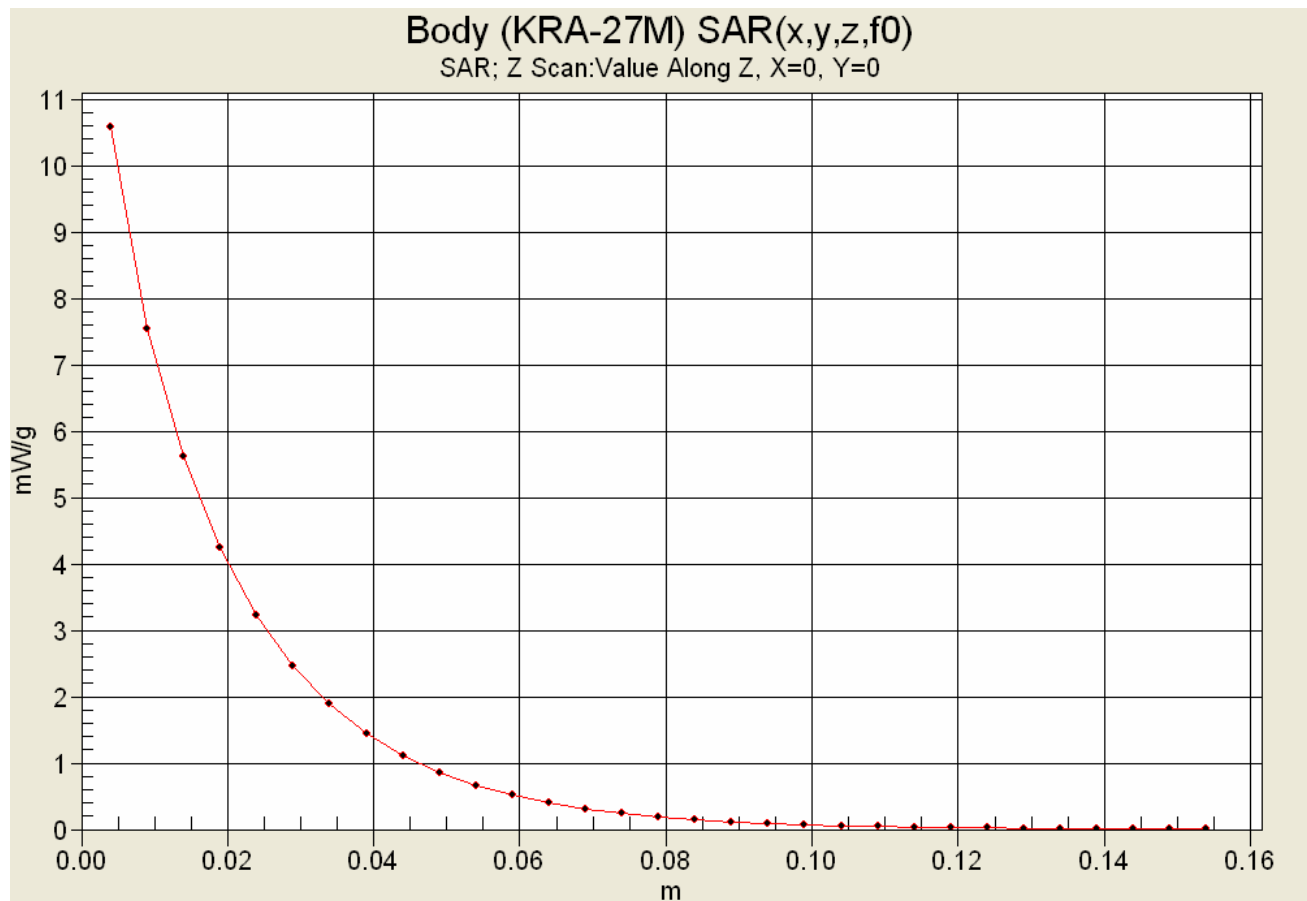


Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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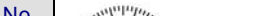
	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Test Lab Certificate No. 2470.01

Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

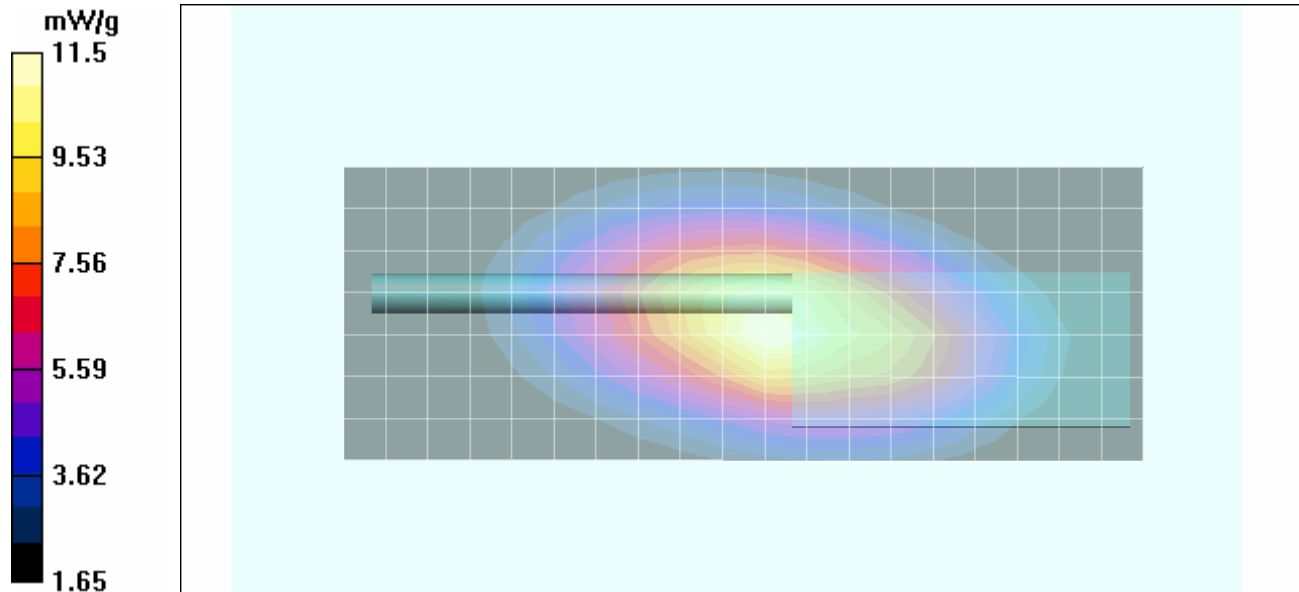
Reference Value = 109.8 V/m; Power Drift = -0.610 dB

Peak SAR (extrapolated) = 16.1 W/kg

SAR(1 g) = 10.9 mW/g; SAR(10 g) 7.71 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 11.5 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

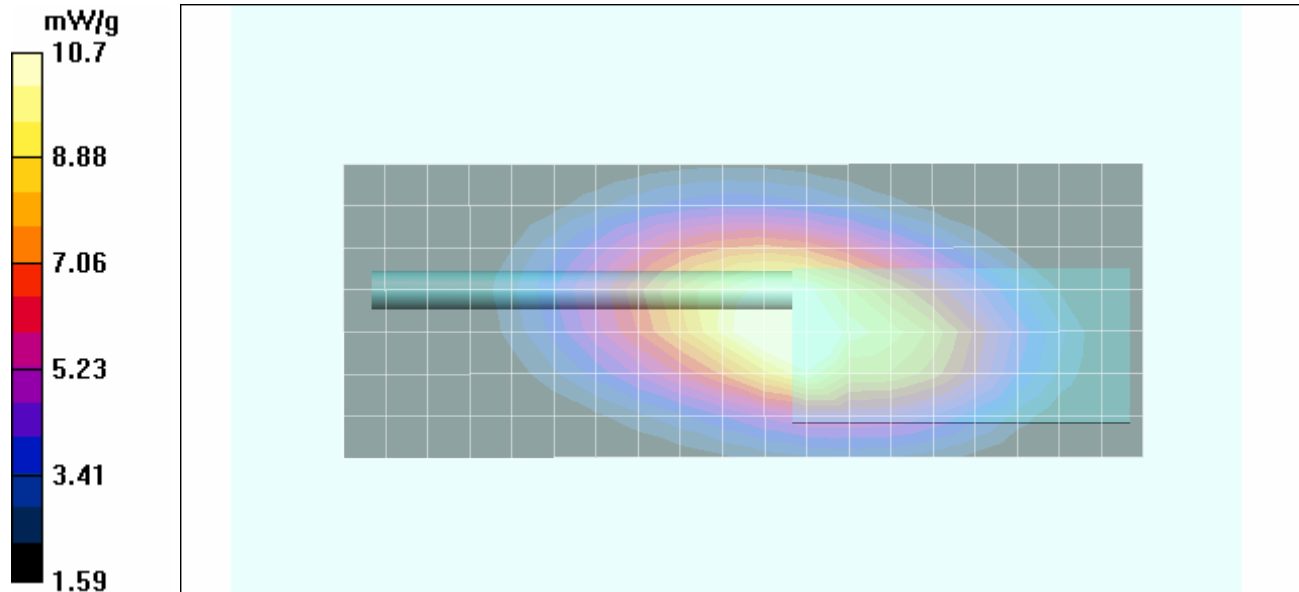
Reference Value = 103.3 V/m; Power Drift = -0.493 dB

Peak SAR (extrapolated) = 14.9 W/kg

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

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 11.5 mW/g

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

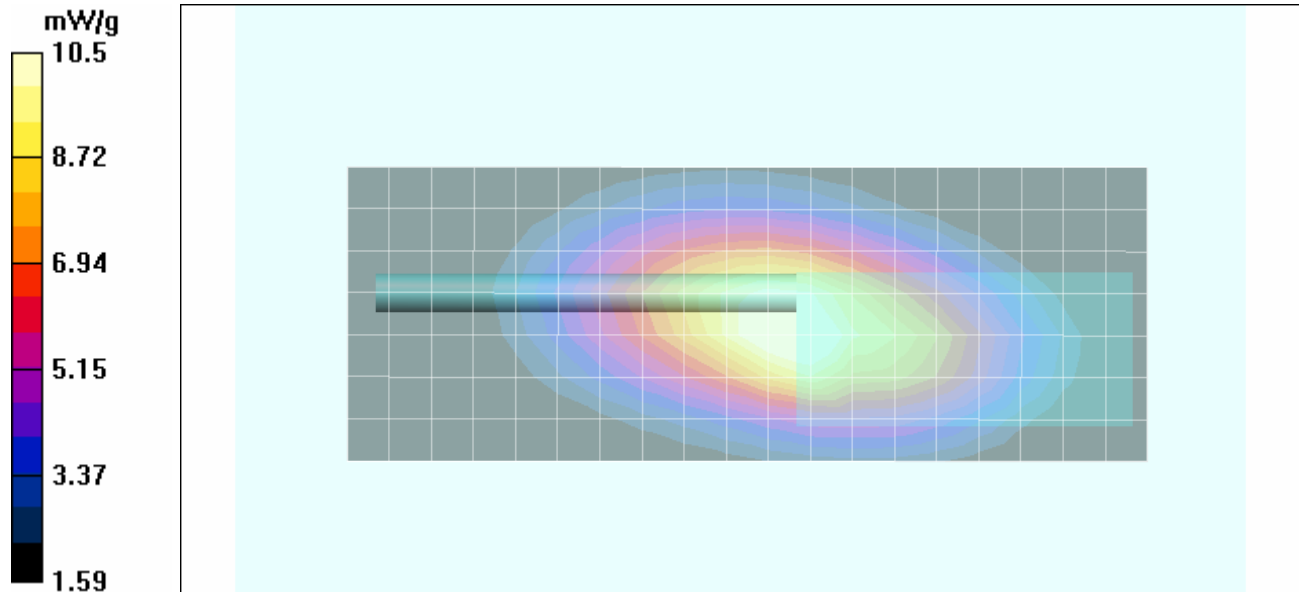
Reference Value = 102.0 V/m; Power Drift = -0.500 dB

Peak SAR (extrapolated) = 14.9 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) 7.17 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

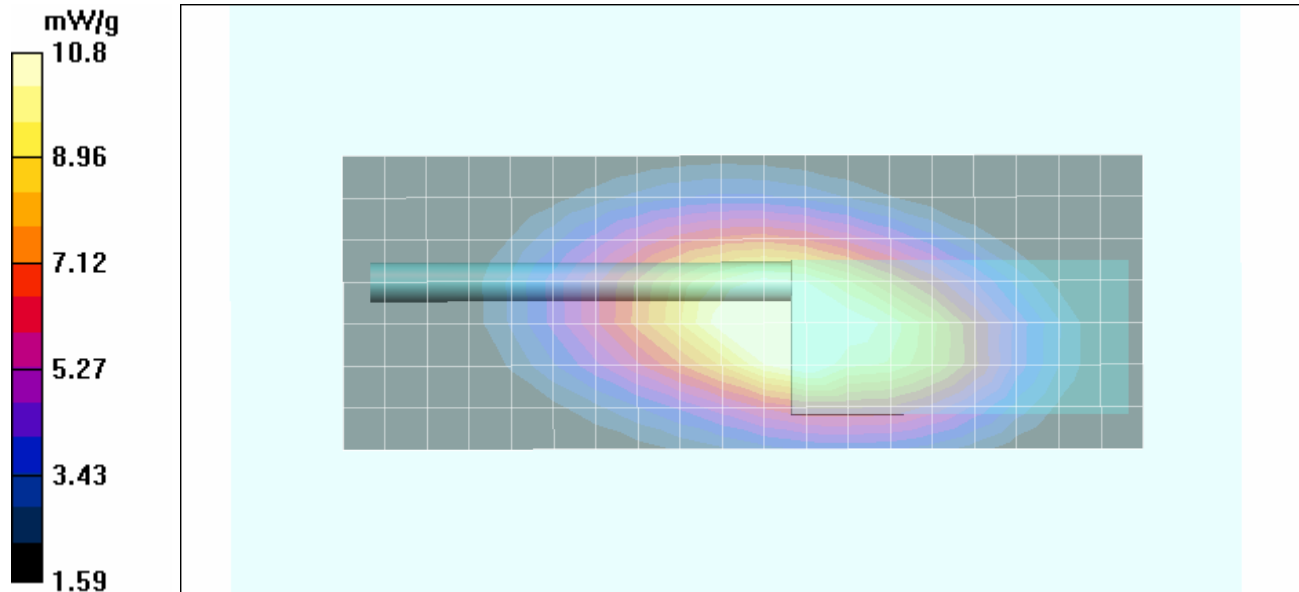
Reference Value = 101.3 V/m; Power Drift = -0.220 dB

Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.31 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 13.0 mW/g

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

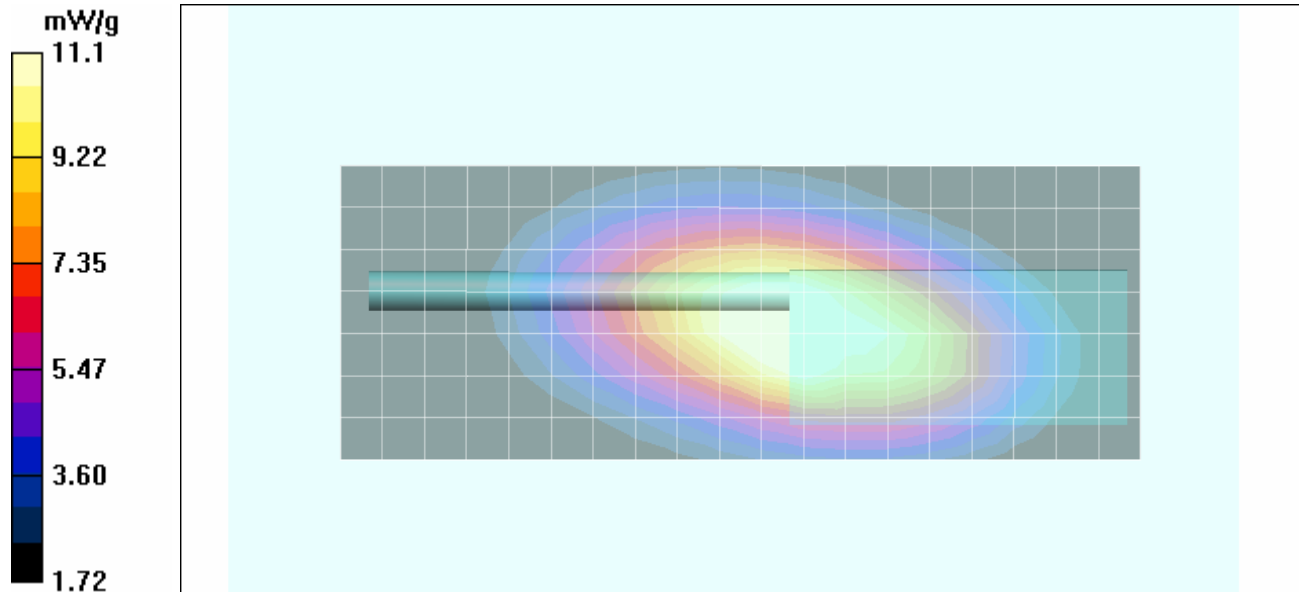
Reference Value = 104.7 V/m; Power Drift = -0.433 dB

Peak SAR (extrapolated) = 15.3 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) 7.51 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation.

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

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

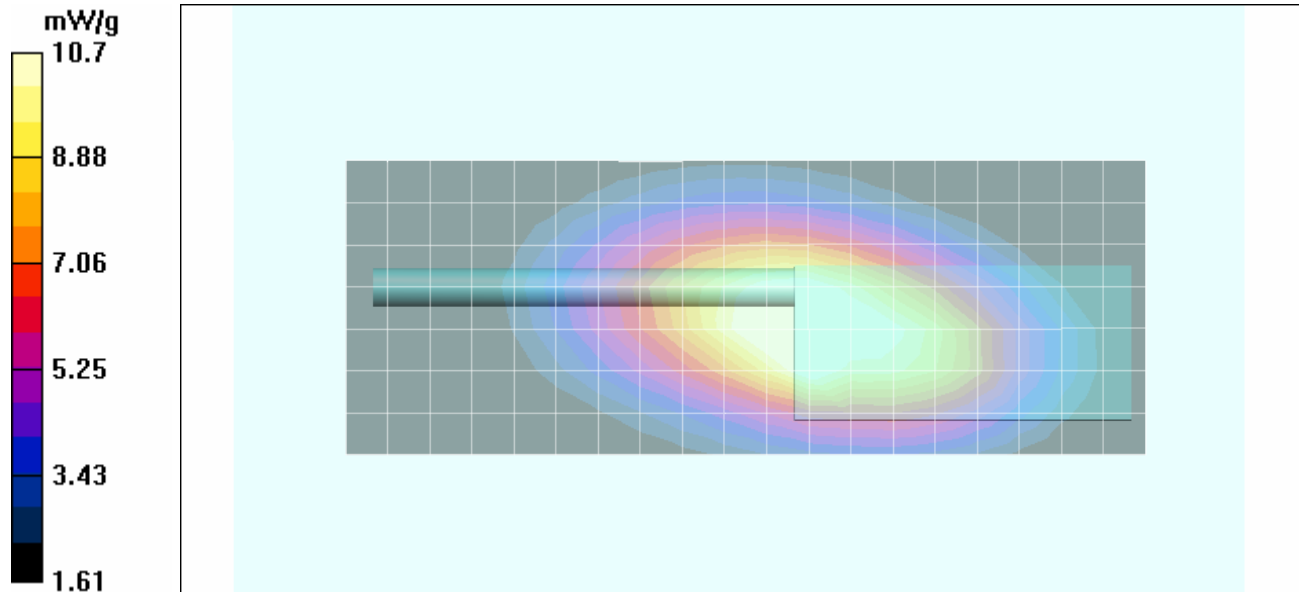
Reference Value = 103.2 V/m; Power Drift = -0.345 dB

Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) 7.19 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M - 455.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 455 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 455 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

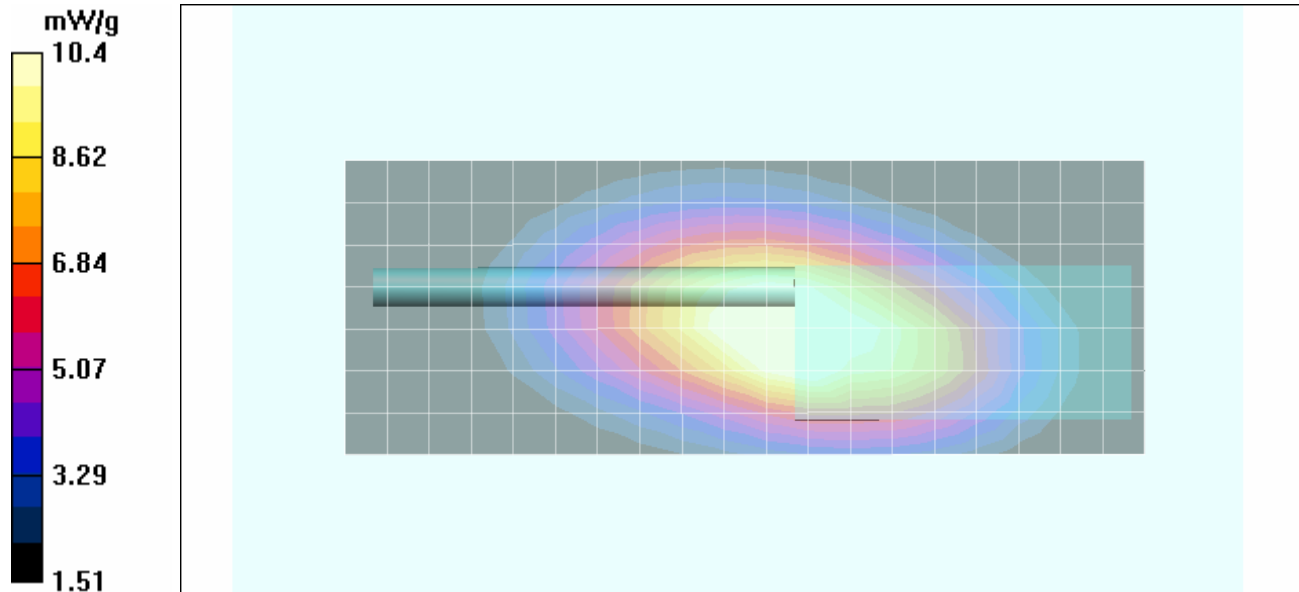
Reference Value = 101.6 V/m; Power Drift = -0.339 dB

Peak SAR (extrapolated) = 14.3 W/kg

SAR(1 g) = 9.83 mW/g; SAR(10 g) 6.99 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.06 mW/g

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

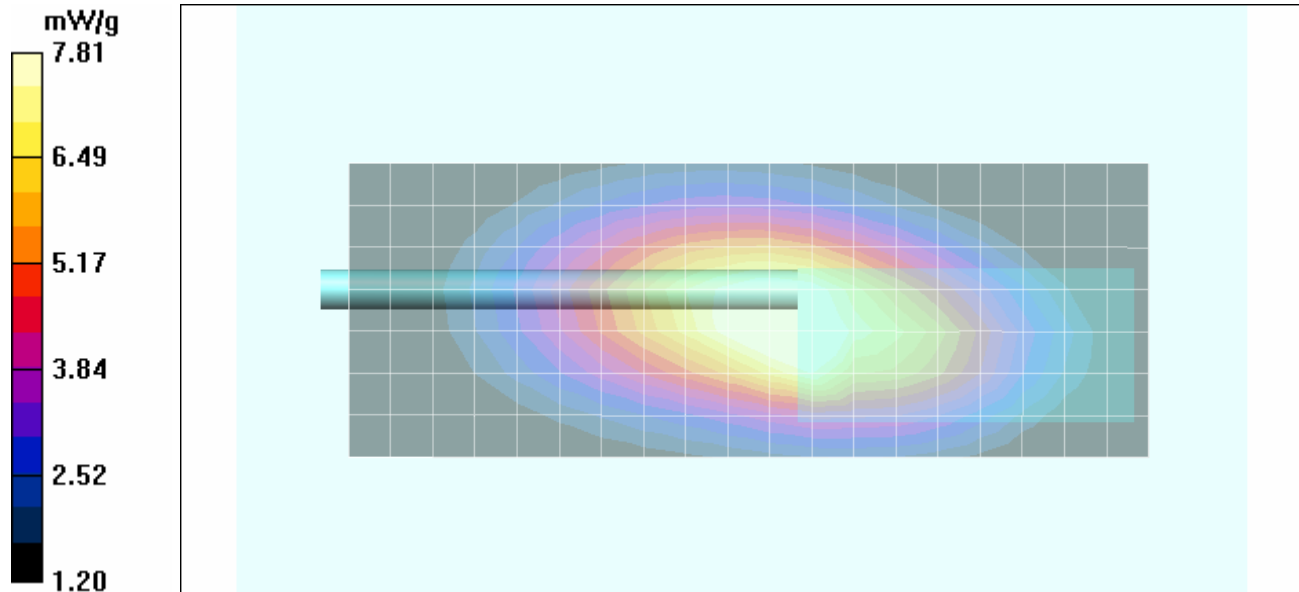
Reference Value = 90.0 V/m; Power Drift = -0.463 dB

Peak SAR (extrapolated) = 10.8 W/kg

SAR(1 g) = 7.4 mW/g; SAR(10 g) 5.33 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.81 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 06/30/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

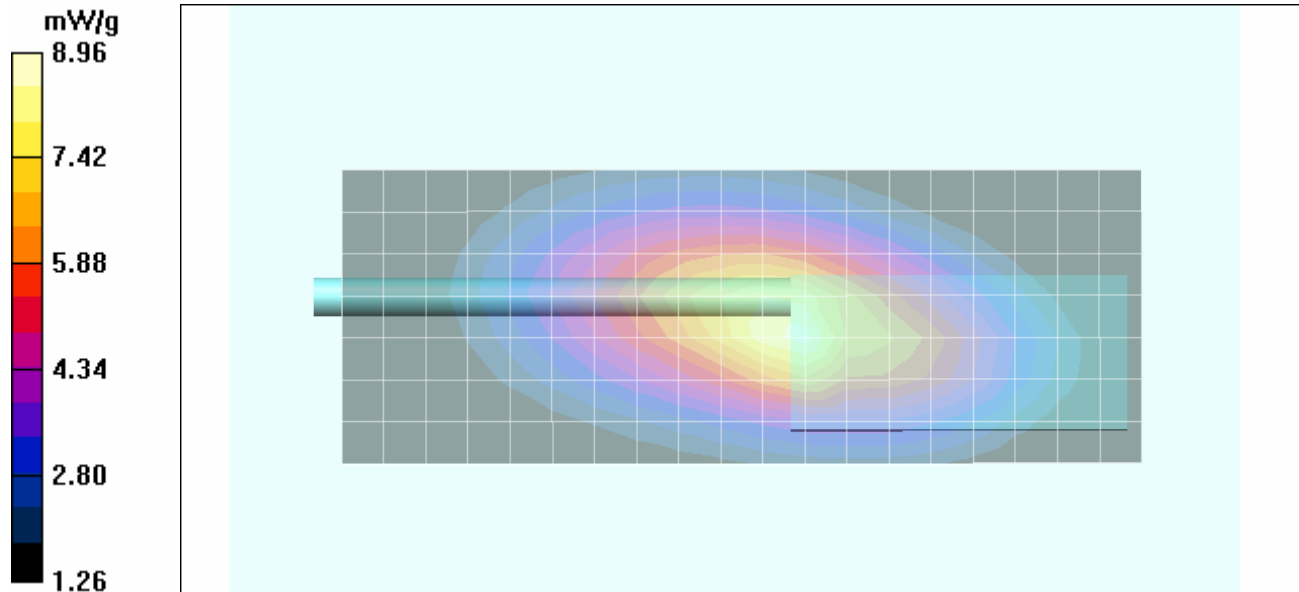
Reference Value = 99.1 V/m; Power Drift = -0.641 dB

Peak SAR (extrapolated) = 12.4 W/kg

SAR(1 g) = 8.52 mW/g; SAR(10 g) 6.08 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.96 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.95 mW/g

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

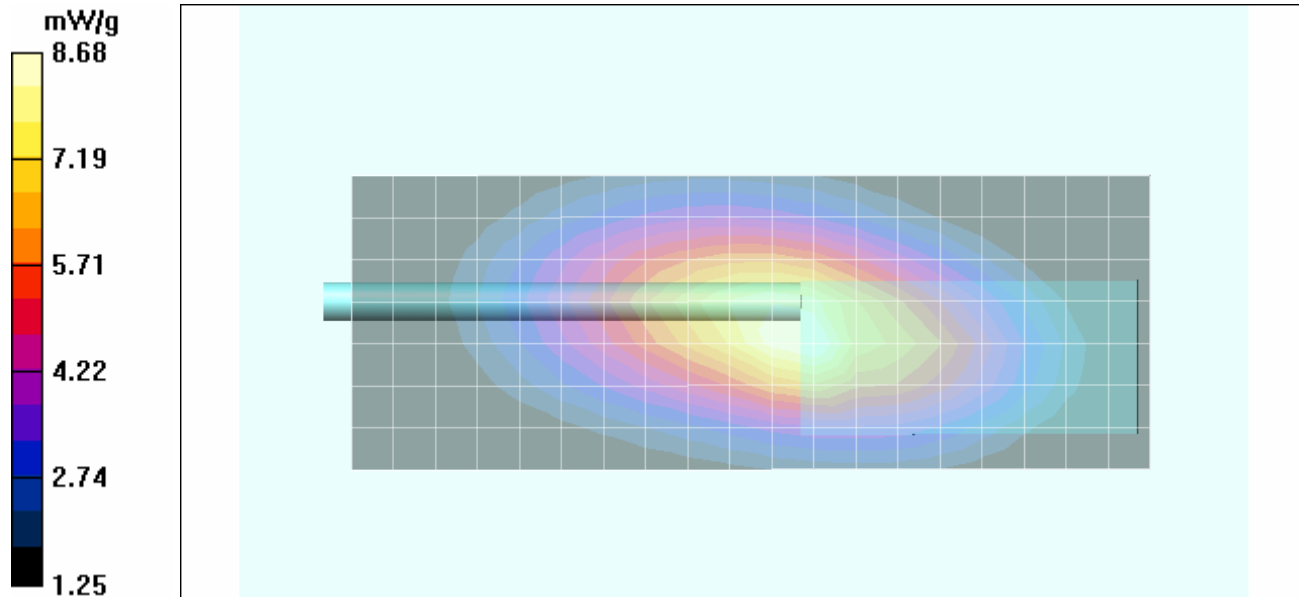
Reference Value = 96.1 V/m; Power Drift = -0.647 dB

Peak SAR (extrapolated) = 12.2 W/kg

SAR(1 g) = 8.27 mW/g; SAR(10 g) 5.9 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.68 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

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

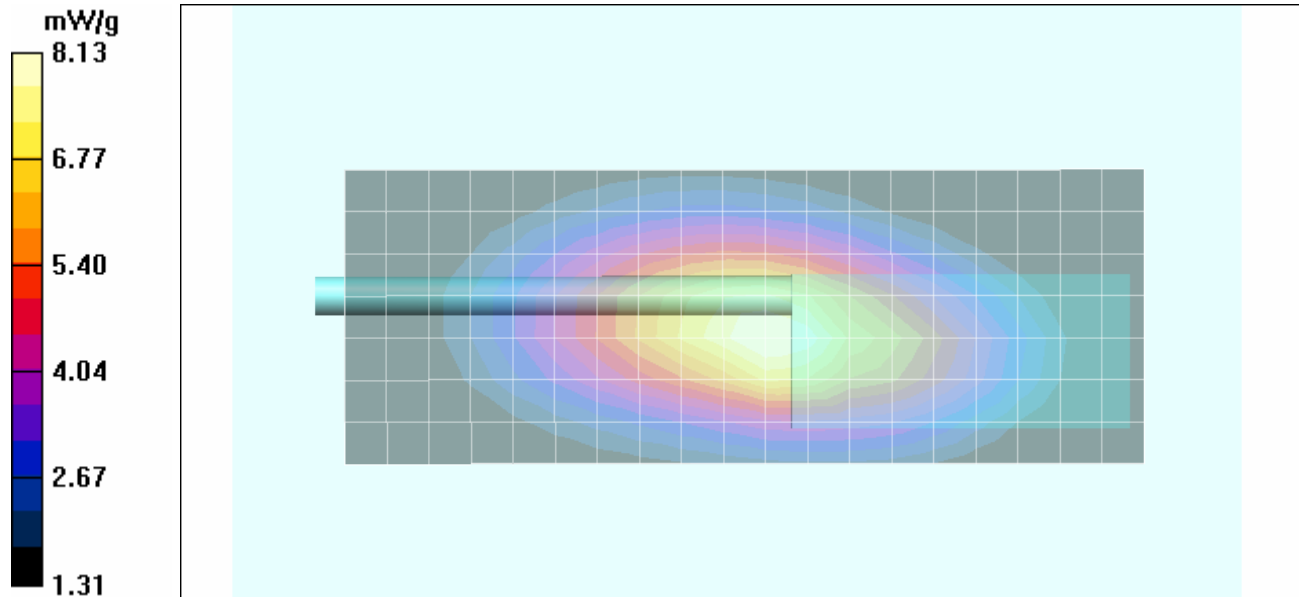
Reference Value = 92.0 V/m; Power Drift = -0.638 dB

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 7.75 mW/g; SAR(10 g) 5.58 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.13 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.51 mW/g

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

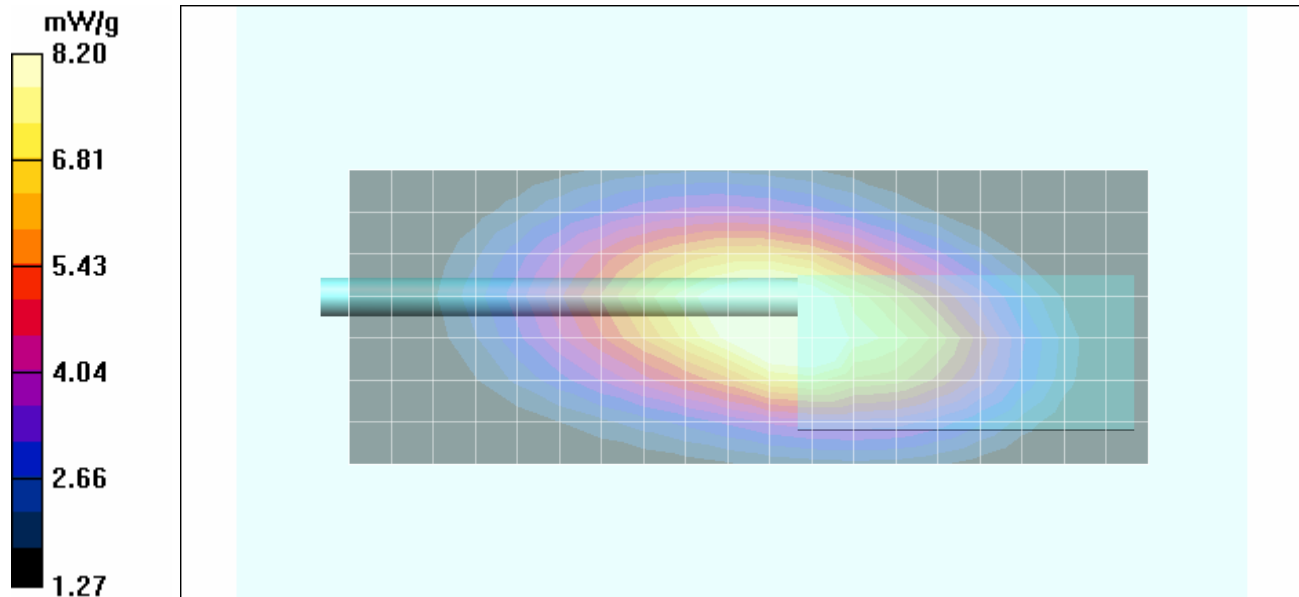
Reference Value = 86.4 V/m; Power Drift = -0.445 dB

Peak SAR (extrapolated) = 11.4 W/kg

SAR(1 g) = 7.86 mW/g; SAR(10 g) 5.65 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.53 mW/g

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

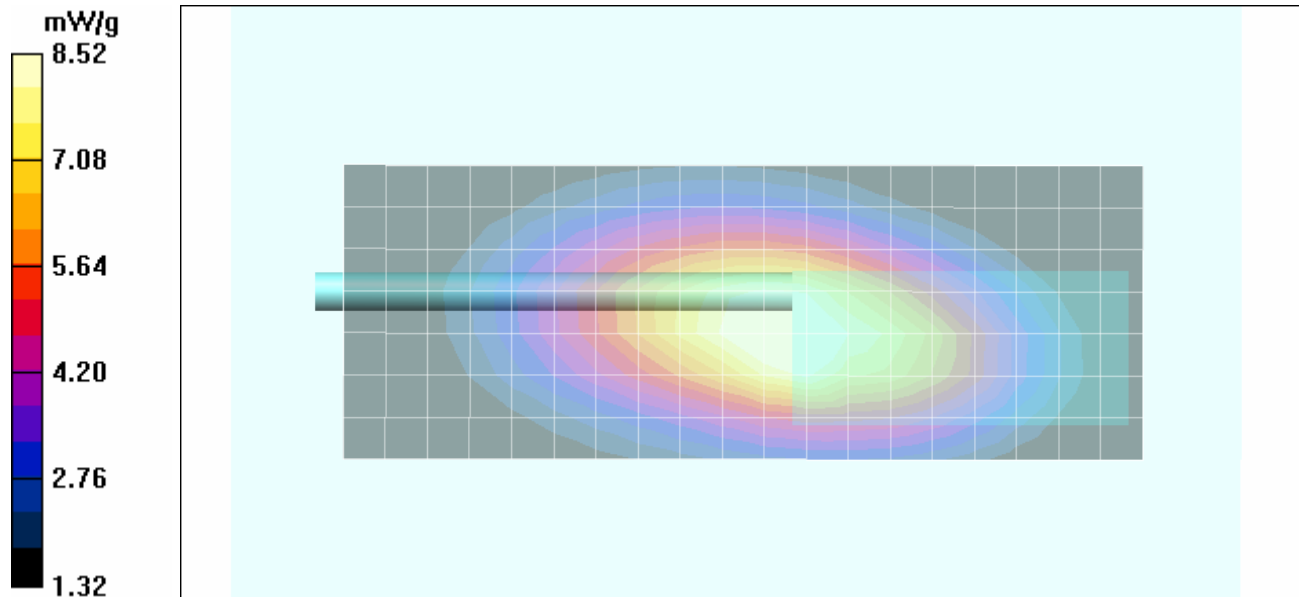
Reference Value = 92.0 V/m; Power Drift = -0.302 dB

Peak SAR (extrapolated) = 11.8 W/kg

SAR(1 g) = 8.17 mW/g; SAR(10 g) 5.86 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.52 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.95 mW/g

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

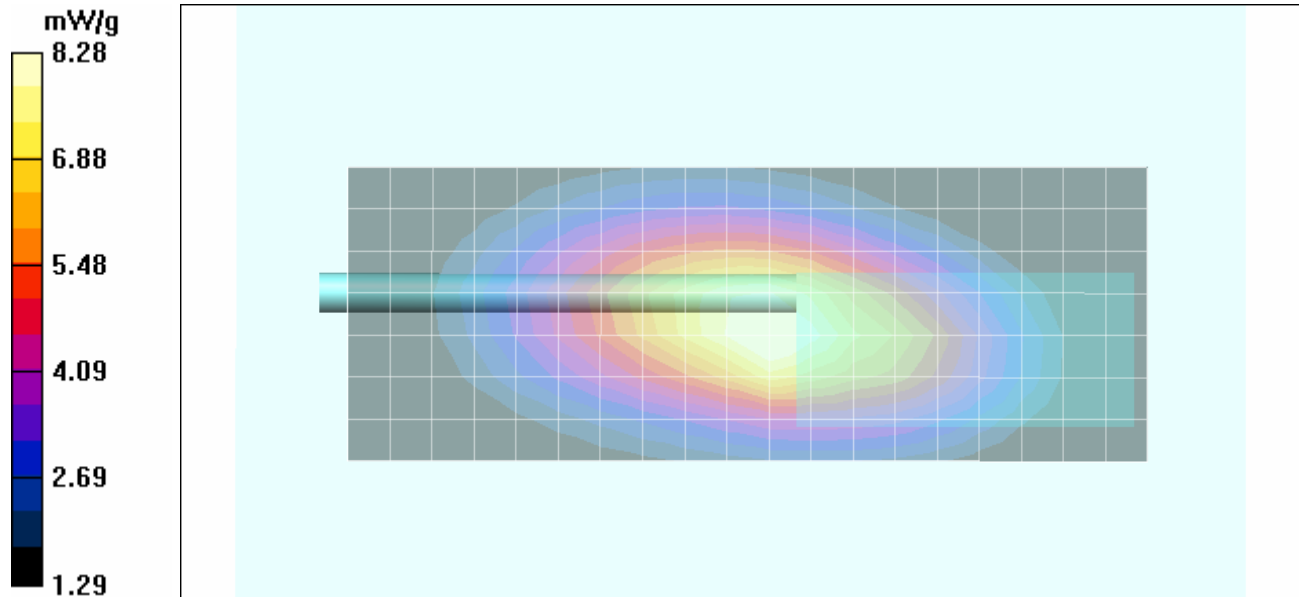
Reference Value = 91.6 V/m; Power Drift = -0.369 dB

Peak SAR (extrapolated) = 11.4 W/kg

SAR(1 g) = 7.87 mW/g; SAR(10 g) 5.66 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 421.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 421 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 421 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.3$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.80 mW/g

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

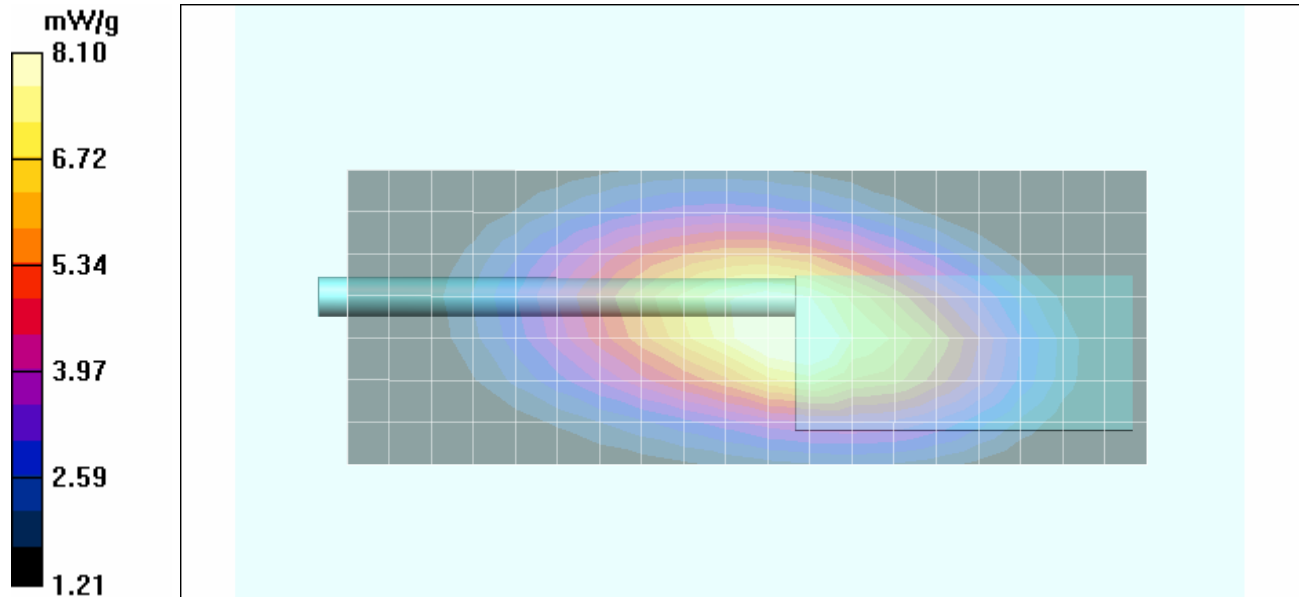
Reference Value = 92.8 V/m; Power Drift = -0.423 dB

Peak SAR (extrapolated) = 11.2 W/kg

SAR(1 g) = 7.67 mW/g; SAR(10 g) 5.4 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.10 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 7.16 mW/g

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

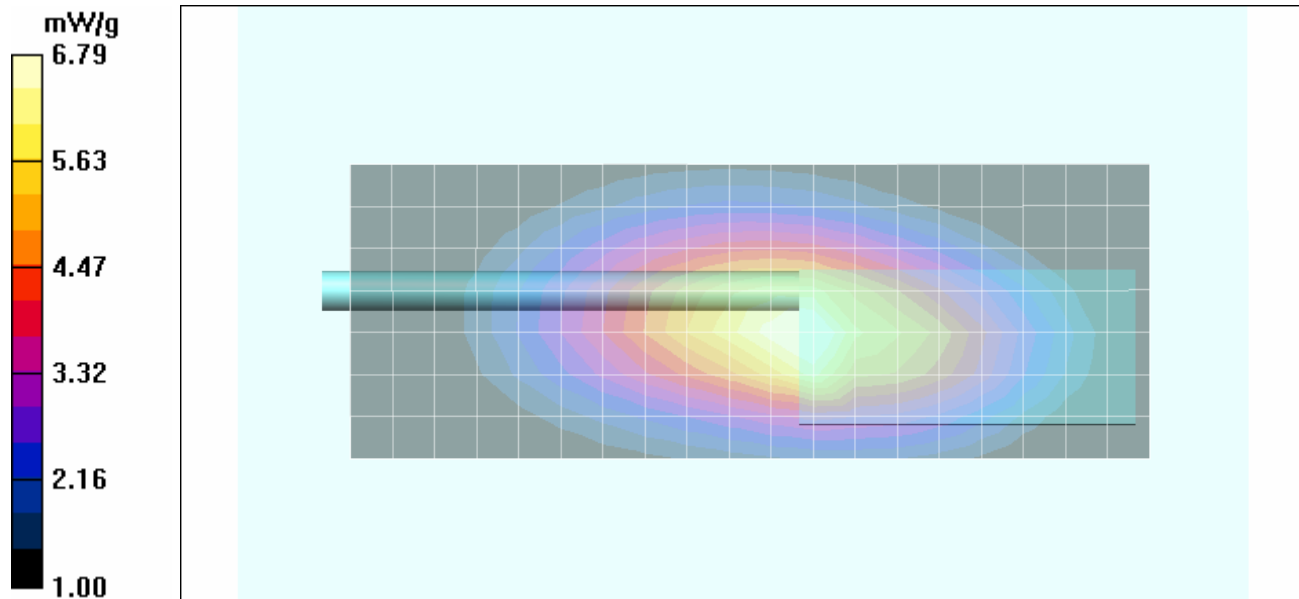
Reference Value = 84.5 V/m; Power Drift = -0.501 dB

Peak SAR (extrapolated) = 9.48 W/kg

SAR(1 g) = 6.43 mW/g; SAR(10 g) 4.51 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.79 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.91 mW/g

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

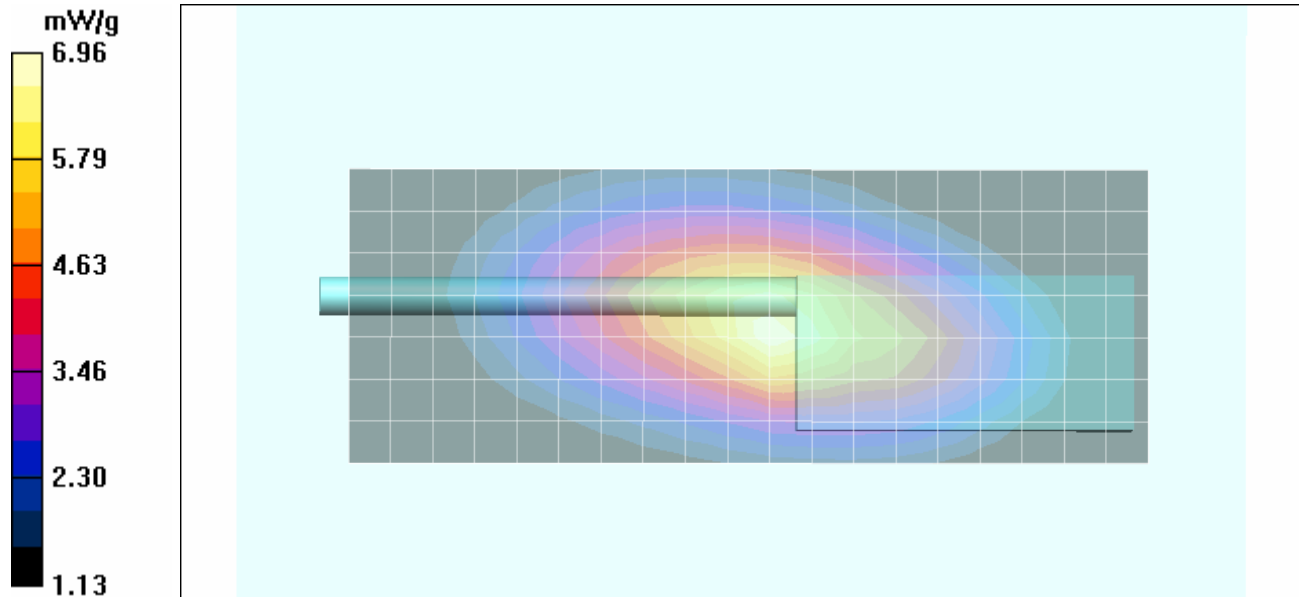
Reference Value = 84.6 V/m; Power Drift = -0.524 dB

Peak SAR (extrapolated) = 9.78 W/kg

SAR(1 g) = 6.68 mW/g; SAR(10 g) 4.78 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.96 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.68 mW/g

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

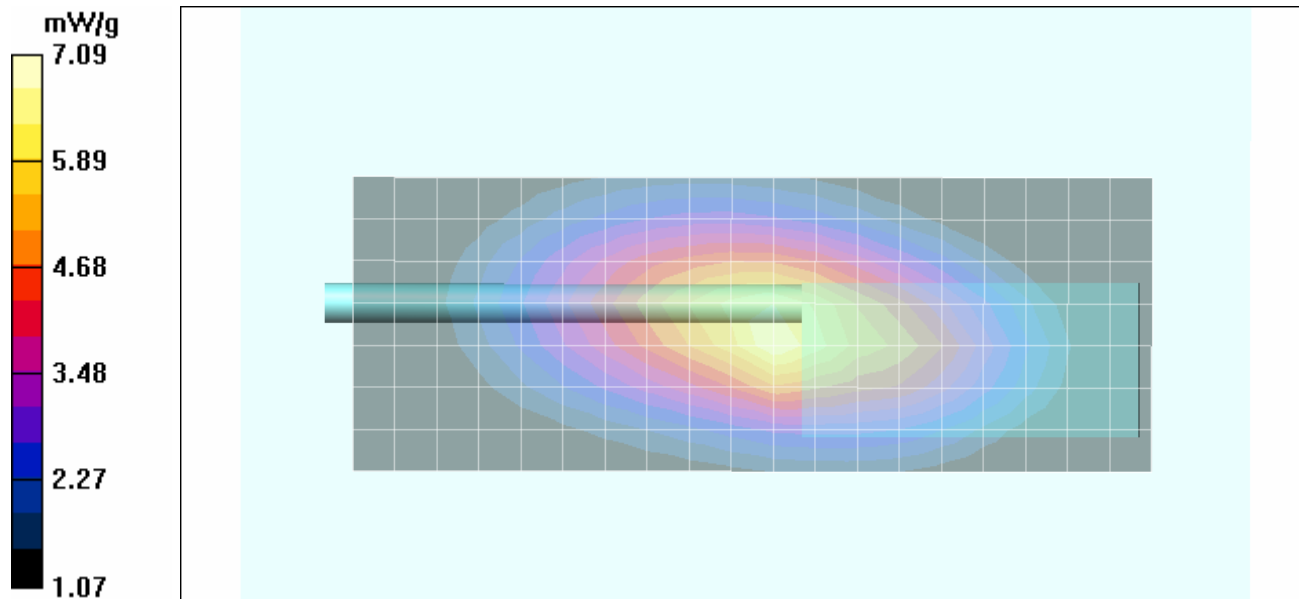
Reference Value = 86.4 V/m; Power Drift = -0.519 dB

Peak SAR (extrapolated) = 10.1 W/kg

SAR(1 g) = 6.76 mW/g; SAR(10 g) 4.8 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.09 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.44 mW/g

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

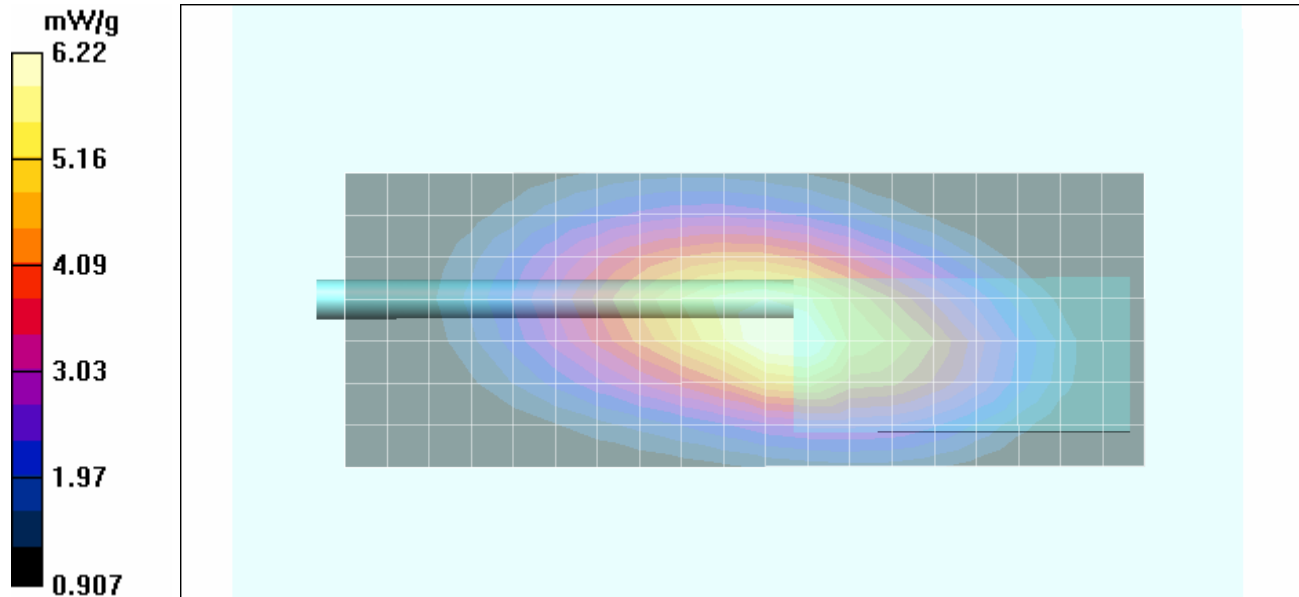
Reference Value = 76.1 V/m; Power Drift = -0.488 dB

Peak SAR (extrapolated) = 8.73 W/kg

SAR(1 g) = 5.94 mW/g; SAR(10 g) 4.22 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.22 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.45 mW/g

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

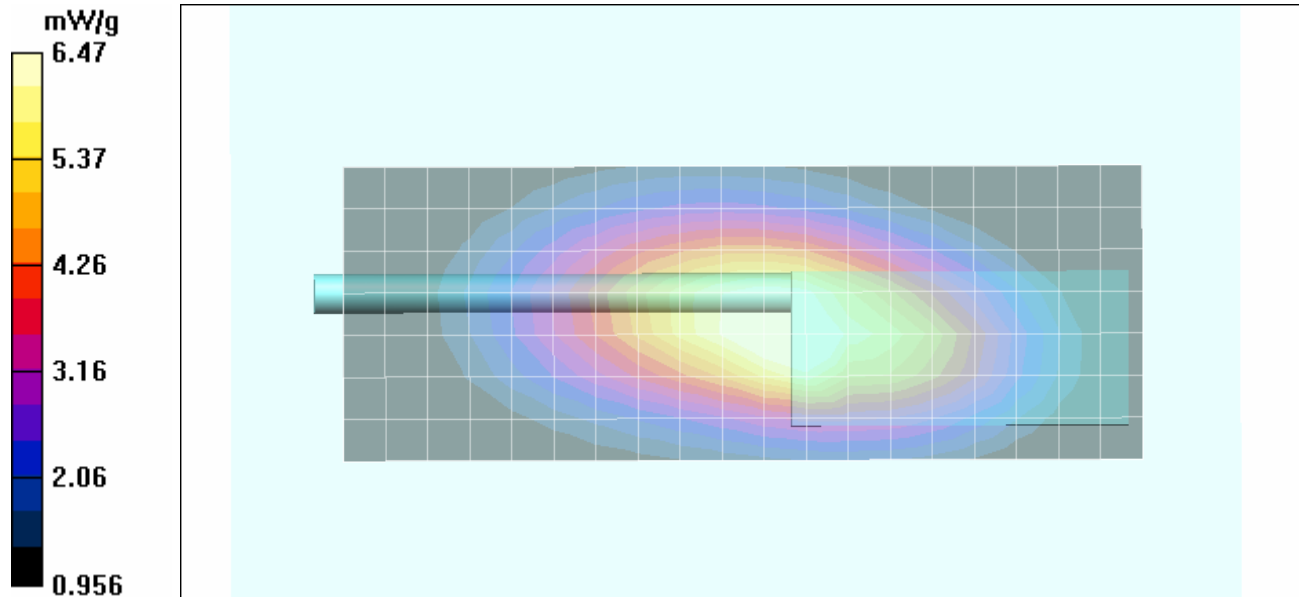
Reference Value = 79.3 V/m; Power Drift = -0.341 dB

Peak SAR (extrapolated) = 8.99 W/kg

SAR(1 g) = 6.15 mW/g; SAR(10 g) 4.36 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.47 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.93 mW/g

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

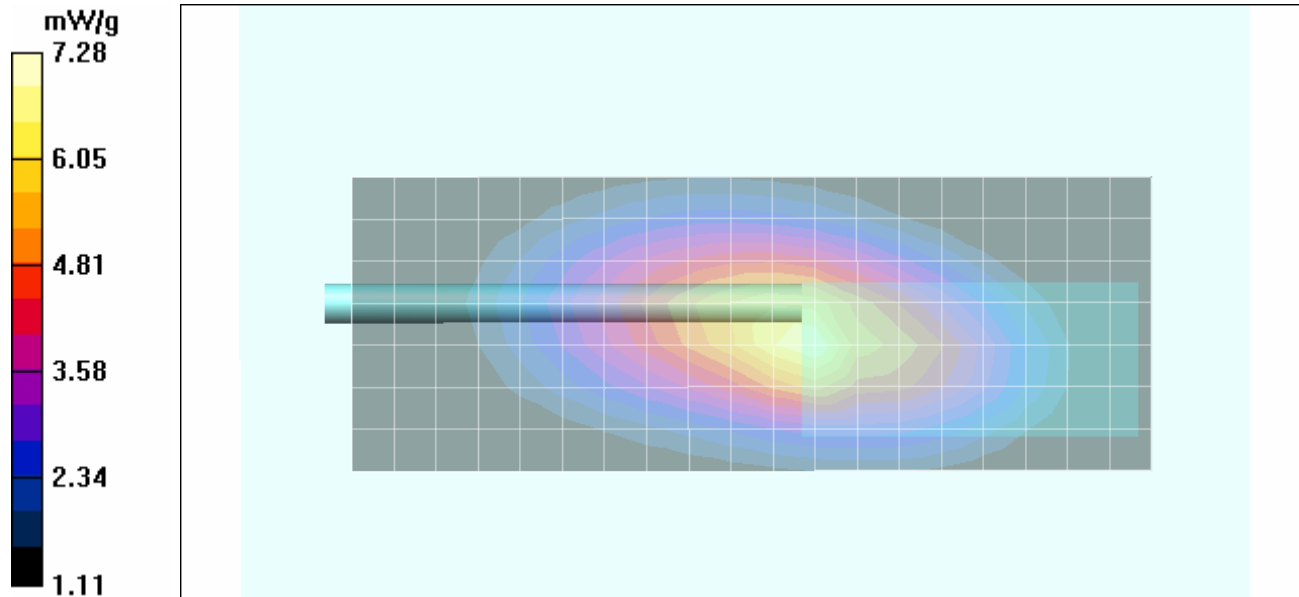
Reference Value = 85.1 V/m; Power Drift = -0.279 dB

Peak SAR (extrapolated) = 10.2 W/kg

SAR(1 g) = 6.89 mW/g; SAR(10 g) 4.83 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.28 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 7.00 mW/g

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

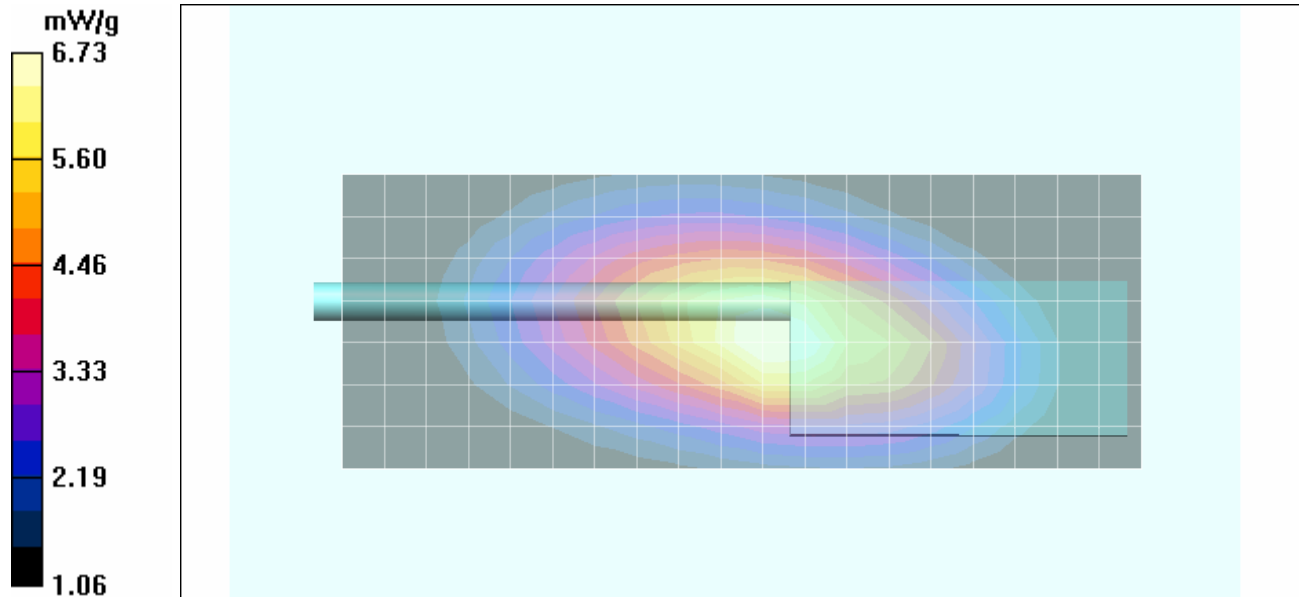
Reference Value = 83.9 V/m; Power Drift = -0.366 dB

Peak SAR (extrapolated) = 9.57 W/kg

SAR(1 g) = 6.45 mW/g; SAR(10 g) 4.62 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.73 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Whip Antenna KRA-27M3 - 435.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 435 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 435 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 6.68 mW/g

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

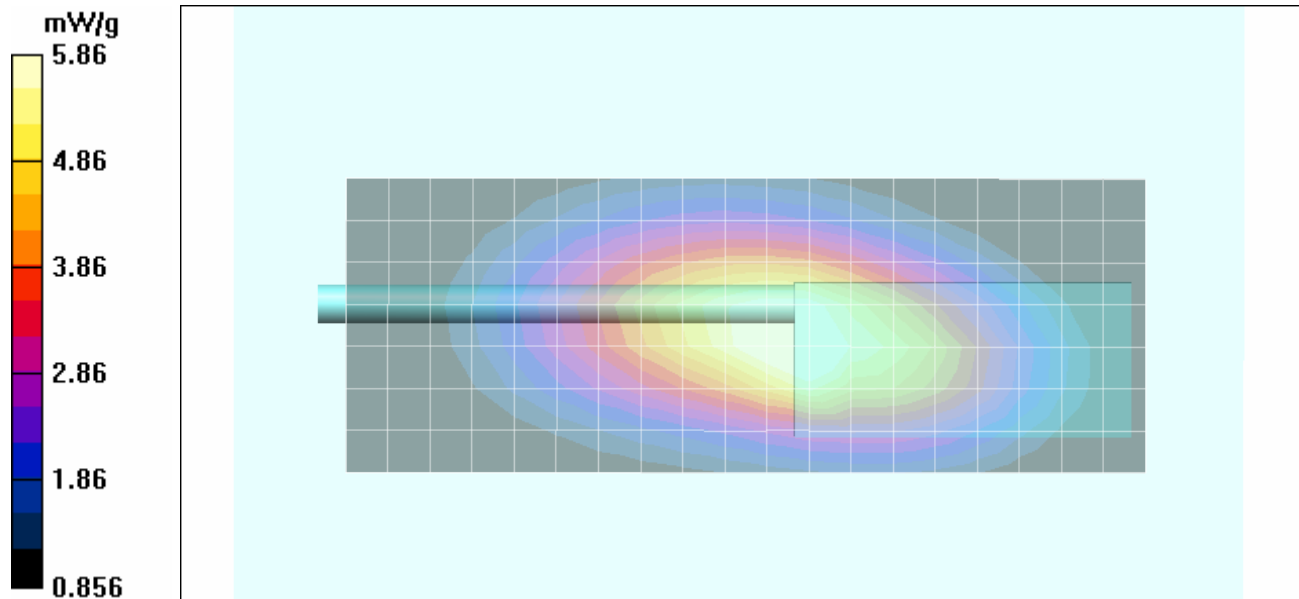
Reference Value = 77.1 V/m; Power Drift = -0.349 dB

Peak SAR (extrapolated) = 8.19 W/kg

SAR(1 g) = 5.61 mW/g; SAR(10 g) 3.93 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 5.86 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

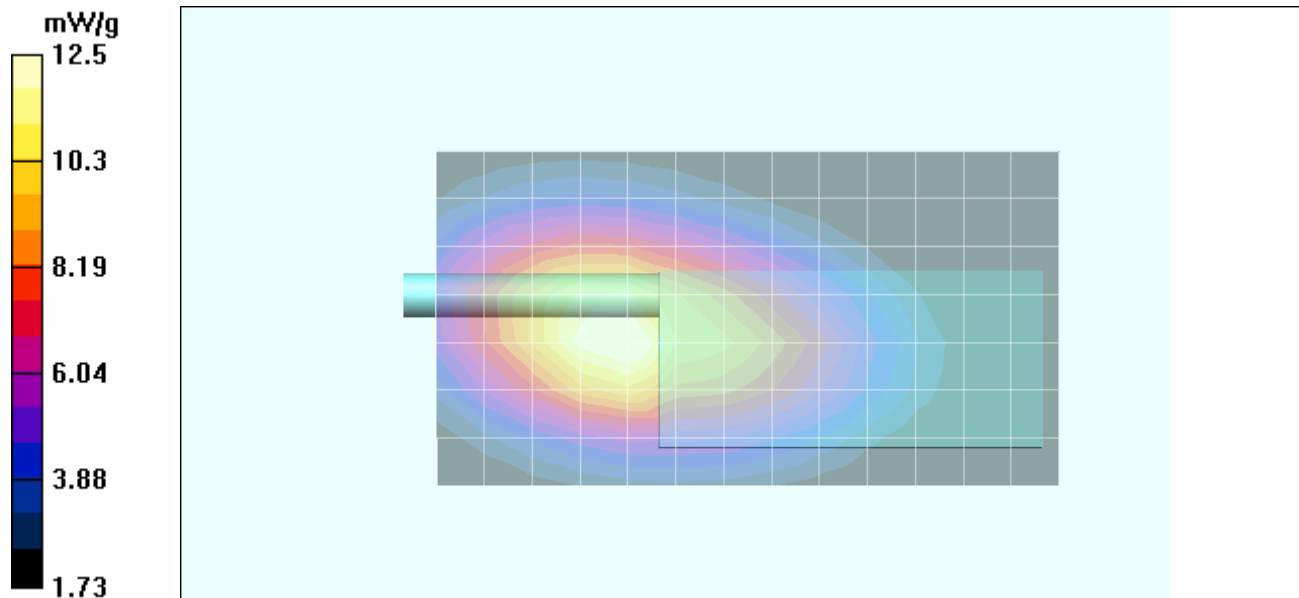
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 111.4 V/m; Power Drift = -0.607 dB

Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 12 mW/g; SAR(10 g) 8.46 mW/g

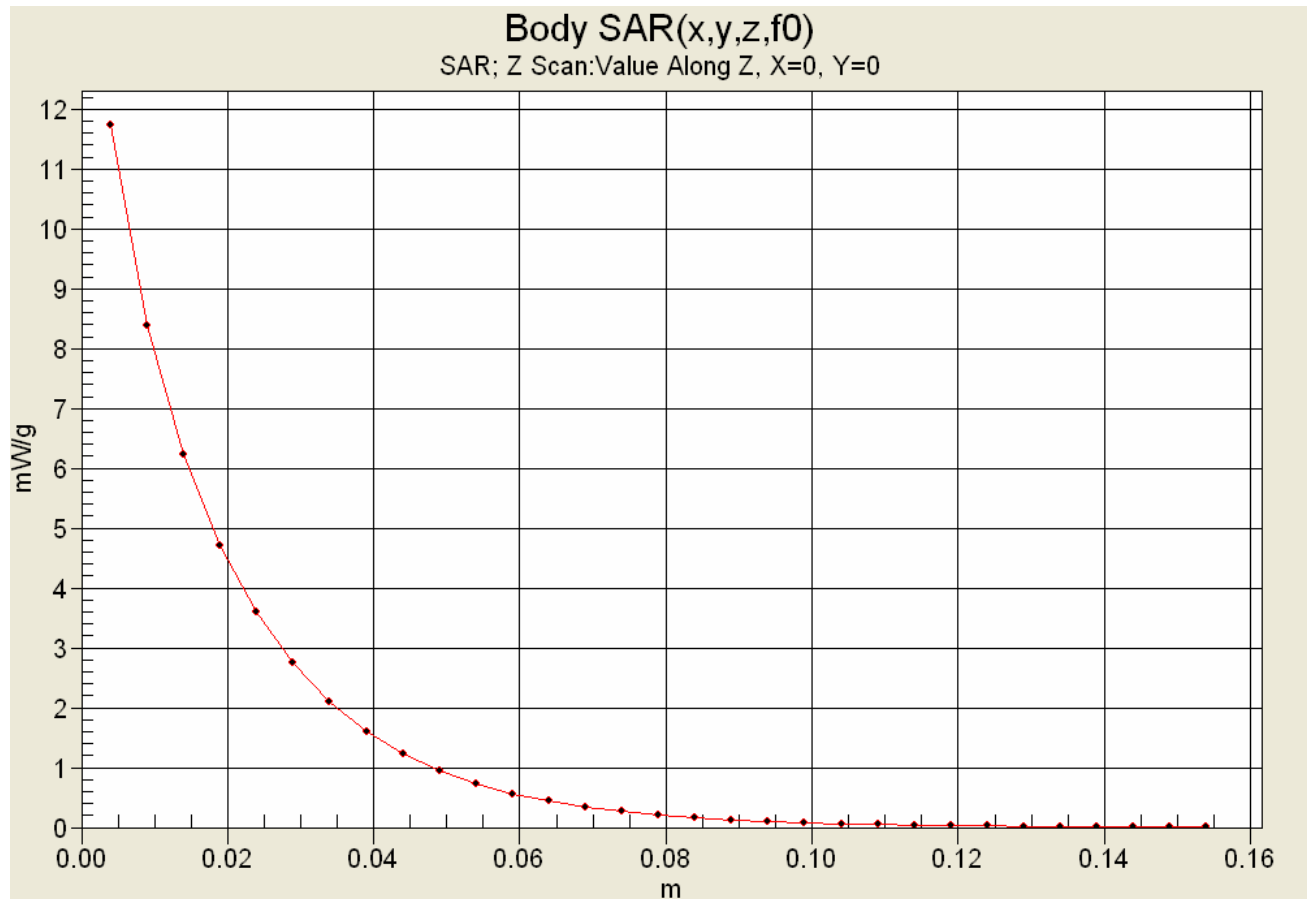
Maximum value of SAR (measured) = 12.5 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Palm-Mic Kit P/N: KHS-8BL

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

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

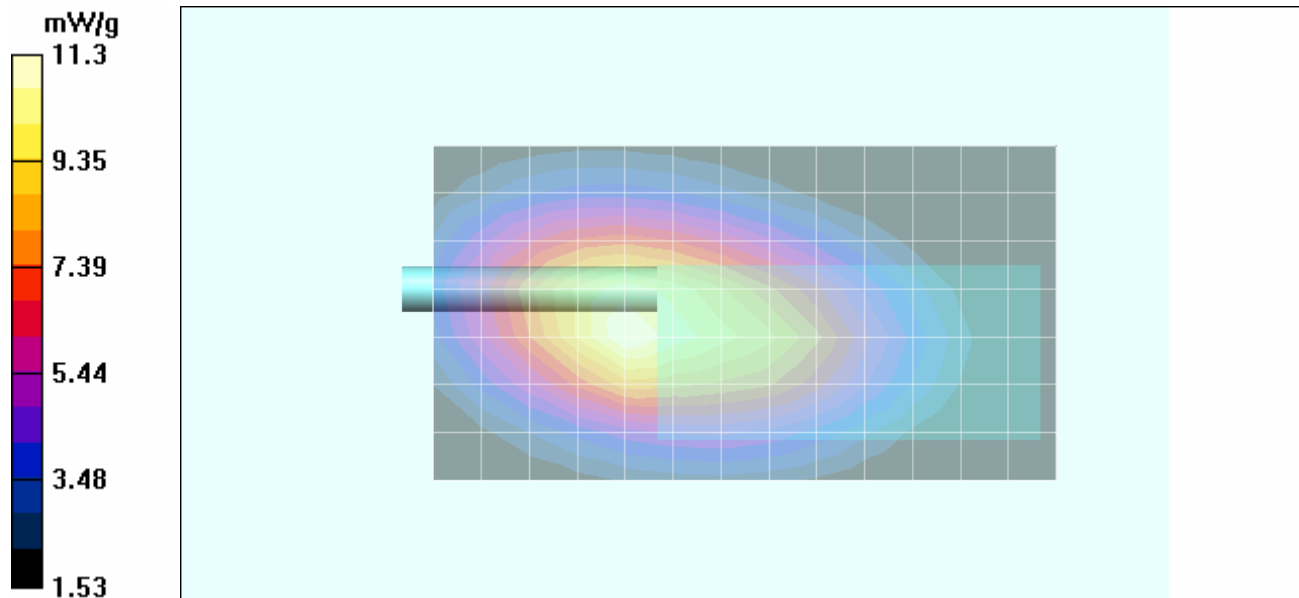
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 103.4 V/m; Power Drift = -0.557 dB

Peak SAR (extrapolated) = 15.7 W/kg

SAR(1 g) = 10.7 mW/g; SAR(10 g) 7.6 mW/g

Maximum value of SAR (measured) = 11.3 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Li-Ion Battery KNB-45L - Stub Antenna KRA-23M - 440.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 440 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 440 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

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

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

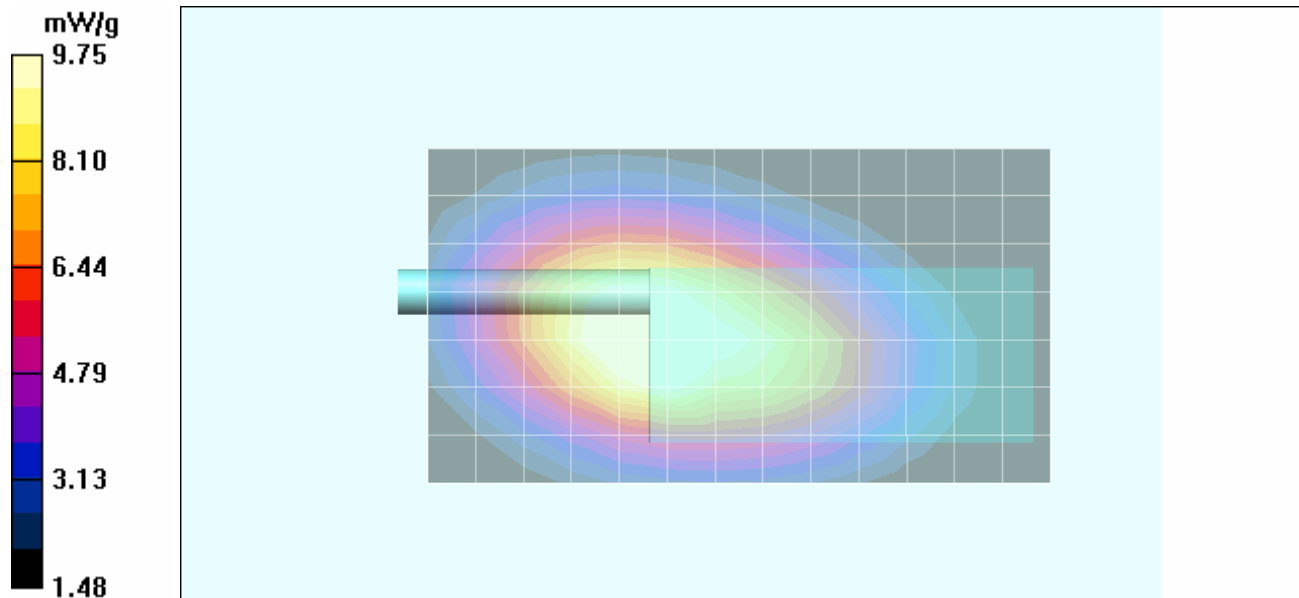
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 95.4 V/m; Power Drift = -0.300 dB

Peak SAR (extrapolated) = 13.6 W/kg

SAR(1 g) = 9.24 mW/g; SAR(10 g) 6.55 mW/g

Maximum value of SAR (measured) = 9.75 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (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: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 8.29 mW/g

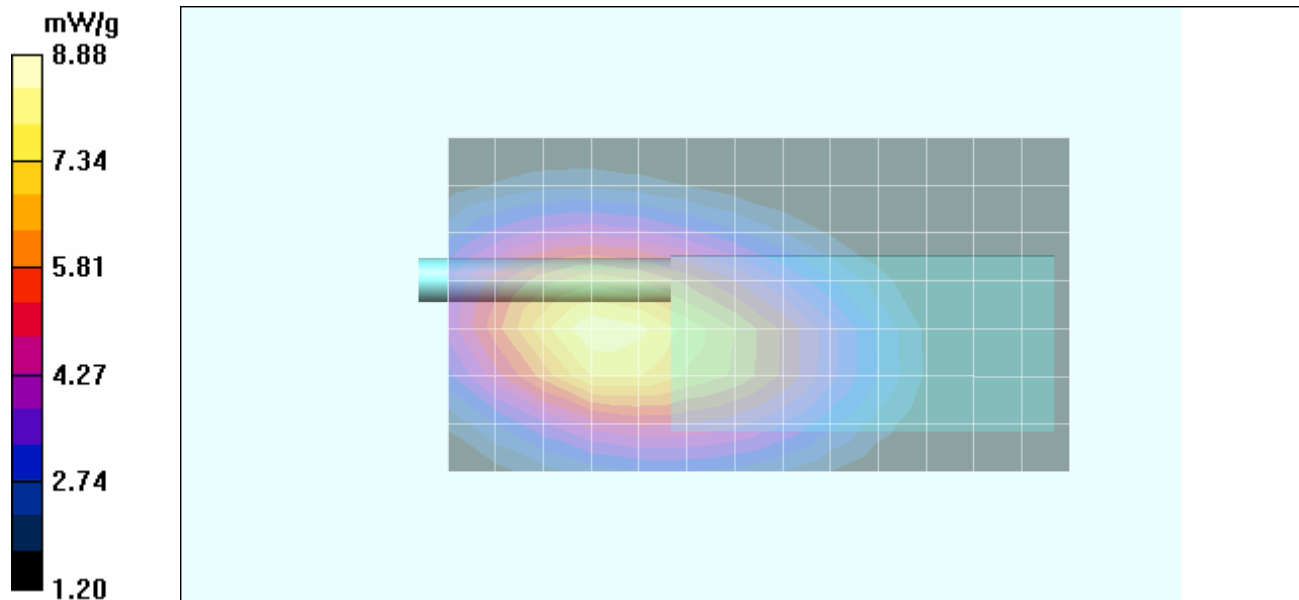
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 101.0 V/m; Power Drift = -0.566 dB

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 8.39 mW/g; SAR(10 g) = 5.89 mW/g

Maximum value of SAR (measured) = 8.88 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 406.1 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 406.1 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 406.1 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.71 mW/g

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

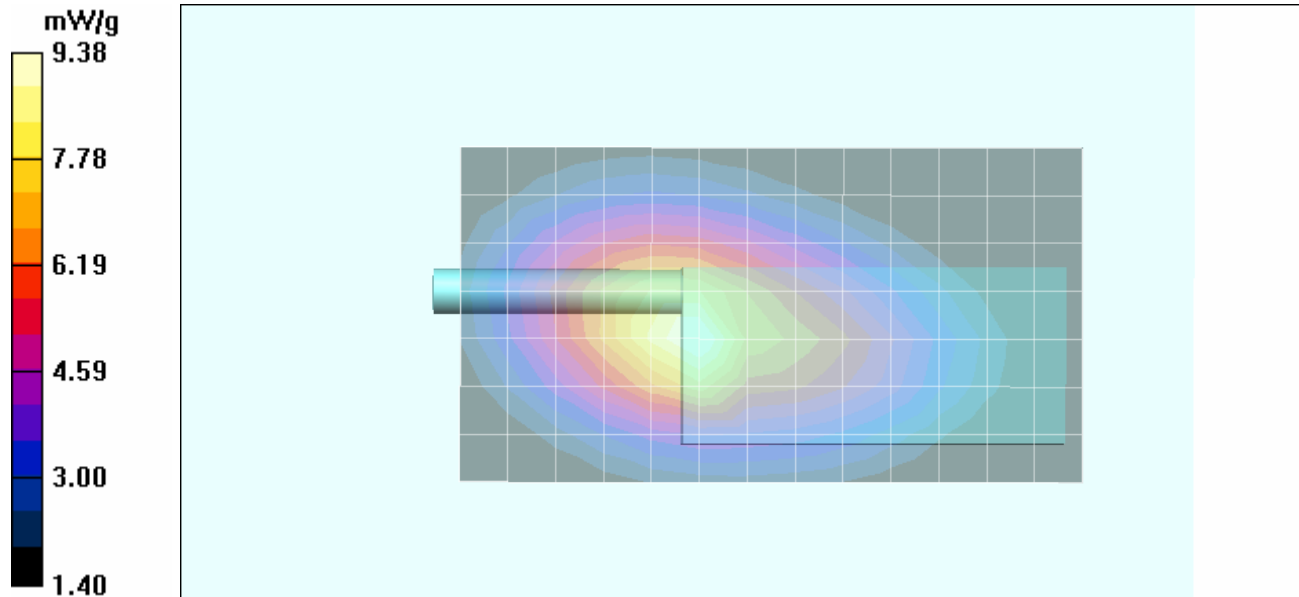
Reference Value = 88.9 V/m; Power Drift = -0.131 dB

Peak SAR (extrapolated) = 13.4 W/kg

SAR(1 g) = 8.99 mW/g; SAR(10 g) 6.36 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 07/01/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-23M3 - 450.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.93 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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) = 4.85 mW/g

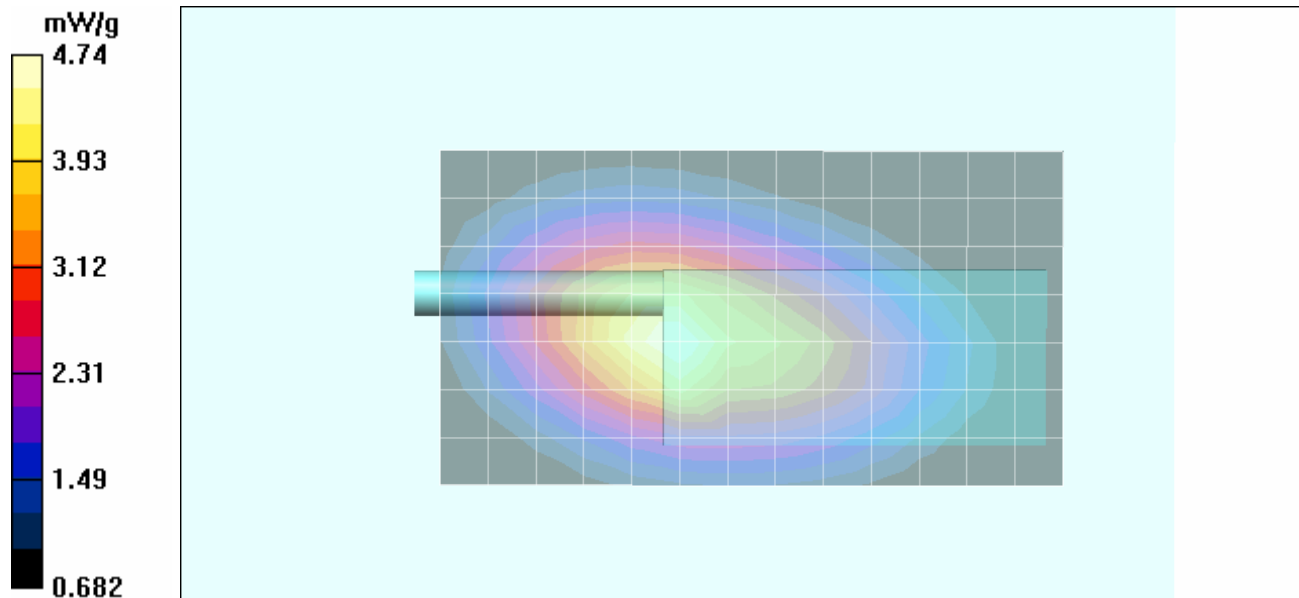
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 69.3 V/m; Power Drift = -0.726 dB

Peak SAR (extrapolated) = 6.57 W/kg

SAR(1 g) = 4.48 mW/g; SAR(10 g) 3.15 mW/g

Maximum value of SAR (measured) = 4.74 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M - 440.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 440 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 440 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 57.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

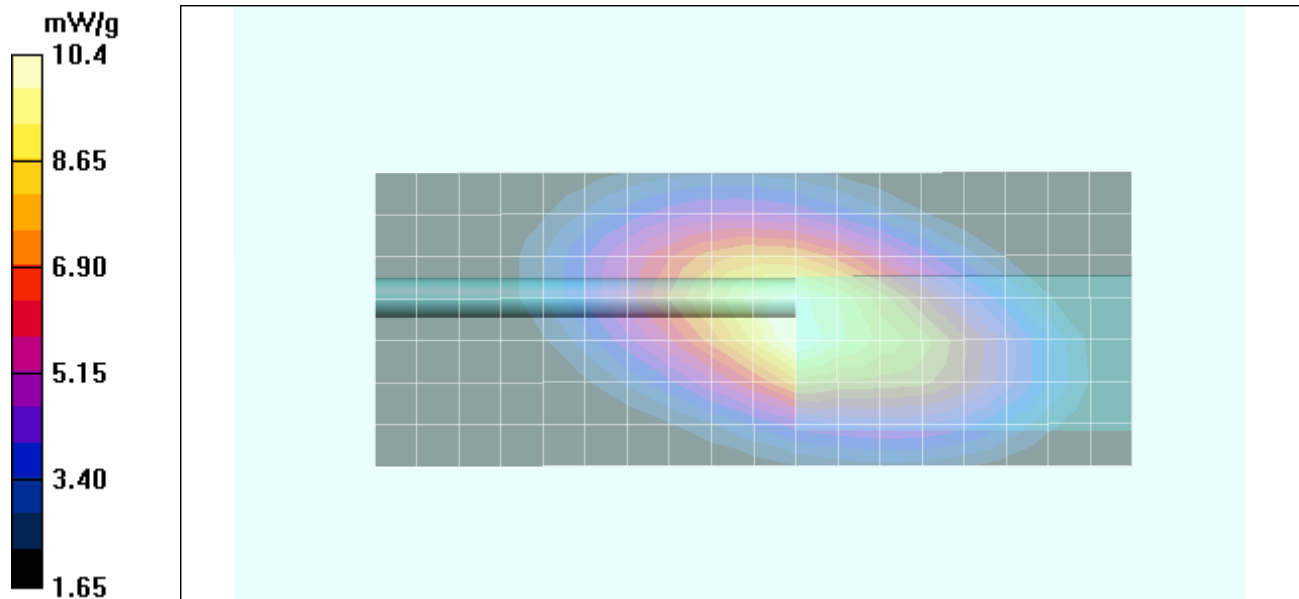
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.1 V/m; Power Drift = -0.326 dB

Peak SAR (extrapolated) = 14.4 W/kg

SAR(1 g) = 9.89 mW/g; SAR(10 g) 7.12 mW/g

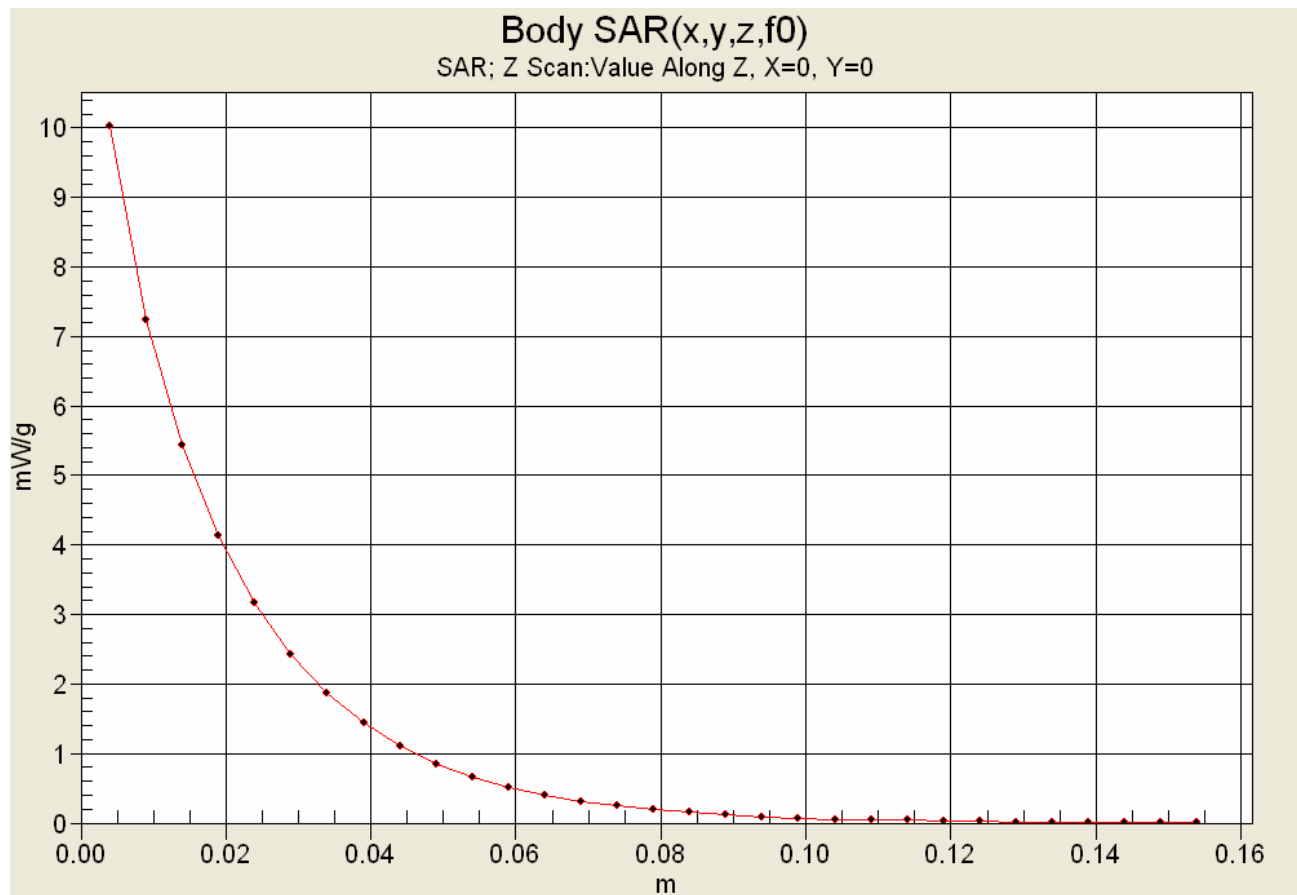
Maximum value of SAR (measured) = 10.4 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 470 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 56.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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

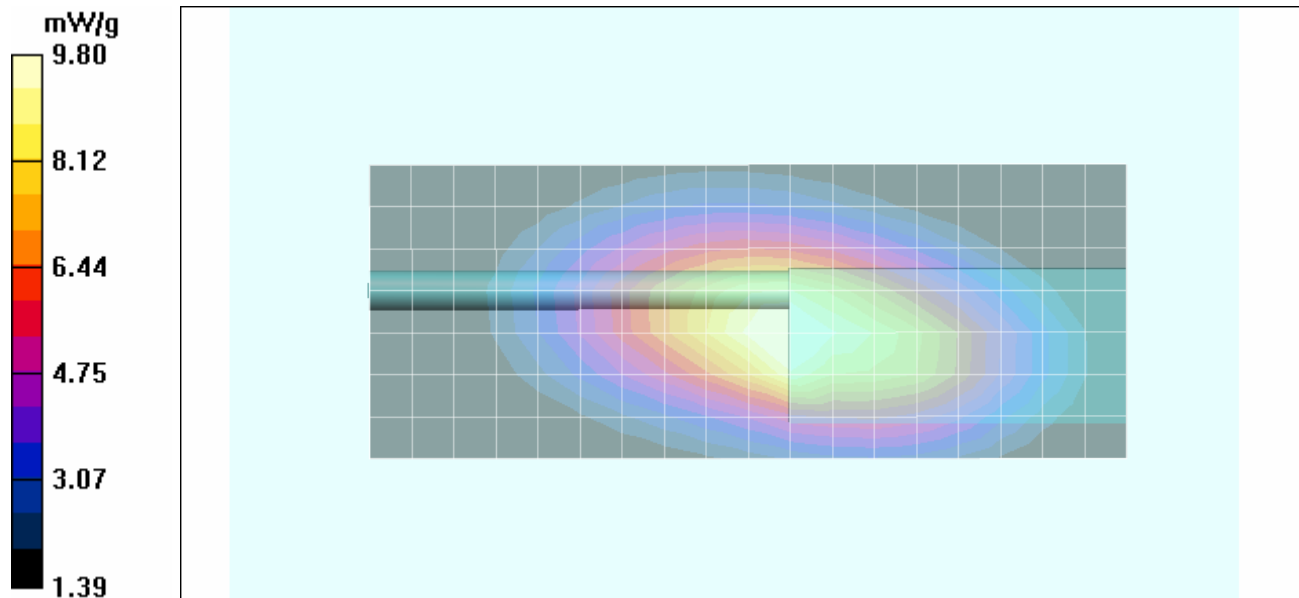
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 90.8 V/m; Power Drift = -0.463 dB

Peak SAR (extrapolated) = 13.6 W/kg

SAR(1 g) = 9.36 mW/g; SAR(10 g) 6.67 mW/g

Maximum value of SAR (measured) = 9.80 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Date(s) of Evaluation</u> 06/29-07/03, 08/04, 2010	<u>Test Report Serial No.</u> 062810ALH-T1034-S90U	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 406.1 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 406.1 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used (interpolated): $f = 406.1 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 58.0$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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: $dx=20\text{mm}$, $dy=20\text{mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.37 mW/g

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

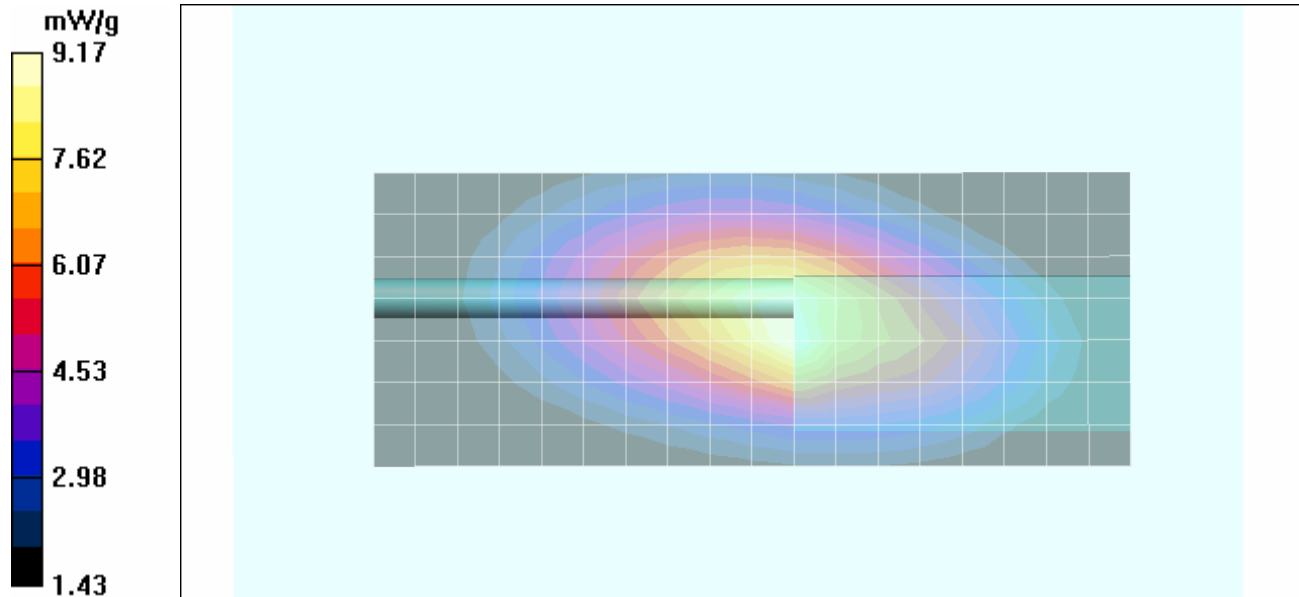
Reference Value = 96.6 V/m; Power Drift = -0.528 dB

Peak SAR (extrapolated) = 12.8 W/kg

SAR(1 g) = 8.74 mW/g; SAR(10 g) 6.29 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 07/02/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Whip Antenna KRA-27M3 - 450.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

Ambient Temp: 24.0°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.94 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(7.34, 7.34, 7.34); Calibrated: 16/07/2009
- 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) = 5.86 mW/g

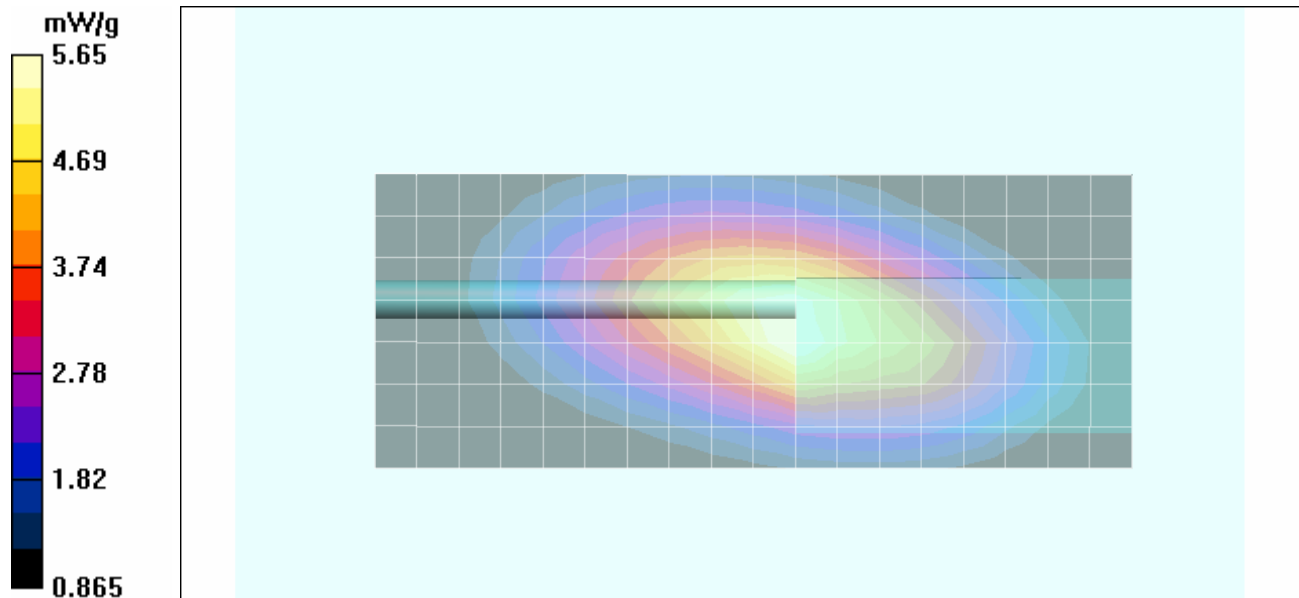
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 73.1 V/m; Power Drift = -0.396 dB

Peak SAR (extrapolated) = 7.85 W/kg

SAR(1 g) = 5.4 mW/g; SAR(10 g) 3.86 mW/g

Maximum value of SAR (measured) = 5.65 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

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

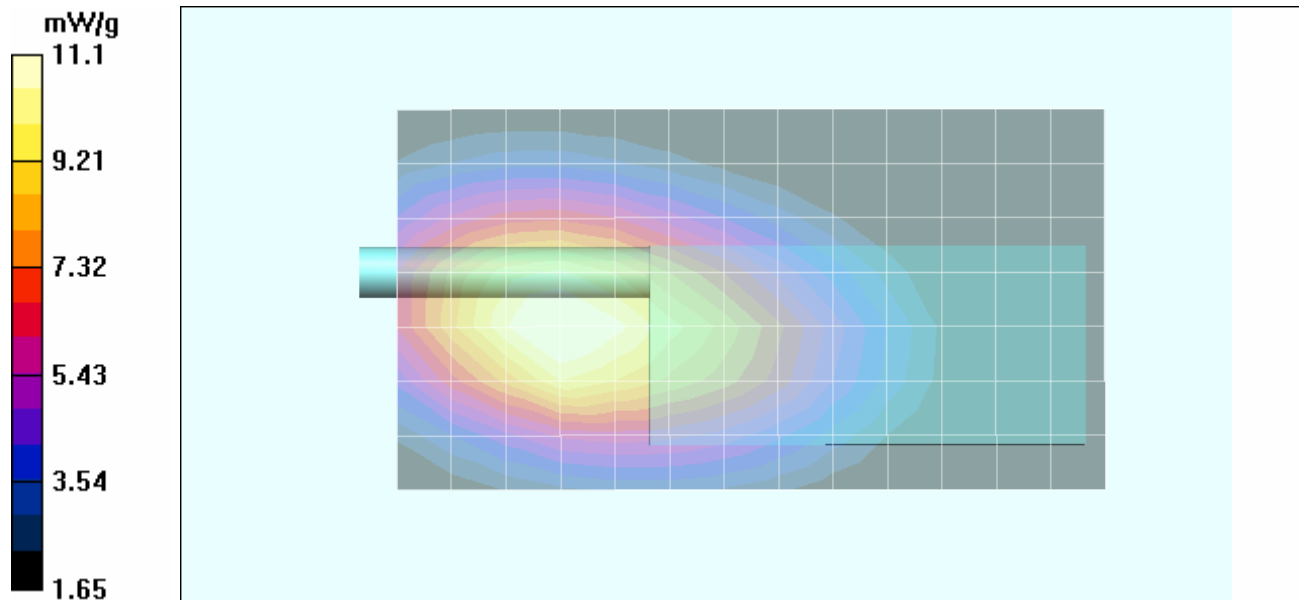
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 116.0 V/m; Power Drift = -0.757 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 7.61 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Over-the-Head 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 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

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

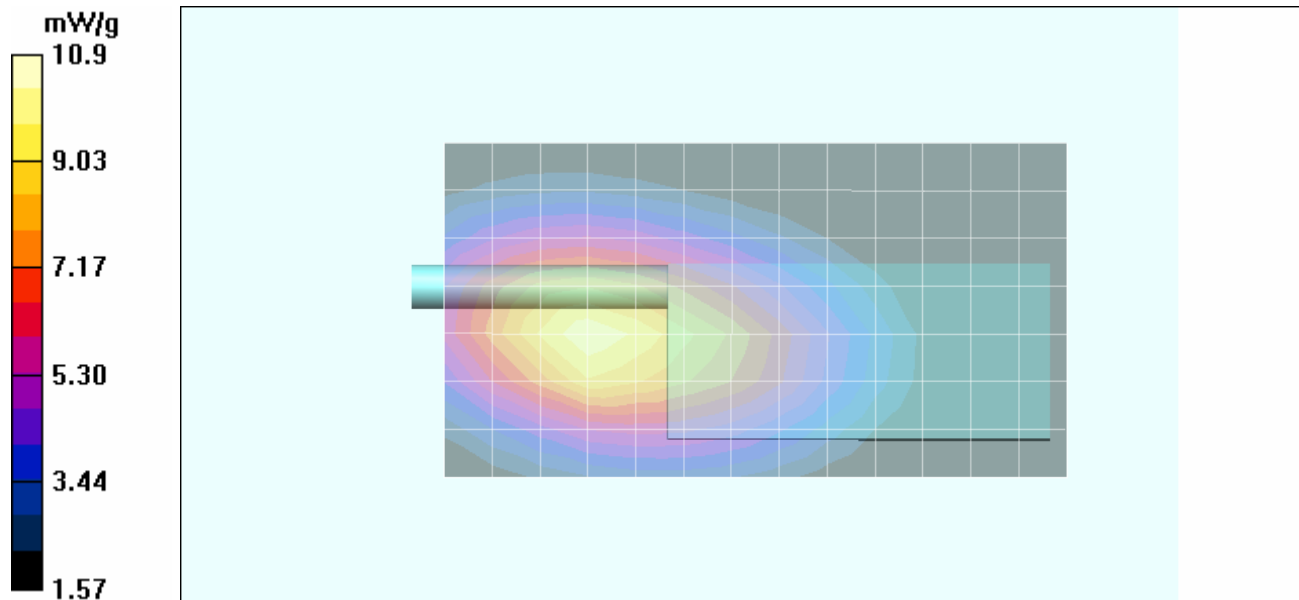
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 111.3 V/m; Power Drift = -0.521 dB

Peak SAR (extrapolated) = 15.1 W/kg

SAR(1 g) = 10.3 mW/g; SAR(10 g) = 7.36 mW/g

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



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

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

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

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

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

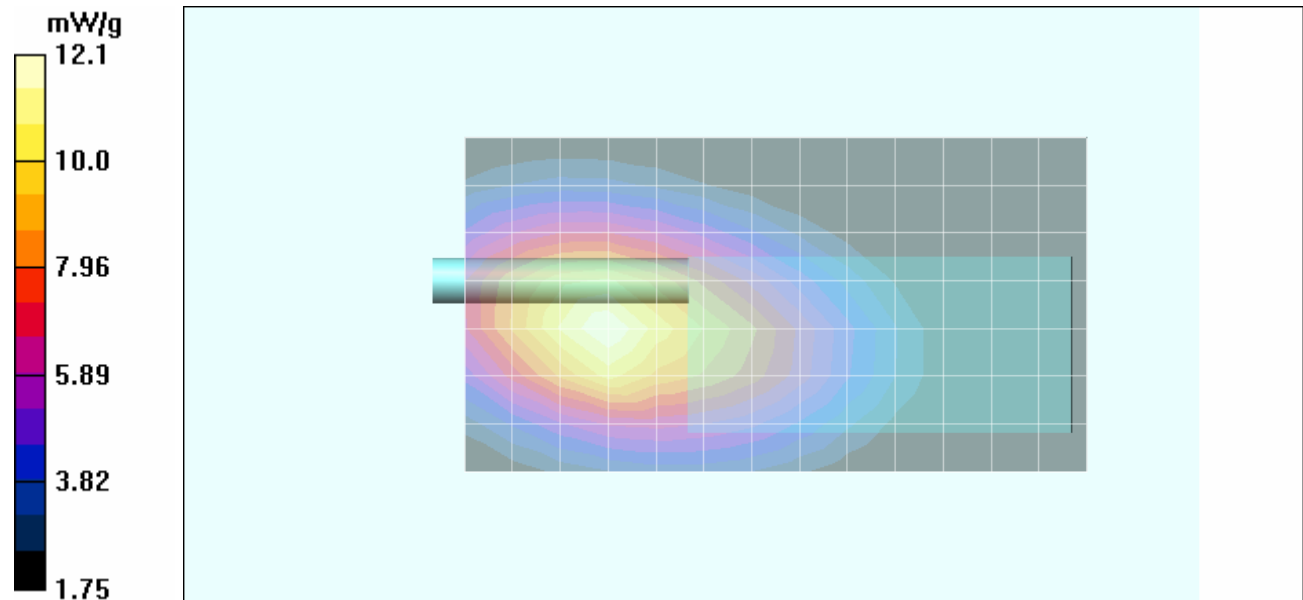
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 120.1 V/m; Power Drift = -0.794 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 11.4 mW/g; SAR(10 g) = 8.17 mW/g

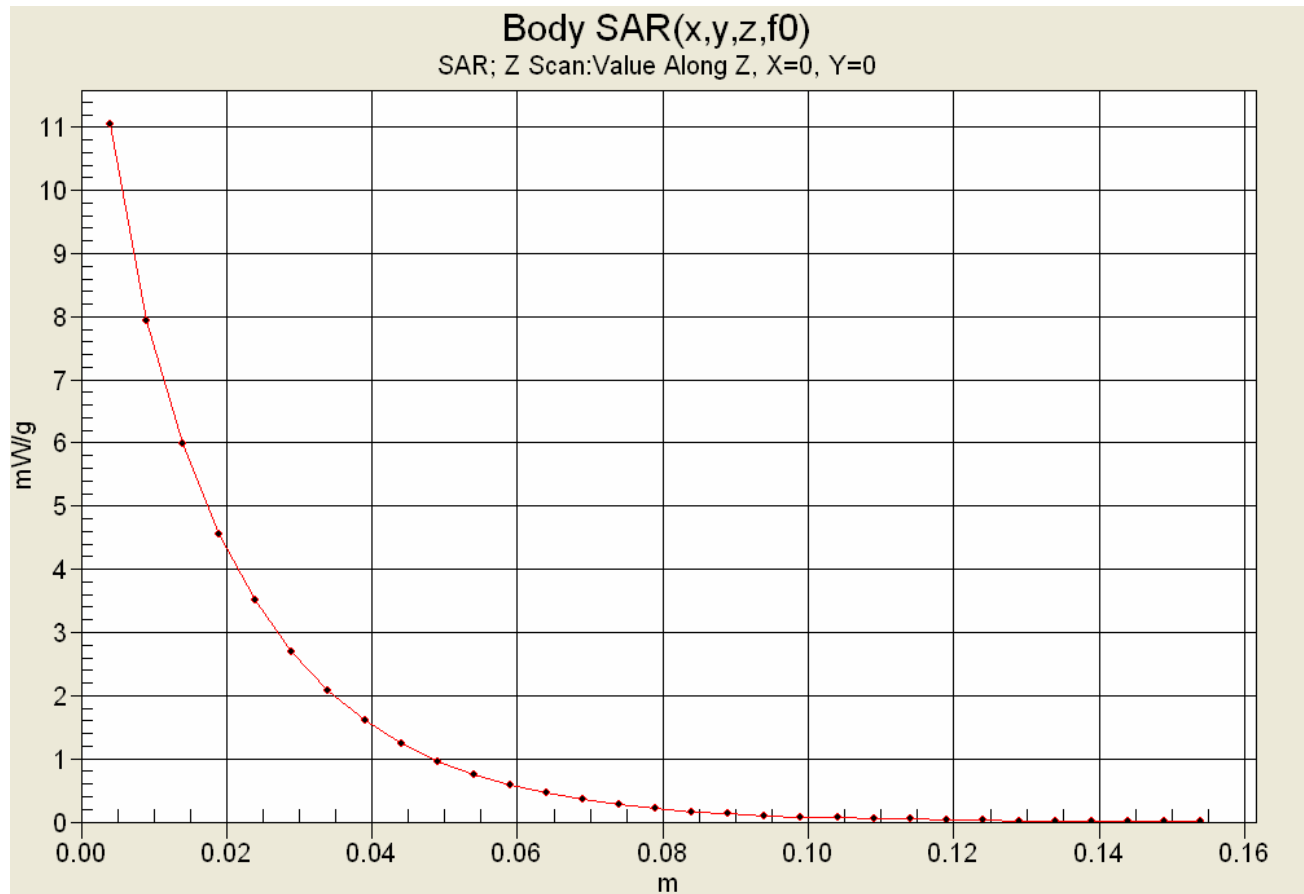
Maximum value of SAR (measured) = 12.1 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Z-Axis Scan



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	
Test Lab Certificate No. 2470.01				

Date Tested: 08/04/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (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: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

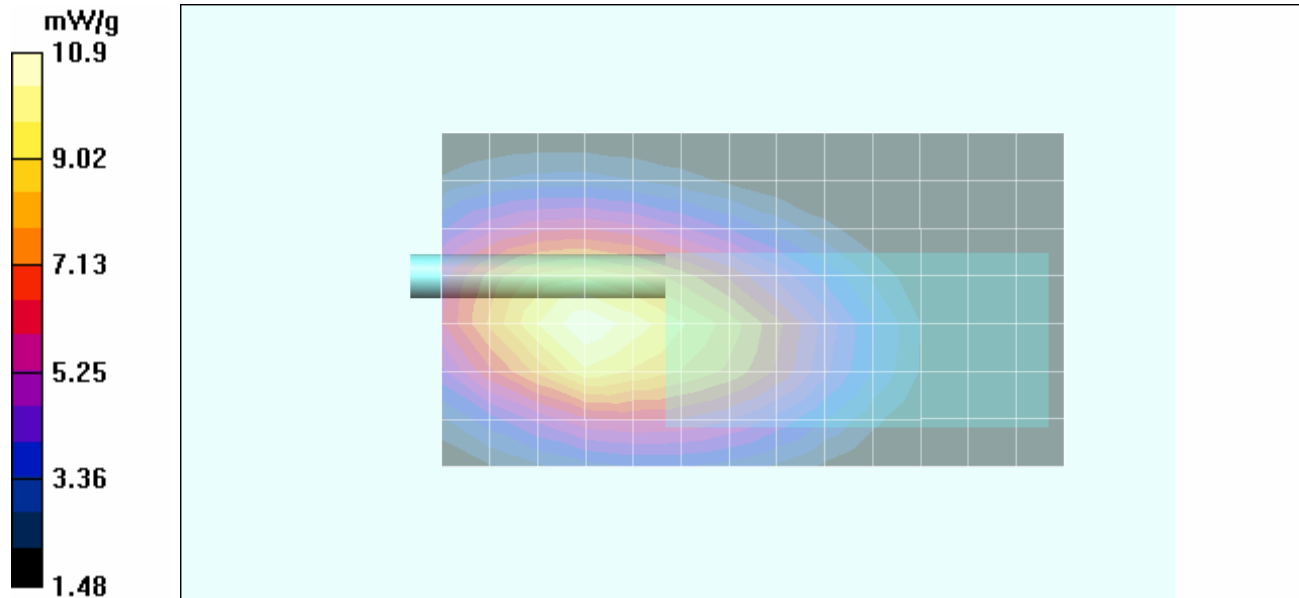
Maximum value of SAR (measured) = 10.9 mW/g

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

Reference Value = 109.6 V/m; Power Drift = -0.441 dB

Peak SAR (extrapolated) = 15.2 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) = 7.47 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

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

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (Pre-production)

Body-worn Accessory: Belt-Clip P/N: KBH-10; Audio Accessory: Speaker-Microphone P/N: KMC-48GPS

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

Communication System: CW

Frequency: 450 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 450 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

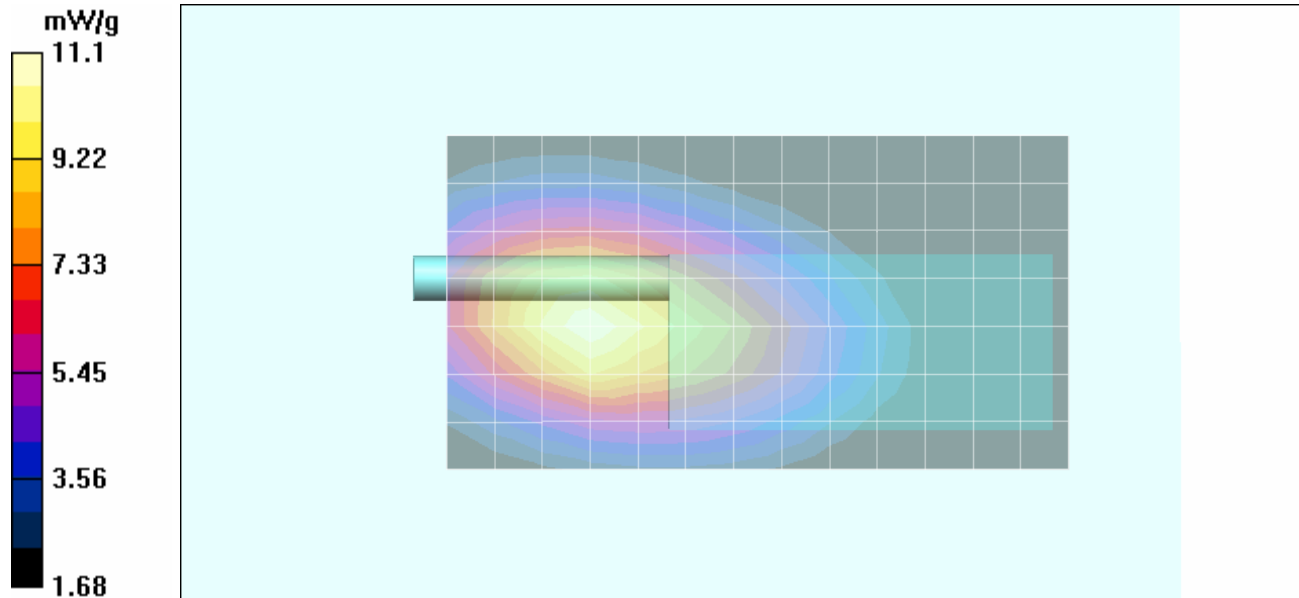
Maximum value of SAR (measured) = 11.1 mW/g

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

Reference Value = 113.8 V/m; Power Drift = -0.759 dB

Peak SAR (extrapolated) = 15.3 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 7.61 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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	<u>Test Report Issue Date</u> August 19, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

Date Tested: 08/04/2010

Body-worn SAR - Ni-MH Battery KNB-29N - Stub Antenna KRA-17M - 470.0 MHz

DUT: Kenwood TK-3312-2; Type: Portable FM UHF PTT Radio Transceiver; Serial: No. 2 (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: 470 MHz; Duty Cycle: 1:1

Medium: MSL450 Medium parameters used: $f = 470 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- 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: $dx=15\text{mm}$, $dy=15\text{mm}$

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

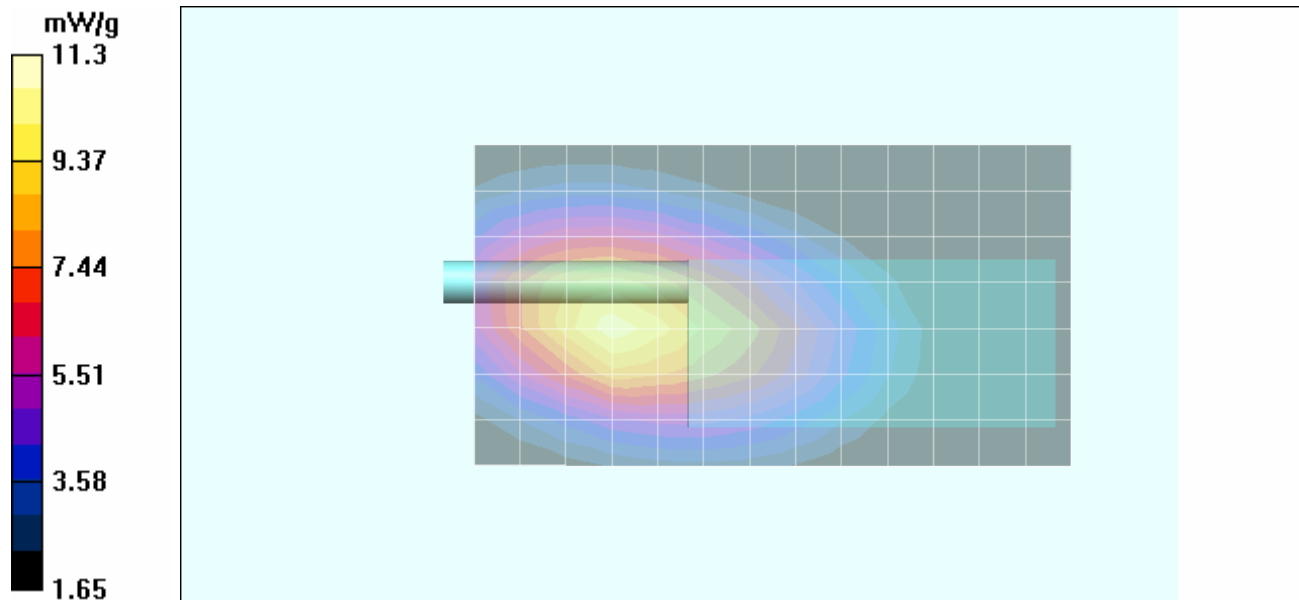
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 115.4 V/m; Power Drift = -0.688 dB

Peak SAR (extrapolated) = 15.9 W/kg

SAR(1 g) = 10.8 mW/g; SAR(10 g) = 7.71 mW/g

Maximum value of SAR (measured) = 11.3 mW/g



Applicant:	Kenwood USA Corporation	FCC ID:	ALH413801	IC:	282D-413801	KENWOOD
DUT Type:	Portable FM UHF PTT Radio Transceiver	Models:	TK-3312-2 (FCC/IC)	TK-3317-2 (FCC)		
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