

Test Report S/N:	102004ALH-F572-S90V
Test Date(s):	November 6, 23, 25, & 27, 2004
Test Type:	FCC/IC SAR Evaluation

APPENDIX A - SAR MEASUREMENT DATA

Applicant:	Kenwood USA Corporation	FCC ID:	ALH37683110	IC ID:	282D-37683110
Model:	TK-2212-1	Portable FM VHF PTT Radio Transceiver		136 - 174 MHz	KENWOOD
2004 Celltech Labs Inc.		This document is not to be reproduced in whole or in part without the written permission of Celltech Labs Inc.			16 of 21

Date Tested: 11/06/04

Face-Held SAR - Long Whip Antenna (P/N: KRA-25)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.19 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Mid Channel/Area Scan (8x27x1):

Measurement grid: dx=15mm, dy=15mm

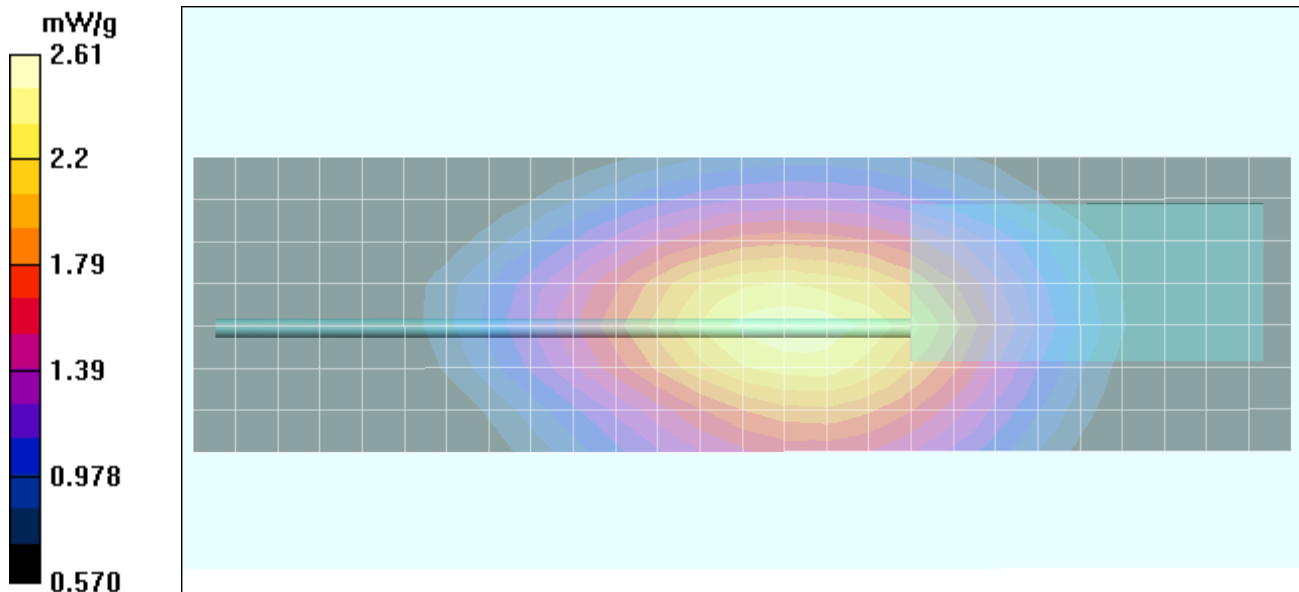
Face-Held - 2.5 cm Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

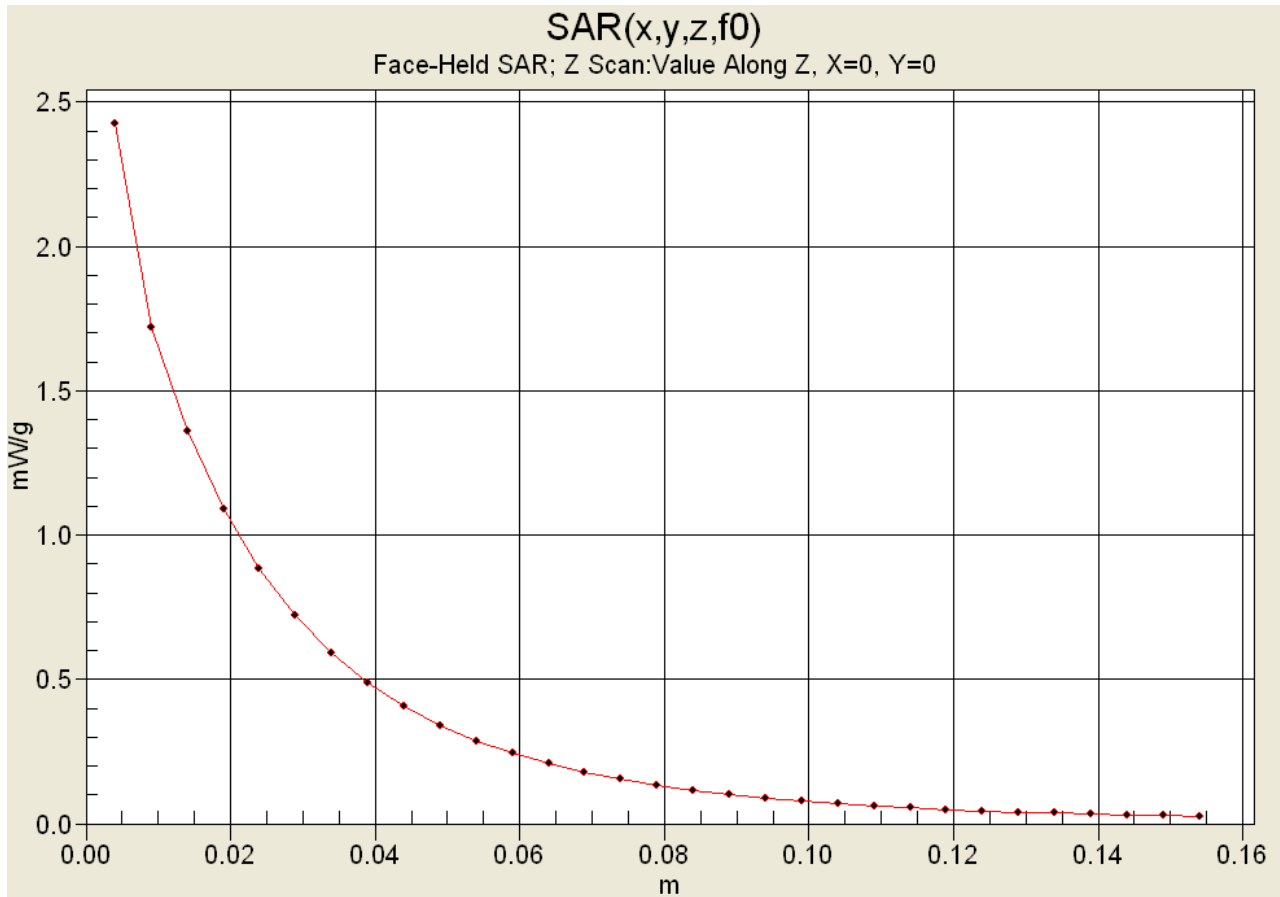
Reference Value = 56.9 V/m; Power Drift = -0.766 dB

Peak SAR (extrapolated) = 3.94 W/kg

SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.89 mW/g



Z-Axis Scan



Date Tested: 11/23/04

Face-Held SAR - Whip Antenna (P/N: KRA-26M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 23.5 °C; Fluid Temp: 21.3 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.22 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.75$ mho/m; $\epsilon_r = 53.7$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Low Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

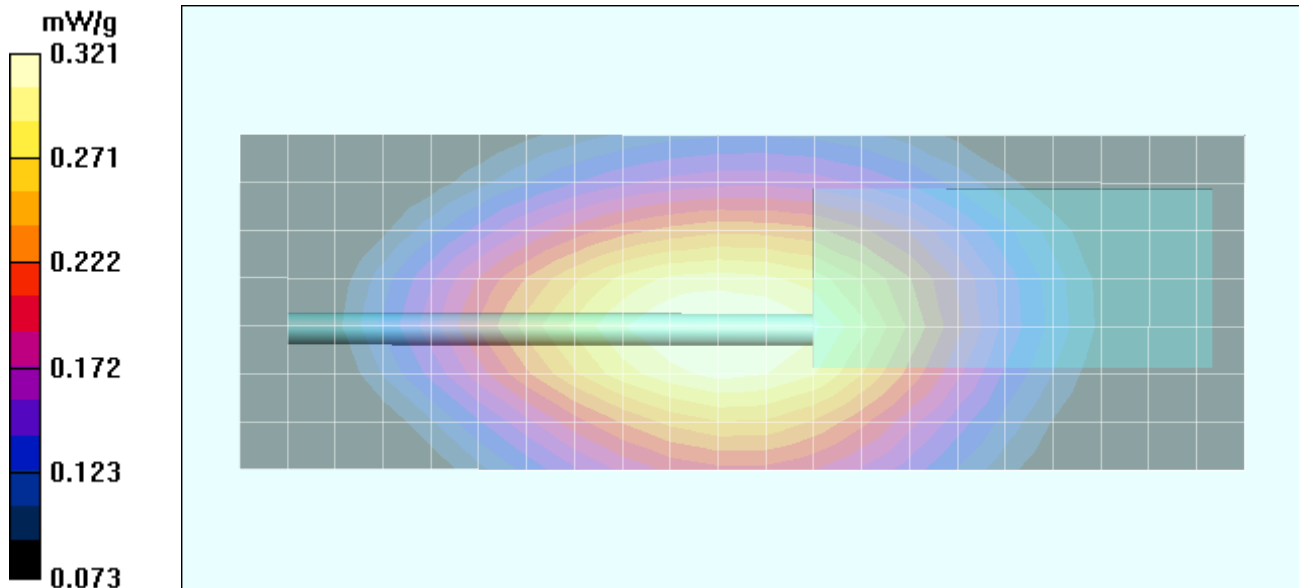
Face-Held - 2.5 cm Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

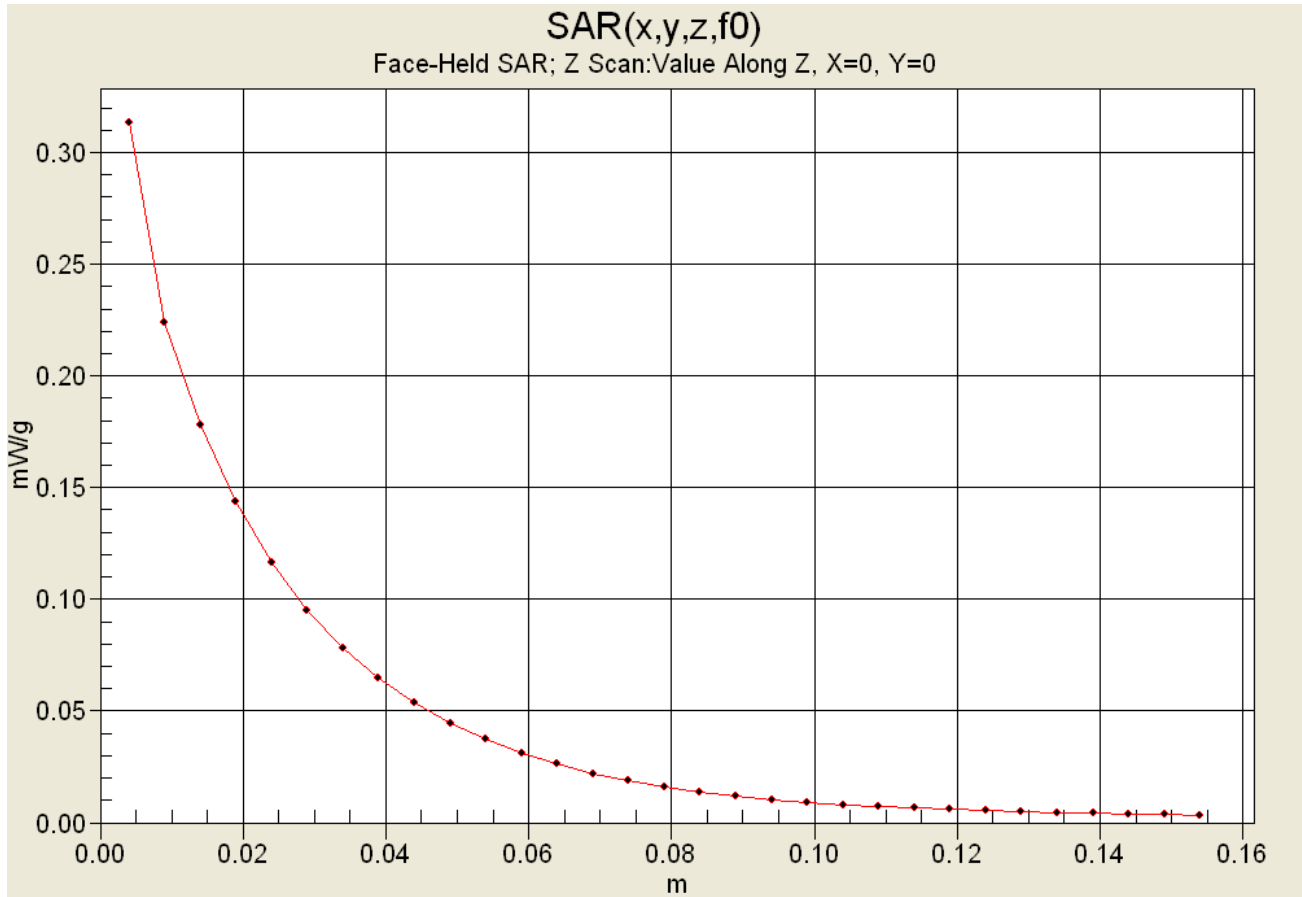
Reference Value = 19.4 V/m; Power Drift = -0.200 dB

Peak SAR (extrapolated) = 0.485 W/kg

SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.233 mW/g



Z-Axis Scan



Date Tested: 11/06/04

Face-Held SAR - Whip Antenna (P/N: KRA-26M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.14 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Mid Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

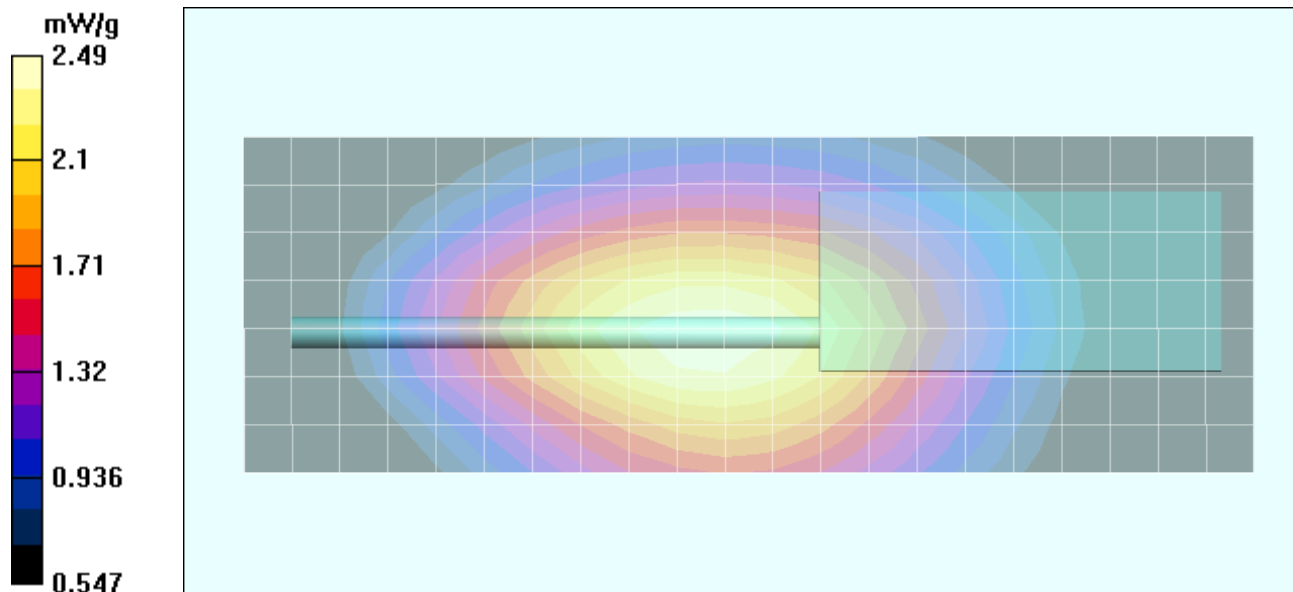
Face-Held - 2.5 cm Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 55.3 V/m; Power Drift = -0.595 dB

Peak SAR (extrapolated) = 3.74 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.8 mW/g



Date Tested: 11/06/04

Face-Held SAR - Whip Antenna (P/N: KRA-26M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.90 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - High Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

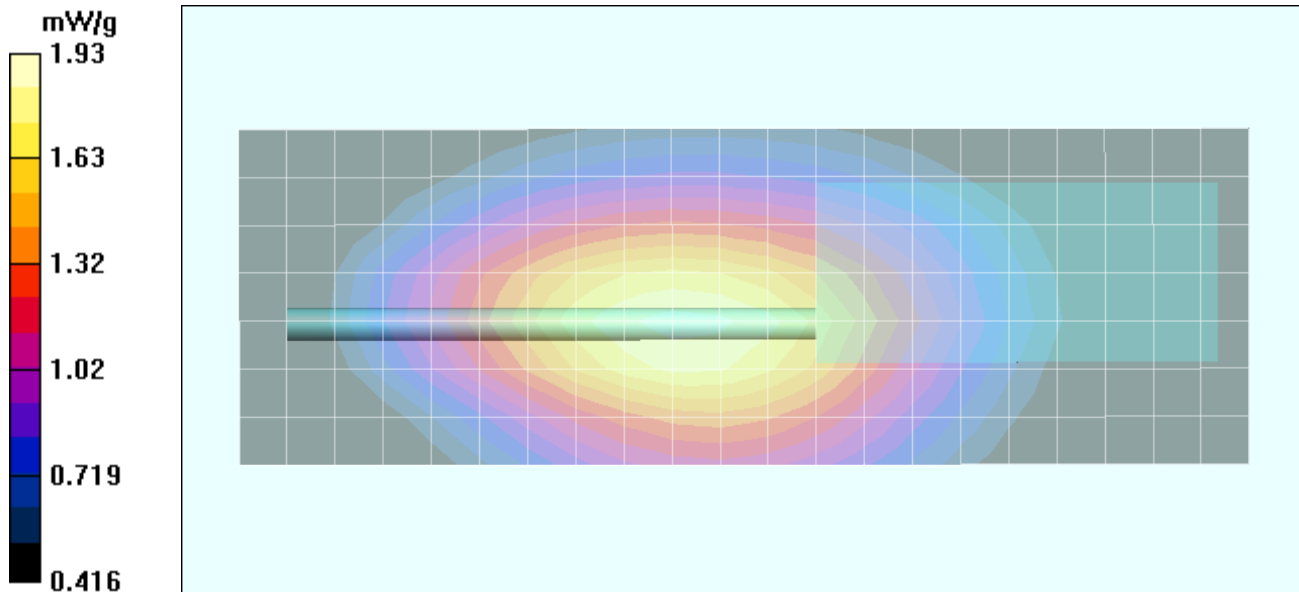
Face-Held - 2.5 cm Separation Distance - High Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 49.8 V/m; Power Drift = -0.853 dB

Peak SAR (extrapolated) = 2.93 W/kg

SAR(1 g) = 1.88 mW/g; SAR(10 g) = 1.4 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-22M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.27 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Low Channel/Area Scan 2 (8x18x1):

Measurement grid: dx=15mm, dy=15mm

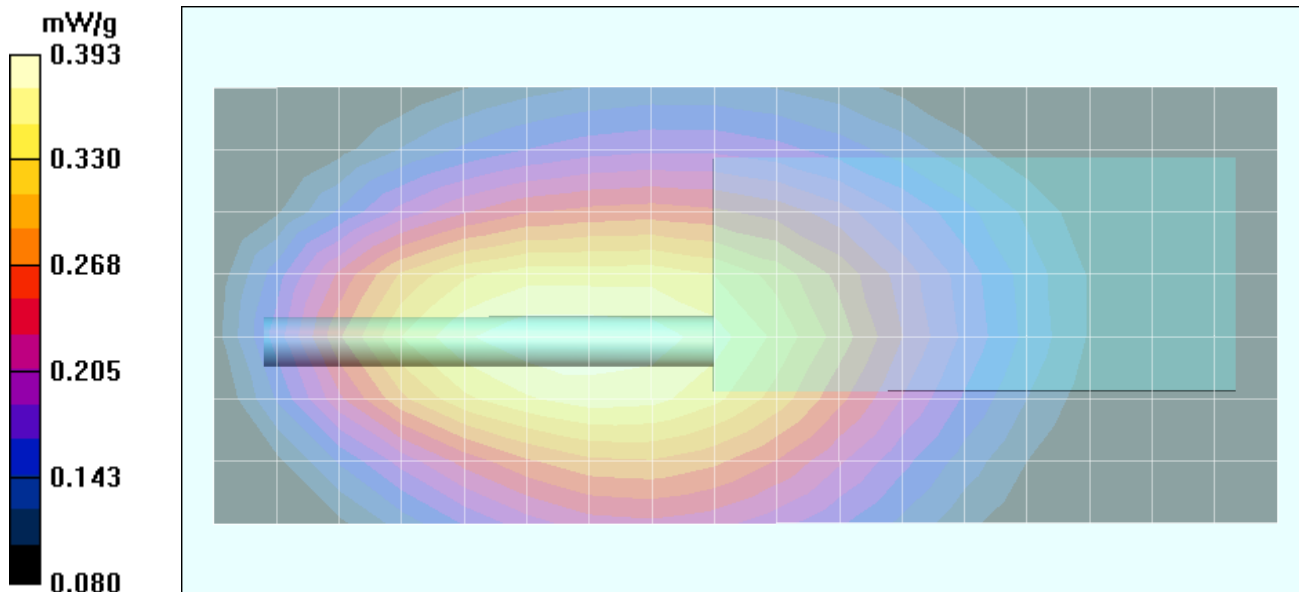
Face-Held - 2.5 cm Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 21.6 V/m; Power Drift = -0.0870 dB

Peak SAR (extrapolated) = 0.634 W/kg

SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.283 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-22M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.19 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Mid Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

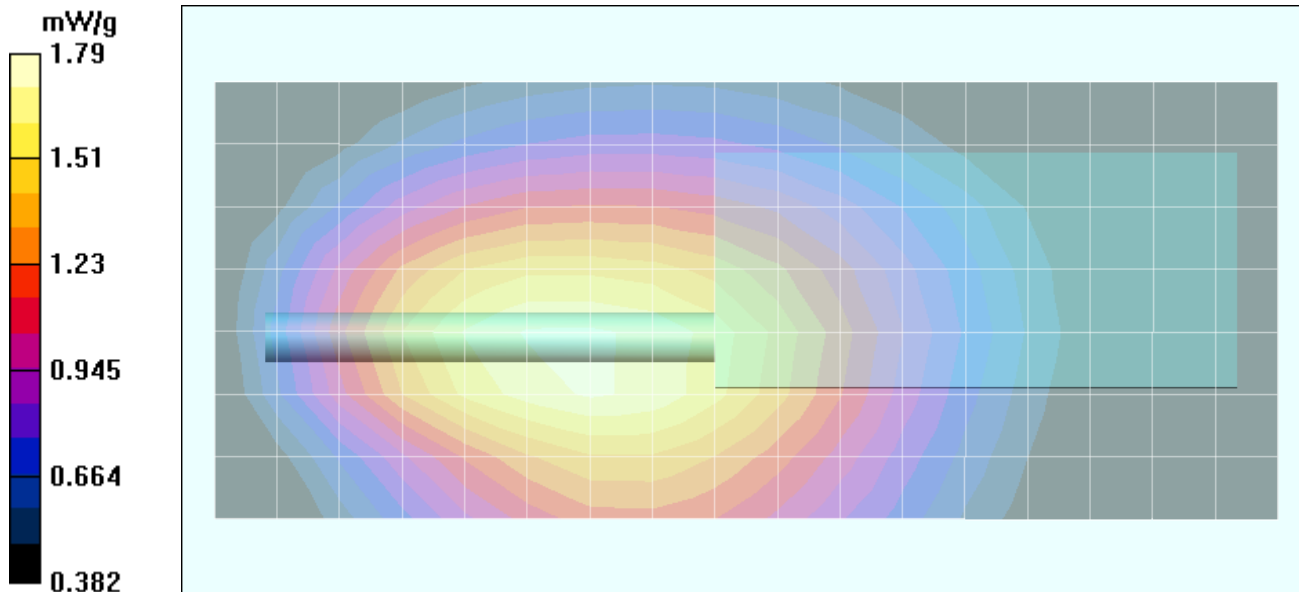
Face-Held - 2.5 cm Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 49.4 V/m; Power Drift = -0.984 dB

Peak SAR (extrapolated) = 2.77 W/kg

SAR(1 g) = 1.74 mW/g; SAR(10 g) = 1.28 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-22M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.99 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: HSL150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - High Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

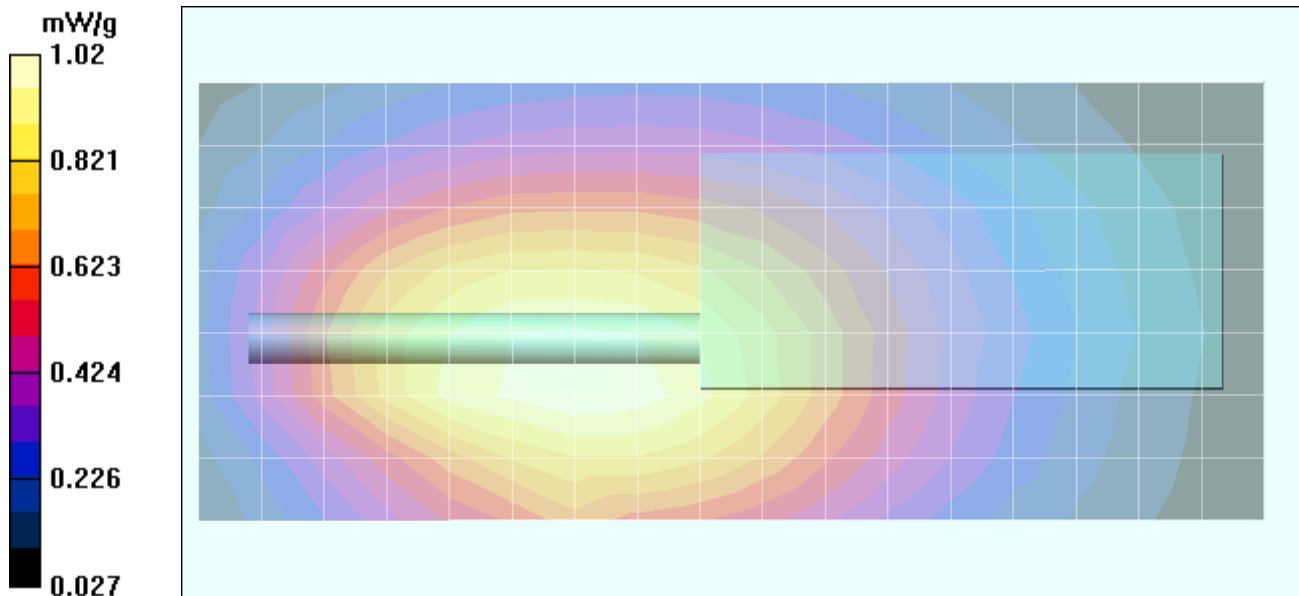
Face-Held - 2.5 cm Separation Distance - High Channel/Zoom Scan 2 (5x5x7)/Cube 0:

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

Reference Value = 38.2 V/m; Power Drift = -1.48 dB

Peak SAR (extrapolated) = 1.5 W/kg

SAR(1 g) = 0.946 mW/g; SAR(10 g) = 0.653 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-16M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.20 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Low Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

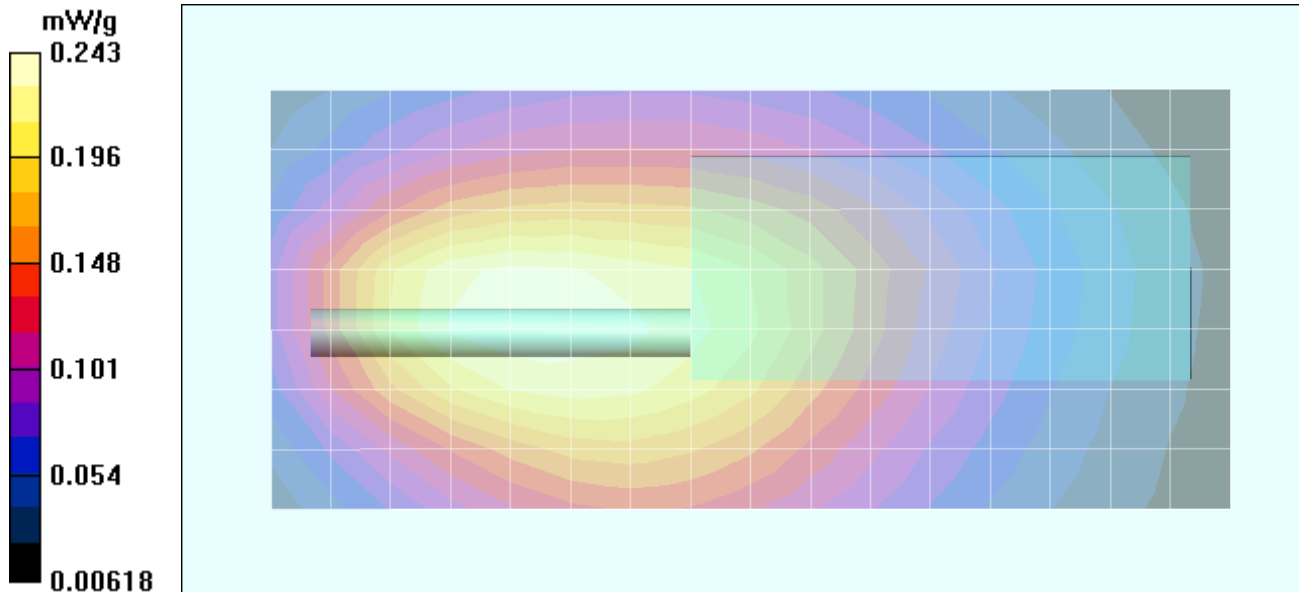
Face-Held - 2.5 cm Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 16.9 V/m; Power Drift = -0.0935 dB

Peak SAR (extrapolated) = 0.397 W/kg

SAR(1 g) = 0.235 mW/g; SAR(10 g) = 0.169 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-16M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.12 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - Mid Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

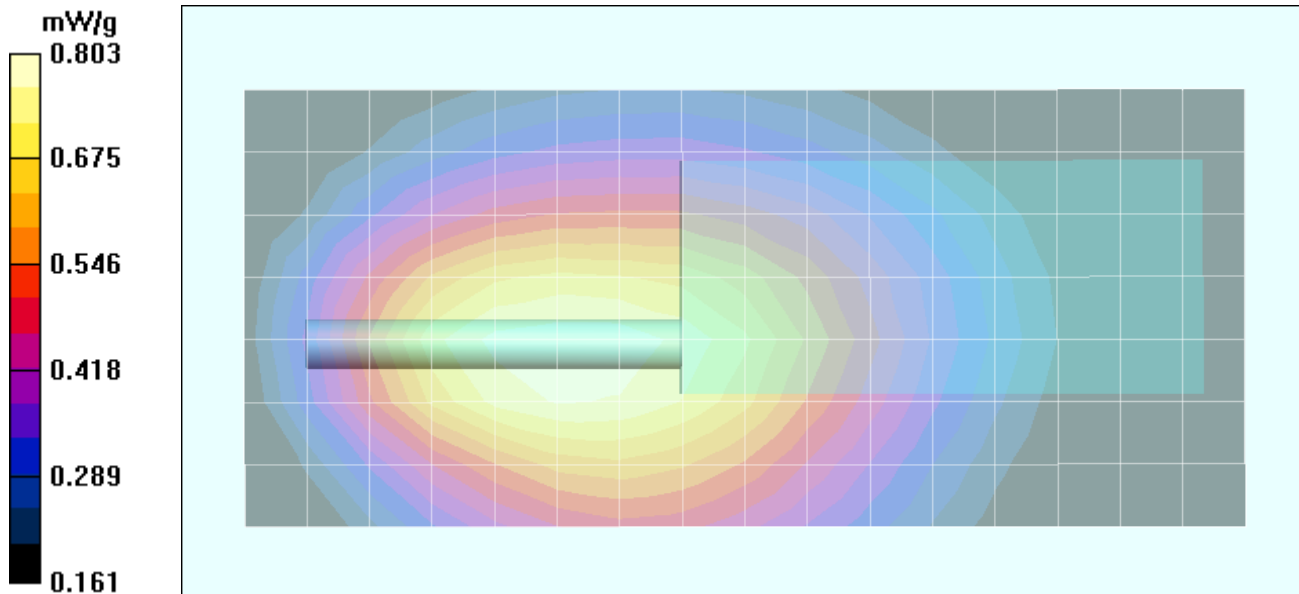
Face-Held - 2.5 cm Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 30.6 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.569 mW/g



Date Tested: 11/06/04

Face-Held SAR - Stubby Antenna (P/N: KRA-16M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Ambient Temp: 22.7 °C; Fluid Temp: 21.7 °C; Barometric Pressure: 102.2 kPa; Humidity: 33%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.93 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.73$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(9.1, 9.1, 9.1); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Face-Held - 2.5 cm Separation Distance - High Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

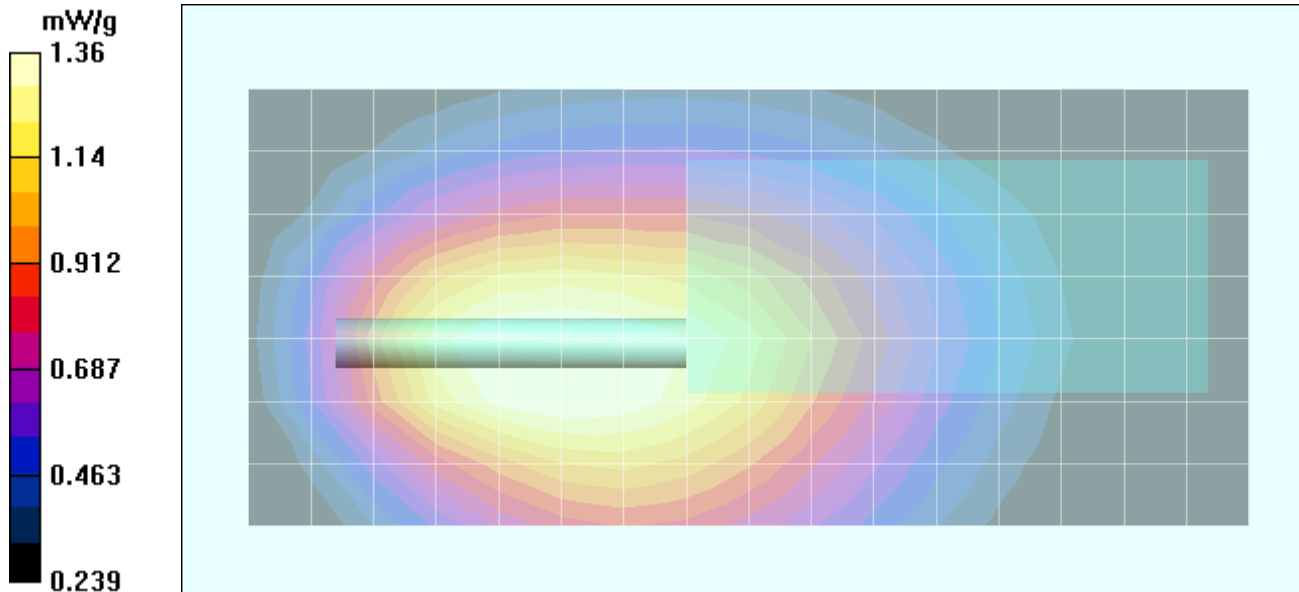
Face-Held - 2.5 cm Separation Distance - High Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 43.7 V/m; Power Drift = -1.17 dB

Peak SAR (extrapolated) = 2.18 W/kg

SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.960 mW/g



Date Tested: 11/25/04

Body-Worn SAR - Long Whip Antenna (P/N: KRA-25)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.5 °C; Barometric Pressure: 101.1 kPa; Humidity: 36%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.10 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.81$ mho/m; $\epsilon_r = 61.6$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x27x1):

Measurement grid: dx=15mm, dy=15mm

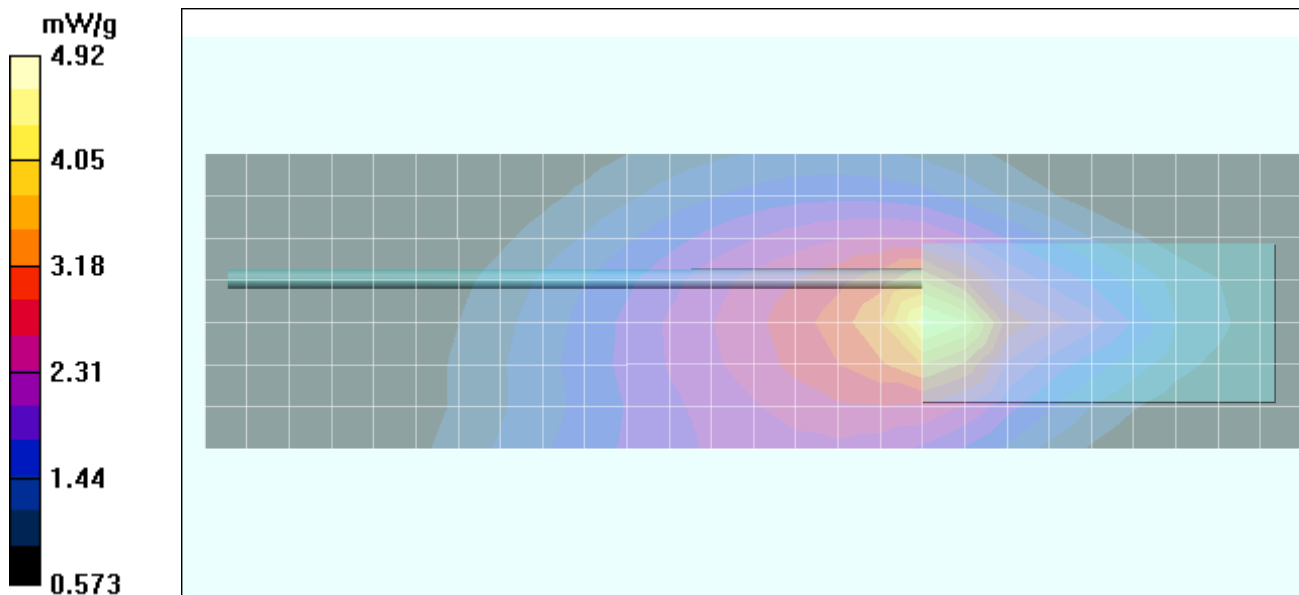
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

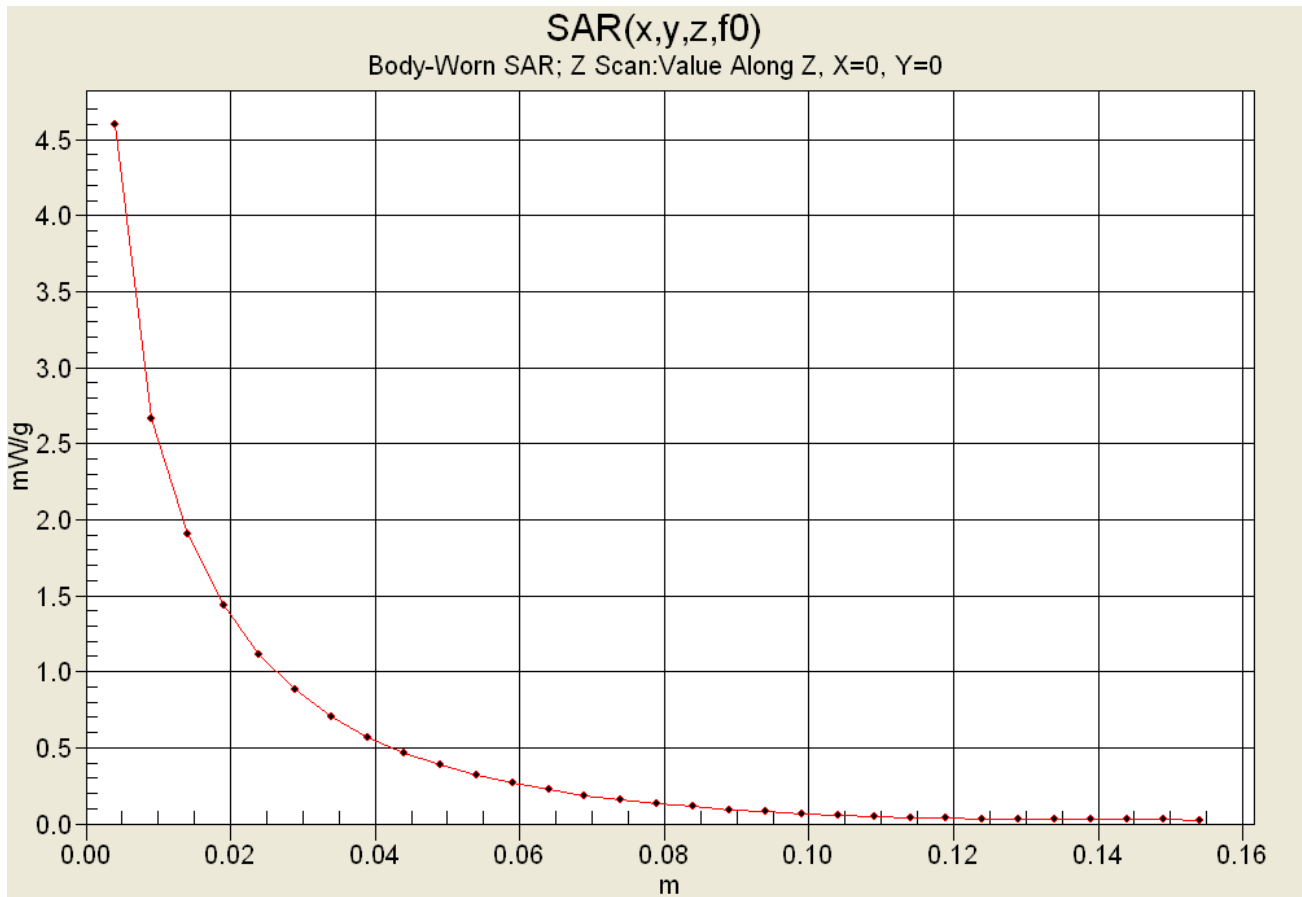
Reference Value = 79.5 V/m; Power Drift = -0.813 dB

Peak SAR (extrapolated) = 12.5 W/kg

SAR(1 g) = 4.99 mW/g; SAR(10 g) = 2.99 mW/g



Z-Axis Scan



Date Tested: 11/25/04

Body-Worn SAR - Long Whip Antenna (P/N: KRA-25)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Boom-Microphone Headset (P/N: KHS-21), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.5 °C; Barometric Pressure: 101.1 kPa; Humidity: 36%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.18 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.81$ mho/m; $\epsilon_r = 61.6$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x27x1):

Measurement grid: dx=15mm, dy=15mm

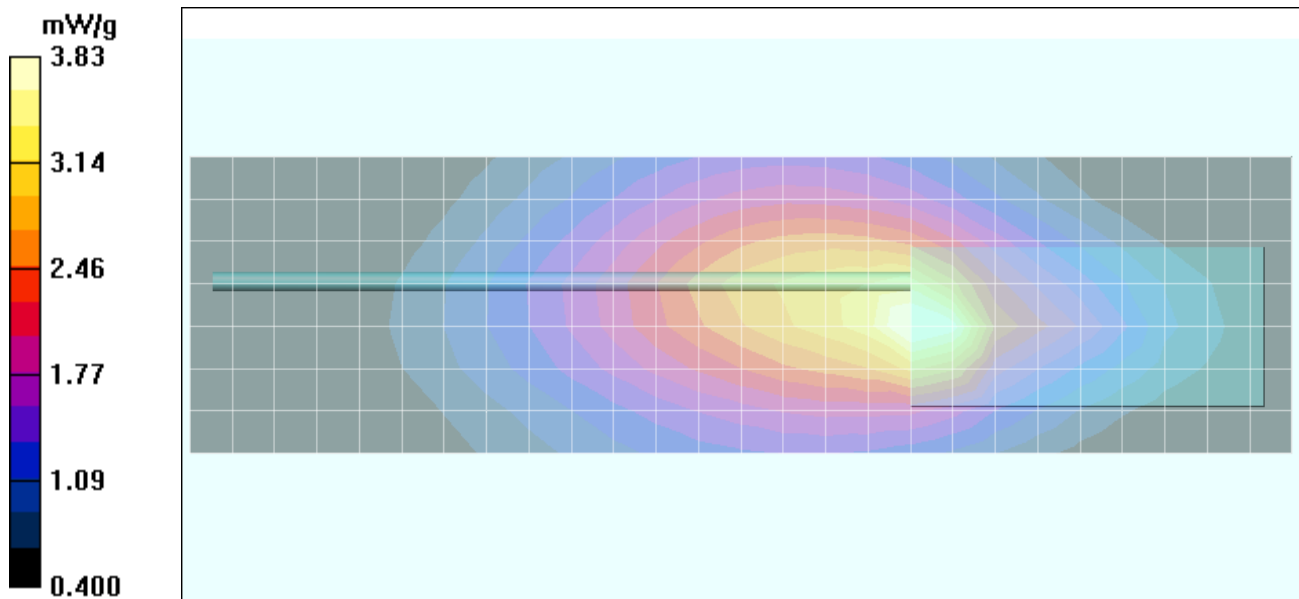
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 67.5 V/m; Power Drift = -0.767 dB

Peak SAR (extrapolated) = 8.96 W/kg

SAR(1 g) = 3.64 mW/g; SAR(10 g) = 2.15 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Whip Antenna (P/N: KRA-26M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.09 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

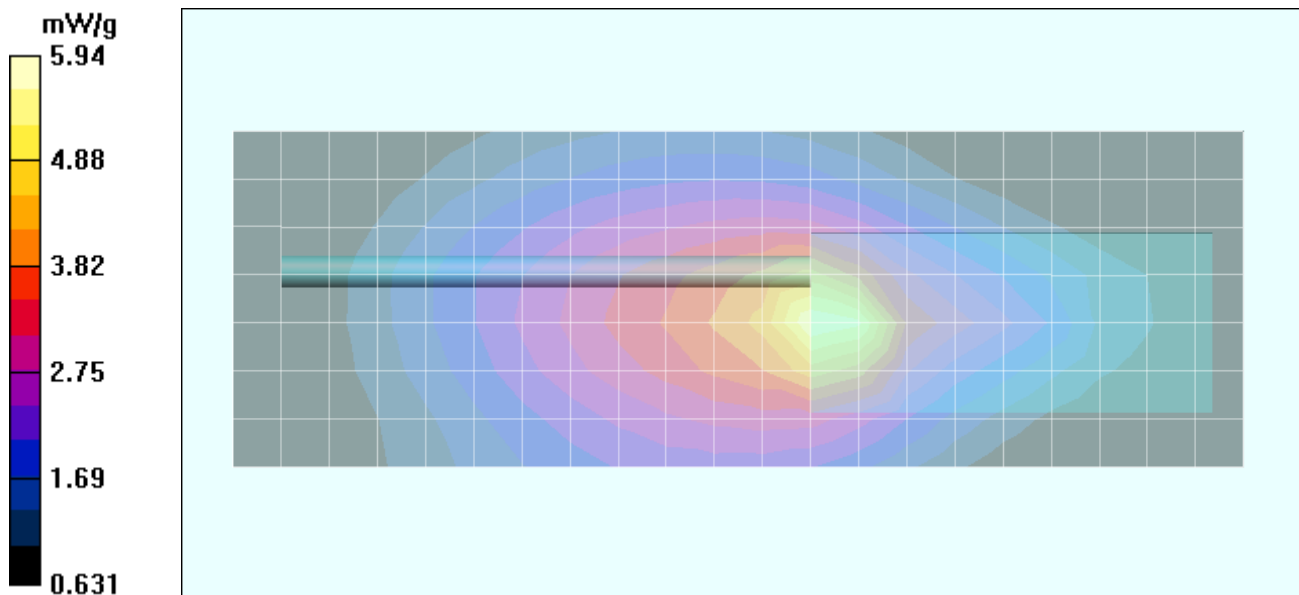
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

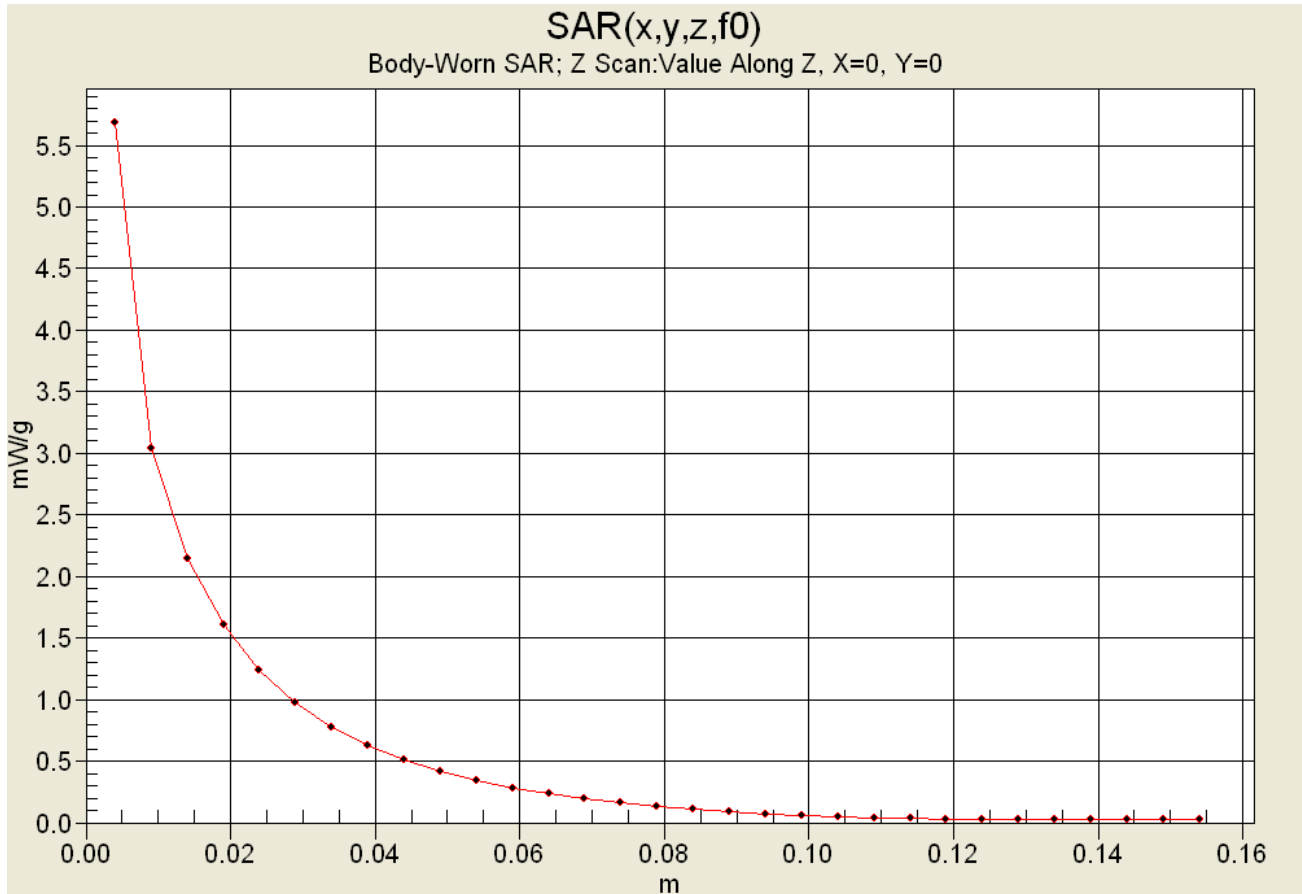
Reference Value = 83.9 V/m; Power Drift = -0.734 dB

Peak SAR (extrapolated) = 13.8 W/kg

SAR(1 g) = 5.64 mW/g; SAR(10 g) = 3.37 mW/g



Z-Axis Scan



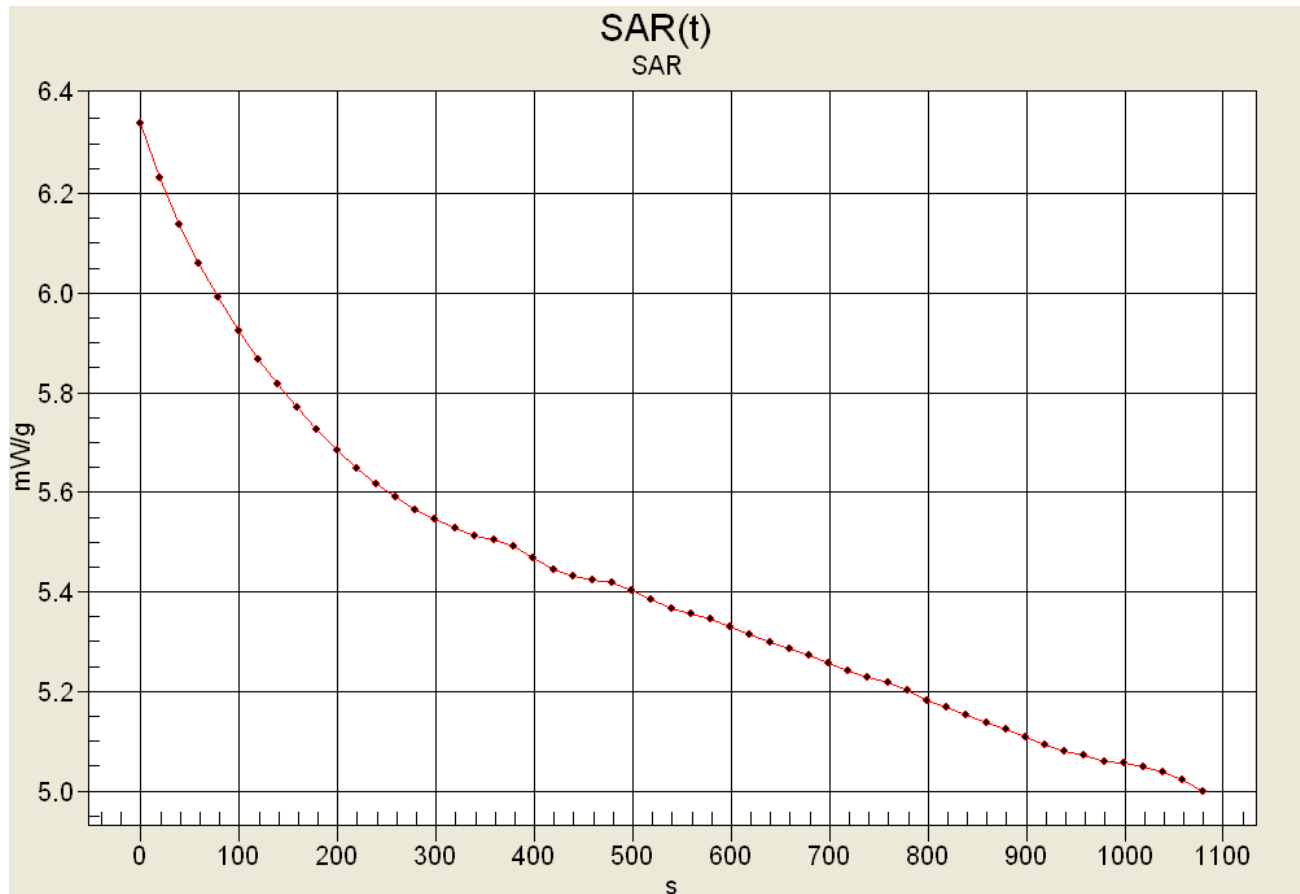
SAR-versus-Time Power Drift Evaluation

DUT With Belt-Clip and Speaker-Microphone

NiMH Battery Pack (P/N: KNB-29N)

Whip Antenna - KRA-26M

Mid Channel - 155.1 MHz



High SAR: 6.34018 mW/g

Low SAR: 4.99963 mW/g (-1.032 dB)

SAR after 340s: 5.51224 mW/g (-0.6077 dB)

(340s = Zoom Scan Duration)

(1080s = Area Scan Duration)

Date Tested: 11/27/04

Body-Worn SAR - Whip Antenna (P/N: KRA-26M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Boom-Microphone Headset (P/N: KHS-21), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.14 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

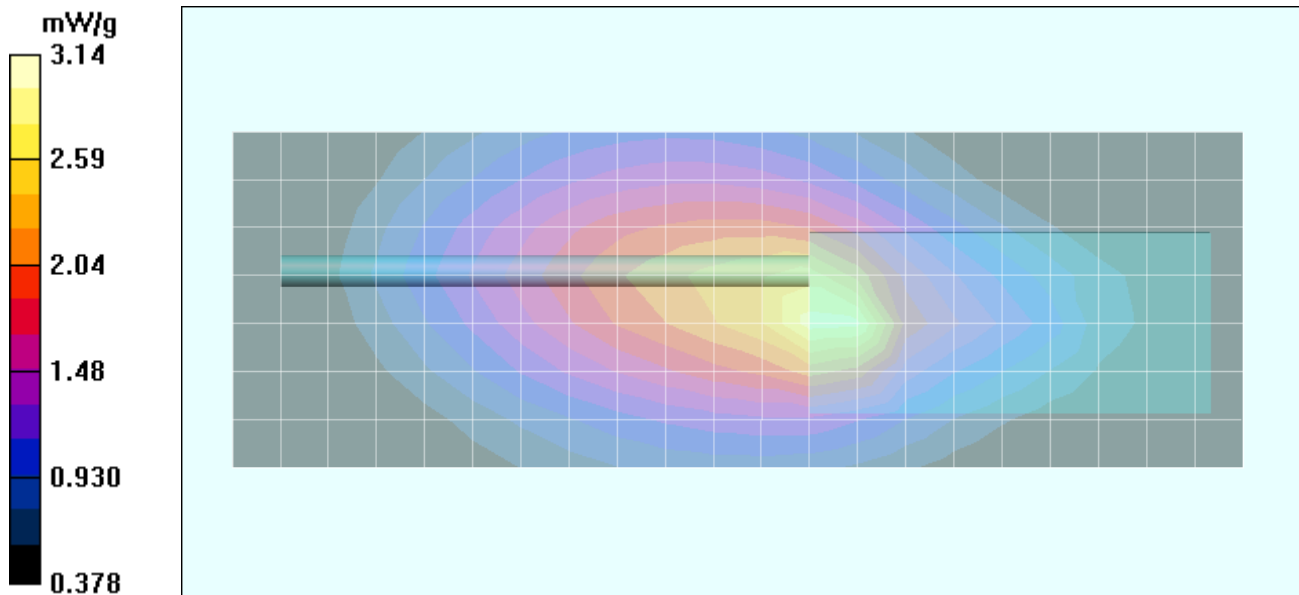
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 60.6 V/m; Power Drift = -0.478 dB

Peak SAR (extrapolated) = 6.74 W/kg

SAR(1 g) = 3.01 mW/g; SAR(10 g) = 1.88 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Whip Antenna (P/N: KRA-26M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.24 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

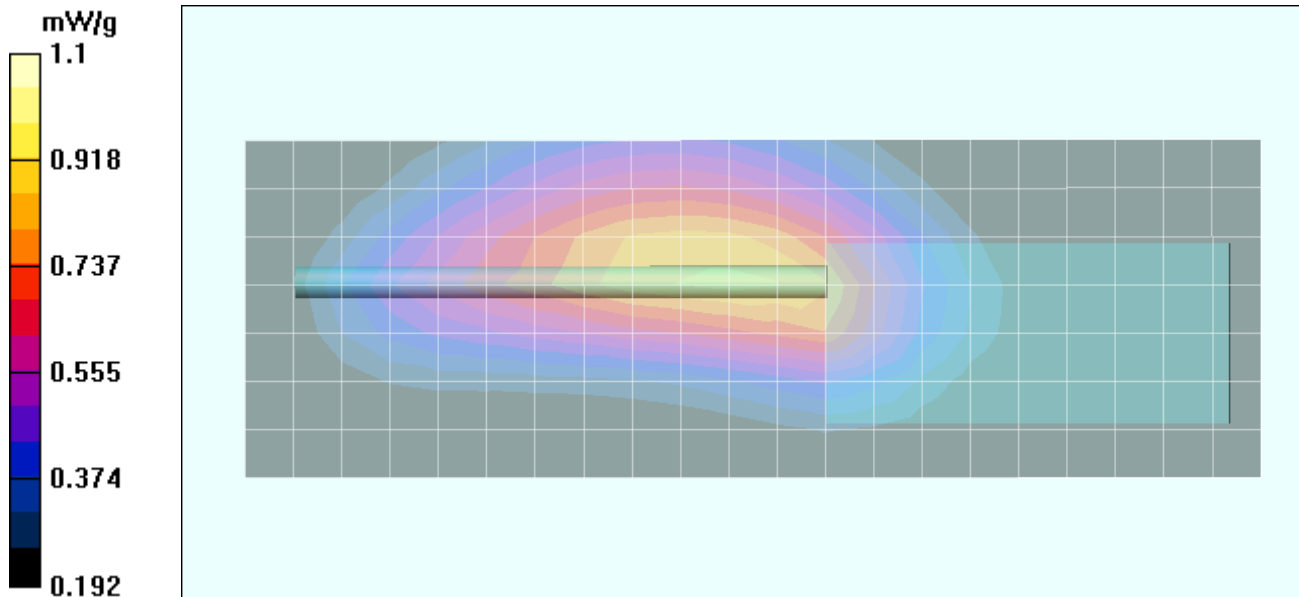
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 36.5 V/m; Power Drift = -1.15 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.751 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Whip Antenna (P/N: KRA-26M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.88 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Area Scan (8x22x1):

Measurement grid: dx=15mm, dy=15mm

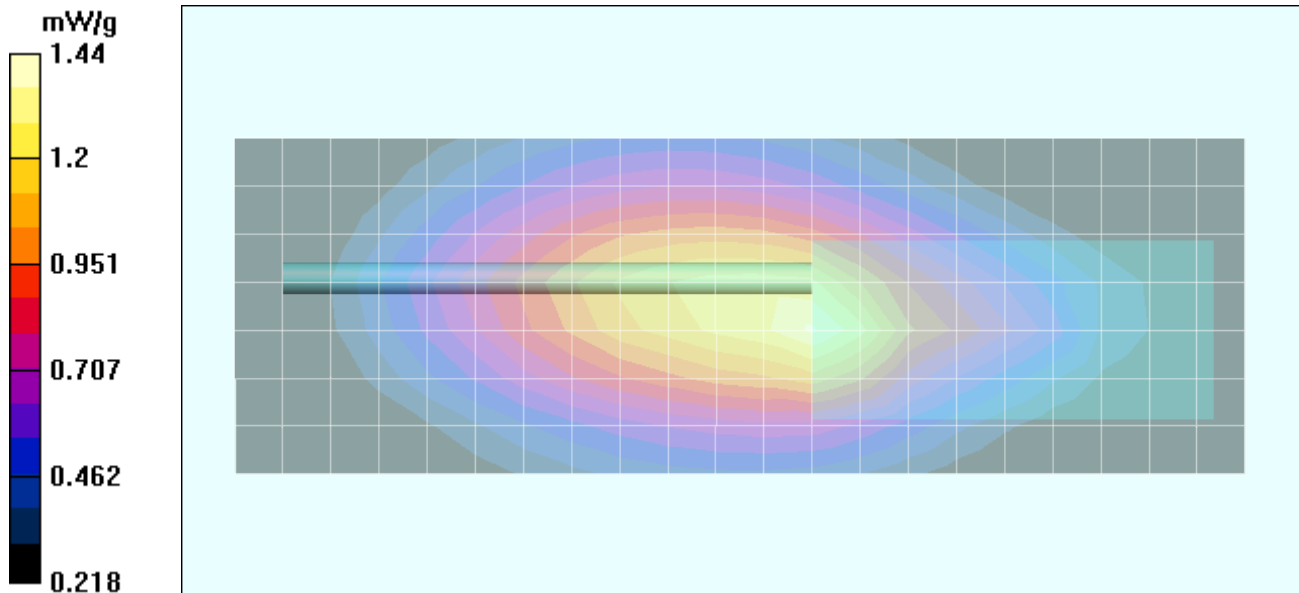
Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 43.2 V/m; Power Drift = -0.591 dB

Peak SAR (extrapolated) = 2.6 W/kg

SAR(1 g) = 1.38 mW/g; SAR(10 g) = 0.935 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-22M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.11 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

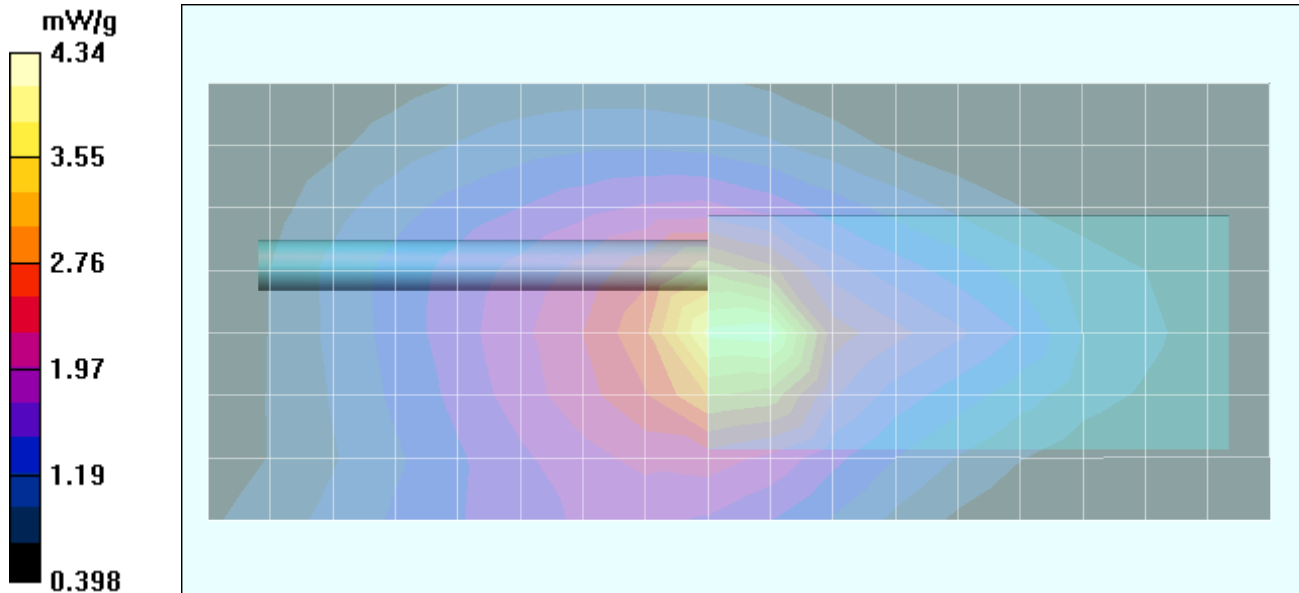
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 70 V/m; Power Drift = -0.907 dB

Peak SAR (extrapolated) = 11 W/kg

SAR(1 g) = 4.17 mW/g; SAR(10 g) = 2.38 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-22M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Boom-Microphone Headset (P/N: KHS-21), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.15 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

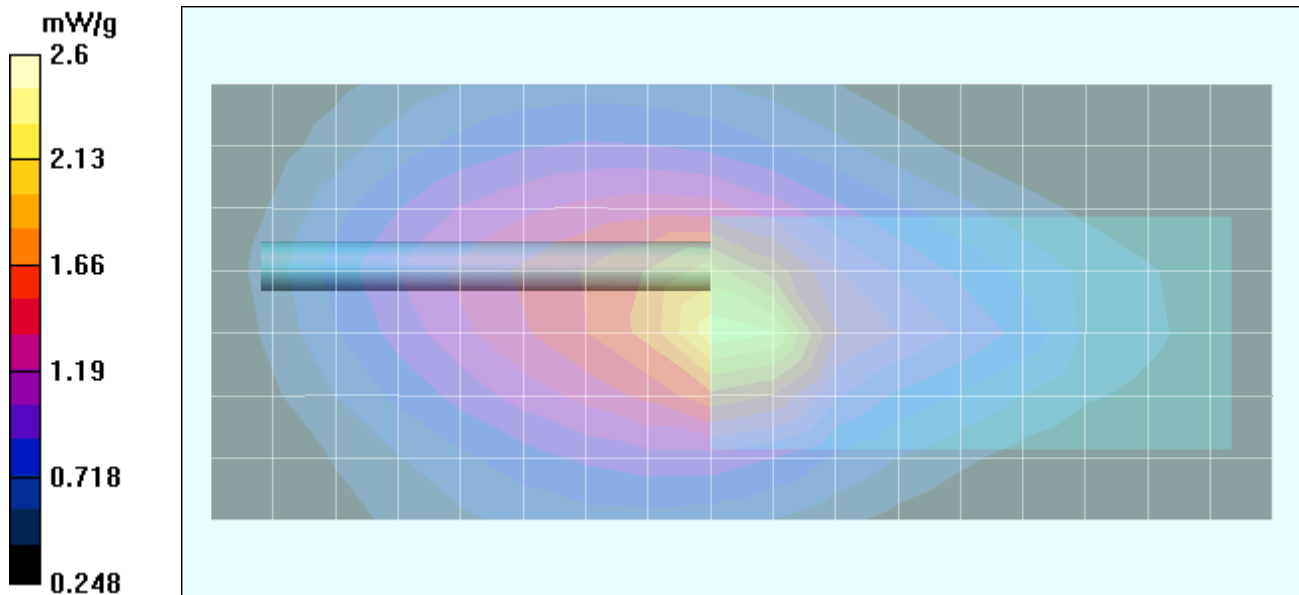
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 54 V/m; Power Drift = -0.499 dB

Peak SAR (extrapolated) = 6.08 W/kg

SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.43 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-22M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.20 dBm (Conducted)

RF Output Power: 37.26 dBm (Conducted) 2nd Maximum

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 39.3 V/m; Power Drift = -1.51 dB

Peak SAR (extrapolated) = 2.2 W/kg

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.687 mW/g

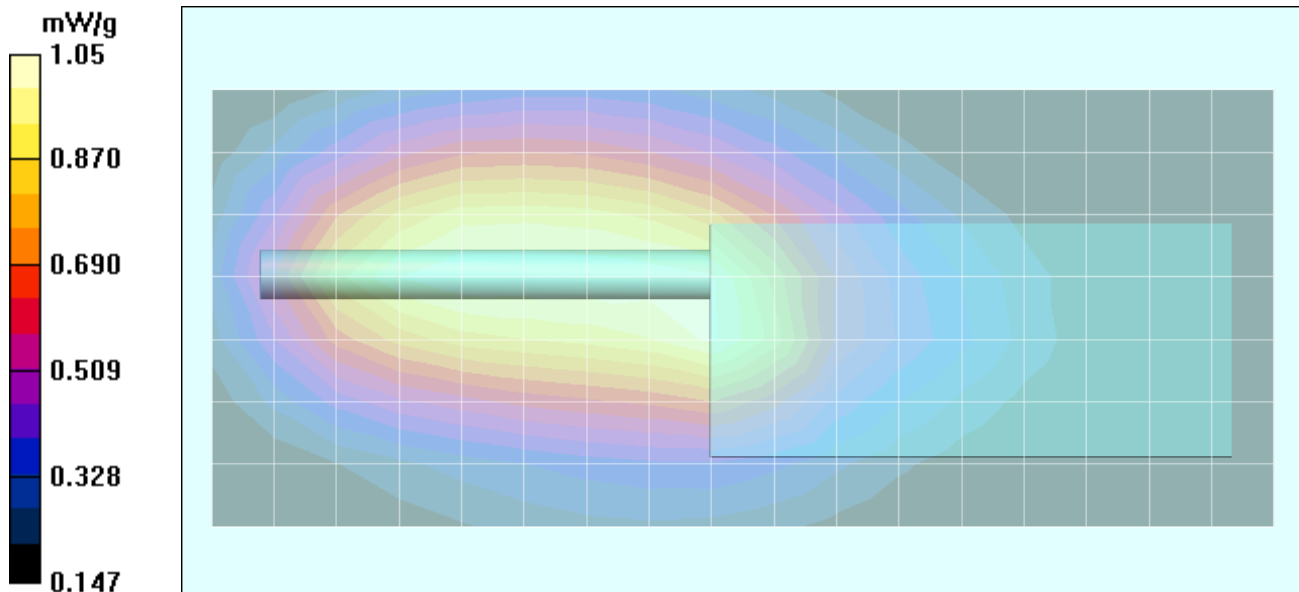
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Zoom Scan 2 (5x5x7)/Cube 0:

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

Reference Value = 43.6 V/m; Power Drift = -1.39 dB

Peak SAR (extrapolated) = 2.31 W/kg

SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.866 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-22M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.91 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Area Scan (8x18x1):

Measurement grid: dx=15mm, dy=15mm

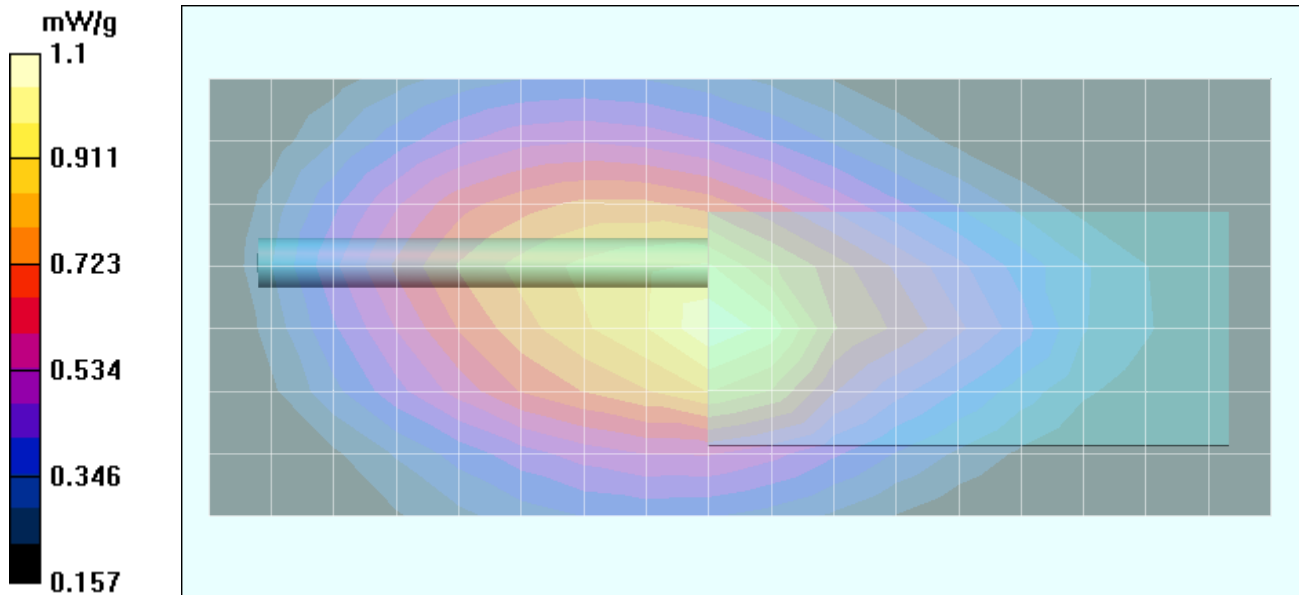
Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 39.1 V/m; Power Drift = -1.14 dB

Peak SAR (extrapolated) = 2.04 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.701 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-16M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.10 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 14/05/2004
- Phantom: Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

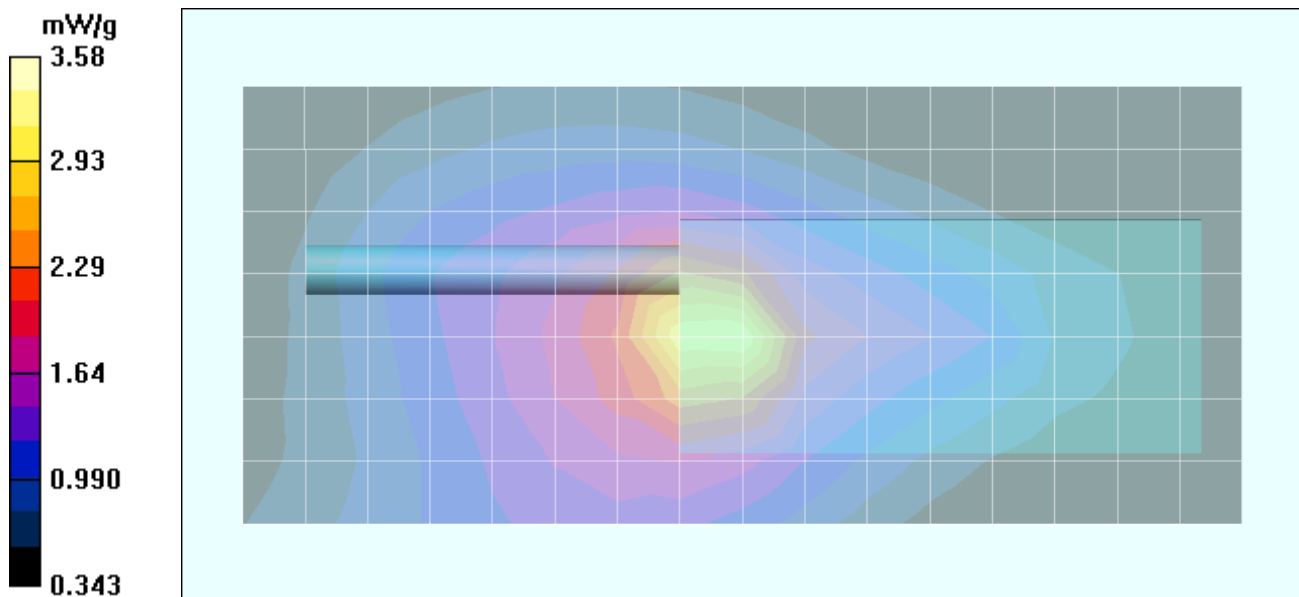
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 62.7 V/m; Power Drift = -0.621 dB

Peak SAR (extrapolated) = 9 W/kg

SAR(1 g) = 3.43 mW/g; SAR(10 g) = 1.97 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-16M)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Boom-Microphone Headset (P/N: KHS-21), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 155.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.16 dBm (Conducted)

RF Output Power: 37.12 dBm (Conducted) 2nd Maximum

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 35.1 V/m; Power Drift = -0.725 dB

Peak SAR (extrapolated) = 2.38 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.696 mW/g

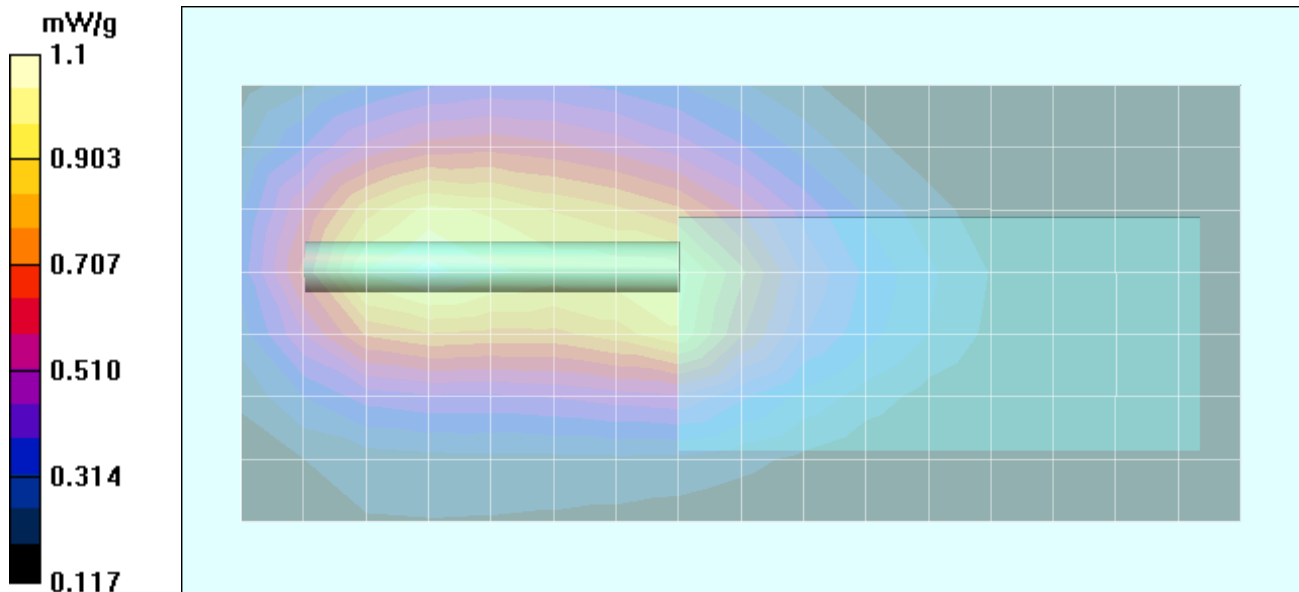
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Mid Channel/Zoom Scan 2 (5x5x7)/Cube 0:

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

Reference Value = 37.7 V/m; Power Drift = -0.813 dB

Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.717 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-16M3)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 136.1 MHz; Duty Cycle: 1:1

RF Output Power: 37.25 dBm (Conducted)

RF Output Power: 37.24 dBm (Conducted) 2nd Maximum

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 42.4 V/m; Power Drift = 0.754 dB

Peak SAR (extrapolated) = 3.92 W/kg

SAR(1 g) = 1.96 mW/g; SAR(10 g) = 1.31 mW/g

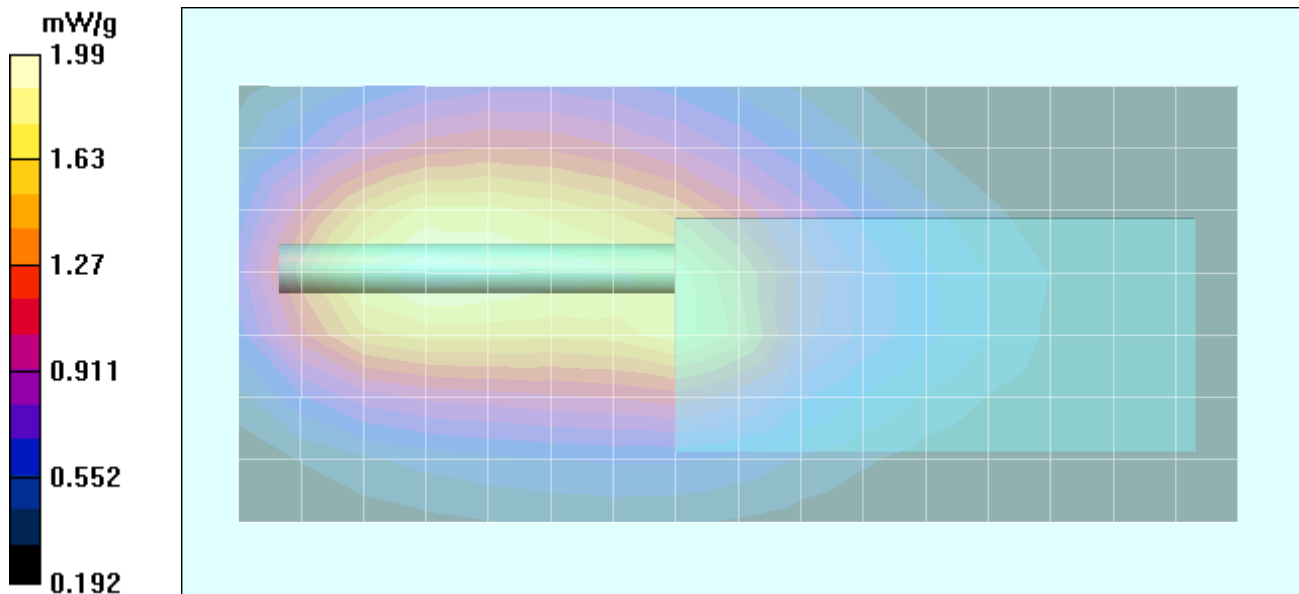
Body-Worn - 1.1 cm Belt-Clip Separation Distance - Low Channel/Zoom Scan 2 (5x5x7)/Cube 0:

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

Reference Value = 40.6 V/m; Power Drift = 1.06 dB

Peak SAR (extrapolated) = 3.34 W/kg

SAR(1 g) = 1.73 mW/g; SAR(10 g) = 1.2 mW/g



Date Tested: 11/27/04

Body-Worn SAR - Stubby Antenna (P/N: KRA-16M2)

DUT: Kenwood Model: TK-2212-1; Type: Portable FM VHF PTT Radio Transceiver; Serial: 00000002

Body-Worn Accessories: Speaker-Microphone (P/N: KMC-17), Belt-Clip (P/N: KBH-10)

Ambient Temp: 23.5 °C; Fluid Temp: 22.1 °C; Barometric Pressure: 102.2 kPa; Humidity: 32%

Communication System: FM VHF

Frequency: 173.9 MHz; Duty Cycle: 1:1

RF Output Power: 36.99 dBm (Conducted)

7.5V 1500mAh NiMH Battery Pack (P/N: KNB-29N)

Medium: M150 ($\sigma = 0.79$ mho/m; $\epsilon_r = 61.4$; $\rho = 1000$ kg/m³)

- Probe: ET3DV6 - SN1387; ConvF(8.7, 8.7, 8.7); Calibrated: 18/03/2004

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn370; Calibrated: 14/05/2004

- Phantom: Planar; Type: Plexiglas; Serial: 161

- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 127

Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Area Scan (8x17x1):

Measurement grid: dx=15mm, dy=15mm

Body-Worn - 1.1 cm Belt-Clip Separation Distance - High Channel/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 42.5 V/m; Power Drift = -1.27 dB

Peak SAR (extrapolated) = 2.31 W/kg

SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.792 mW/g

