# APPENDIX A – SAR TEST PLOTS

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| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 440.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 440.012 MHz; $\sigma$ = 0.874 mho/m; $\varepsilon_r$ = 44.5; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

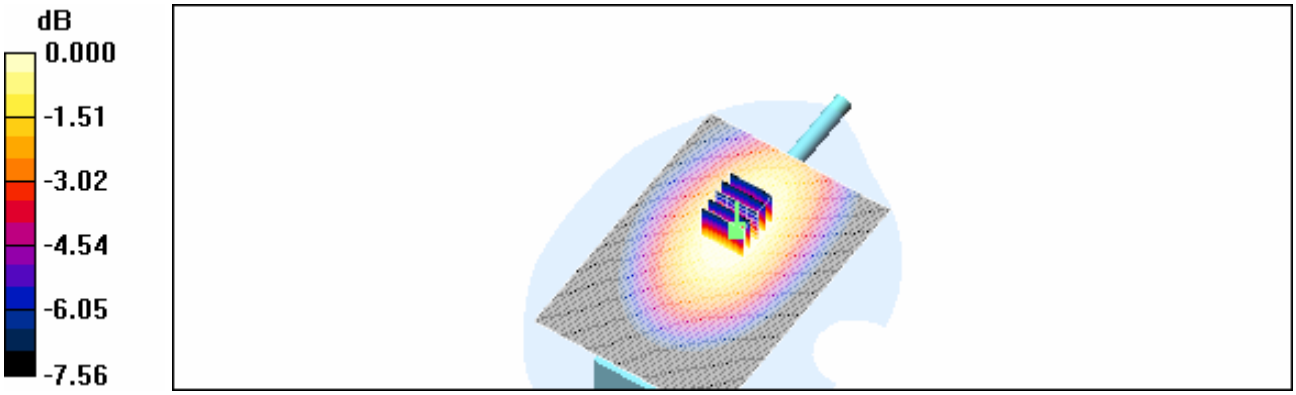
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 1/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 8.02 mW/g

GMRS 450 Face 1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 89.8 V/m; Power Drift = -0.629 dB
Peak SAR (extrapolated) = 9.93 W/kg
SAR(1 g) = 7.21 mW/g; SAR(10 g) = 5.34 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 7.56 mW/g




0 dB = 7.56mW/g

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|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 455.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 455.012 MHz; $\sigma$ = 0.887 mho/m; $\varepsilon_r$ = 44.1; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

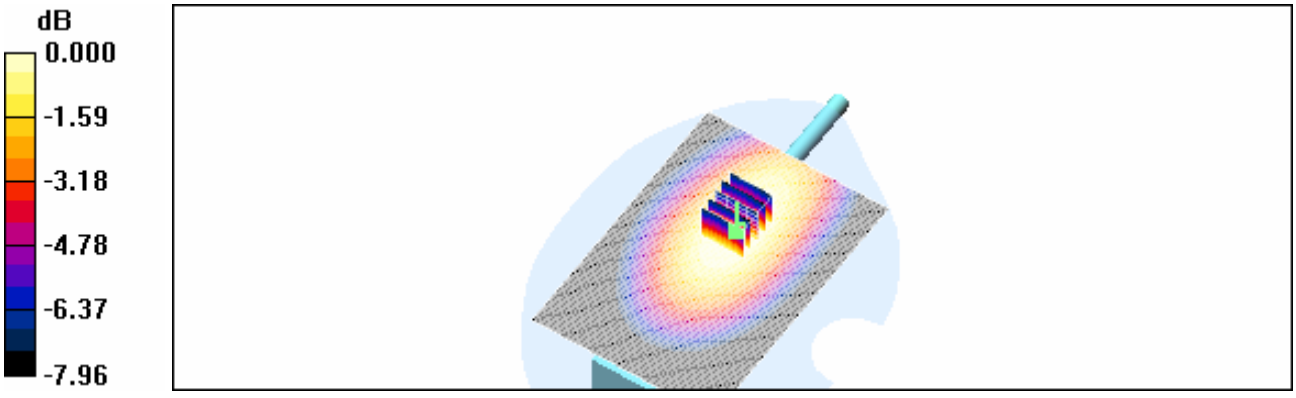
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 2/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 6.40 mW/g

GMRS 450 Face 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 78.0 V/m; Power Drift = -0.559 dB
Peak SAR (extrapolated) = 7.98 W/kg
**SAR(1 g) = 5.73 mW/g; SAR(10 g) = 4.21 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 6.02 mW/g




0 dB = 6.02mW/g

Test Laboratory: HCT CO., LTD.
EUT Type: UHF FM Portable Transceiver
Liquid Temperature: 22.2℃
Test Date: Oct .17, 2007

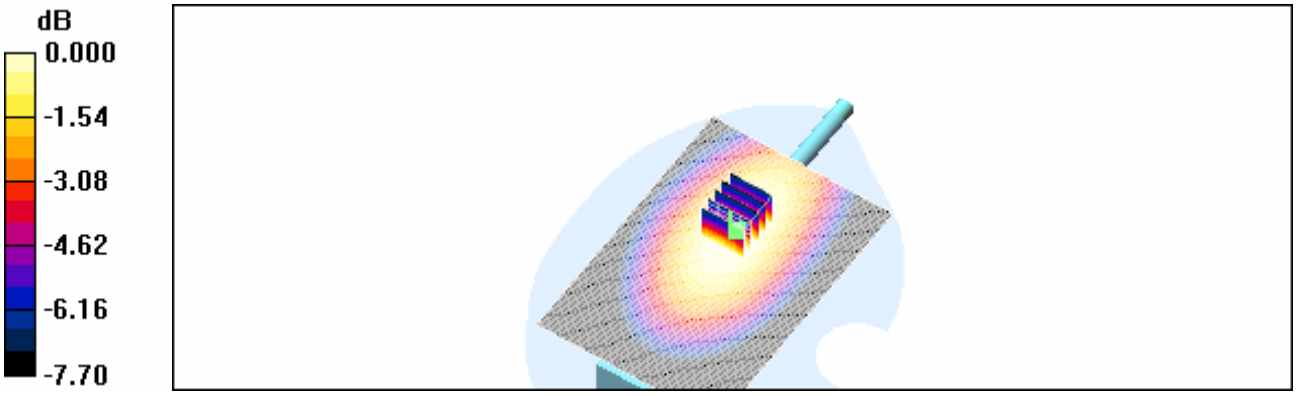
DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 469.988 MHz;Duty Cycle: 1:1
Medium parameters used: f = 470 MHz; $\sigma$ = 0.901 mho/m; $\varepsilon_r$ = 43.9; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 3/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

GMRS 450 Face 3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.4 V/m; Power Drift = -0.409 dB
Peak SAR (extrapolated) = 8.85 W/kg
SAR(1 g) = 6.39 mW/g; SAR(10 g) = 4.72 mW/g
Maximum value of SAR (interpolated) = 7.14 mW/g
Maximum value of SAR (measured) = 6.68 mW/g




0 dB = 6.68mW/g

Test Laboratory: HCT CO., LTD.
EUT Type: UHF FM Portable Transceiver
Liquid Temperature: 22.2℃
Test Date: Oct .17, 2007

DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 440.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 440.012 MHz; $\sigma$ = 0.874 mho/m; $\varepsilon_r$ = 44.5; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

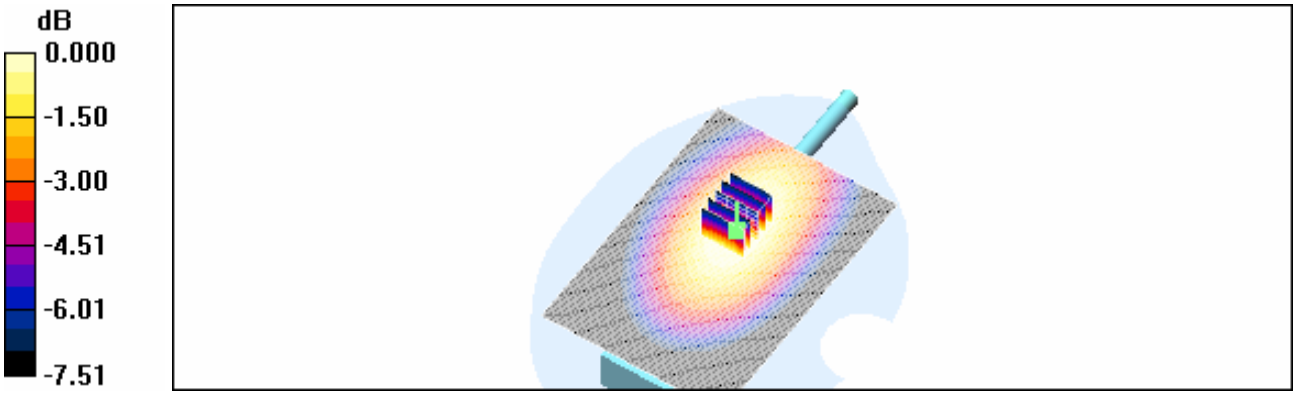
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 4/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 7.64 mW/g

GMRS 450 Face 4/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 87.5 V/m; Power Drift = -0.202 dB
Peak SAR (extrapolated) = 9.59 W/kg
**SAR(1 g) = 6.98 mW/g; SAR(10 g) = 5.19 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 7.31 mW/g




0 dB = 7.31mW/g

Test Laboratory: HCT CO., LTD.
EUT Type: UHF FM Portable Transceiver
Liquid Temperature: 22.2℃
Test Date: Oct .17, 2007

DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 455.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 455.012 MHz; $\sigma$ = 0.887 mho/m; $\varepsilon_r$ = 44.1; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

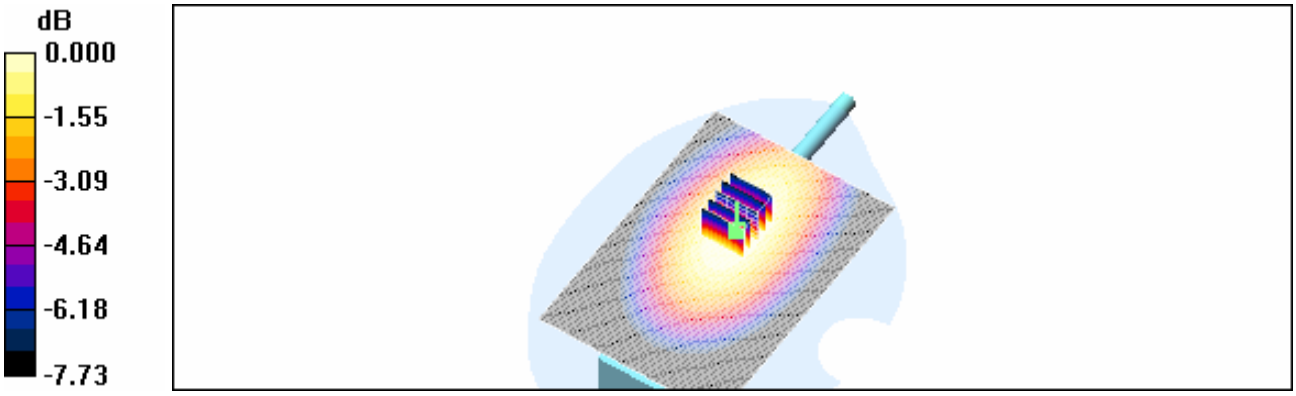
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 5/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 6.31 mW/g

GMRS 450 Face 5/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 78.8 V/m; Power Drift = -0.507 dB
Peak SAR (extrapolated) = 7.90 W/kg
**SAR(1 g) = 5.71 mW/g; SAR(10 g) = 4.21 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 5.99 mW/g




0 dB = 5.99mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

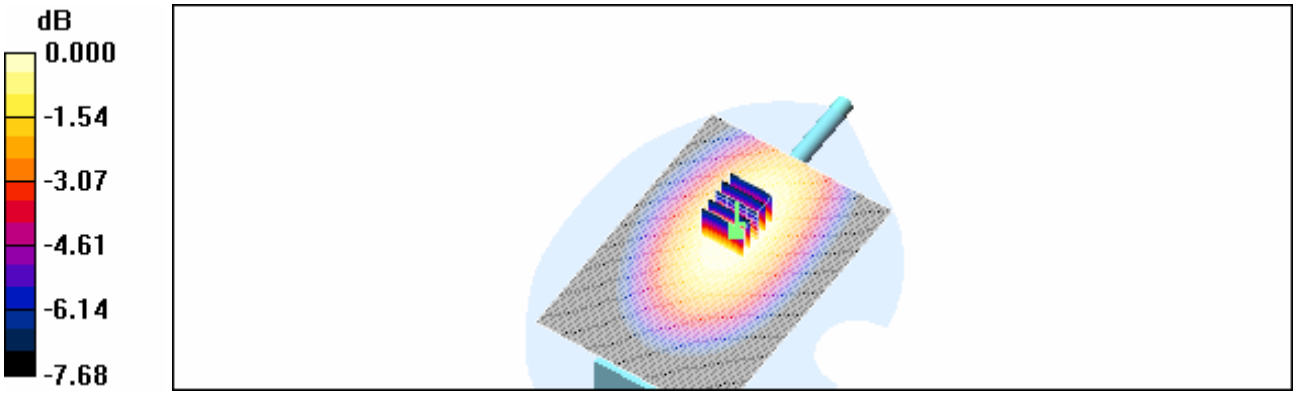
DUT: TR-450H(Face); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 469.988 MHz;Duty Cycle: 1:1
Medium parameters used: f = 470 MHz; $\sigma$ = 0.901 mho/m; $\varepsilon_r$ = 43.9; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.25, 7.25, 7.25); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 Face 6/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 6.67 mW/g

GMRS 450 Face 6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 80.8 V/m; Power Drift = -0.541 dB
Peak SAR (extrapolated) = 8.32 W/kg
SAR(1 g) = 6.01 mW/g; SAR(10 g) = 4.43 mW/g
Maximum value of SAR (measured) = 6.29 mW/g




0 dB = 6.29mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 440.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 440.012 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.6; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

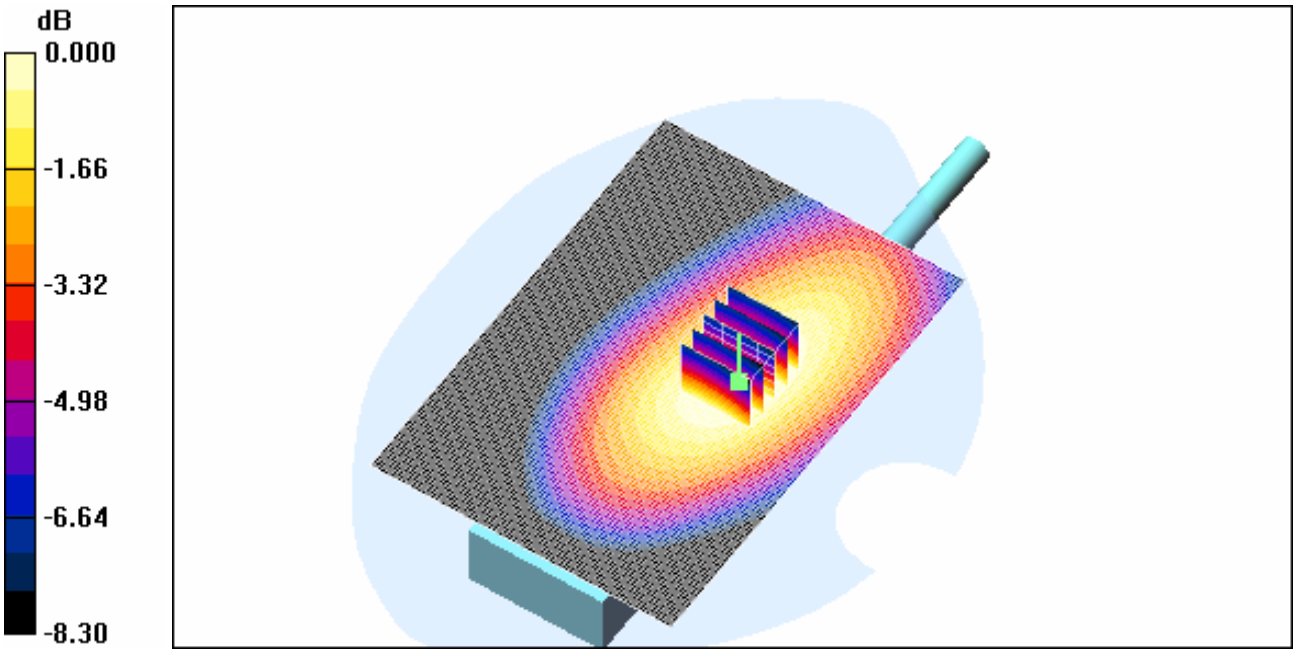
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 1/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 10.2 mW/g

GMRS 450 body 1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.8 V/m; Power Drift = -0.386 dB
Peak SAR (extrapolated) = 13.2 W/kg
**SAR(1 g) = 9.29 mW/g; SAR(10 g) = 6.76 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 9.71 mW/g




0 dB = 9.71mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 455.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 455.012 MHz; $\sigma$ = 0.967 mho/m; $\varepsilon_r$ = 54.4; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

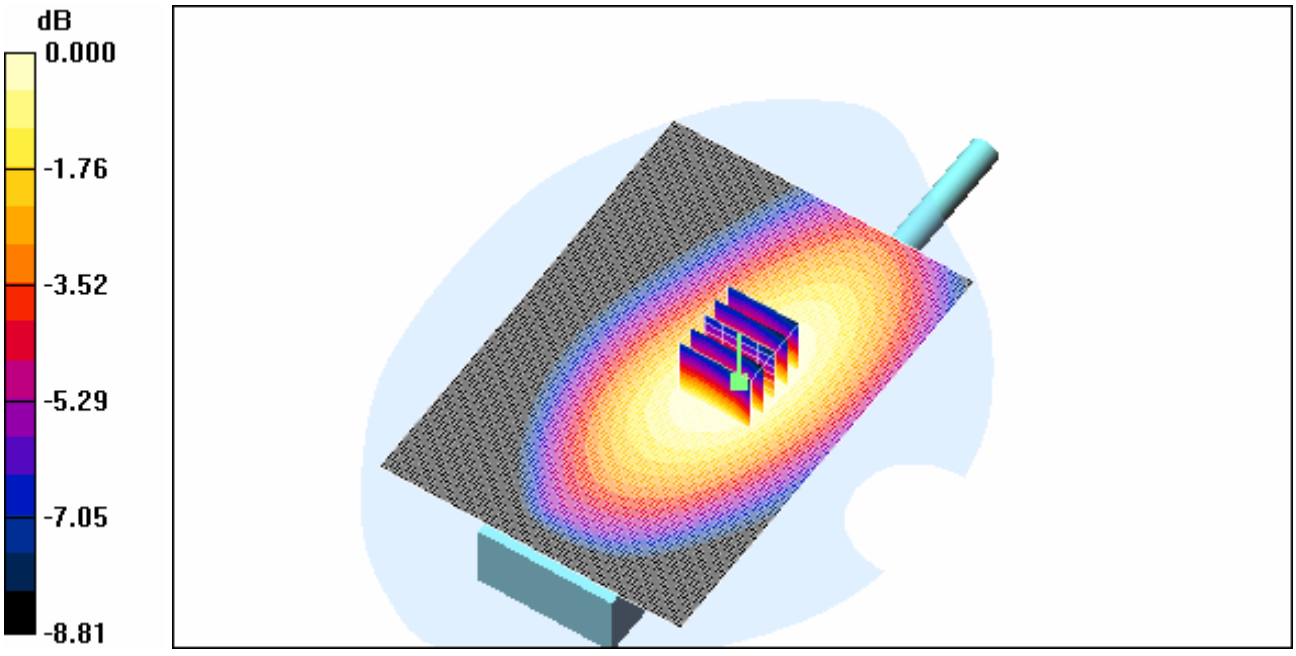
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 2/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 8.24 mW/g

GMRS 450 body 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 90.0 V/m; Power Drift = -0.922 dB
Peak SAR (extrapolated) = 10.4 W/kg
**SAR(1 g) = 7.29 mW/g; SAR(10 g) = 5.28 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 7.64 mW/g




0 dB = 7.64mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

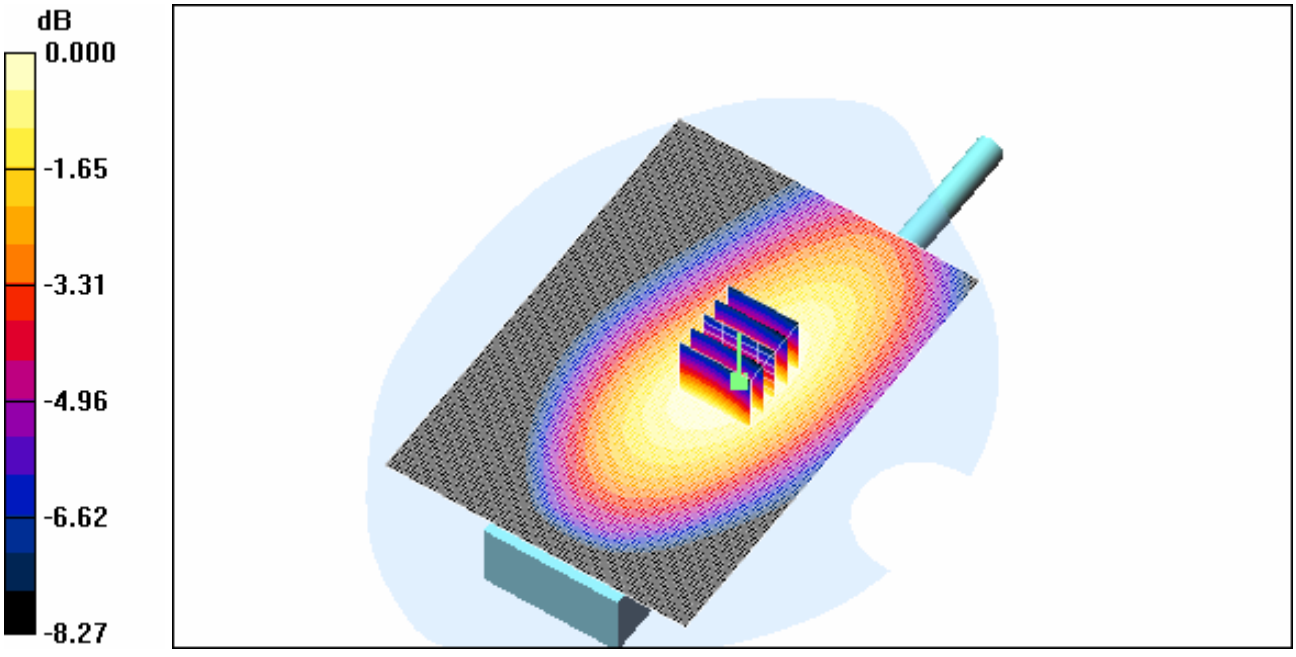
DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 469.988 MHz;Duty Cycle: 1:1
Medium parameters used: f = 470 MHz; $\sigma$ = 0.978 mho/m; $\varepsilon_r$ = 54.1; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 3/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 8.40 mW/g

GMRS 450 body 3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 94.6 V/m; Power Drift = -0.515 dB
Peak SAR (extrapolated) = 10.9 W/kg
SAR(1 g) = 7.7 mW/g; SAR(10 g) = 5.62 mW/g
Maximum value of SAR (measured) = 8.05 mW/g




0 dB = 8.05mW/g

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|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 440.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 440.012 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.6; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

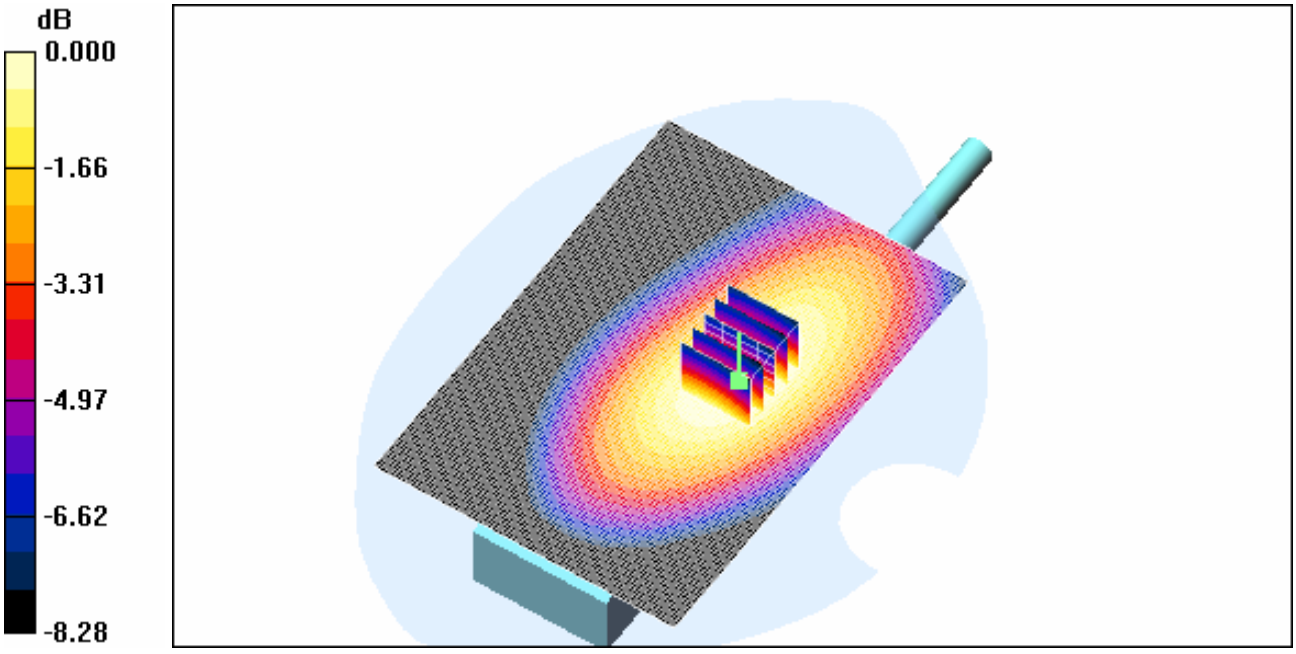
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 4/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 10.9 mW/g

GMRS 450 body 4/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.4 V/m; Power Drift = -0.333 dB
Peak SAR (extrapolated) = 14.0 W/kg
**SAR(1 g) = 9.85 mW/g; SAR(10 g) = 7.16 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 10.3 mW/g




0 dB = 10.3mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 455.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 455.012 MHz; $\sigma$ = 0.967 mho/m; $\varepsilon_r$ = 54.4; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

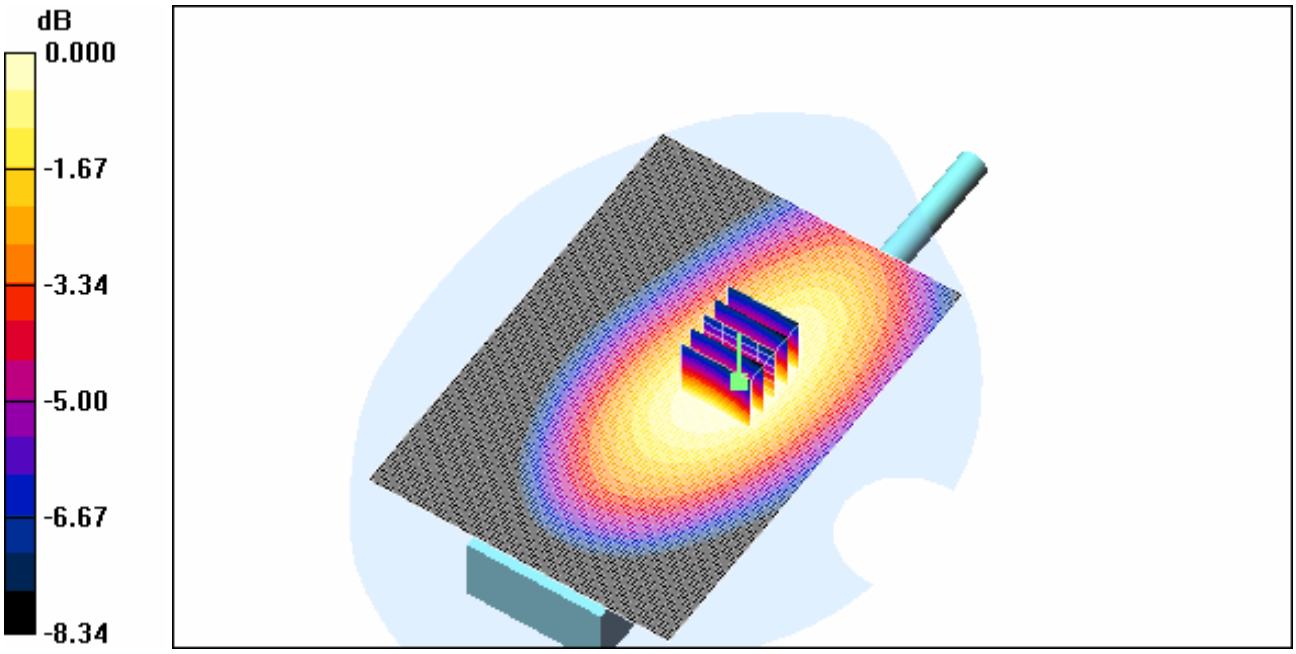
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 5/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 9.44 mW/g

GMRS 450 body 5/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.5 V/m; Power Drift = -0.432 dB
Peak SAR (extrapolated) = 12.3 W/kg
**SAR(1 g) = 8.61 mW/g; SAR(10 g) = 6.25 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 9.00 mW/g




0 dB = 9.00mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

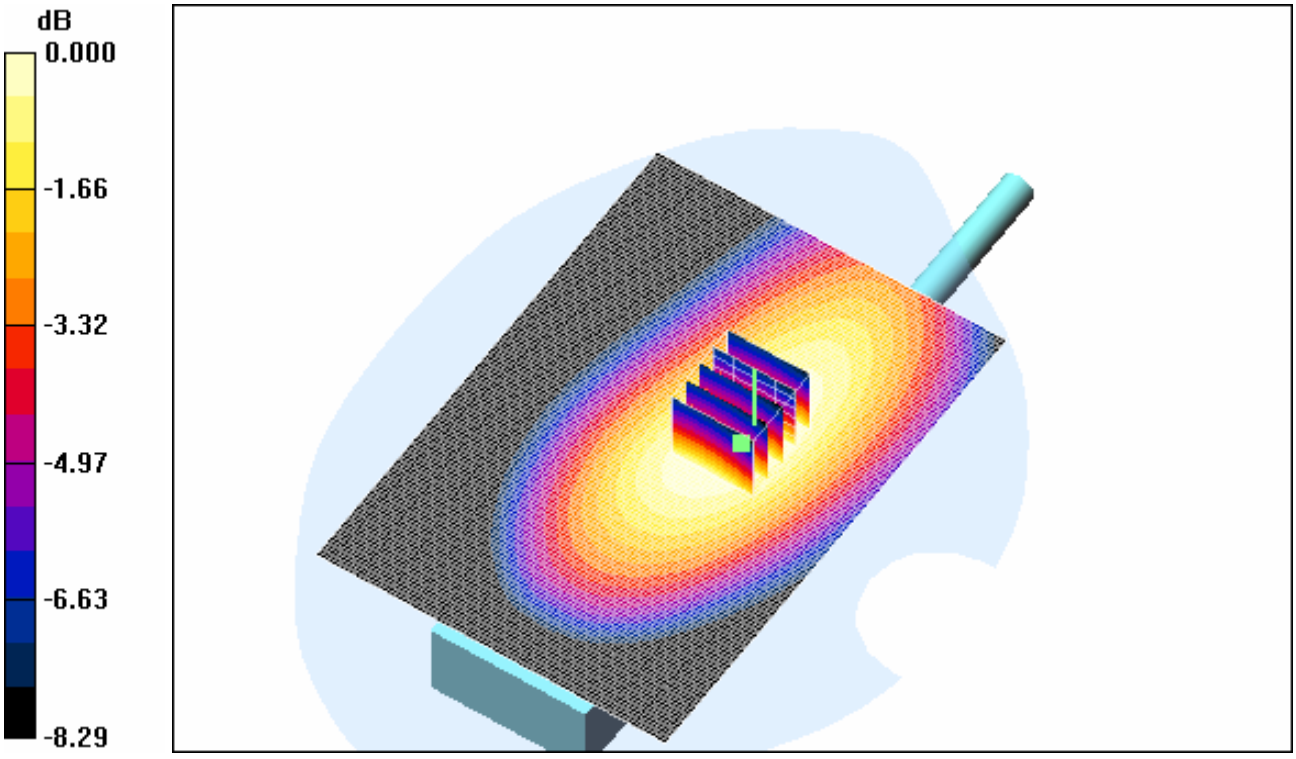
DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 469.988 MHz;Duty Cycle: 1:1
Medium parameters used: f = 470 MHz; $\sigma$ = 0.978 mho/m; $\varepsilon_r$ = 54.1; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 6/Area Scan (91x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 7.85 mW/g

GMRS 450 body 6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.4 V/m; Power Drift = -0.211 dB
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 7.17 mW/g; SAR(10 g) = 5.22 mW/g
Maximum value of SAR (measured) = 7.48 mW/g




0 dB = 7.48mW/g

| | |
|---|---|
| Test Laboratory: | HCT CO., LTD. |
| EUT Type: | UHF FM Portable Transceiver |
| Liquid Temperature: | 22.2℃ |
| Test Date: | Oct .17, 2007 |

DUT: TR-450H(Body); Type: Bar; Serial: #1

Communication System: 450MHz (TR-450H); Frequency: 440.012 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 440.012 MHz; $\sigma$ = 0.955 mho/m; $\varepsilon_r$ = 54.6; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section ; Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 176

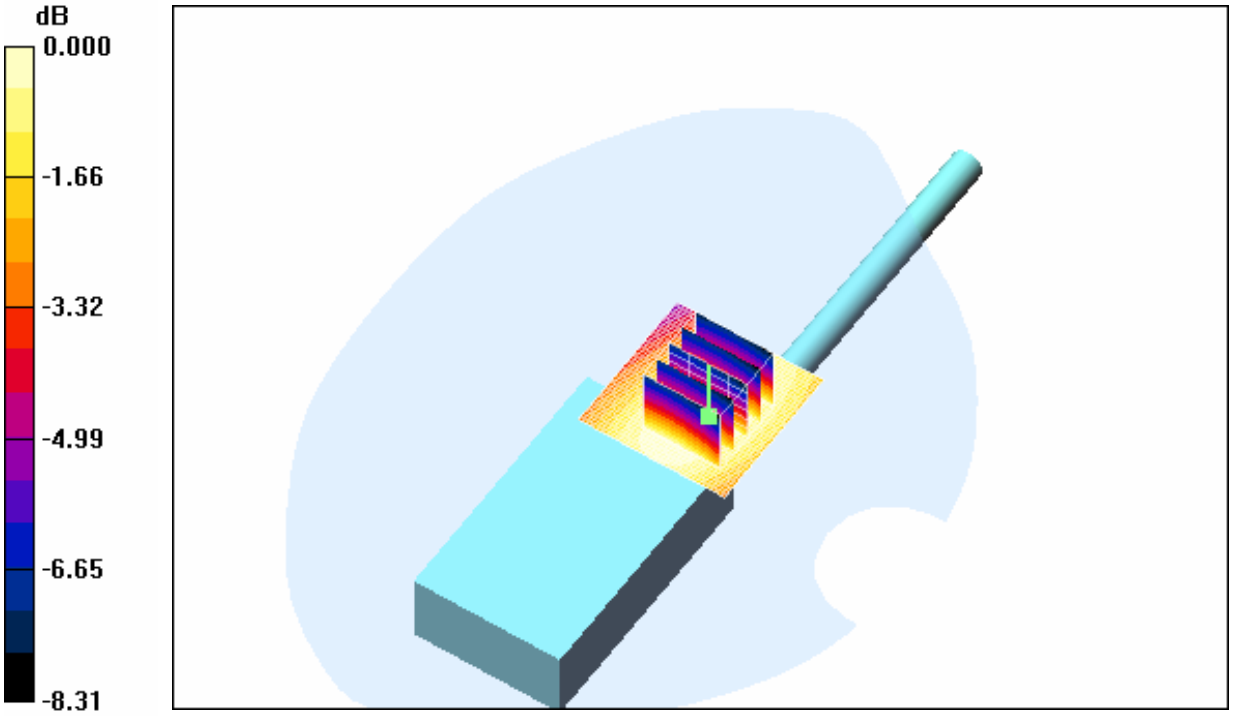
DASY4 Configuration:
- Probe: ET3DV6 - SN1609; ConvF(7.76, 7.76, 7.76); Calibrated: 2007-08-30
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2007-01-25
- Phantom: SAM 835/900 MHz; Type: SAM

GMRS 450 body 4/Area Scan (41x41x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 10.3 mW/g

GMRS 450 body 4/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 97.5 V/m; Power Drift = -0.153 dB
Peak SAR (extrapolated) = 13.5 W/kg
**SAR(1 g) = 9.51 mW/g; SAR(10 g) = 6.91 mW/g**

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 9.96 mW/g




0 dB = 9.96mW/g