

Test Laboratory: Compliance Certification Services

## Lap Held Position

DUT: Apple MacBook Pro; Type: Laptop; Serial: N/A

Communication System: 802.11bgn; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

**b mode L ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.01 mW/g

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

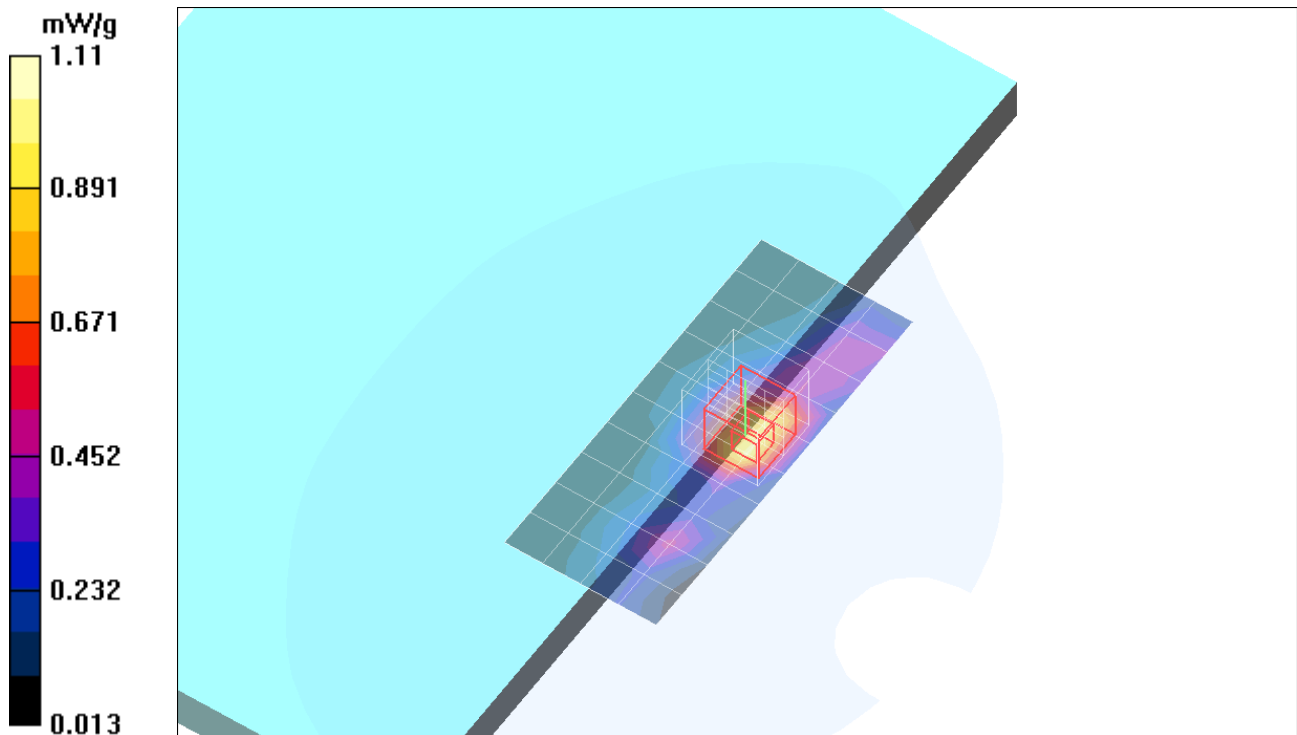
Reference Value = 24.0 V/m; Power Drift = -0.184 dB

Peak SAR (extrapolated) = 2.21 W/kg

**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.516 mW/g**

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

Maximum value of SAR (measured) = 1.11 mW/g



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Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
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**b mode M ch/Area Scan (5x21x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.07 mW/g

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

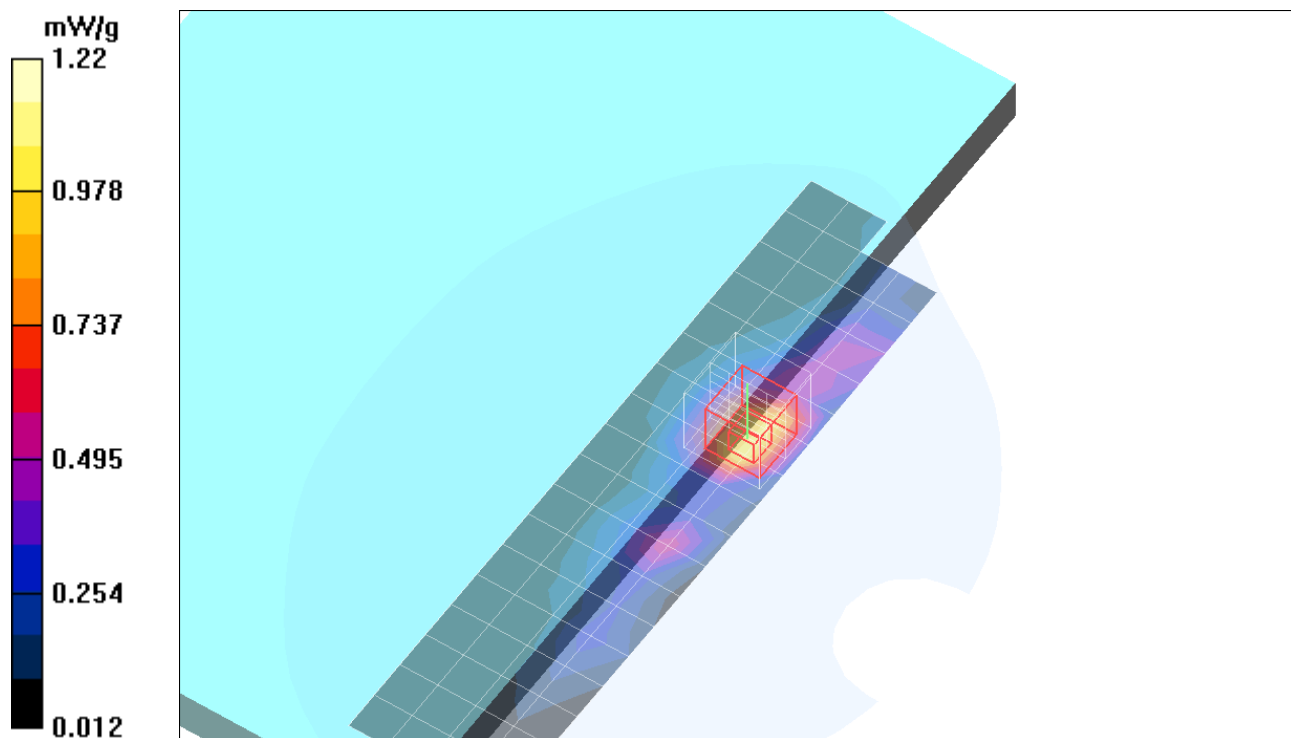
Reference Value = 12.7 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 2.34 W/kg

**SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.558 mW/g**

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

Maximum value of SAR (measured) = 1.22 mW/g



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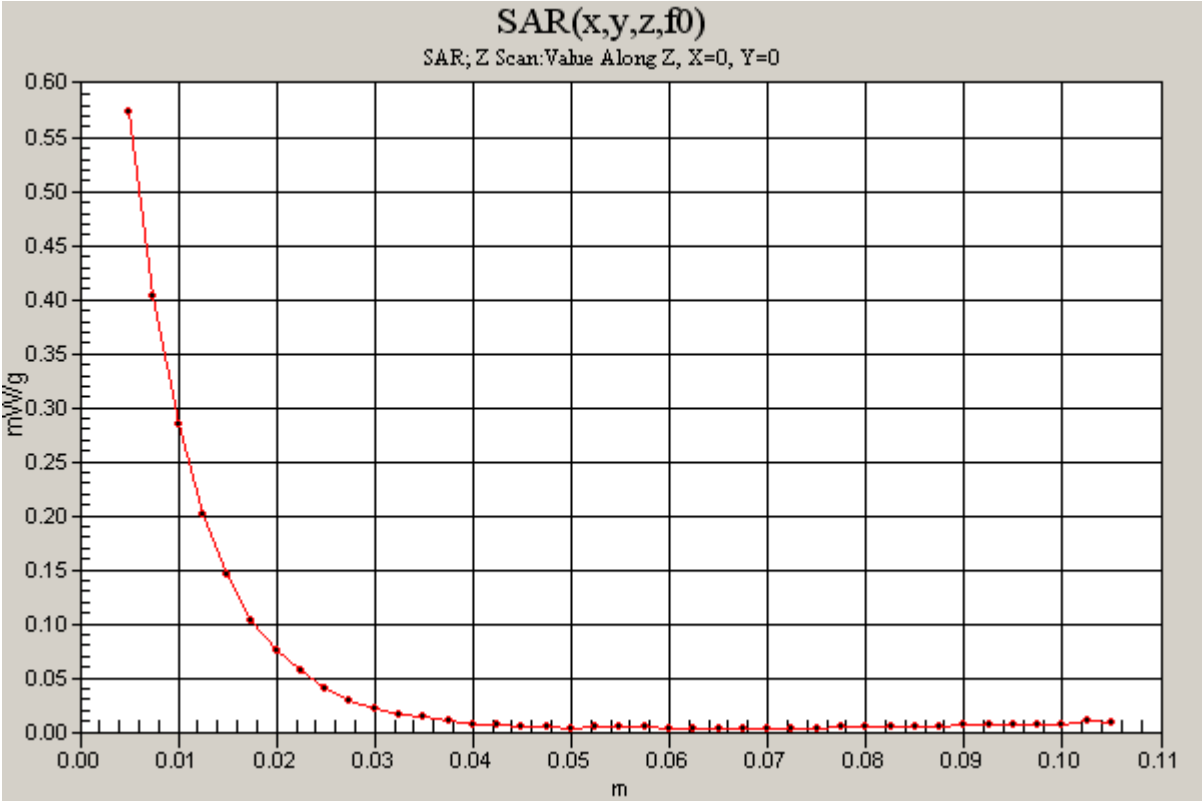
DUT: Apple MacBook Pro; Type: Laptop; Serial: N/A

Communication System: 802.11bgn; Frequency: 2437 MHz;Duty Cycle: 1:1

**b mode M ch/Z Scan (1x1x41):** Measurement grid: dx=20mm, dy=20mm, dz=2.5mm

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

Maximum value of SAR (measured) = 0.574 mW/g



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## Lap Held Position

DUT: Apple MacBook Pro; Type: Laptop; Serial: N/A

Communication System: 802.11bgn; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

**b mode H ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.02 mW/g

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

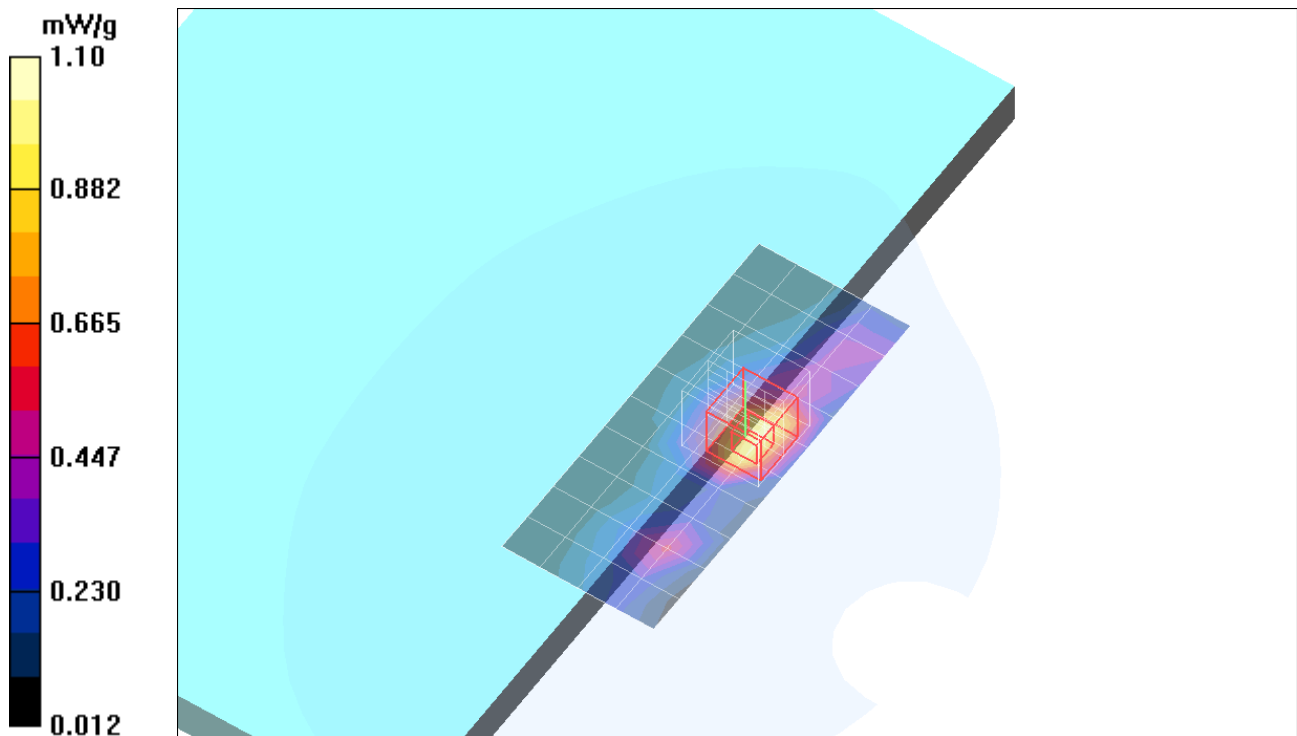
Reference Value = 24.5 V/m; Power Drift = -0.129 dB

Peak SAR (extrapolated) = 2.20 W/kg

**SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.500 mW/g**

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

Maximum value of SAR (measured) = 1.10 mW/g



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Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

**g 20M mode L ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 0.498 mW/g

**g 20M mode L ch/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.9 V/m; Power Drift = -0.169 dB

Peak SAR (extrapolated) = 1.06 W/kg

**SAR(1 g) = 0.493 mW/g; SAR(10 g) = 0.248 mW/g**

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

Maximum value of SAR (measured) = 0.526 mW/g

**g 20M mode L ch/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

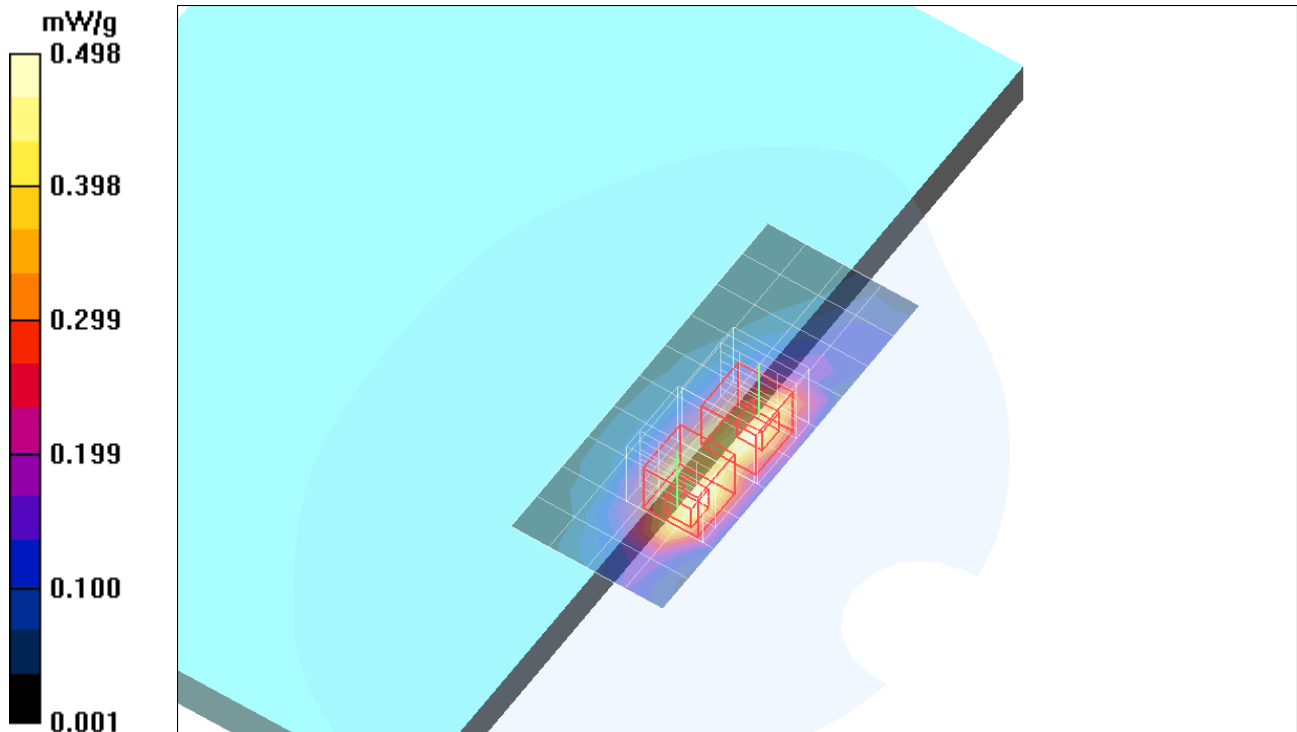
Reference Value = 15.9 V/m; Power Drift = -0.169 dB

Peak SAR (extrapolated) = 0.999 W/kg

**SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.237 mW/g**

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

Maximum value of SAR (measured) = 0.500 mW/g



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Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

**g 20M mode M ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 0.841 mW/g

**g 20M mode M ch/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 19.0 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 1.84 W/kg

**SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.420 mW/g**

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

Maximum value of SAR (measured) = 0.927 mW/g

**g 20M mode M ch/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

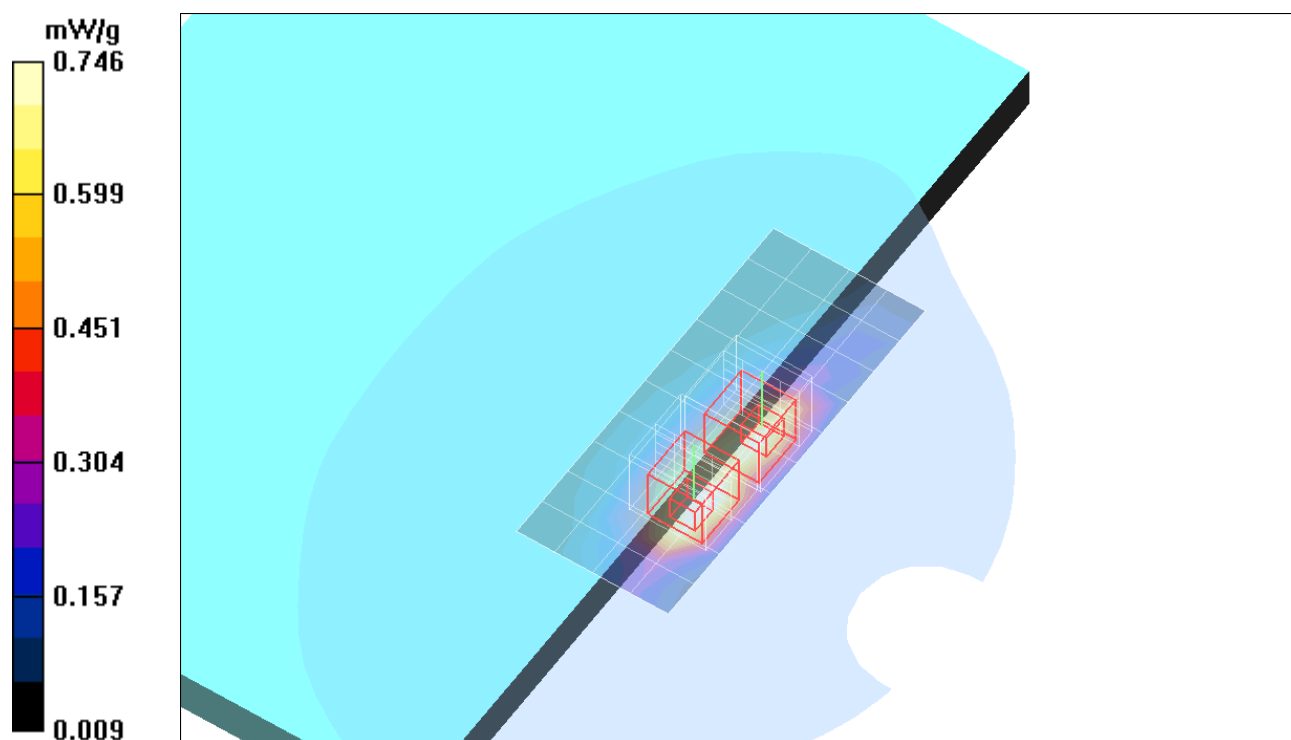
Reference Value = 19.0 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 1.50 W/kg

**SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.360 mW/g**

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

Maximum value of SAR (measured) = 0.746 mW/g



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Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 51.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

**g 20M mode H ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 0.543 mW/g

**g 20M mode H ch/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 17.0 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.536 mW/g; SAR(10 g) = 0.263 mW/g**

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

Maximum value of SAR (measured) = 0.592 mW/g

**g 20M mode H ch/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

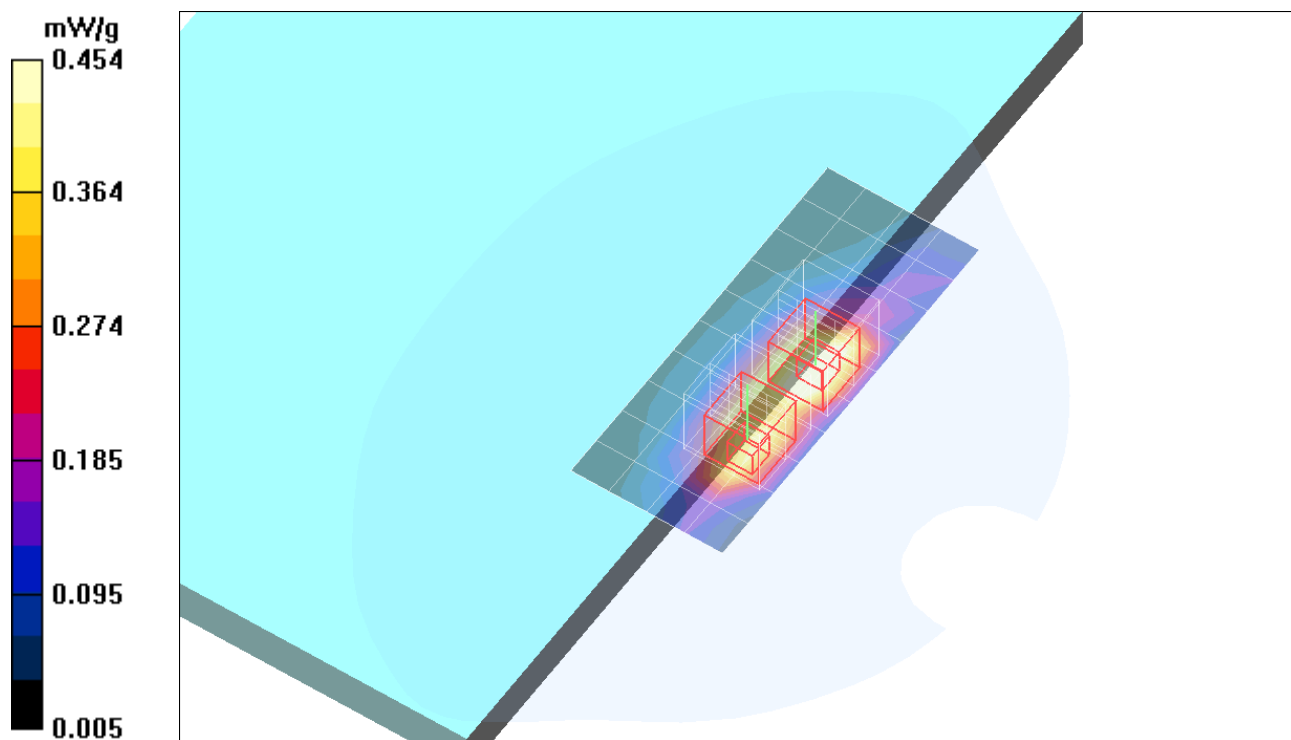
Reference Value = 17.0 V/m; Power Drift = -0.183 dB

Peak SAR (extrapolated) = 0.929 W/kg

**SAR(1 g) = 0.429 mW/g; SAR(10 g) = 0.214 mW/g**

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

Maximum value of SAR (measured) = 0.454 mW/g



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Medium parameters used (interpolated):  $f = 2437 \text{ MHz}$ ;  $\sigma = 2 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

- DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
  - Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
  - Sensor-Surface: 4mm (Mechanical Surface Detection)
  - Electronics: DAE4 SN558; Calibrated: 1/20/2006
  - Phantom: SAM 2; Type: SAM 2; Serial: 1050
  - Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

## g 40M mode M ch/Area Scan (5x11x1):

Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.225 mW/g

## g 40M mode M ch/Zoom Scan (5x5x7)/Cube 0:

Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 11.2 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 0.475 W/kg

**SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.110 mW/g**

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

Maximum value of SAR (measured) = 0.248 mW/g

## g 40M mode M ch/Zoom Scan (5x5x7)/Cube 1:

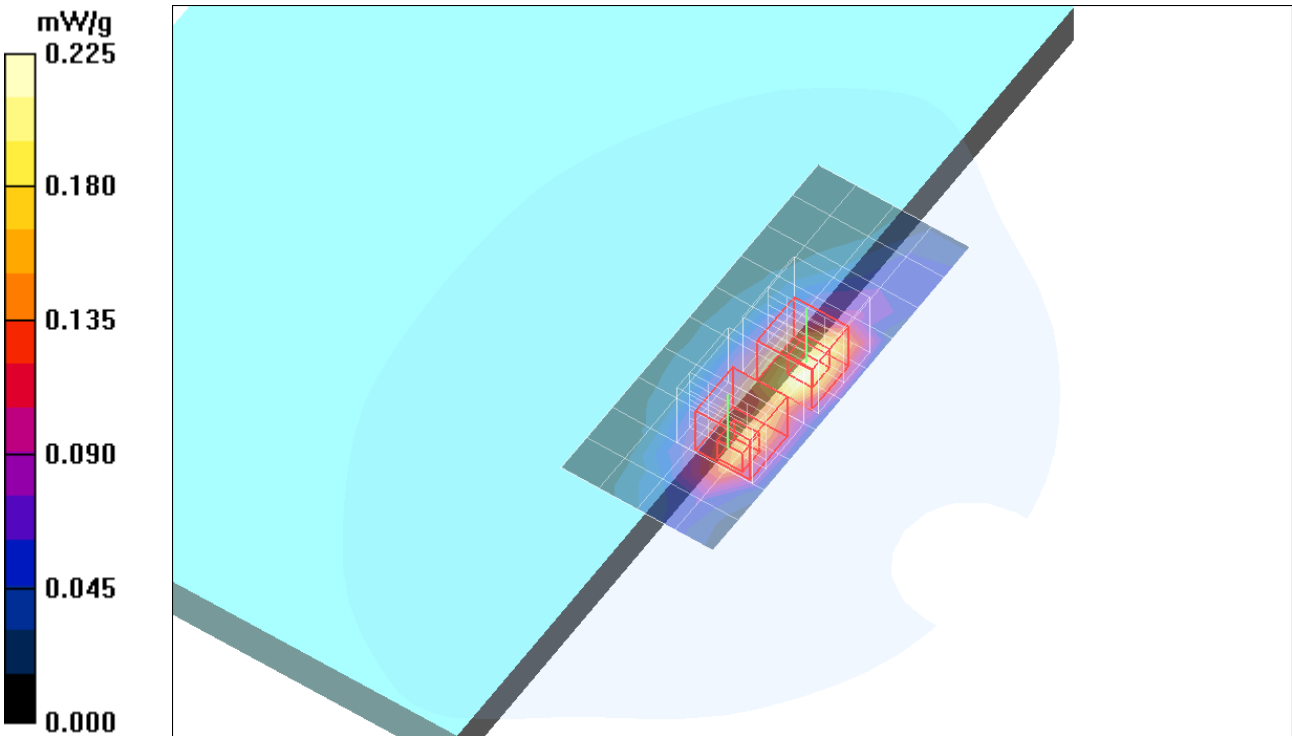
Measurement grid:  $dx=7.5\text{mm}$ ,  $dy=7.5\text{mm}$ ,  $dz=5\text{mm}$   
Reference Value = 11.2 V/m; Power Drift = -0.136 dB

Peak SAR (extrapolated) = 0.366 W/kg

**SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.087 mW/g**

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

Maximum value of SAR (measured) = 0.177 mW/g





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Medium parameters used (interpolated):  $f = 2437 \text{ MHz}$ ;  $\sigma = 2 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

- DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
  - Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
  - Sensor-Surface: 4mm (Mechanical Surface Detection)
  - Electronics: DAE4 SN558; Calibrated: 1/20/2006
  - Phantom: SAM 2; Type: SAM 2; Serial: 1050
  - Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 170

## HT20 mode M ch/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 0.710 mW/g

## HT20 mode M ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 19.2 V/m; Power Drift = -0.169 dB

Peak SAR (extrapolated) = 1.43 W/kg

**SAR(1 g) = 0.671 mW/g; SAR(10 g) = 0.337 mW/g**

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

Maximum value of SAR (measured) = 0.715 mW/g

## HT20 mode M ch/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

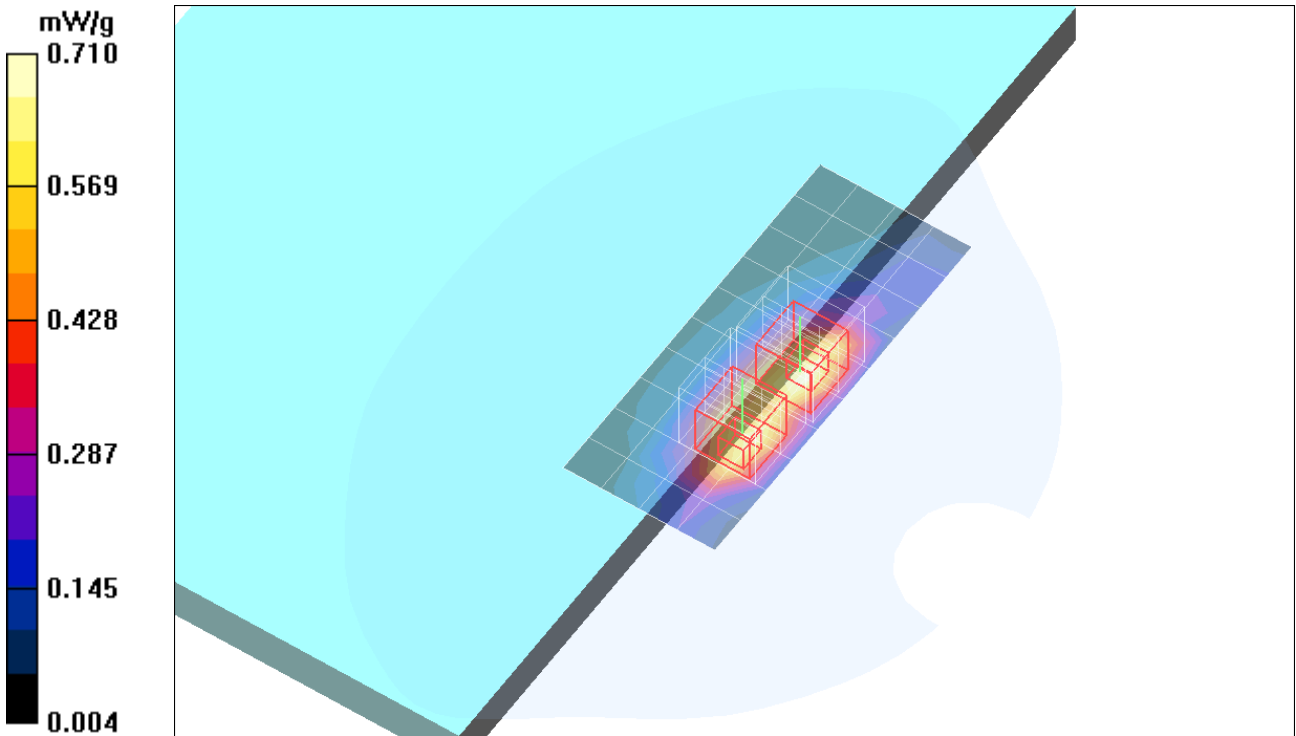
Reference Value = 19.2 V/m; Power Drift = -0.169 dB

Peak SAR (extrapolated) = 1.41 W/kg

**SAR(1 g) = 0.655 mW/g; SAR(10 g) = 0.330 mW/g**

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

Maximum value of SAR (measured) = 0.696 mW/g



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## Lap Held Position

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Communication System: 802.11bgn; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Room Ambient Temperature: 23.0deg. C; Liquid Temperature: 22.0 deg. C

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3552; ConvF(7.08, 7.08, 7.08); Calibrated: 5/30/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 SN558; Calibrated: 1/20/2006
- Phantom: SAM 2; Type: SAM 2; Serial: 1050
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**HT40 mode M ch/Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 0.244 mW/g

**HT40 mode M ch/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.2 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 0.542 W/kg

**SAR(1 g) = 0.245 mW/g; SAR(10 g) = 0.122 mW/g**

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

Maximum value of SAR (measured) = 0.263 mW/g

**HT40 mode M ch/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.2 V/m; Power Drift = -0.193 dB

Peak SAR (extrapolated) = 0.502 W/kg

**SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.117 mW/g**

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

Maximum value of SAR (measured) = 0.246 mW/g

