

APPENDIX B: SAR DIPOLE VERIFICATION PLOTS

ELEMENT

DUT: Dipole 13.0 MHz; Type: CLA-13 - SN1002

Communication System: UID: 0, CW; Frequency: 13.0 MHz
Medium: 30 Head; Medium parameters used:
f = 13.0 MHz; cond = 0.733 S/m; perm = 52.7; density = 1000 kg/m³
Phantom Section: Flat; Space: 0 mm

Test Date: 03/11/2024; Ambient Temp: 19.8°C; Tissue Temp: 19.0°C

Probe: EX3DV4 - SN7713; ConvF:(16.75,16.75,16.75); 2024-01-17
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1530; 2024-01-16
Phantom: ELI V8.0 (20deg probe tilt); Serial: 2077
Measurement SW: DASY Module SAR V16.2.0.1425

13.0 MHz System Verification at 30.0 dBm (1000 mW)

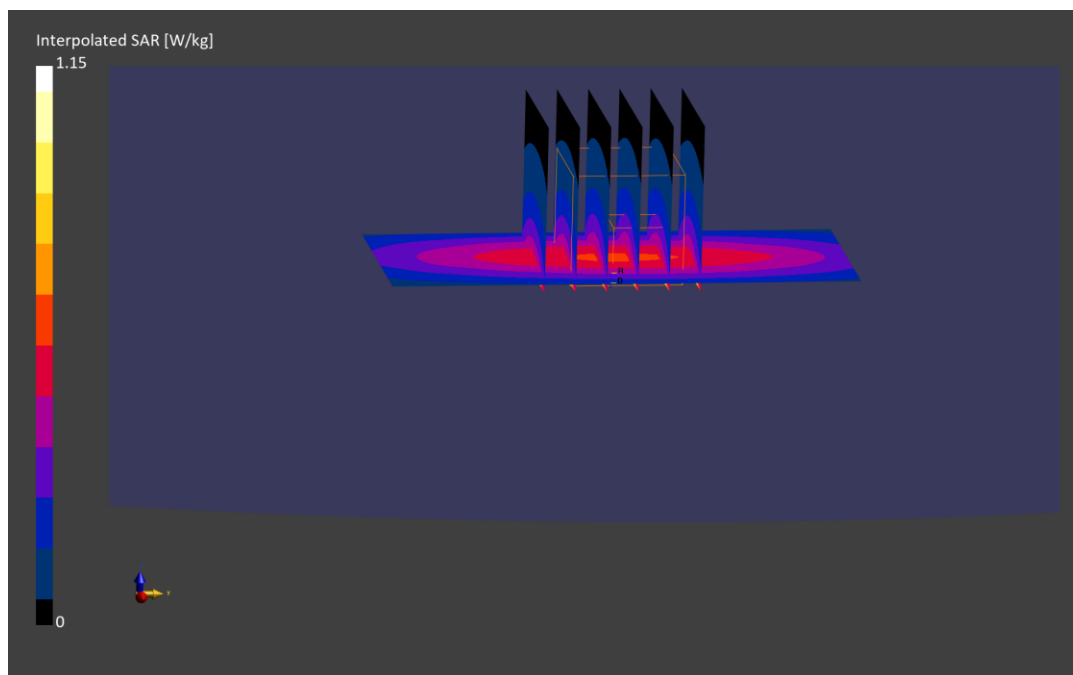
Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm

Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm; Graded
Ratio: 1.5

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.326 W/kg

Deviation (1 g) = 1.34%; Deviation (10 g) = -0.31%



ELEMENT

DUT: Dipole 2450.0 MHz; Type: D2450V2 - SN981

Communication System: UID: 0, CW; Frequency: 2450.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.0 MHz; cond = 1.87 S/m; perm = 40.9; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 02/19/2024; Ambient Temp: 20.2°C; Tissue Temp: 19.0°C

Probe: EX3DV4 - SN7803; ConvF:(7.11,7.19,7.15); 2024-01-11
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1533; 2024-01-09
Phantom: Twin-SAM V8.0; Serial: 2060
Measurement SW: DASY Module SAR V16.2.0.1425

2450.0 MHz System Verification at 20.0 dBm (100 mW)

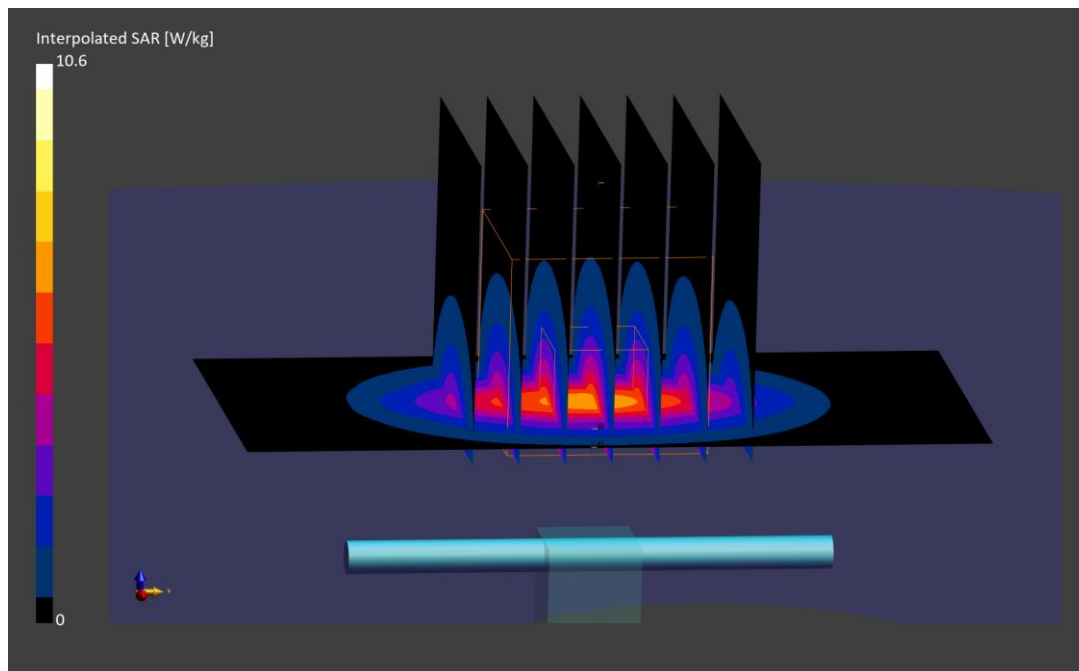
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded
Ratio: 1.5

Peak SAR (extrapolated) = 10.6 W/kg

SAR(1 g) = 5.12 W/kg; SAR(10 g) = 2.39 W/kg

Deviation (1 g) = -5.01%; Deviation (10 g) = -5.91%



ELEMENT

DUT: Dipole 2450.000 MHz; Type: D2450V2 - SN719

Communication System: UID: 0, CW; Frequency: 2450.000 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.000 MHz; cond = 1.86 S/m; perm = 39.4; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 04/05/2024; Ambient Temp: 21.1°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7409; ConvF:(7.44,7.44,7.44); 2023-06-15
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1334; 2023-06-15
Phantom: Twin-SAM V8.0; Serial: 1966
Measurement SW: DASY Module SAR V16.2.4.2524

2450.0 MHz System Verification at 20.0 dBm (100 mW)

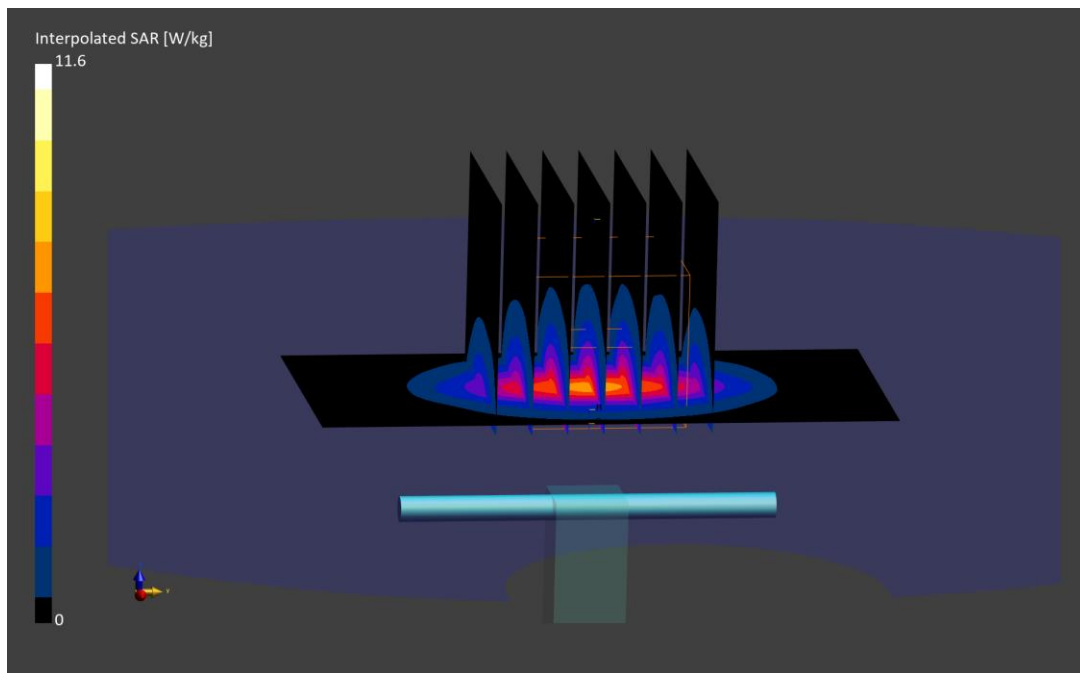
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded
Ratio: 1.5

Peak SAR (extrapolated) = 11.6 W/kg

SAR(1 g) = 5.44 W/kg; SAR(10 g) = 2.47 W/kg

Deviation (1 g) = -1.09%; Deviation (10 g) = -3.89%



ELEMENT

DUT: Dipole 2450.000 MHz; Type: D2450V2 - SN719

Communication System: UID: 0, CW; Frequency: 2450.000 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.000 MHz; cond = 1.79 S/m; perm = 39.0; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/07/2024; Ambient Temp: 20.6°C; Tissue Temp: 20.6°C

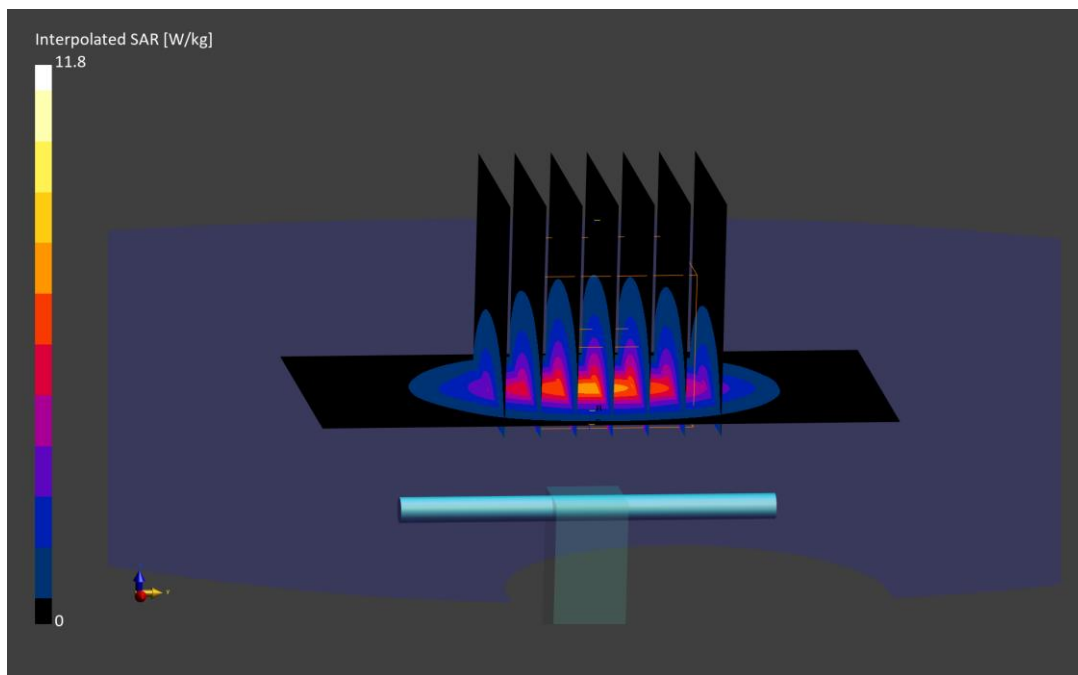
Probe: EX3DV4 - SN7551; ConvF:(7.56,7.56,7.56); 2023-11-14
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1323; 2023-11-15
Phantom: Twin-SAM V8.0 (Left); Serial: 1964
Measurement SW: DASY Module SAR V16.2.4.2524

2450.0 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded
Ratio: 1.5

Peak SAR (extrapolated) = 11.8 W/kg
SAR(1 g) = 5.64 W/kg; SAR(10 g) = 2.65 W/kg
Deviation (1 g) = 2.55%; Deviation (10 g) = 3.11%



ELEMENT

DUT: Dipole 2450.000 MHz; Type: D2450V2 - SN719

Communication System: UID: 0, CW; Frequency: 2450.000 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.000 MHz; cond = 1.79 S/m; perm = 39.6; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/08/2024; Ambient Temp: 19.7°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7409; ConvF:(7.44,7.44,7.44); 2023-06-15
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1334; 2023-06-15
Phantom: Twin-SAM V8.0; Serial: 1966
Measurement SW: DASY Module SAR V16.2.4.2524

2450.0 MHz System Verification at 20.0 dBm (100 mW)

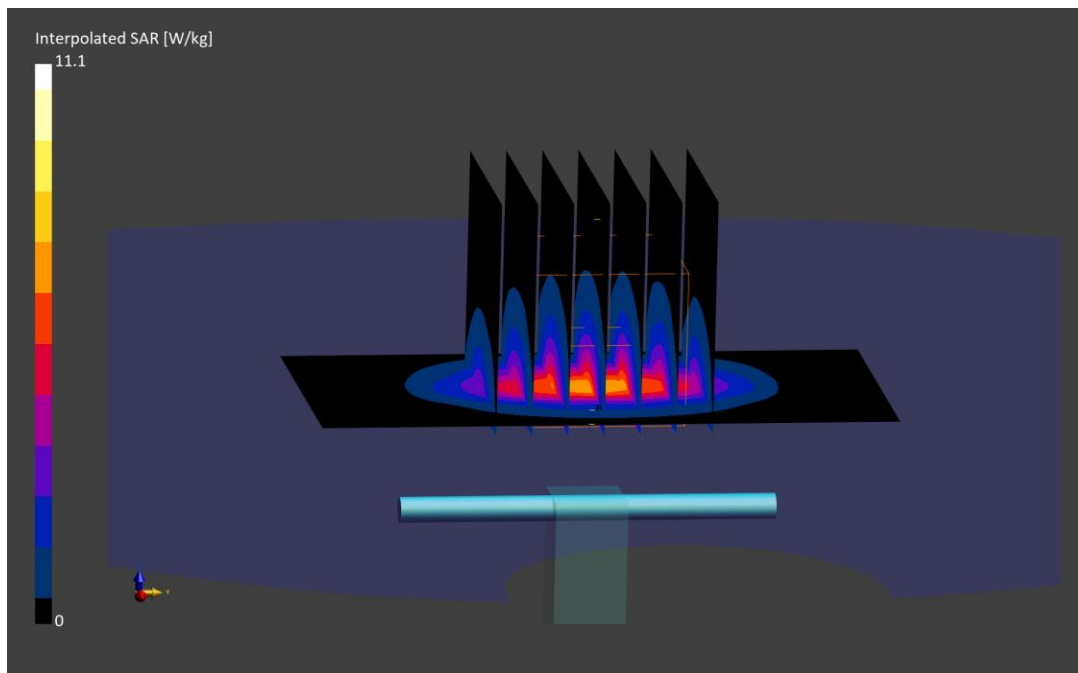
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm; Graded
Ratio: 1.5

Peak SAR (extrapolated) = 11.1 W/kg

SAR(1 g) = 5.47 W/kg; SAR(10 g) = 2.56 W/kg

Deviation (1 g) = -0.55%; Deviation (10 g) = -0.39%



ELEMENT

DUT: Dipole 5250.0 MHz; Type: D5GHzV2 - SN1191

Communication System: UID: 0, CW; Frequency: 5250.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5250.0 MHz; cond = 4.61 S/m; perm = 36.2; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 02/25/2024; Ambient Temp: 21.2°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7713; ConvF:(5.54,5.54,5.54); 2024-01-17
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1530; 2024-01-16
Phantom: Twin-SAM V5.0; Serial: 1757
Measurement SW: DASY Module SAR V16.2.0.1425

5250.0 MHz System Verification at 17.0 dBm (50 mW)

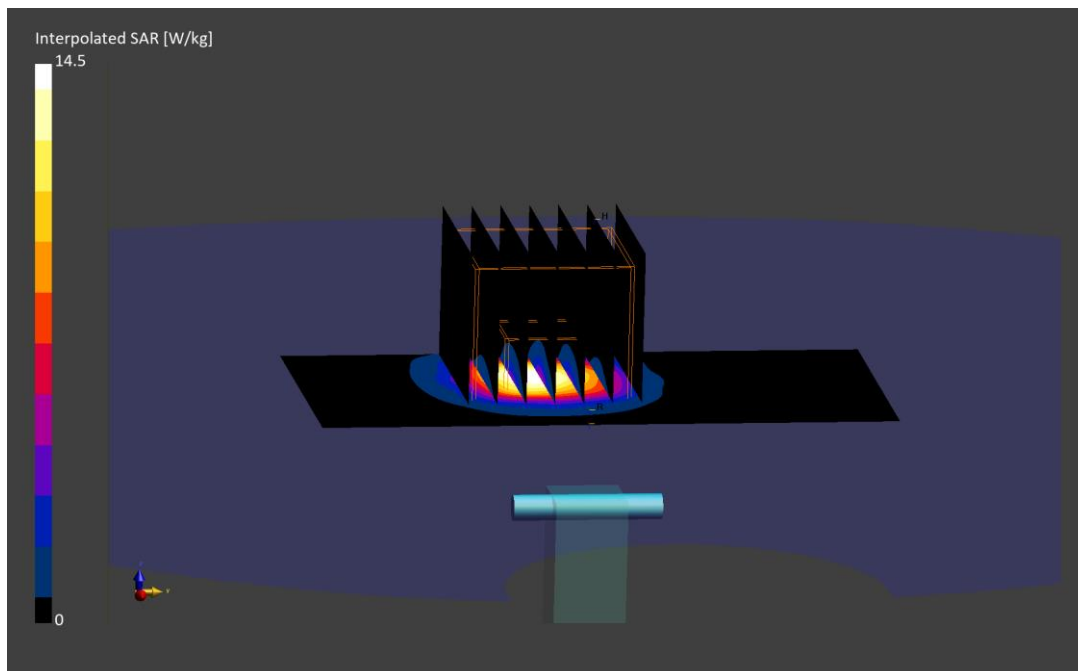
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 14.5 W/kg

SAR(1 g) = 3.66 W/kg; SAR(10 g) = 1.04 W/kg

Deviation (1 g) = -7.22%; Deviation (10 g) = -8.37%



ELEMENT

DUT: Dipole 5250.0 MHz; Type: D5GHzV2 - SN1057

Communication System: UID: 0, CW; Frequency: 5250.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5250.0 MHz; cond = 4.61 S/m; perm = 35.7; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/15/2024; Ambient Temp: 23.9°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7803; ConvF:(5.27,5.46,5.32); 2024-01-11
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1533; 2024-01-09
Phantom: Twin-SAM V8.0; Serial: 2060
Measurement SW: DASY Module SAR V16.2.0.1425

5250.0 MHz System Verification at 17.0 dBm (50 mW)

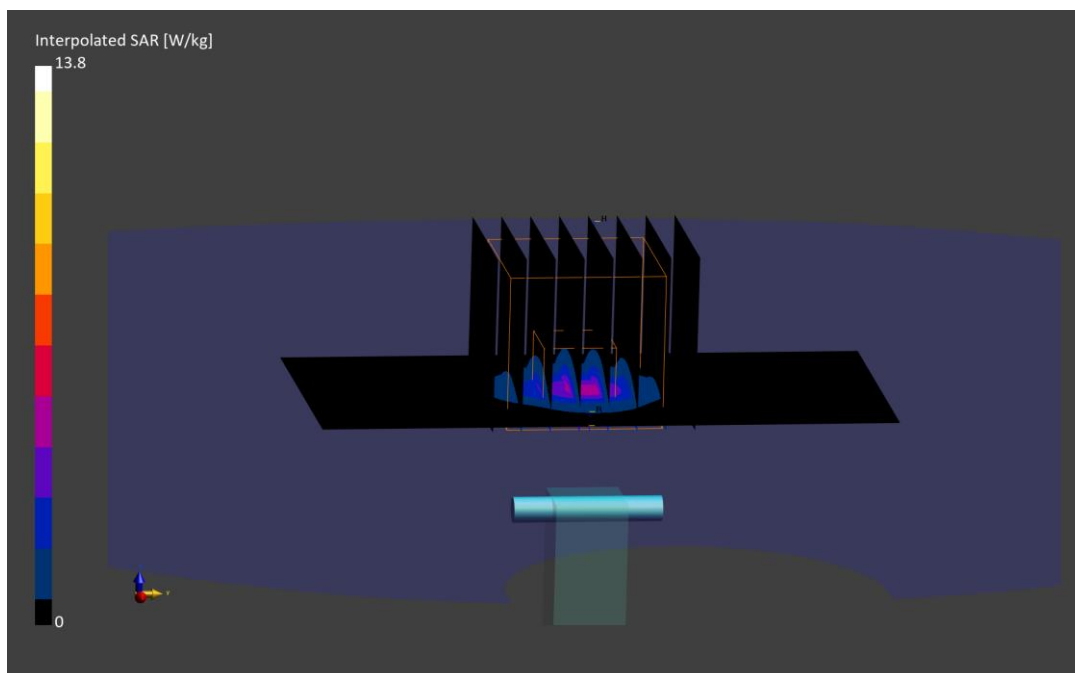
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 13.8 W/kg

SAR(1 g) = 3.64 W/kg; SAR(10 g) = 1.05 W/kg

Deviation (1 g) = -8.31%; Deviation (10 g) = -7.49%



ELEMENT

DUT: Dipole 5600.0 MHz; Type: D5GHzV2 - SN1191

Communication System: UID: 0, CW; Frequency: 5600.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5600.0 MHz; cond = 5.00 S/m; perm = 35.6; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 02/25/2024; Ambient Temp: 21.2°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7713; ConvF:(4.99,4.99,4.99); 2024-01-17
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1530; 2024-01-16
Phantom: Twin-SAM V5.0; Serial: 1757
Measurement SW: DASY Module SAR V16.2.0.1425

5600.0 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 17.3 W/kg

SAR(1 g) = 4.06 W/kg; SAR(10 g) = 1.13 W/kg

Deviation (1 g) = -2.17%; Deviation (10 g) = -5.44%



ELEMENT

DUT: Dipole 5600.0 MHz; Type: D5GHzV2 - SN1057

Communication System: UID: 0, CW; Frequency: 5600.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5600.0 MHz; cond = 5.01 S/m; perm = 35.0; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/15/2024; Ambient Temp: 23.9°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7803; ConvF:(4.51,4.6,4.55); 2024-01-11
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1533; 2024-01-09
Phantom: Twin-SAM V8.0; Serial: 2060
Measurement SW: DASY Module SAR V16.2.0.1425

5600.0 MHz System Verification at 17.0 dBm (50 mW)

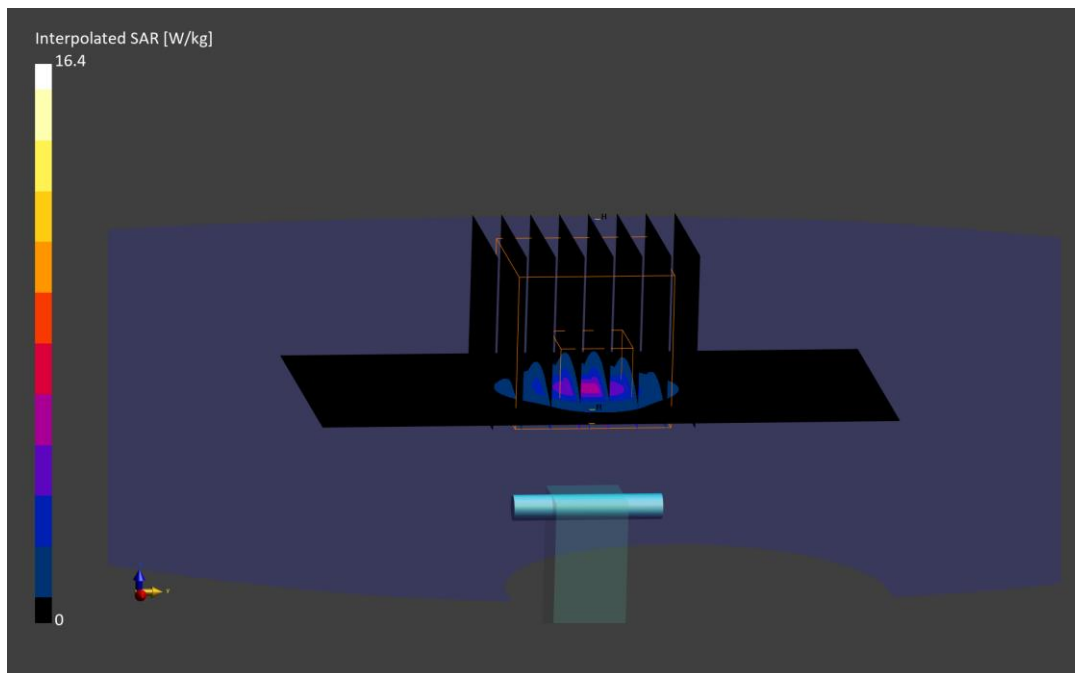
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 4.07 W/kg; SAR(10 g) = 1.16 W/kg

Deviation (1 g) = -1.69%; Deviation (10 g) = -1.69%



ELEMENT

DUT: Dipole 5750.0 MHz; Type: D5GHzV2 - SN1191

Communication System: UID: 0, CW; Frequency: 5750.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5750.0 MHz; cond = 5.18 S/m; perm = 35.3; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 02/25/2024; Ambient Temp: 21.2°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7713; ConvF:(5.08,5.08,5.08); 2024-01-17
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1530; 2024-01-16
Phantom: Twin-SAM V5.0; Serial: 1757
Measurement SW: DASY Module SAR V16.2.0.1425

5750.0 MHz System Verification at 17.0 dBm (50 mW)

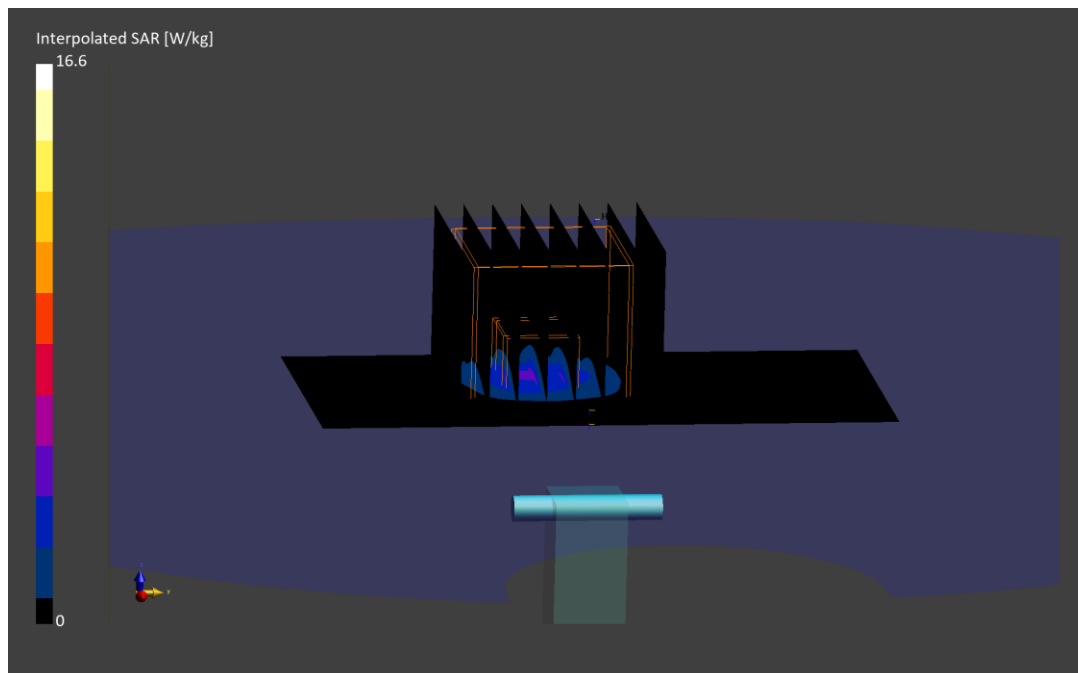
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 16.6 W/kg

SAR(1 g) = 3.80 W/kg; SAR(10 g) = 1.08 W/kg

Deviation (1 g) = -3.68%; Deviation (10 g) = -3.57%



ELEMENT

DUT: Dipole 5750.0 MHz; Type: D5GHzV2 - SN1057

Communication System: UID: 0, CW; Frequency: 5750.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5750.0 MHz; cond = 5.18 S/m; perm = 34.8; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/15/2024; Ambient Temp: 23.9°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7803; ConvF:(4.68,4.79,4.72); 2024-01-11
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1533; 2024-01-09
Phantom: Twin-SAM V8.0; Serial: 2060
Measurement SW: DASY Module SAR V16.2.0.1425

5750.0 MHz System Verification at 17.0 dBm (50 mW)

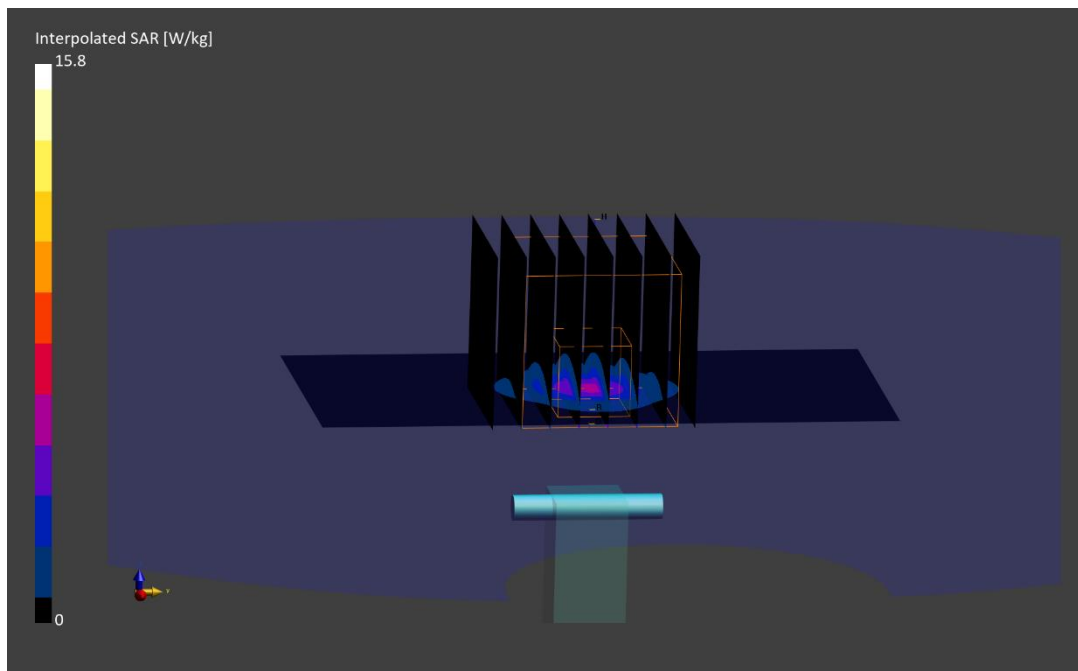
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 15.8 W/kg

SAR(1 g) = 3.83 W/kg; SAR(10 g) = 1.09 W/kg

Deviation (1 g) = -4.01%; Deviation (10 g) = -3.96%



ELEMENT

DUT: Dipole 5850.0 MHz; Type: D5GHzV2 - SN1191

Communication System: UID: 0, CW; Frequency: 5850.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5850.0 MHz; cond = 5.29 S/m; perm = 35.2; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 02/25/2024; Ambient Temp: 21.2°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7713; ConvF:(4.98,4.98,4.98); 2024-01-17
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1530; 2024-01-16
Phantom: Twin-SAM V5.0; Serial: 1757
Measurement SW: DASY Module SAR V16.2.0.1425

5850.0 MHz System Verification at 17.0 dBm (50 mW)

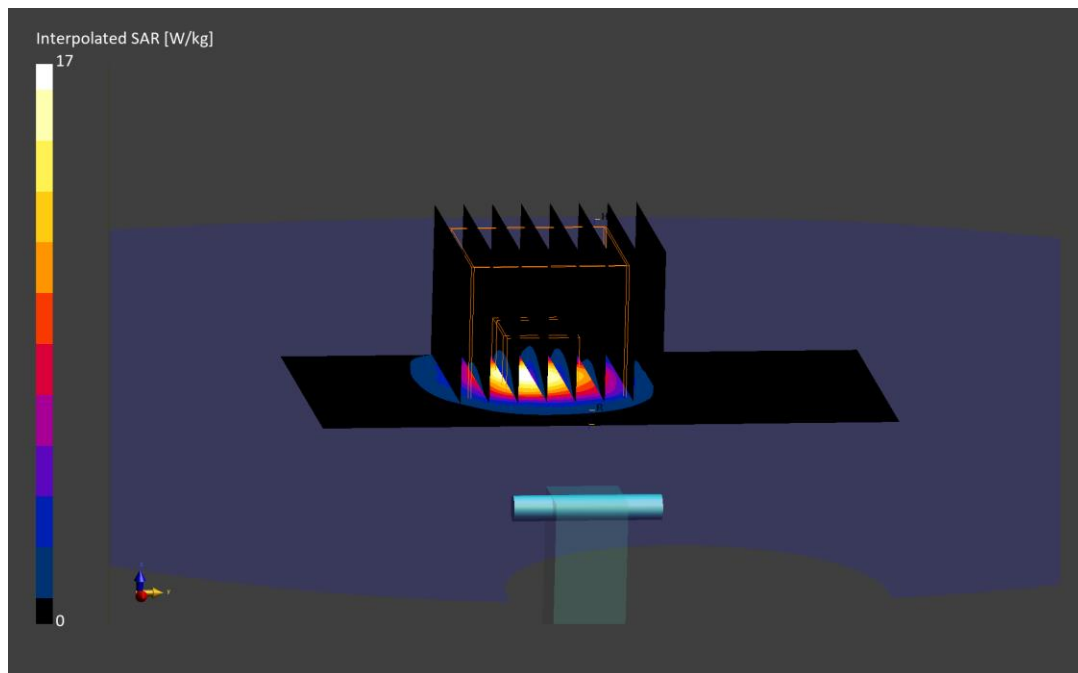
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 17.0 W/kg

SAR(1 g) = 3.79 W/kg; SAR(10 g) = 1.06 W/kg

Deviation (1 g) = -3.81%; Deviation (10 g) = -5.78%



ELEMENT

DUT: Dipole 5850.0 MHz; Type: D5GHzV2 - SN1057

Communication System: UID: 0, CW; Frequency: 5850.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5850.0 MHz; cond = 5.30 S/m; perm = 34.6; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 03/15/2024; Ambient Temp: 23.9°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7803; ConvF:(4.52,4.64,4.58); 2024-01-11
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1533; 2024-01-09
Phantom: Twin-SAM V8.0; Serial: 2060
Measurement SW: DASY Module SAR V16.2.0.1425

5850.0 MHz System Verification at 17.0 dBm (50 mW)

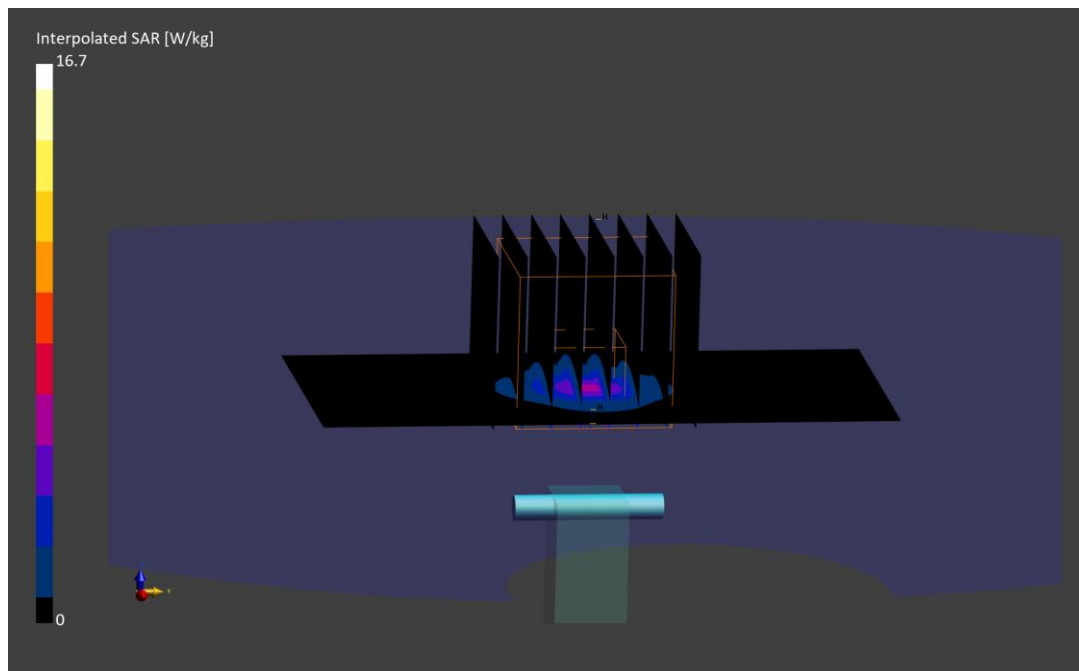
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=4.0 mm, dy=4.0 mm, dz=1.4 mm; Graded
Ratio: 1.4

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 3.98 W/kg; SAR(10 g) = 1.13 W/kg

Deviation (1 g) = -2.33%; Deviation (10 g) = -1.74%



ELEMENT

DUT: Dipole 6500.0 MHz; Type: D6.5GHzV2 - SN1018

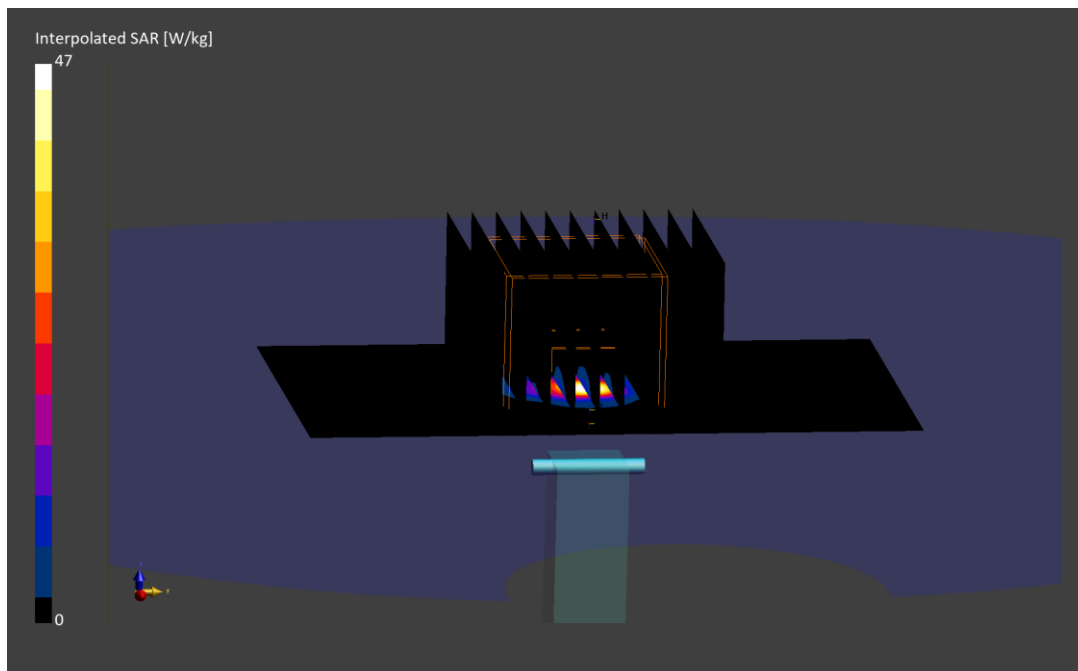
Communication System: UID: 0, CW; Frequency: 6500.0 MHz
Medium: 6000 Head; Medium parameters used:
f = 6500.0 MHz; cond = 6.03 S/m; perm = 35.0; density = 1000 kg/m³
Phantom Section: Flat; Space: 5 mm

Test Date: 02/12/2024; Ambient Temp: 23.3°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7718; ConvF:(5.15,5.15,5.15); 2023-04-18
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1368; 2023-04-14
Phantom: Twin-SAM V5.0; Serial: 1759
Measurement SW: DASY Module SAR V16.2.0.1425

6500.0 MHz System Verification at 14.0 dBm (25 mW)

Area Scan (51.0 x 85.0): Measurement grid: dx=8.5 mm, dy=8.5 mm
Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=3.4 mm, dy=3.4 mm, dz=1.4 mm; Graded
Ratio: 1.4
Peak SAR (extrapolated) = 47.1 W/kg
SAR(1 g) = 7.50 W/kg; SAR(10 g) = 1.38 W/kg
Deviation (1 g) = 2.39%; Deviation (10 g) = 2.41%



ELEMENT

DUT: Dipole 6500.000 MHz; Type: D6.5GHzV2 - SN1020

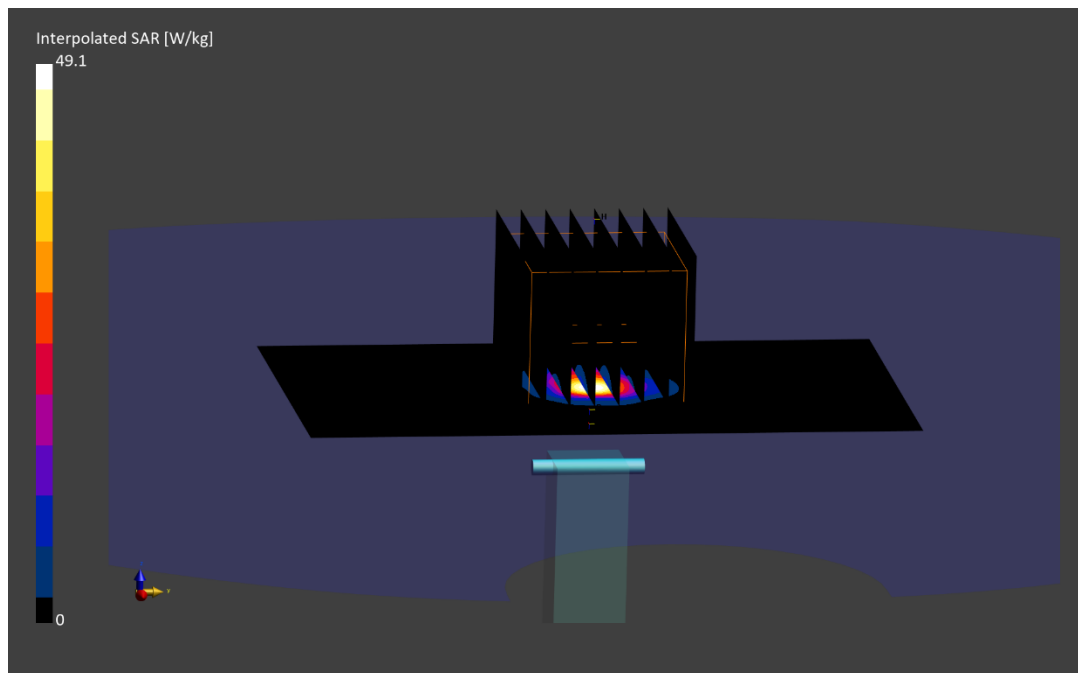
Communication System: UID: 0, CW; Frequency: 6500.000 MHz
Medium: 6000 Head; Medium parameters used:
f = 6500.000 MHz; cond = 6.28 S/m; perm = 35.1; density = 1000 kg/m³
Phantom Section: Flat; Space: 5 mm

Test Date: 02/19/2024; Ambient Temp: 19.6°C; Tissue Temp: 19.4°C

Probe: EX3DV4 - SN7410; ConvF:(5.55,5.55,5.55); 2023-07-07
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4ip Sn1638; 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 1979
Measurement SW: DASY Module SAR V16.2.4.2524

6500.0 MHz System Verification at 14.0 dBm (25 mW)

Area Scan (51.0 x 85.0): Measurement grid: dx=8.5 mm, dy=8.5 mm
Zoom Scan (22.0 x 22.0 x 22.0): Measurement grid: dx=3.4 mm, dy=3.4 mm, dz=1.4 mm; Graded
Ratio: 1.4
Peak SAR (extrapolated) = 49.1 W/kg
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 1.42 W/kg
Deviation (1 g) = 3.42%; Deviation (10 g) = 5.38%



Date: 2024-03-04, 07:54
 10 GHz System Verification

Device Under Test Properties

| DUT | Serial Number | DUT Type |
|----------------------------|---------------|----------|
| 10 GHz Verification Source | 1004 | Phone |

Exposure Conditions

| Phantom Section | Position | Test Distance [mm] | Band | Frequency [MHz] |
|-----------------|----------|--------------------|-----------------|-----------------|
| 5G | FRONT | 10.00 | Validation band | 10000.0 |

Hardware Setup

| Probe, Calibration Date | DAE, Calibration Date |
|---------------------------------------|---------------------------|
| EUmmWV4 - SN9622_F1-55GHz, 2024-02-02 | DAE4ip Sn1639, 2023-11-15 |

Software Setup

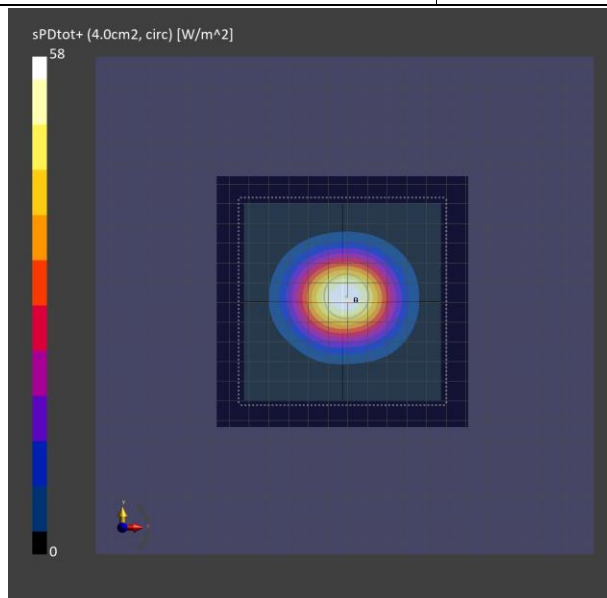
| Software | Software Version |
|----------------------|------------------|
| cDasy6 Module mmWave | 3.2.0.1840 |

Scans Setup

| | |
|---------------------|---------------|
| Scan Type | 5G Scan |
| Grid Extents [mm] | 120.0 x 120.0 |
| Grid Steps [lambda] | 0.25 x 0.25 |
| Sensor Surface [mm] | 10.0 |

Measurement Results

| | |
|---|---------|
| Scan Type | 5G Scan |
| Avg. Area [cm ²] | 4.00 |
| pS _{tot} avg [W/m ²] | 58.0 |
| pS _n avg [W/m ²] | 57.8 |
| E _{peak} [V/m] | 157 |
| Power Drift [dB] | -0.01 |



Date: 2024-04-02, 17:40
 10 GHz System Verification

Device Under Test Properties

| DUT | Serial Number | DUT Type |
|----------------------------|---------------|----------|
| 10 GHz Verification Source | 1002 | Phone |

Exposure Conditions

| Phantom Section | Position | Test Distance [mm] | Band | Frequency [MHz] |
|-----------------|----------|--------------------|-----------------|-----------------|
| 5G | FRONT | 10.00 | Validation band | 10000.0 |

Hardware Setup

| Probe, Calibration Date | DAE, Calibration Date |
|---------------------------------------|---------------------------|
| EUmmWV4 - SN9622_F1-55GHz, 2024-02-02 | DAE4ip Sn1639, 2023-11-15 |

Software Setup

| Software | Software Version |
|----------------------|------------------|
| cDasy6 Module mmWave | 3.2.0.1840 |

Scans Setup

| | |
|---------------------|---------------|
| Scan Type | 5G Scan |
| Grid Extents [mm] | 120.0 x 120.0 |
| Grid Steps [lambda] | 0.25 x 0.25 |
| Sensor Surface [mm] | 10.0 |

Measurement Results

| | |
|---|---------|
| Scan Type | 5G Scan |
| Avg. Area [cm ²] | 4.00 |
| pS _{tot} avg [W/m ²] | 54.1 |
| pS _n avg [W/m ²] | 53.9 |
| E _{peak} [V/m] | 152 |
| Power Drift [dB] | -0.03 |

