APPENDIX B: SYSTEM VERIFICATION

ELEMENT

DUT: Dipole 2450.0 MHz; Type: D2450V2 - SN855

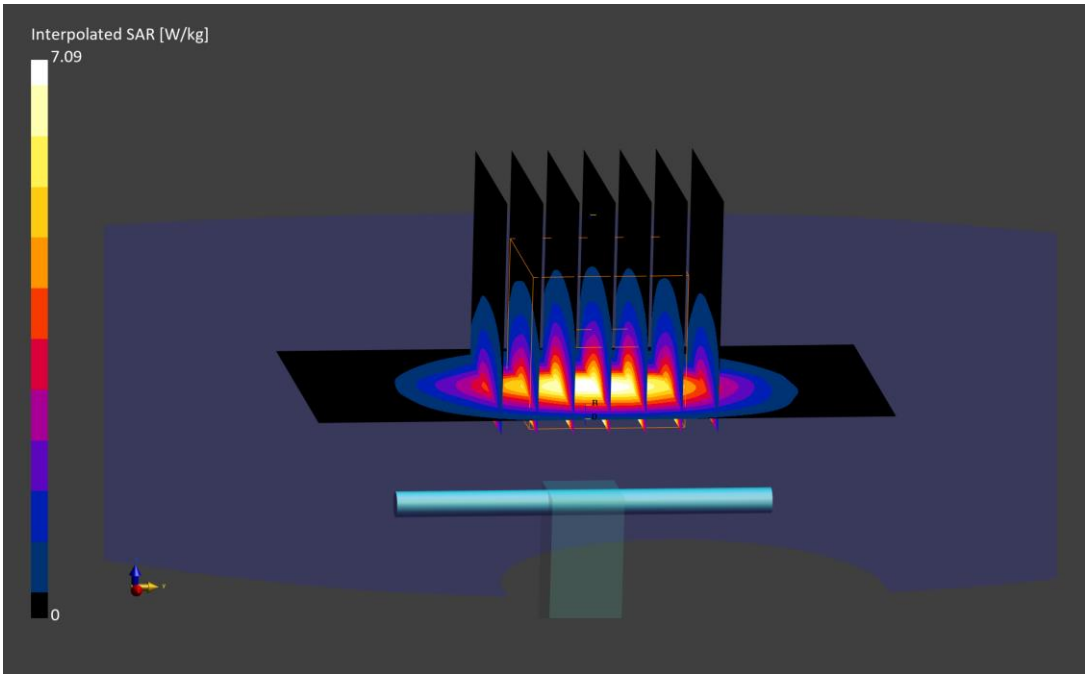
Communication System: UID: 0, CW; Frequency: 2450.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.0 MHz; cond = 1.84 S/m; perm = 38.6; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 8/13/2024; Ambient Temp: 22.5°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN7499; ConvF:(7.13,7.46,7.69); Calibrated: 2024-01-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1644; Calibrated: 2023-12-07
Phantom: Twin-SAM V8.0; Serial: 1357
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) = 11.9 W/kg
SAR(1 g) = 5.29 W/kg; SAR(10 g) = 2.35 W/kg
Deviation (1 g) = 0.95%; Deviation (10 g) = -4.47%



ELEMENT

DUT: Dipole 2450.0 MHz; Type: D2450V2 - SN750

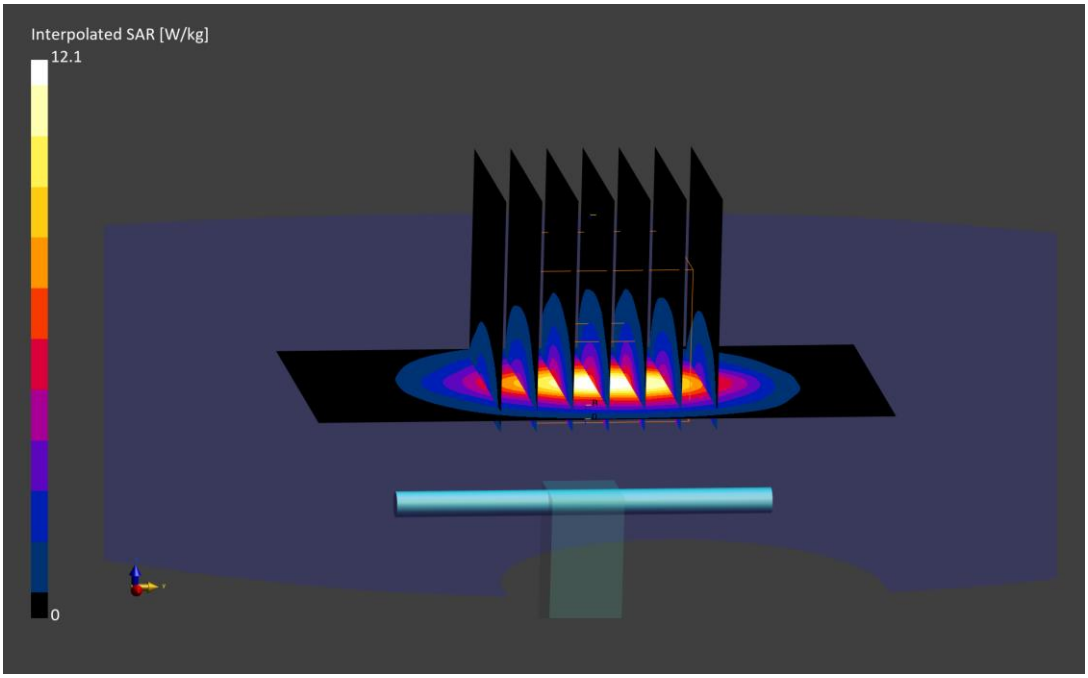
Communication System: UID: 0, CW; Frequency: 2450.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2450.0 MHz; cond = 1.82 S/m; perm = 38.0; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 8/15/2024; Ambient Temp: 22.5°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7499; ConvF:(7.13,7.46,7.69); Calibrated: 2024-01-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1644; Calibrated: 2023-12-07
Phantom: Twin-SAM V8.0; Serial: 1357
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) = 12.1 W/kg
SAR(1 g) = 5.29 W/kg; SAR(10 g) = 2.34 W/kg
Deviation (1 g) = 0.57%; Deviation (10 g) = -4.49%



ELEMENT

DUT: Dipole 5250.0 MHz; Type: D5GHzV2 - SN1123

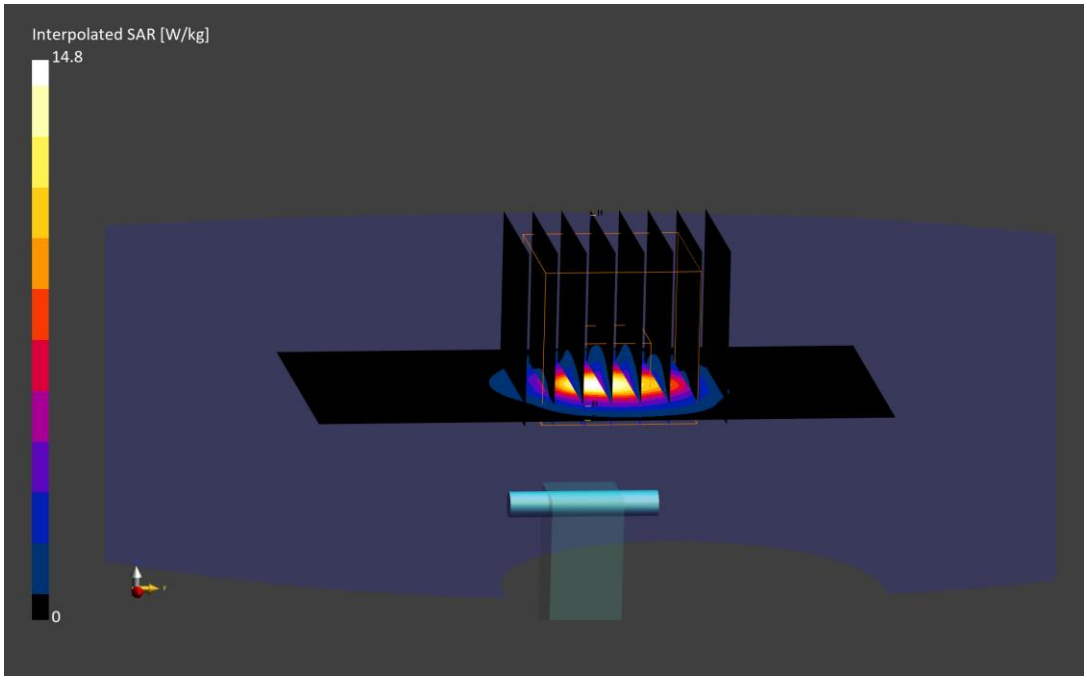
Communication System: UID: 0, CW; Frequency: 5250.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5250.0 MHz; cond = 4.52 S/m; perm = 36.5; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/29/2024; Ambient Temp: 21.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN3746; ConvF:(5.12,5.12,5.12); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 14.8 W/kg
SAR(1 g) = 3.85 W/kg; SAR(10 g) = 1.09 W/kg
Deviation (1 g) = -3.02%; Deviation (10 g) = -4.39%



ELEMENT

DUT: Dipole 5250.0 MHz; Type: D5GHzV2 - SN1163

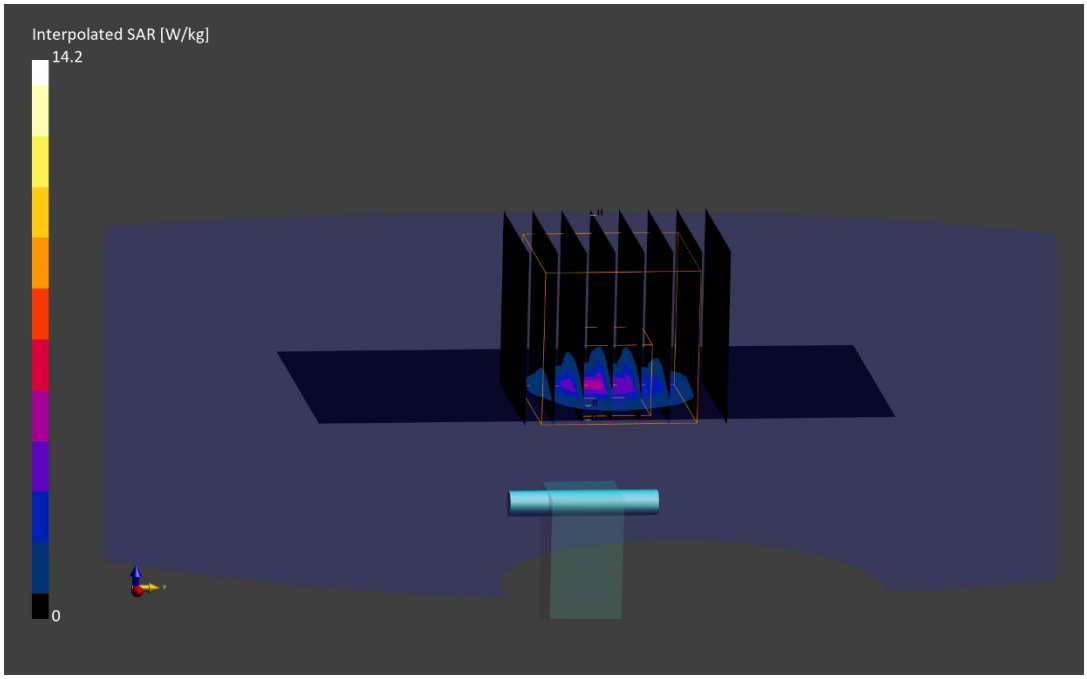
Communication System: UID: 0, CW; Frequency: 5250.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5250.0 MHz; cond = 4.55 S/m; perm = 36.7; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 08/02/2024; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3746; ConvF:(5.12,5.12,5.12); 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 14.2 W/kg
SAR(1 g) = 3.68 W/kg; SAR(10 g) = 1.04 W/kg
Deviation (1 g) = -7.54%; Deviation (10 g) = -7.96%



ELEMENT

DUT: Dipole 5600.0 MHz; Type: D5GHzV2 - SN1123

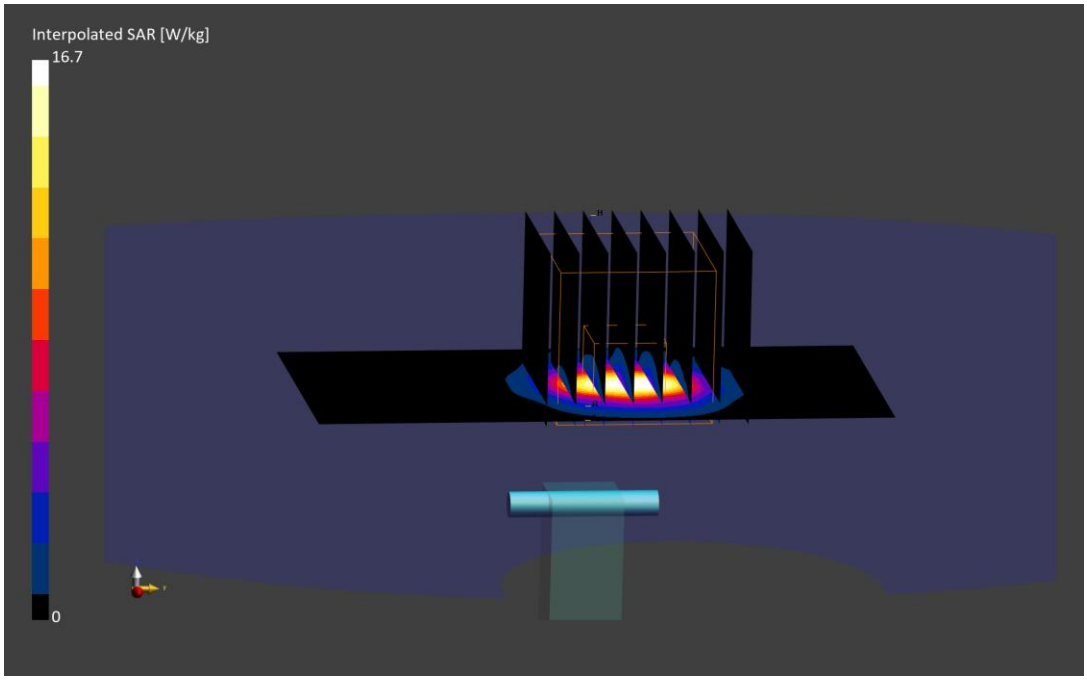
Communication System: UID: 0, CW; Frequency: 5600.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5600.0 MHz; cond = 4.90 S/m; perm = 36.0; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/29/2024; Ambient Temp: 21.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN3746; ConvF:(4.45,4.45,4.45); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 16.7 W/kg
SAR(1 g) = 3.98 W/kg; SAR(10 g) = 1.11 W/kg
Deviation (1 g) = -3.52%; Deviation (10 g) = -5.93%



ELEMENT

DUT: Dipole 5600.0 MHz; Type: D5GHzV2 - SN1163

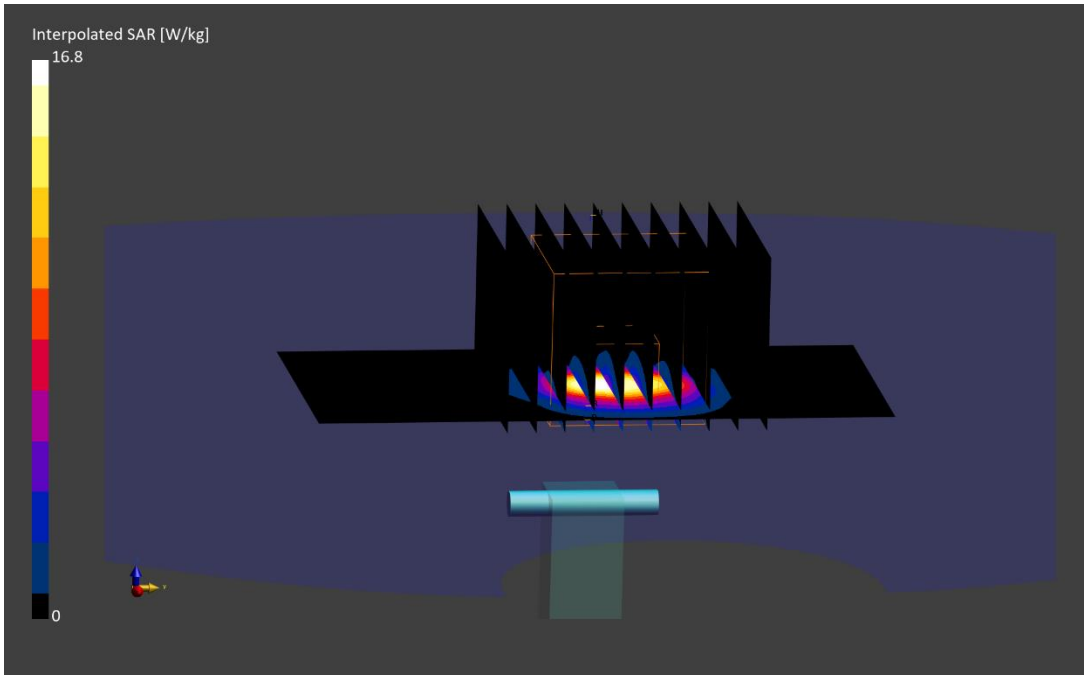
Communication System: UID: 0, CW; Frequency: 5600.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5600.0 MHz; cond = 4.92 S/m; perm = 36.1; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 08/02/2024; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3746; ConvF:(4.45,4.45,4.45); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 16.8 W/kg
SAR(1 g) = 4.03 W/kg; SAR(10 g) = 1.12 W/kg
Deviation (1 g) = -2.66%; Deviation (10 g) = -4.27%



ELEMENT

DUT: Dipole 5750.0 MHz; Type: D5GHzV2 - SN1123

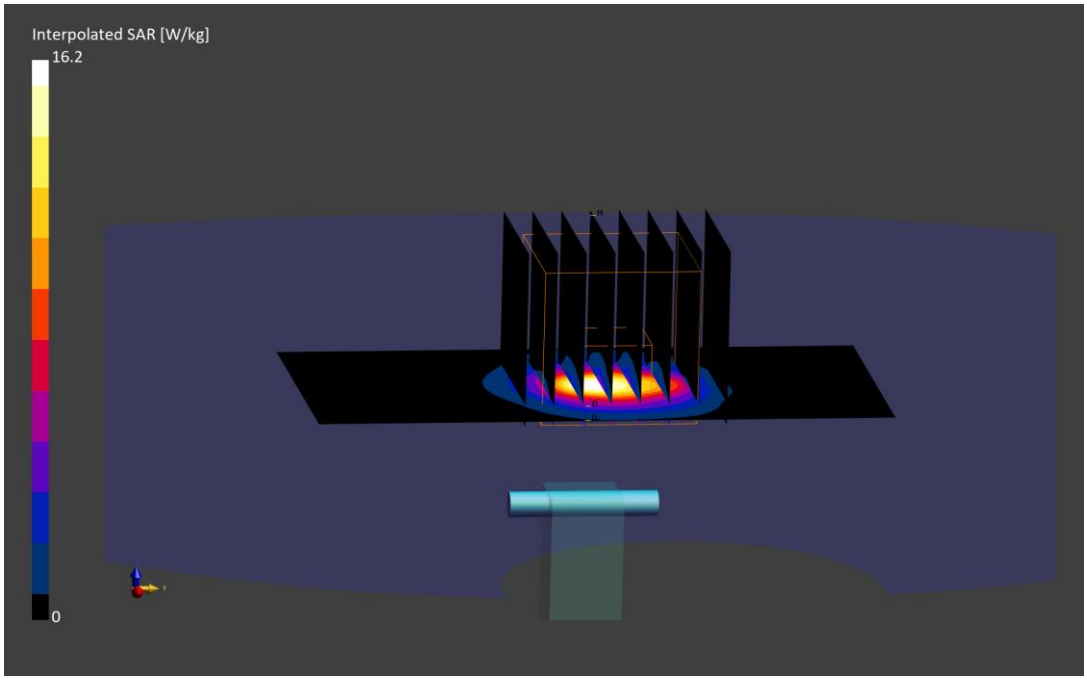
Communication System: UID: 0, CW; Frequency: 5750.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5750.0 MHz; cond = 5.06 S/m; perm = 35.8; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/29/2024; Ambient Temp: 21.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN3746; ConvF:(4.59,4.59,4.59); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 16.2 W/kg
SAR(1 g) = 3.85 W/kg; SAR(10 g) = 1.10 W/kg
Deviation (1 g) = -3.02%; Deviation (10 g) = -2.65%



ELEMENT

DUT: Dipole 5750.0 MHz; Type: D5GHzV2 - SN1163

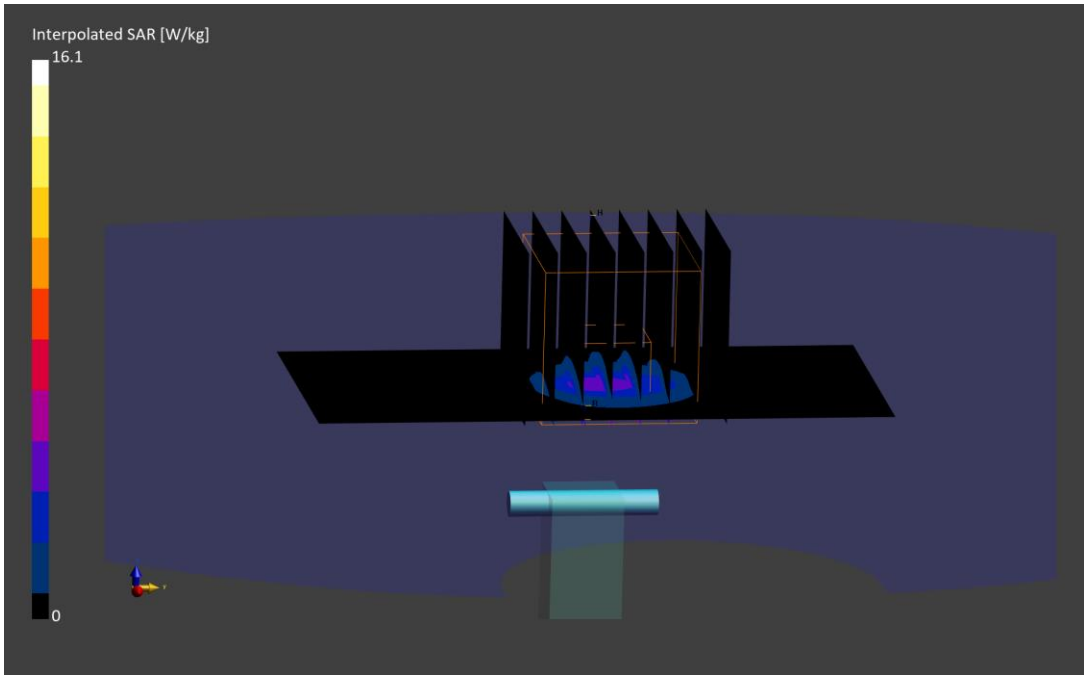
Communication System: UID: 0, CW; Frequency: 5750.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5750.0 MHz; cond = 5.09 S/m; perm = 35.9; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 08/02/2024; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3746; ConvF:(4.59,4.59,4.59); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 16.1 W/kg
SAR(1 g) = 3.76 W/kg; SAR(10 g) = 1.06 W/kg
Deviation (1 g) = -7.27%; Deviation (10 g) = -7.83%



ELEMENT

DUT: Dipole 5850.0 MHz; Type: D5GHzV2 - SN1123

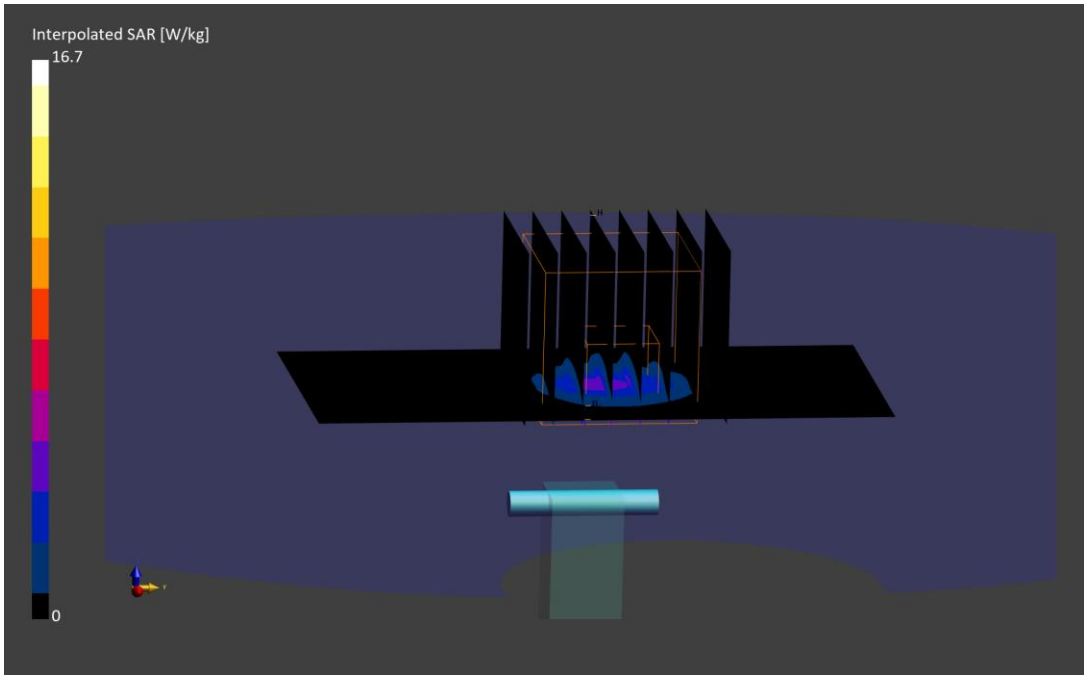
Communication System: UID: 0, CW; Frequency: 5850.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5850.0 MHz; cond = 5.17 S/m; perm = 35.7; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 07/29/2024; Ambient Temp: 21.7°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN3746; ConvF:(4.5,4.5,4.5); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 3.79 W/kg; SAR(10 g) = 1.06 W/kg
Deviation (1 g) = -5.37%; Deviation (10 g) = -7.02%



ELEMENT

DUT: Dipole 5850.0 MHz; Type: D5GHzV2 - SN1163

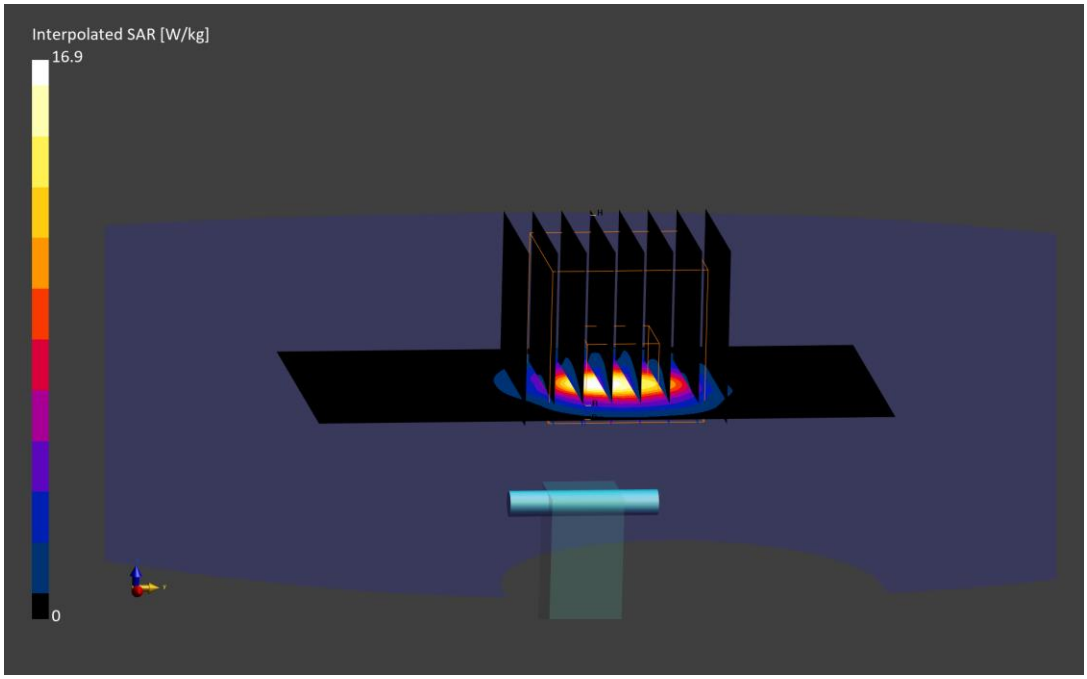
Communication System: UID: 0, CW; Frequency: 5850.0 MHz
Medium: 5200-5800 Head; Medium parameters used:
f = 5850.0 MHz; cond = 5.20 S/m; perm = 35.8; density = 1000 kg/m^3
Phantom Section: Flat; Space: 10 mm

Test Date: 08/02/2024; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3746; ConvF:(4.5,4.5,4.5); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1237; Calibrated: 2023-10-18
Phantom: Twin-SAM V8.0; Serial: 2027
Measurement SW: DASY Module SAR V16.2.4.2524

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) = 16.9 W/kg
SAR(1 g) = 3.85 W/kg; SAR(10 g) = 1.08 W/kg
Deviation (1 g) = -2.53%; Deviation (10 g) = -2.70%



ELEMENT

DUT: Dipole 6500.000 MHz; Type: D6.5GHzV2 - SN1019

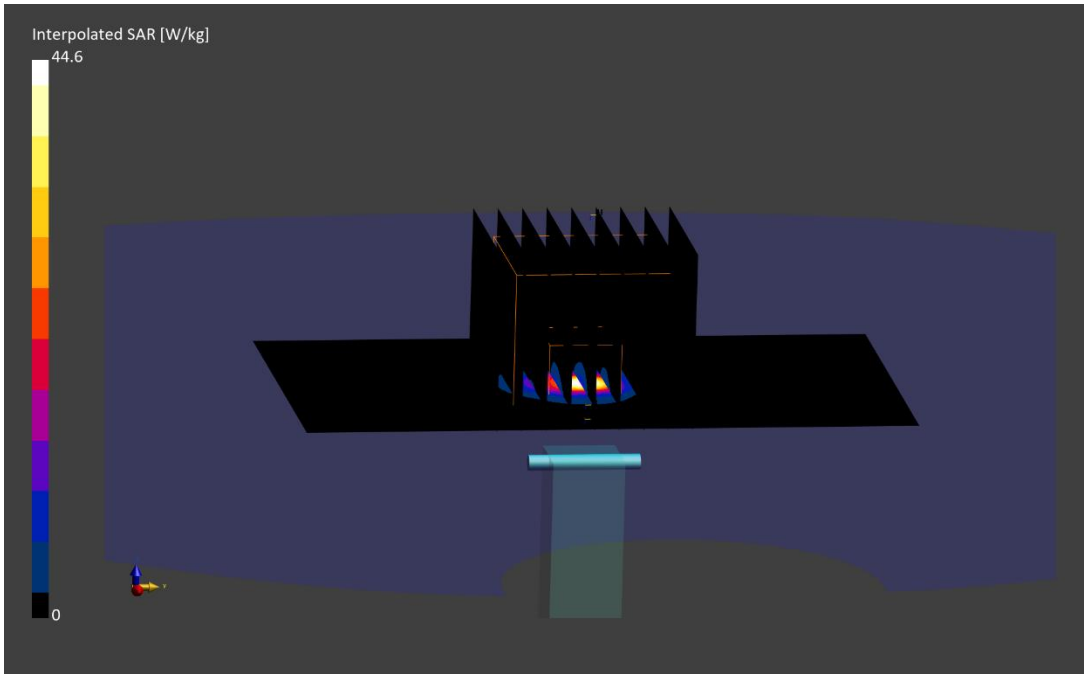
Communication System: UID: 0, CW; Frequency: 6500.0 MHz
Medium: 6000 Head; Medium parameters used:
f = 6500.0 MHz; cond = 5.91 S/m; perm = 34.9; density = 1000 kg/m^3
Phantom Section: Flat; Space: 5 mm

Test Date: 08/14/2024; Ambient Temp: 21.2°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7420; ConvF:(5.21,5.12,5.28); Calibrated: 2023-10-16
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1333; Calibrated: 2023-10-18
Phantom: Twin-SAM V4.0; Serial: 1275
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) = 44.6 W/kg
SAR(1 g) = 7.32 W/kg; SAR(10 g) = 1.34 W/kg; APD(4 cm^2) = 32.8 W/m^2
Deviation (1 g) = -0.07%; Deviation (10 g) = -0.92%; Deviation (APD) = -0.61%



element

Date: 08/17/2024

Measurement Group

Device Under Test Properties

DUT	Serial Number
10 GHz Verification Source	1006

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 - SN9487, 04/08/2024	DAE4 - SN1582, 04/09/2024

Software Setup

Software	Software Version
cDASY6 Module mmWave	3.2.0.1840

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0

Measurement Results

Scan Type	5G Scan
Avg. Area [cm²]	4.00
pS_{tot} avg [W/m²]	67.2
pS_n avg [W/m²]	67.1
E_{peak} [V/m]	168
Deviation [dB] pS_{tot}	0.57
Deviation [dB] pS_n	0.60