

APPENDIX B: SYSTEM VERIFICATION

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; $\text{cond} = 1.82$ S/m; $\text{perm} = 38.0$; $\text{density} = 1000$ kg/m³

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)

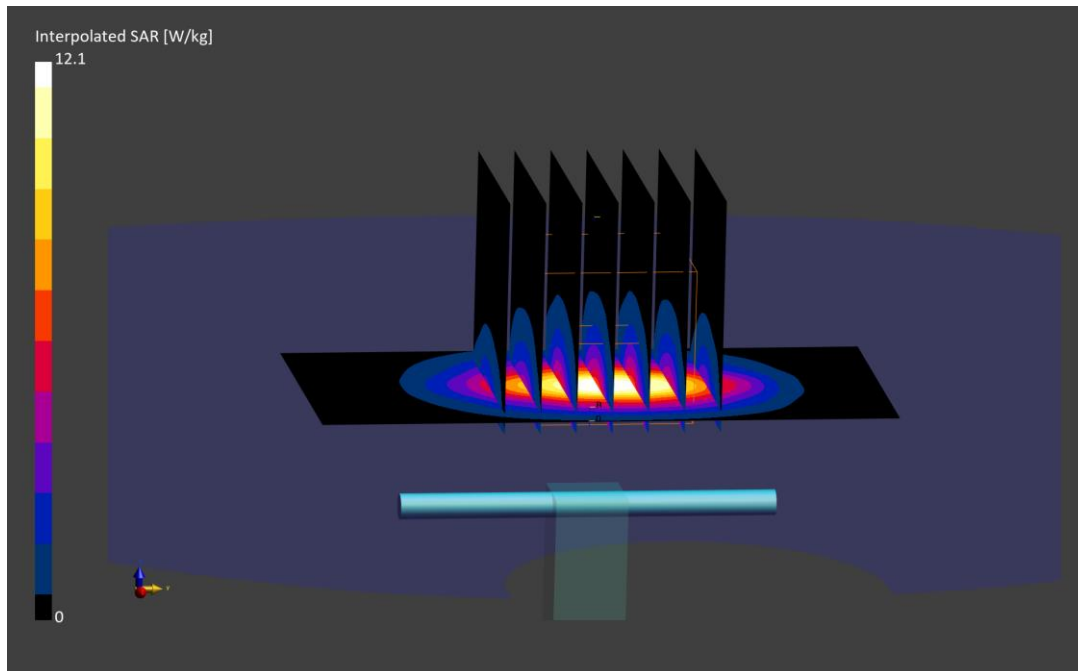
Area Scan (40.0 x 80.0): Measurement grid: $dx=10.0$ mm, $dy=10.0$ mm

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

Deviation (1 g) = 0.57%



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; $\text{cond} = 1.86$ S/m; $\text{perm} = 38.8$; $\text{density} = 1000$ kg/m³

Phantom Section: Flat; Space: 10 mm

Test Date: 08/19/2024; Ambient Temp: 20.1°C; Tissue Temp: 24.0°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)

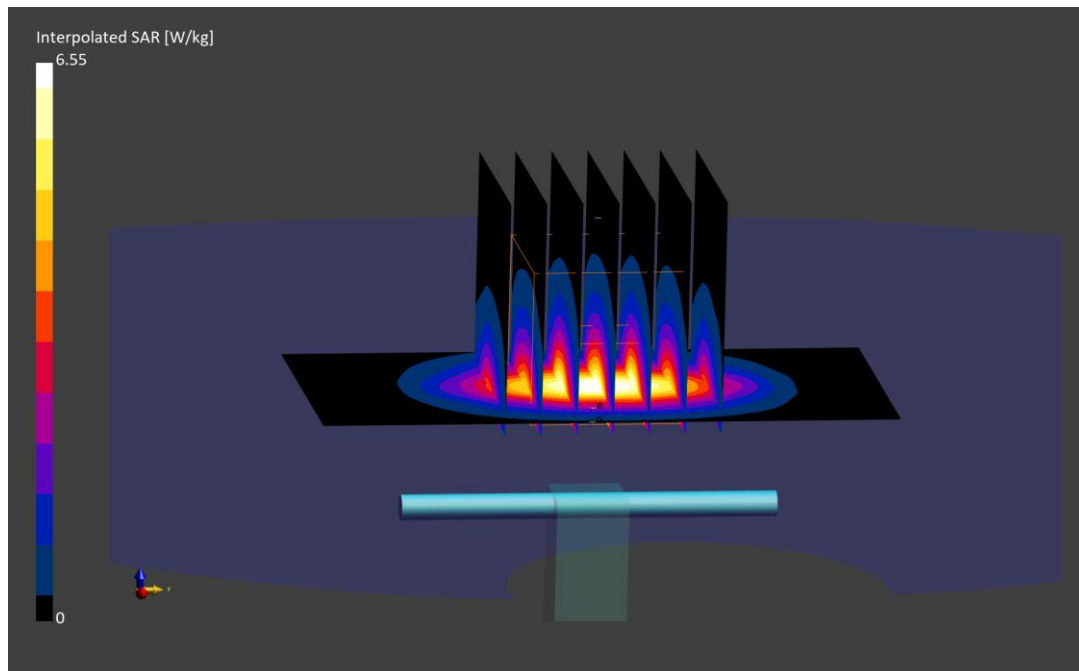
Area Scan (40.0 x 80.0): Measurement grid: $dx=10.0$ mm, $dy=10.0$ mm

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) = 11.1 W/kg

SAR(1 g) = 5.06 W/kg

Deviation (1 g) = -3.80%



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 = 4.48 S/m; perm = 34.5; density = 1000 kg/m³

Phantom Section: Flat; Space: 10 mm

Test Date: 07/23/2024; Ambient Temp: 23.2°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7427; ConvF:(4.73,5.26,5.35); Calibrated: 2024-02-09

Sensor-Surface: 1.4mm (VMS + 6p)

Electronics: DAE4 Sn467; Calibrated: 2024-02-09

Phantom: Twin-SAM V8.0; Serial: 2070

Measurement SW: DASY Module SAR V16.2.4.2524

5250.0 MHz System Verification at 17.0 dBm (50 mW)

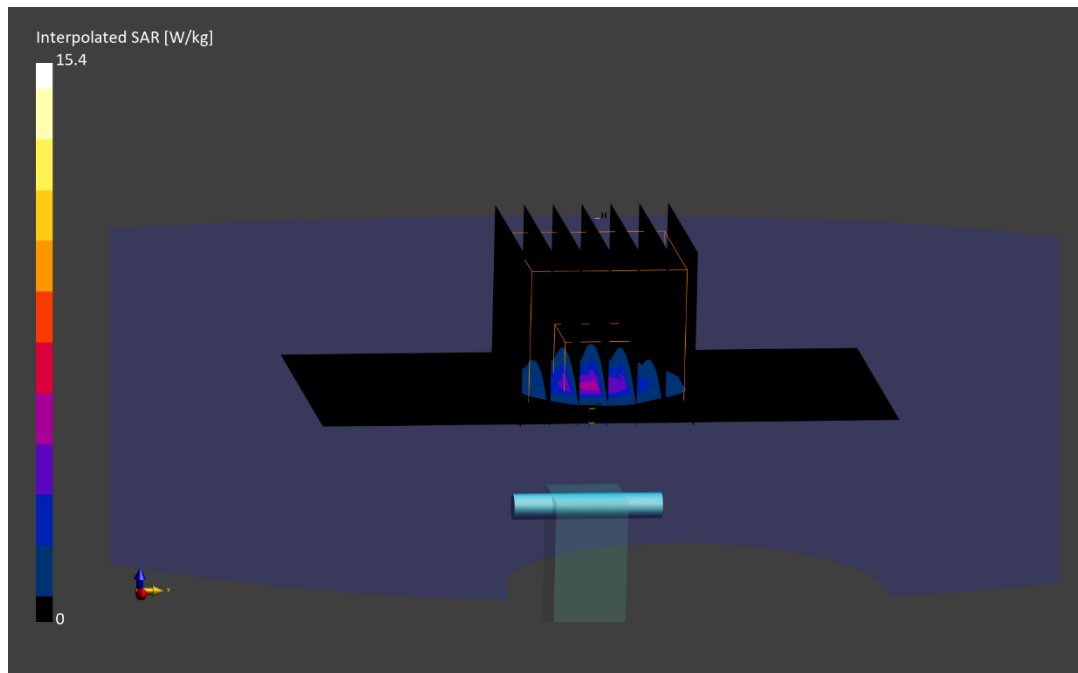
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

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) = 15.4 W/kg

SAR(1 g) = 3.91 W/kg

Deviation (1 g) = -1.76%



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 = 4.86 S/m; perm = 33.9; density = 1000 kg/m³

Phantom Section: Flat; Space: 10 mm

Test Date: 07/23/2024; Ambient Temp: 23.2°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7427; ConvF:(4.18,4.62,4.72); Calibrated: 2024-02-09

Sensor-Surface: 1.4mm (VMS + 6p)

Electronics: DAE4 Sn467; Calibrated: 2024-02-09

Phantom: Twin-SAM V8.0; Serial: 2070

Measurement SW: DASY Module SAR V16.2.4.2524

5600.0 MHz System Verification at 17.0 dBm (50 mW)

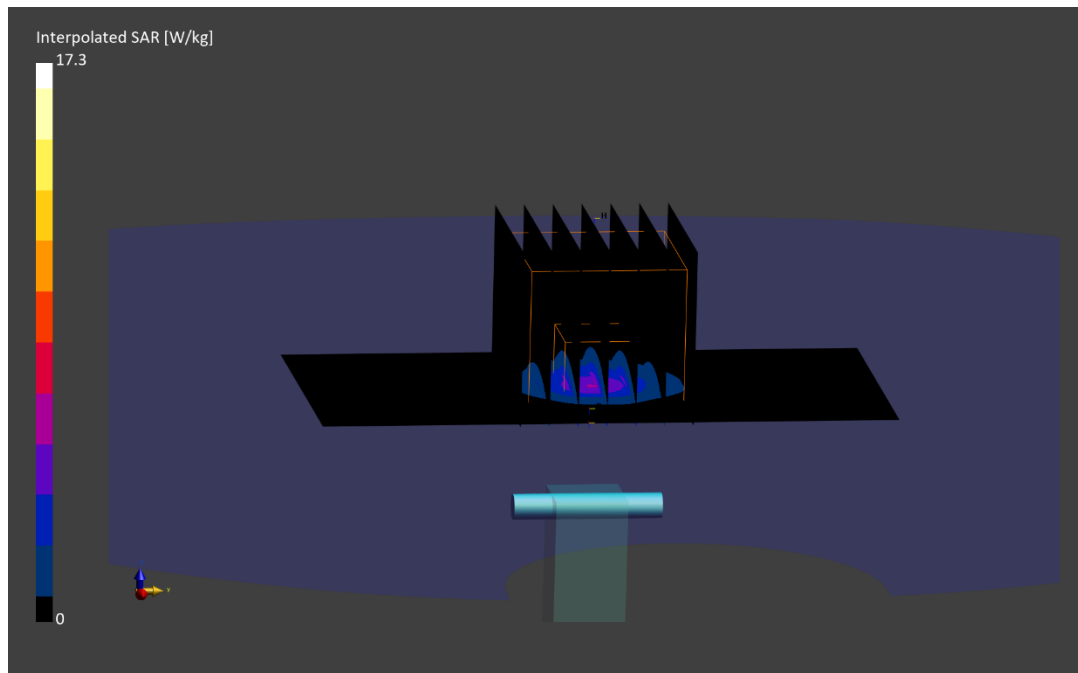
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

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) = 17.3 W/kg

SAR(1 g) = 4.18 W/kg

Deviation (1 g) = 0.97%



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 = 5.01 S/m; perm = 33.7; density = 1000 kg/m³

Phantom Section: Flat; Space: 10 mm

Test Date: 07/23/2024; Ambient Temp: 23.2°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7427; ConvF:(4.35,4.78,4.93); Calibrated: 2024-02-09

Sensor-Surface: 1.4mm (VMS + 6p)

Electronics: DAE4 Sn467; Calibrated: 2024-02-09

Phantom: Twin-SAM V8.0; Serial: 2070

Measurement SW: DASY Module SAR V16.2.4.2524

5750.0 MHz System Verification at 17.0 dBm (50 mW)

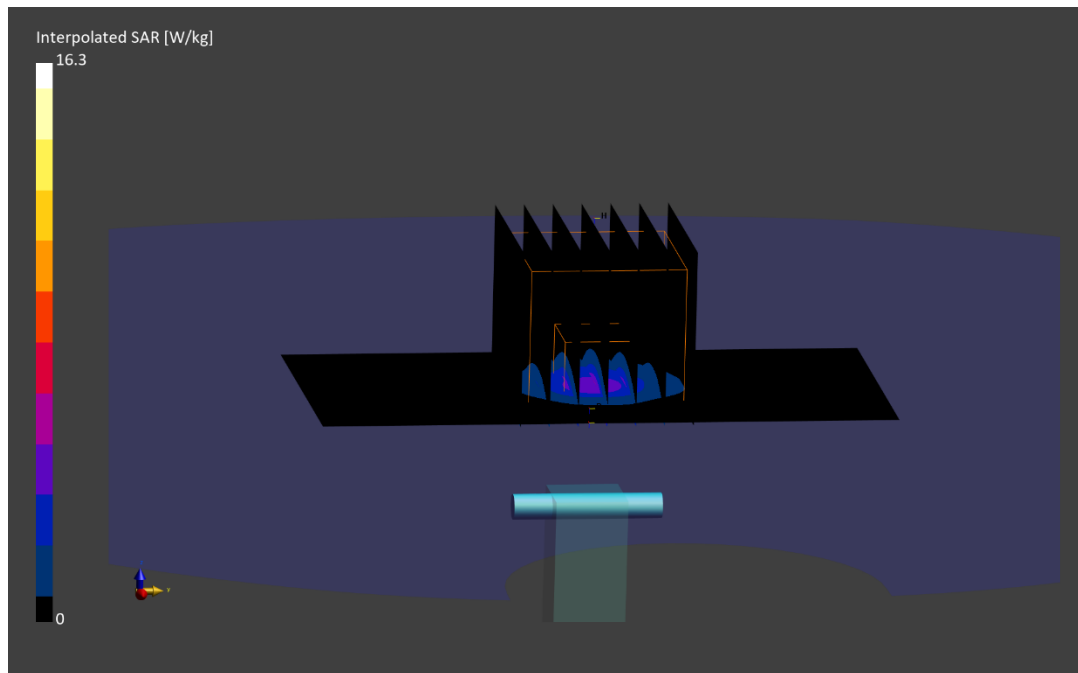
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

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) = 16.3 W/kg

SAR(1 g) = 3.82 W/kg

Deviation (1 g) = -5.80%



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 = 5.11 S/m; perm = 33.5; density = 1000 kg/m³

Phantom Section: Flat; Space: 10 mm

Test Date: 07/23/2024; Ambient Temp: 23.2°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7427; ConvF:(4.04,4.57,4.63); Calibrated: 2024-02-09

Sensor-Surface: 1.4mm (VMS + 6p)

Electronics: DAE4 Sn467; Calibrated: 2024-02-09

Phantom: Twin-SAM V8.0; Serial: 2070

Measurement SW: DASY Module SAR V16.2.4.2524

5850.0 MHz System Verification at 17.0 dBm (50 mW)

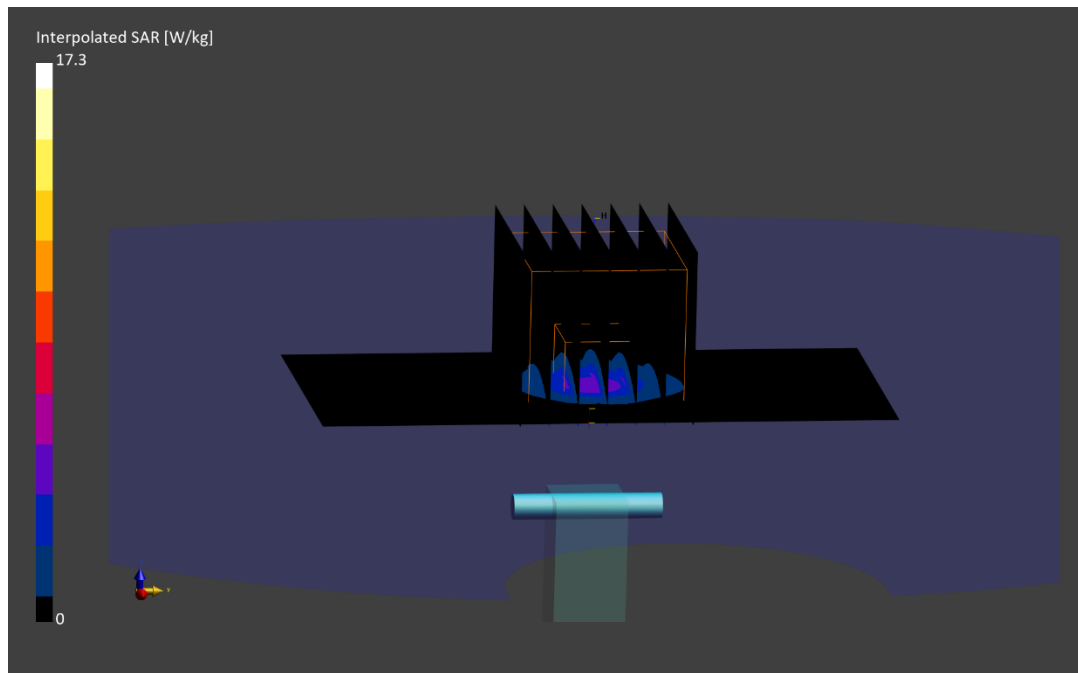
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

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) = 17.3 W/kg

SAR(1 g) = 4.03 W/kg

Deviation (1 g) = 2.03%



ELEMENT

DUT: Dipole 6500.0 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/m³

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)

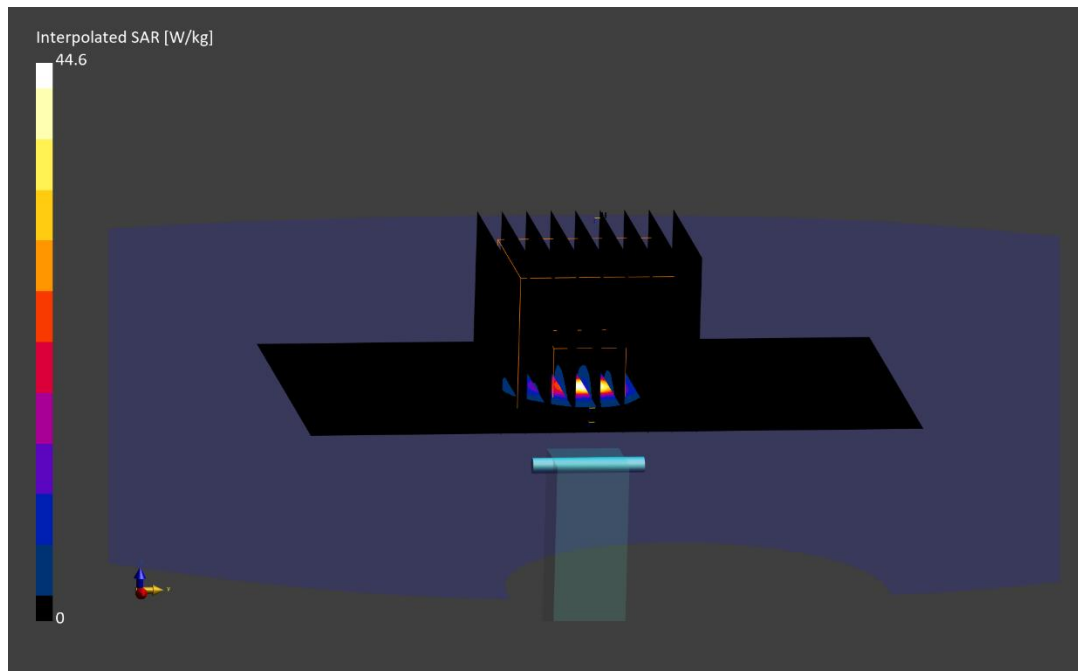
Area Scan (51.0 x 85.0): Measurement grid: dx=8.5 mm, dy=8.5 mm

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; APD(4 cm²) = 32.8 W/m²

Deviation (1 g) = -0.07%; Deviation (APD) = -0.61%



Date: 08/09/2024

10 GHz System Verification

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]	51.0
pS _n avg [W/m²]	50.8
E _{peak} [V/m]	149
Deviation [dB] pS _{tot}	-0.63
Deviation [dB] pS _n	-0.61

