

## APPENDIX A: VERIFICATION PLOTS

# ELEMENT

**DUT: Dipole 835.0 MHz; Type: D835V2 - SN4d132**

Communication System: UID: 0, CW; Frequency: 835.0 MHz  
Medium: 835 Body; Medium parameters used:  
f = 835.0 MHz; cond = 0.955 S/m; perm = 53.5; density = 1000 kg/m<sup>3</sup>  
Phantom Section: Flat; Space: 15 mm

Test Date: 06/20/2022; Ambient Temp: 21.0°C; Tissue Temp: 20.2°C

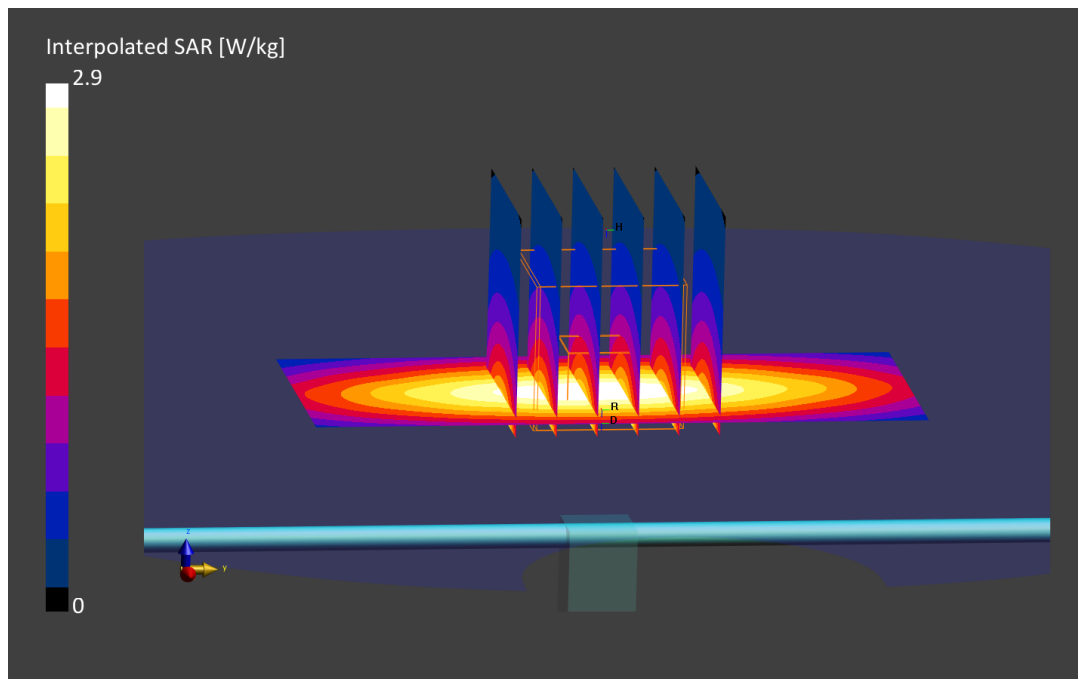
Probe: EX3DV4 - SN7551; ConvF:(9.98,9.98,9.98); Calibrated: 2021-10-26  
Sensor-Surface: 1.4mm (VMS + 6p)  
Electronics: DAE4 Sn1449; Calibrated: 2021-09-15  
Phantom: Twin-SAM V8.0 (Left); Serial: 1964  
Measurement SW: DASY Module SAR V16.0.2.136

## 835 MHz System Verification at 23 dBm (200 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) = 2.90 W/kg  
**SAR(1 g) = 1.88 W/kg; SAR(10 g) = 1.24 W/kg**  
Deviation (1 g) = -4.18%



# ELEMENT

**DUT: Dipole 1750.0 MHz; Type: D1765V2 - SN1008**

Communication System: UID: 0, CW; Frequency: 1750.0 MHz  
Medium: 1750 Body; Medium parameters used:  
f = 1750.0 MHz; cond = 1.45 S/m; perm = 52.1; density = 1000 kg/m<sup>3</sup>  
Phantom Section: Flat; Space: 10 mm

Test Date: 06/20/2022; Ambient Temp: 21.0°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7551; ConvF:(8.18,8.18,8.18); Calibrated: 2021-10-26  
Sensor-Surface: 1.4mm (VMS + 6p)  
Electronics: DAE4 Sn1449; Calibrated: 2021-09-15  
Phantom: Twin-SAM V8.0 (Left); Serial: 1964  
Measurement SW: DASY Module SAR V16.0.2.136

## 1750 MHz System Verification at 20 dBm (100 mW)

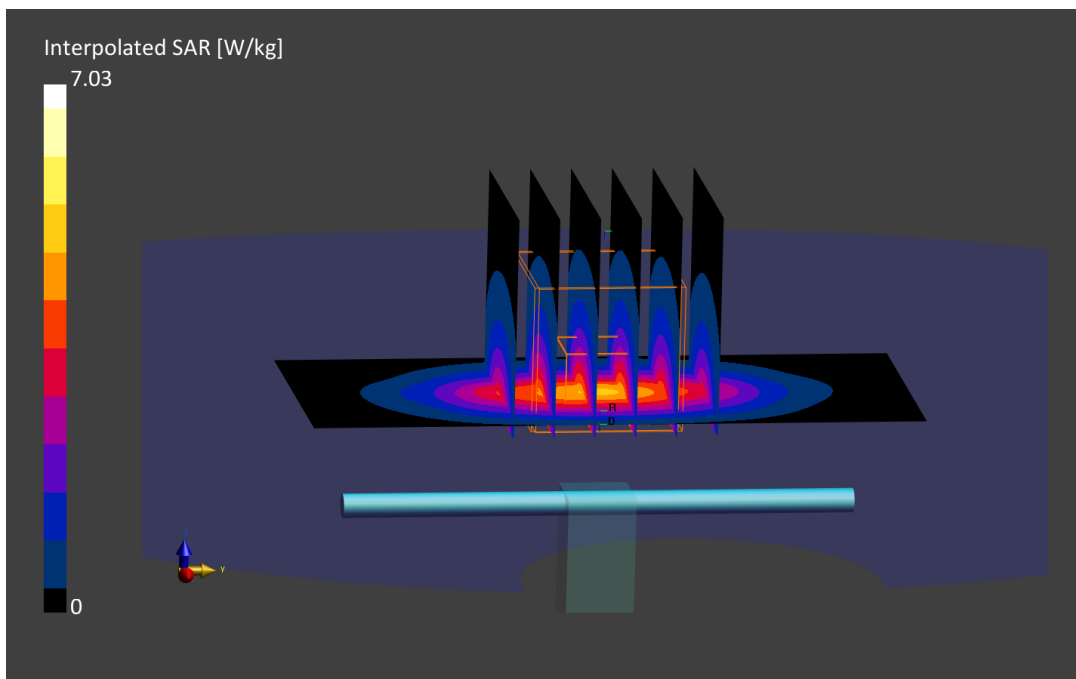
**Area Scan (40.0 x 90.0):** Measurement grid: dx=10.0 mm, dy=15.0 mm

**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) = 7.03 W/kg

**SAR(1 g) = 3.85 W/kg; SAR(10 g) = 2.06 W/kg**

Deviation (1 g) = 1.85%



# ELEMENT

**DUT: Dipole 1900.0 MHz; Type: D1900V2 - SN5d148**

Communication System: UID: 0, CW; Frequency: 1900.0 MHz  
Medium: 1900 Body; Medium parameters used:  
f = 1900.0 MHz; cond = 1.59 S/m; perm = 53.4; density = 1000 kg/m<sup>3</sup>  
Phantom Section: Flat; Space: 10 mm

Test Date: 05/12/2022; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

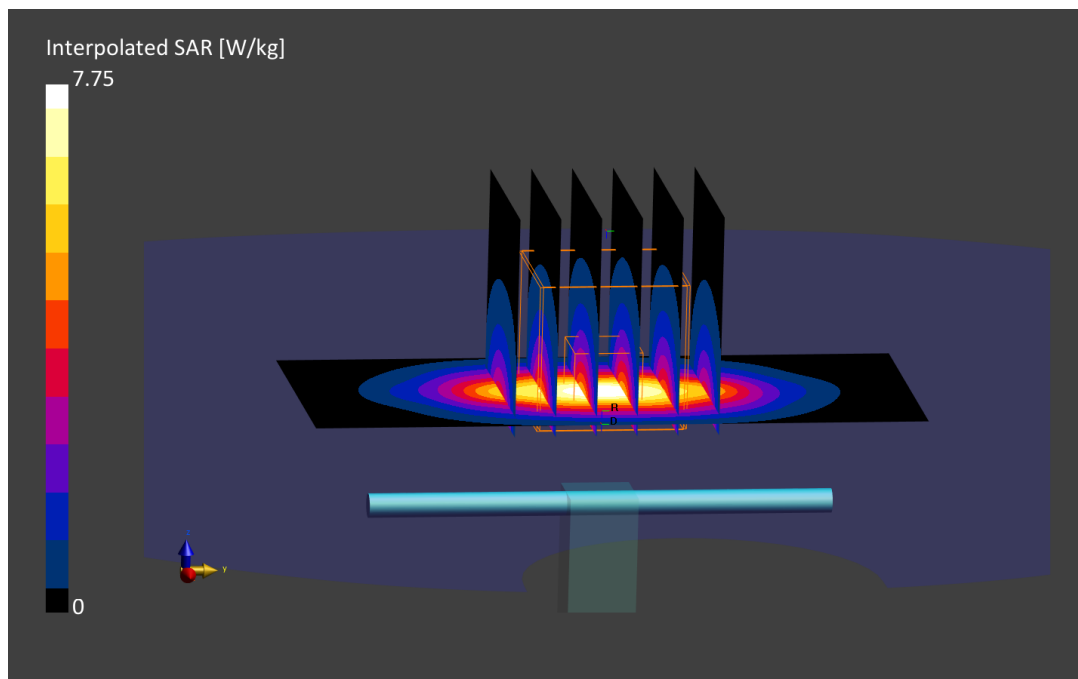
Probe: EX3DV4 - SN7551; ConvF:(7.82,7.82,7.82); Calibrated: 2021-10-26  
Sensor-Surface: 1.4mm (VMS + 6p)  
Electronics: DAE4 Sn1449; Calibrated: 2021-09-15  
Phantom: Twin-SAM V8.0 Right; Serial: 1981  
Measurement SW: DASY Module SAR V16.0.2.136

## 1900 MHz System Verification at 20 dBm (100 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) = 7.74 W/kg  
**SAR(1 g) = 4.21 W/kg; SAR(10 g) = 2.18 W/kg**  
Deviation (10 g) = 4.31%;



# ELEMENT

**DUT: Dipole 1900.0 MHz; Type: D1900V2 - SN5d148**

Communication System: UID: 0, CW; Frequency: 1900.0 MHz  
Medium: 1900 Body; Medium parameters used:  
f = 1900.0 MHz; cond = 1.55 S/m; perm = 51.8; density = 1000 kg/m<sup>3</sup>  
Phantom Section: Flat; Space: 10 mm

Test Date: 06/20/2022; Ambient Temp: 21.0°C; Tissue Temp: 20.2°C

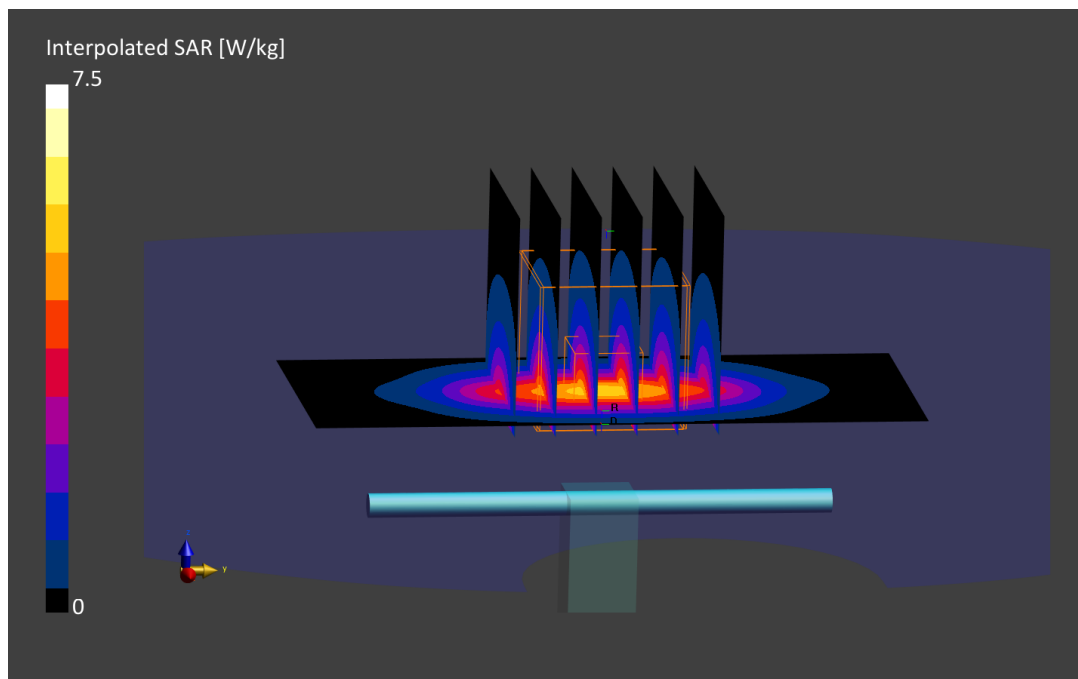
Probe: EX3DV4 - SN7551; ConvF:(7.82,7.82,7.82); Calibrated: 2021-10-26  
Sensor-Surface: 1.4mm (VMS + 6p)  
Electronics: DAE4 Sn1449; Calibrated: 2021-09-15  
Phantom: Twin-SAM V8.0 (Left); Serial: 1964  
Measurement SW: DASY Module SAR V16.0.2.136

## 1900 MHz System Verification at 20 dBm (100 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) = 7.50 W/kg  
**SAR(1 g) = 4.20 W/kg; SAR(10 g) = 2.20 W/kg**  
Deviation (1 g) = 5.26%



# ELEMENT

**DUT: Dipole 3700.0 MHz; Type: D3700V2 - SN1067**

Communication System: UID: 0, CW; Frequency: 3700.0 MHz  
Medium: 3700 Head; Medium parameters used:  
f = 3700.0 MHz; cond = 2.96 S/m; perm = 38.2; density = 1000 kg/m<sup>3</sup>  
Phantom Section: Flat; Space: 10 mm

Test Date: 05/19/2022; Ambient Temp: 21.1°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7551; ConvF:(6.4,6.4,6.4); Calibrated: 2021-10-26  
Sensor-Surface: 1.4mm (VMS + 6p)  
Electronics: DAE4 Sn1449; Calibrated: 2021-09-15  
Phantom: Twin-SAM V8.0 Right; Serial: 1981  
Measurement SW: DASY Module SAR V16.0.2.136

## 3700 MHz System Verification at 20 dBm (100 mW)

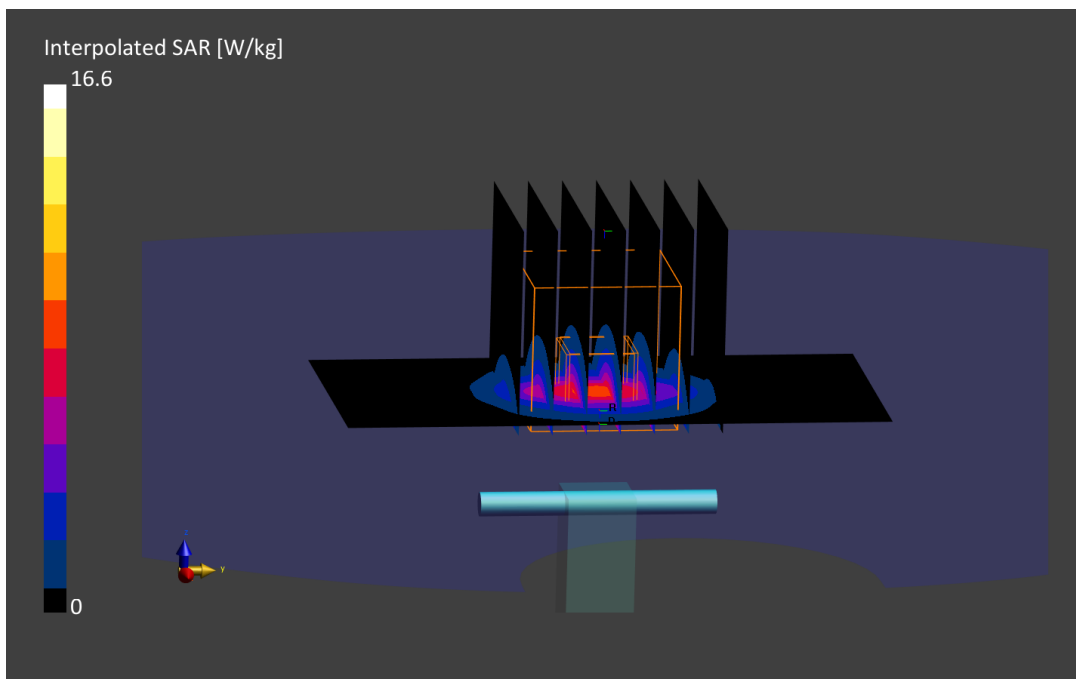
**Area Scan (40.0 x 80.0):** Measurement grid: dx=10.0 mm, dy=10.0 mm

**Zoom Scan (28.0 x 28.0 x 28.0):** Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.4 mm; Graded  
Ratio: 1.5

Peak SAR (extrapolated) = 16.6 W/kg

**SAR(1 g) = 6.51 W/kg; SAR(10 g) = 2.44 W/kg**

Deviation (1 g) = -3.13%



# ELEMENT

Date: 06/07/2022

30 GHz System Verification

## Device Under Test Properties

DUT	Serial Number
30 GHz Verification Source	1045

## Exposure Conditions

Phantom Section	Position	Test Distance [mm]	Band	Frequency [MHz]
5G	FRONT	5.55	Validation band	30000.0

## Hardware Setup

Probe, Calibration Date	DAE, Calibration Date
EUmmWV3 - SN9421_F1-55GHz, 2022-03-15	DAE4 Sn1530, 2022-01-12

## Software Setup

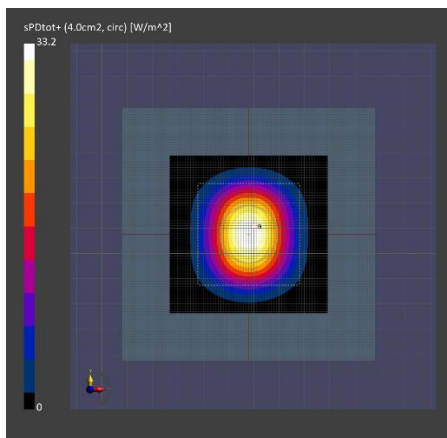
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

## Scans Setup

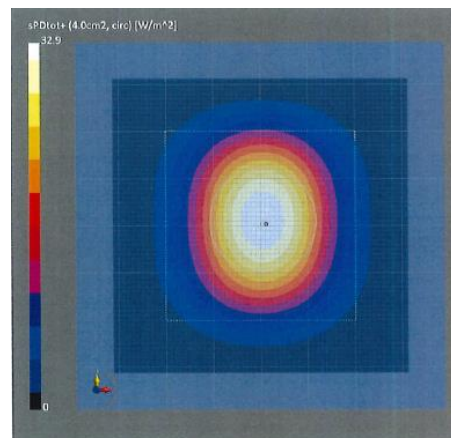
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

## Measurement Results

Scan Type	5G Scan
Avg. Area [cm <sup>2</sup> ]	4.00
pS <sub>tot</sub> avg [W/m <sup>2</sup> ]	33.2
pS <sub>n</sub> avg [W/m <sup>2</sup> ]	32.8
E <sub>peak</sub> [V/m]	131
Power Drift [dB]	0.08



30GHz System Verification



Calibration Certificate