

APPENDIX A: VERIFICATION PLOTS

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 = 1.49 S/m; perm = 53.7; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 05/12/2022; Ambient Temp: 20.7⁰C; Tissue Temp: 20.5⁰C

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 Right; Serial: 1981
Measurement SW: DASY Module SAR V16.0.2.136

1750 MHz System Verification at 20 dBm (100 mW)

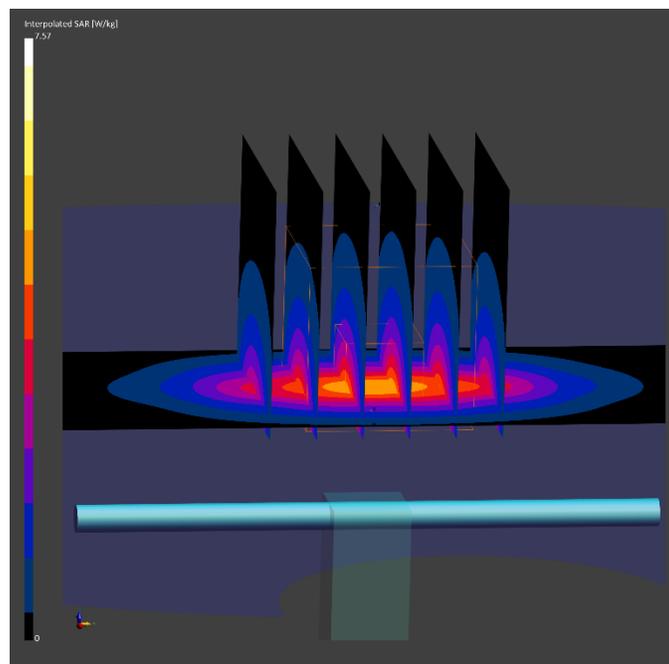
Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm

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) = 7.57 W/kg

SAR(1 g) = 3.97 W/kg; SAR(10 g) = 2.09 W/kg

Deviation (1 g) = 5.03%



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 = 54.9; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 05/10/2022; Ambient Temp: 21.0°C; Tissue Temp: 20.7°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)

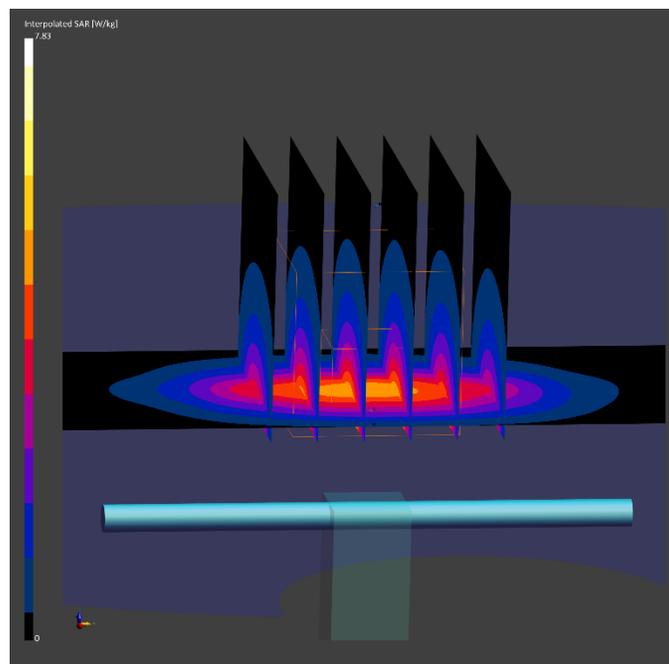
Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm

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) = 7.83 W/kg

SAR(1 g) = 4.17 W/kg; SAR(10 g) = 2.15 W/kg

Deviation (1 g) = 4.51%



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/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 05/12/2022; Ambient Temp: 21.5⁰C; Tissue Temp: 20.6⁰C

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)

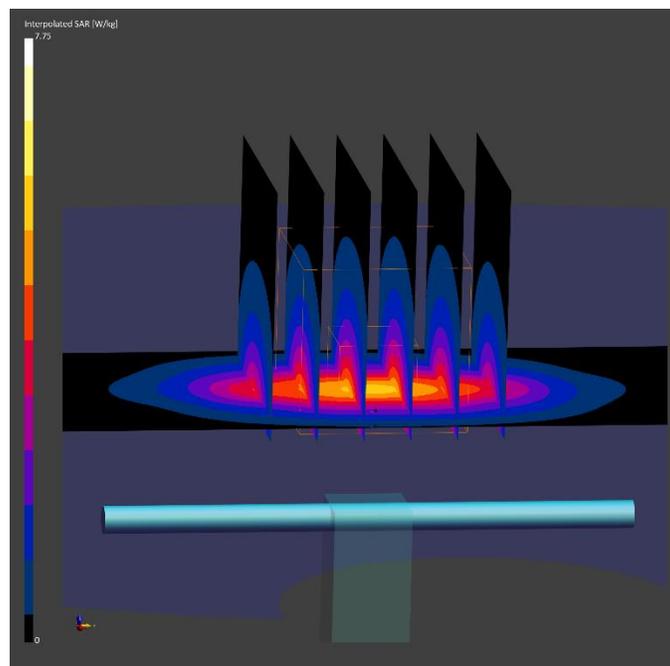
Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm

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 (1 g) = 5.51%



ELEMENT

DUT: Dipole 2300.0 MHz; Type: D2300V2 - SN1116

Communication System: UID: 0, CW; Frequency: 2300.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2300.0 MHz; cond = 1.90 S/m; perm = 51.7; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 05/17/2022; Ambient Temp: 23.6⁰C; Tissue Temp: 21.8⁰C

Probe: EX3DV4 - SN7551; ConvF:(7.81,7.81,7.81); 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

2300 MHz System Verification at 20 dBm (100 mW)

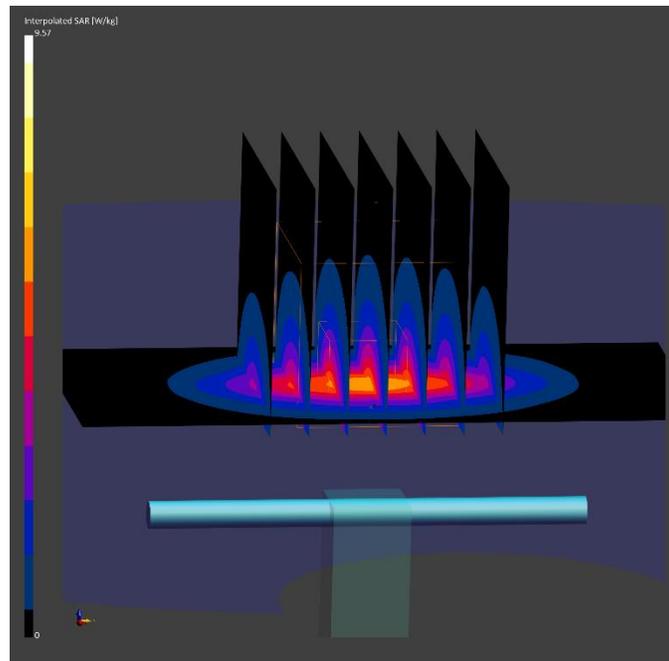
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (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) = 9.57 W/kg

SAR(1 g) = 4.73 W/kg; SAR(10 g) = 2.25 W/kg

Deviation (1 g) = -3.86%



ELEMENT

DUT: Dipole 2600.0 MHz; Type: D2600V2 - SN1064

Communication System: UID: 0, CW; Frequency: 2600.0 MHz
Medium: 2450 Body; Medium parameters used:
f = 2600.0 MHz; cond = 2.14 S/m; perm = 51.3; density = 1000 kg/m³
Phantom Section: Flat; Space: 10 mm

Test Date: 05/17/2022; Ambient Temp: 23.6⁰C; Tissue Temp: 21.8⁰C

Probe: EX3DV4 - SN7551; ConvF:(7.43,7.43,7.43); 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

2600 MHz System Verification at 20 dBm (100 mW)

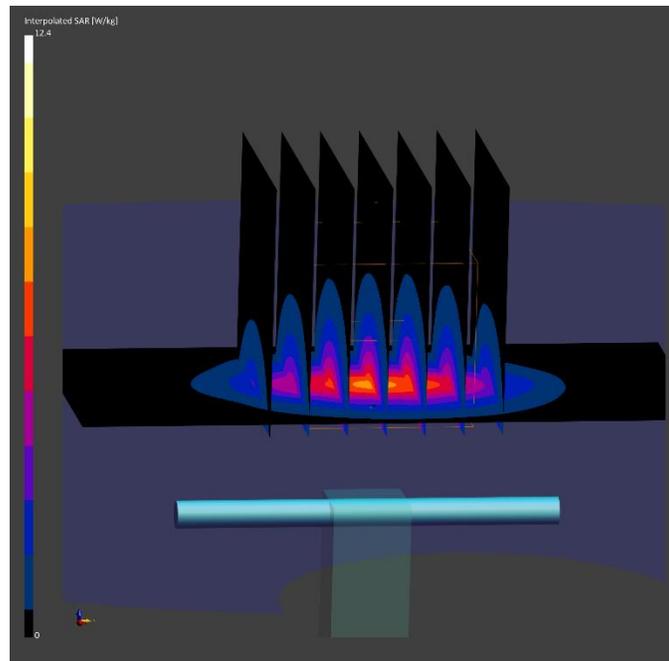
Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm

Zoom Scan (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) = 12.4 W/kg

SAR(1 g) = 5.68 W/kg; SAR(10 g) = 2.53 W/kg

Deviation (1 g) = 2.16%



ELEMENT

Date: 06/24/2022

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

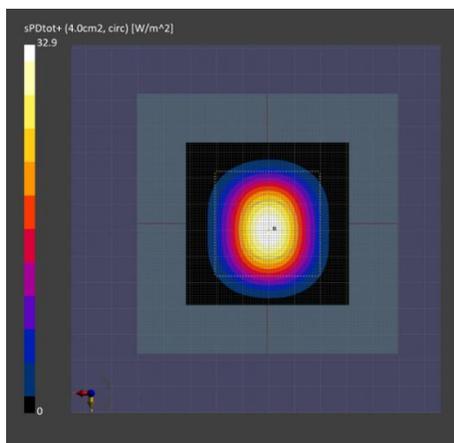
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

Scans Setup

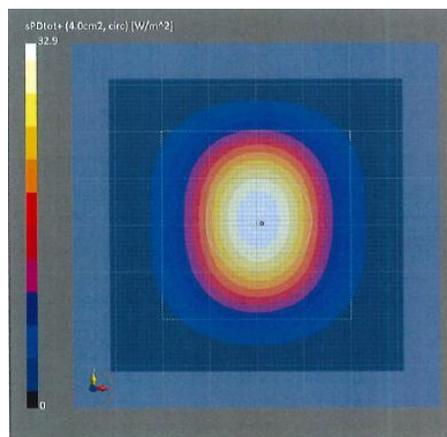
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
pS _{tot} avg [W/m ²]	32.9
pS _n avg [W/m ²]	32.5
E _{peak} [V/m]	131
Power Drift [dB]	0.02



30GHz System Verification



Calibration Certificate