

Appendix B - System Performance Check Plots

System Performance Check at 2450 MHz**DUT: D2450V2_SN712**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2450$ MHz; $\sigma = 1.778$ S/m; $\epsilon_r = 38.87$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.44, 7.44, 7.44) @ 2450 MHz; Calibrated: 2022/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 2450MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 4.28 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.66 V/m; Power Drift = -0.12 dB

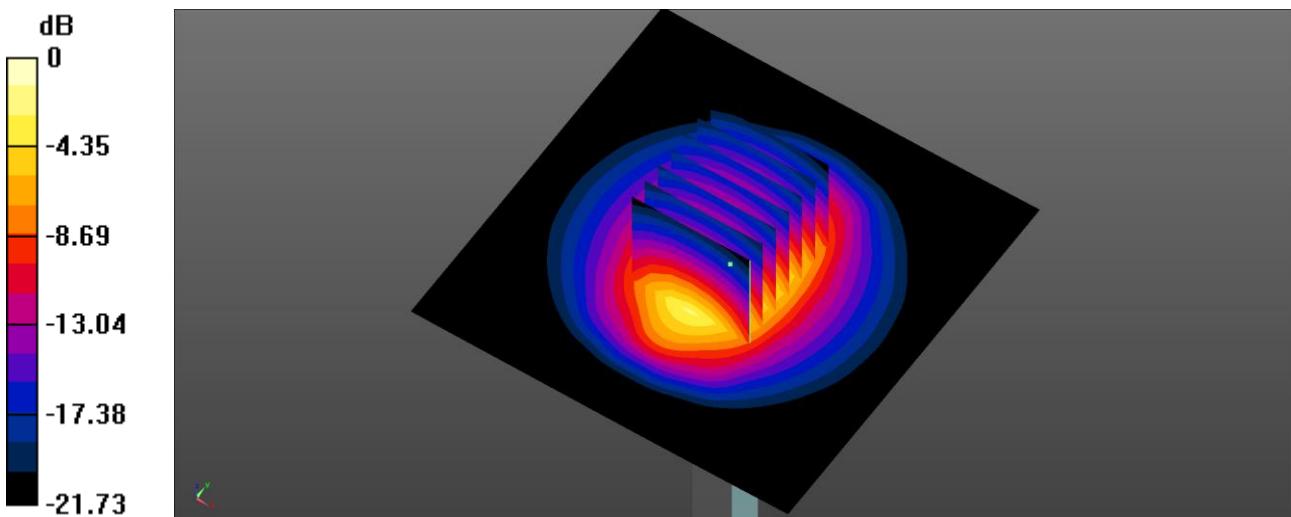
Peak SAR (extrapolated) = 5.29 W/kg

SAR(1 g) = 2.54 W/kg; SAR(10 g) = 1.18 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 48.4%

Maximum value of SAR (measured) = 4.27 W/kg



0 dB = 4.27 W/kg = 6.30 dBW/kg

System Performance Check at 2450 MHz**DUT: D2450V2_SN712**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2450$ MHz; $\sigma = 1.801$ S/m; $\epsilon_r = 39.374$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7647; ConvF(8.13, 8.13, 8.13) @ 2450 MHz; Calibrated: 2022/4/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1253; Calibrated: 2021/12/30
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1133
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 2450MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 4.24 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.49 V/m; Power Drift = 0.01 dB

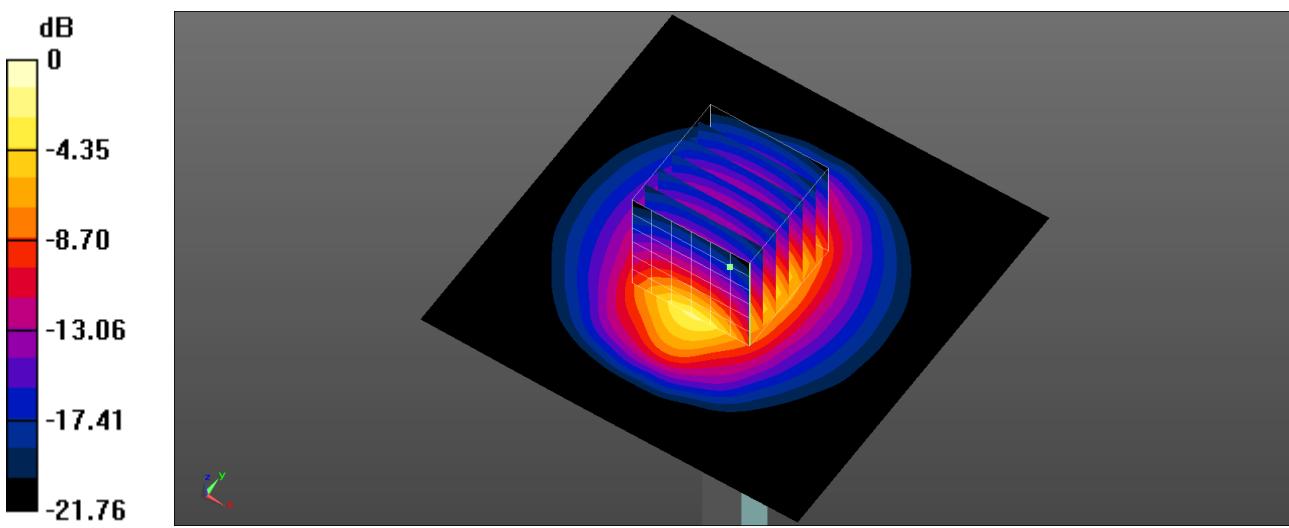
Peak SAR (extrapolated) = 5.25 W/kg

SAR(1 g) = 2.5 W/kg; SAR(10 g) = 1.17 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 48.5%

Maximum value of SAR (measured) = 4.25 W/kg



System Performance Check at 5250 MHz**DUT: D5GHzV2_SN1021**

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5250$ MHz; $\sigma = 4.674$ S/m; $\epsilon_r = 35.652$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.01, 5.01, 5.01) @ 5250 MHz; Calibrated: 2022/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 5250MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.55 W/kg

System Performance Check at 5250MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 51.83 V/m; Power Drift = -0.11 dB

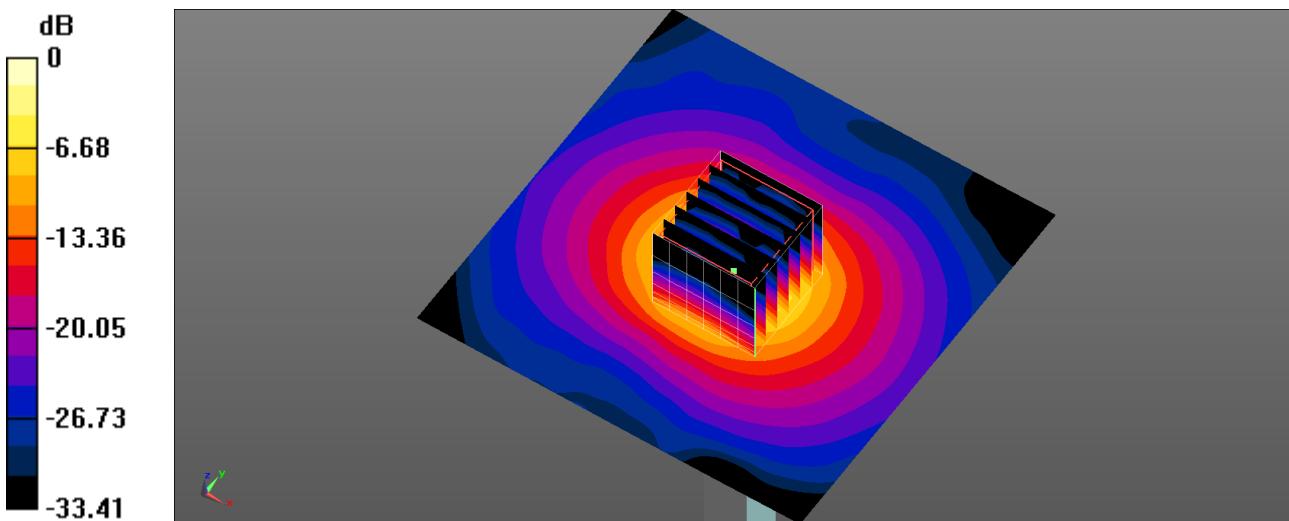
Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 4.07 W/kg; SAR(10 g) = 1.18 W/kg

Smallest distance from peaks to all points 3 dB below = 8.1 mm

Ratio of SAR at M2 to SAR at M1 = 57.7%

Maximum value of SAR (measured) = 9.89 W/kg



System Performance Check at 5600 MHz**DUT: Dipole 5 GHzV2_SN1021**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.033$ S/m; $\epsilon_r = 34.986$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.61, 4.61, 4.61) @ 5600 MHz; Calibrated: 2022/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 5600MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 10.1 W/kg

System Performance Check at 5600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 50.18 V/m; Power Drift = -0.14 dB

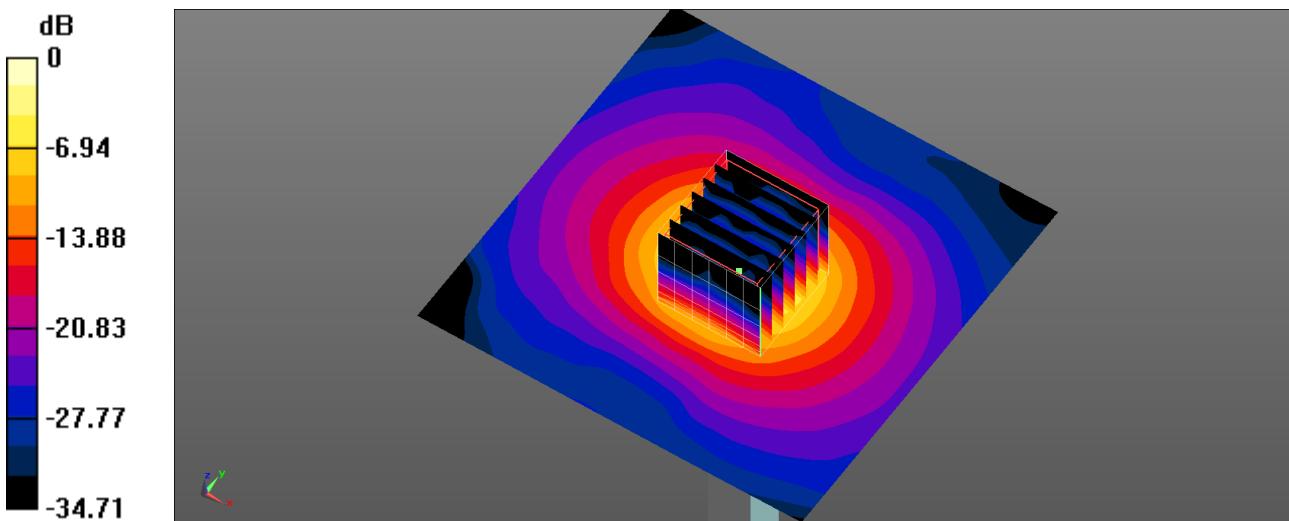
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 4.11 W/kg; SAR(10 g) = 1.19 W/kg

Smallest distance from peaks to all points 3 dB below = 8.6 mm

Ratio of SAR at M2 to SAR at M1 = 61.7%

Maximum value of SAR (measured) = 10.5 W/kg



System Performance Check at 5750 MHz**DUT: Dipole 5 GHzV2_SN1021**

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 5.25$ S/m; $\epsilon_r = 34.761$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.65, 4.65, 4.65) @ 5800 MHz; Calibrated: 2022/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 5750MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.16 W/kg

System Performance Check at 5750MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 46.49 V/m; Power Drift = -0.14 dB

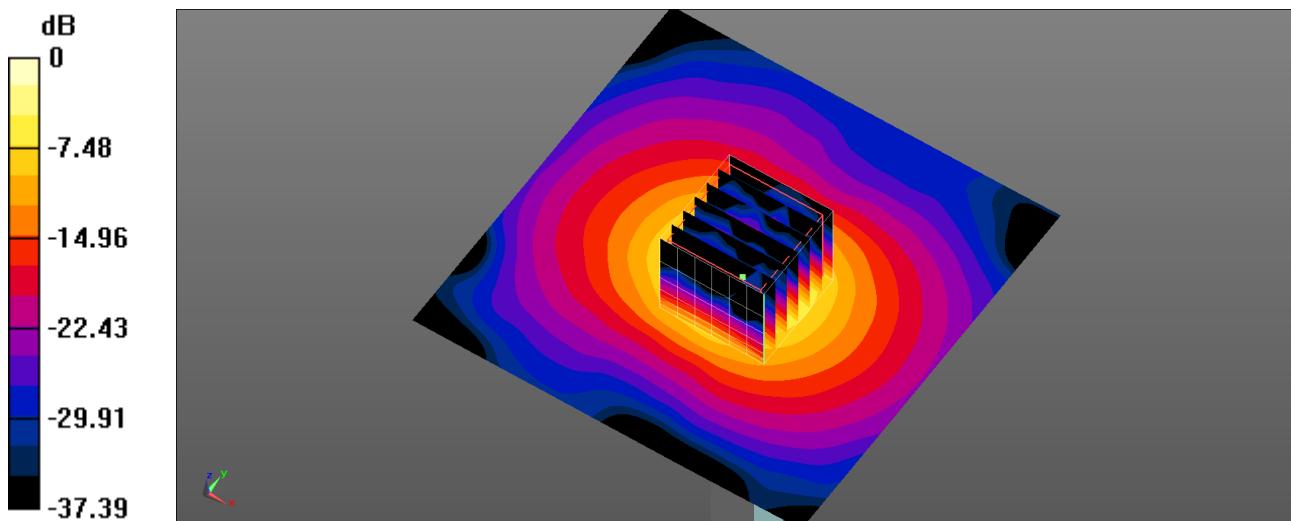
Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 3.88 W/kg; SAR(10 g) = 1.07 W/kg

Smallest distance from peaks to all points 3 dB below = 8.2 mm

Ratio of SAR at M2 to SAR at M1 = 59%

Maximum value of SAR (measured) = 9.49 W/kg



0 dB = 9.49 W/kg = 9.77 dBW/kg

System Performance Check at 5800 MHz**DUT: Dipole 5 GHzV2_SN1040**

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 5.285$ S/m; $\epsilon_r = 34.962$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7756; ConvF(4.6, 4.6, 4.6) @ 5800 MHz; Calibrated: 2022/8/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check at 5800MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.66 W/kg

System Performance Check at 5800MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 48.66 V/m; Power Drift = -0.11 dB

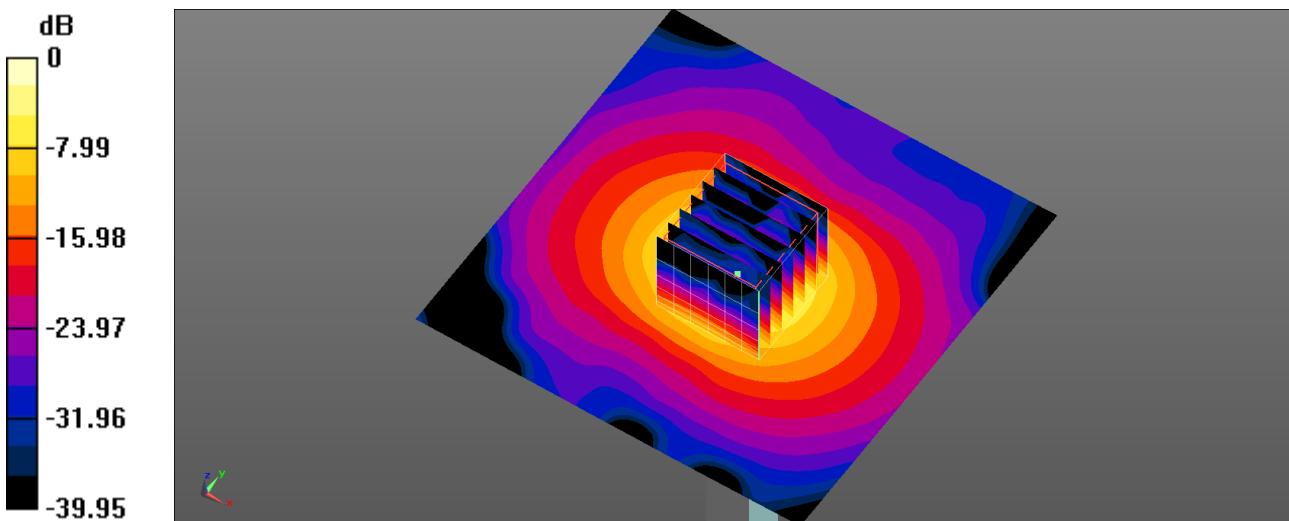
Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 3.91 W/kg; SAR(10 g) = 1.12 W/kg

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 58.5%

Maximum value of SAR (measured) = 10.1 W/kg



0 dB = 10.1 W/kg = 10.04 dBW/kg

System Performance Check Report Summary

| Dipole | Frequency [MHz] |
|-----------------------|--------------------|
| D6.5GHzV2 - SN1016 | 6500.0 |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|-------------------------|-----------------------|------|---------------|------------------------------------------|----------------------|------------------------------|---------------------|
| Flat, | 0 | , | 0-- | 6500.0, 0 | 5.5 | 6.06 | 35.0 |

Hardware Setup

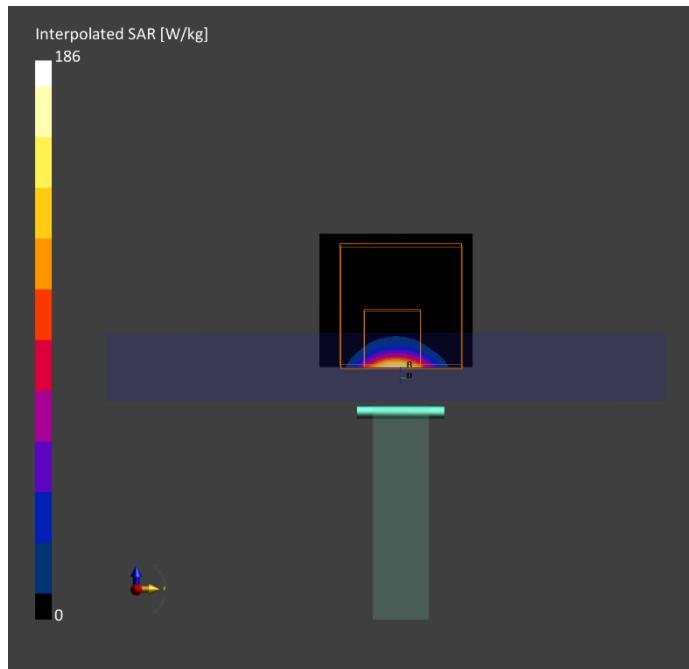
| Phantom | TSL, Measured Date | Probe, Calibration Date | DAE, Calibration Date |
|------------------------------------|--------------------|-----------------------------|------------------------|
| ELI V5.0 (20deg probe tilt) - 1175 | HSL6G | EX3DV4 - SN3847, 2022-03-24 | DAE4 Sn541, 2022-03-23 |

Scan Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|--------------------|
| Grid Extents [mm] | 51.0 x 85.0 | 22.0 x 22.0 x 22.0 |
| Grid Steps [mm] | 8.5 x 8.5 | 3.4 x 3.4 x 1.4 |
| Sensor Surface [mm] | 3.0 | 1.4 |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------------------------------------------|---------------|---------------|
| Date | 2022-11-28 | 2022-11-28 |
| psSAR1g [W/Kg] | 25.2 | 27.8 |
| psSAR10g [W/Kg] | 4.88 | 5.11 |
| psPDab (1.0cm ² , sq) [W/m ²] | | 269 |
| psPDab (4.0cm ² , sq) [W/m ²] | | 128 |
| Power Drift [dB] | 0.17 | -0.06 |
| TSL Correction | Positive only | Positive only |
| M2/M1 [%] | | 47.8 |
| Dist 3dB Peak [mm] | | 4.7 |



| Dipole | Frequency [MHz] |
|-----------------------|-----------------|
| D6.5GHzV2 - SN1016 | 6500.0 |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat, | 0 | , | 0-- | 6500.0, 0 | 5.5 | 6.01 | 35.0 |

Hardware Setup

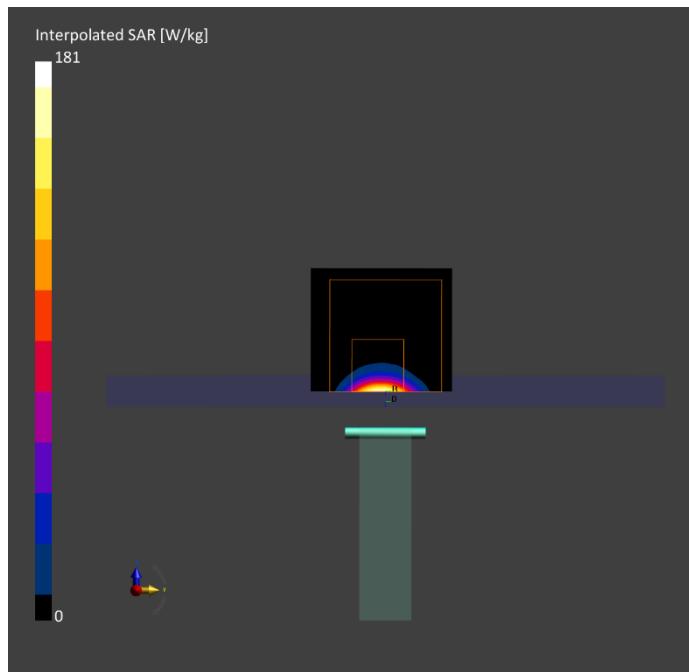
| Phantom | TSL, Measured Date | Probe, Calibration Date | DAE, Calibration Date |
|------------------------------------|--------------------|-----------------------------|------------------------|
| ELI V5.0 (20deg probe tilt) - 1175 | HSL6G | EX3DV4 - SN3847, 2022-03-24 | DAE4 Sn541, 2022-03-23 |

Scan Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|--------------------|
| Grid Extents [mm] | 51.0 x 85.0 | 22.0 x 22.0 x 22.0 |
| Grid Steps [mm] | 8.5 x 8.5 | 3.4 x 3.4 x 1.4 |
| Sensor Surface [mm] | 3.0 | 1.4 |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------------------------------------------|---------------|---------------|
| Date | 2022-11-29 | 2022-11-29 |
| psSAR1g [W/Kg] | 24.3 | 27.1 |
| psSAR10g [W/Kg] | 4.77 | 5.08 |
| psPDab (1.0cm ² , sq) [W/m ²] | | 268 |
| psPDab (4.0cm ² , sq) [W/m ²] | | 121 |
| Power Drift [dB] | -0.18 | -0.11 |
| TSL Correction | Positive only | Positive only |
| M2/M1 [%] | | 47.7 |
| Dist 3dB Peak [mm] | | 4.6 |



System Performance Check Report

Device under Test Properties

| Model, Manufacturer | Dimensions [mm] | IMEI | DUT Type |
|-------------------------------|-----------------------|----------|----------|
| 5G Verification Source 10 GHz | 100.0 x 100.0 x 100.0 | SN: 2003 | - |

Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor |
|-----------------|------------------------------|-----------------|------------|---------------------------------|-------------------|
| 5G Air | 10.00 | Validation band | CW, | 10000.0, 10000 | 1.0 |

Hardware Setup

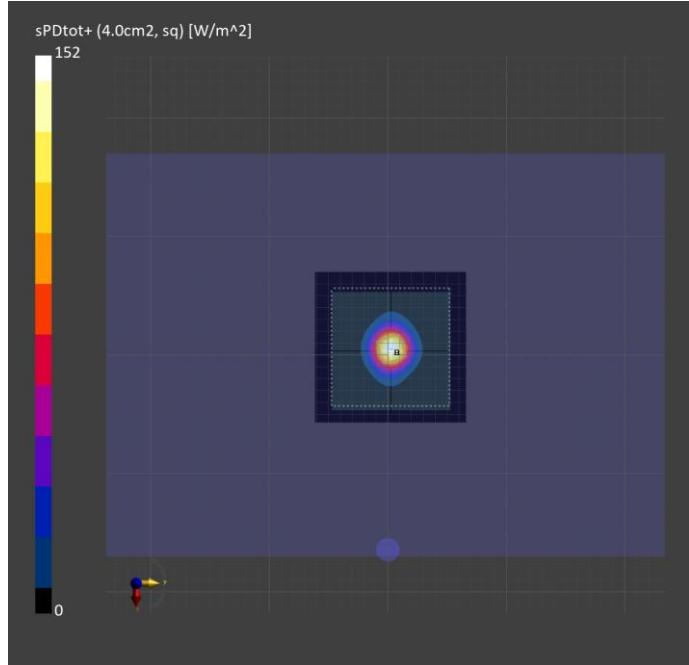
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|--------------------|--------|---------------------------------------|------------------------|
| mmWave- 5G Phantom | Air | EUmmWV4 - SN9639_F1-55GHz, 2022-08-24 | DAE4 Sn541, 2022-03-23 |

Scan Setup

| | 5G Scan |
|---------------------|---------------|
| Grid Extents [mm] | 120.0 x 120.0 |
| Grid Steps [lambda] | 0.25 x 0.25 |
| Sensor Surface [mm] | 10.0 |
| MAIA | N/A |

Measurement Results

| | 5G Scan |
|------------------------------|------------|
| Date | 2022-11-30 |
| Avg. Area [cm ²] | 4.00 |
| psPDn+ [W/m ²] | 147 |
| psPDtot+ [W/m ²] | 150 |
| psPDmod+ [W/m ²] | 153 |
| E _{max} [V/m] | 278 |
| H _{max} [A/m] | 0.703 |
| Power Drift [dB] | 0.11 |



System Performance Check Report

Device under Test Properties

| Model, Manufacturer | Dimensions [mm] | IMEI | DUT Type |
|-------------------------------|-----------------------|----------|----------|
| 5G Verification Source 10 GHz | 100.0 x 100.0 x 100.0 | SN: 2003 | - |

Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor |
|-----------------|------------------------------|-----------------|------------|---------------------------------|-------------------|
| 5G Air | 10.00 | Validation band | CW, | 10000.0, 10000 | 1.0 |

Hardware Setup

| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|--------------------|--------|---------------------------------------|------------------------|
| mmWave- 5G Phantom | Air | EUmmWV4 - SN9639_F1-55GHz, 2022-08-24 | DAE4 Sn541, 2022-03-23 |

Scan Setup

| | 5G Scan | 5G Scan |
|---------------------|---------------|------------|
| Grid Extents [mm] | 120.0 x 120.0 | 2022-12-01 |
| Grid Steps [lambda] | 0.25 x 0.25 | 4.00 |
| Sensor Surface [mm] | 10.0 | 144 |
| MAIA | N/A | 149 |
| | | 155 |
| | | 236 |
| | | 0.689 |
| | | 0.17 |

