Appendix B - System Performance Check Plots

Date: 2022/10/26

System Performance Check at 2450 MHz

DUT: Dipole D2450V2_SN712

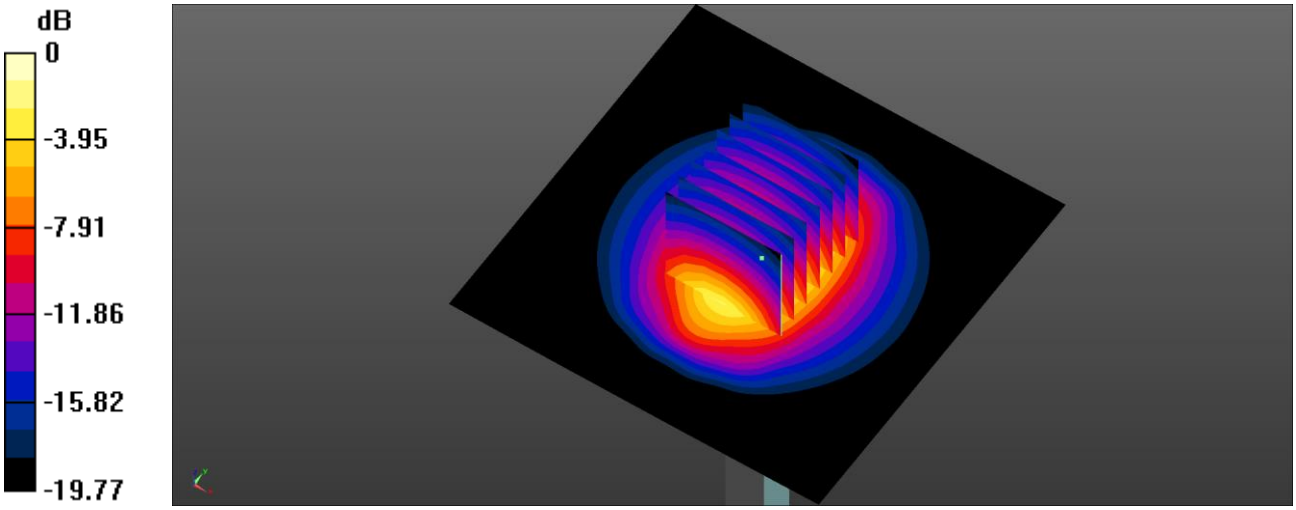
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.798 S/m; ε_r = 39.419; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 - SN3847; ConvF(7.51, 7.51, 7.51) @ 2450 MHz; Calibrated: 2022/3/24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2022/3/23
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- 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) = 3.94 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.34 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.73 W/kg
SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.21 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 53.4%
Maximum value of SAR (measured) = 3.89 W/kg



0 dB = 3.89 W/kg = 5.90 dBW/kg

Date: 2022/10/22

System Performance Check at 5250 MHz

DUT: D5250V2_SN1021

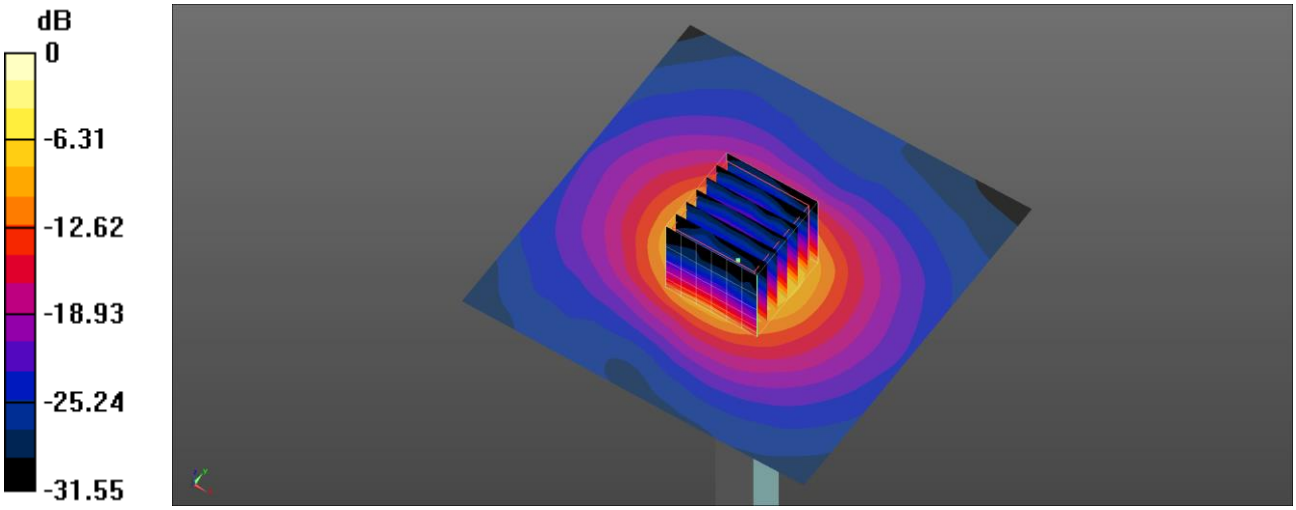
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.679 S/m; ε_r = 35.636; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 - SN3847; ConvF(5.24, 5.24, 5.24) @ 5250 MHz; Calibrated: 2022/3/24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2022/3/23
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- 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) = 8.60 W/kg

System Performance Check at 5250MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.88 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 14.8 W/kg
SAR(1 g) = 3.65 W/kg; SAR(10 g) = 1.06 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 64.1%
Maximum value of SAR (measured) = 8.91 W/kg



0 dB = 8.91 W/kg = 9.50 dBW/kg

Date: 2022/10/23

System Performance Check at 5600 MHz

DUT: D5600V2_SN1021

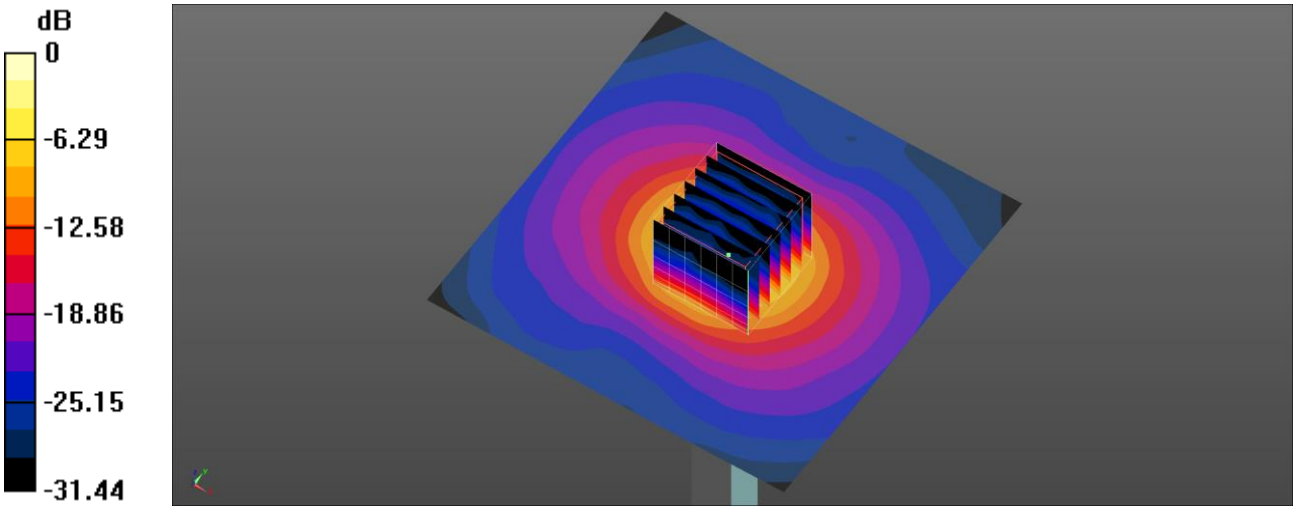
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.059 S/m; ε_r = 35.508; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 - SN3847; ConvF(4.68, 4.68, 4.68) @ 5600 MHz; Calibrated: 2022/3/24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2022/3/23
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- 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) = 9.32 W/kg

System Performance Check at 5600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 48.30 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 3.78 W/kg; SAR(10 g) = 1.08 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 61.1%
Maximum value of SAR (measured) = 9.50 W/kg



0 dB = 9.50 W/kg = 9.78 dBW/kg

Date: 2022/10/24

System Performance Check at 5750 MHz

DUT: D5750V2_SN1021

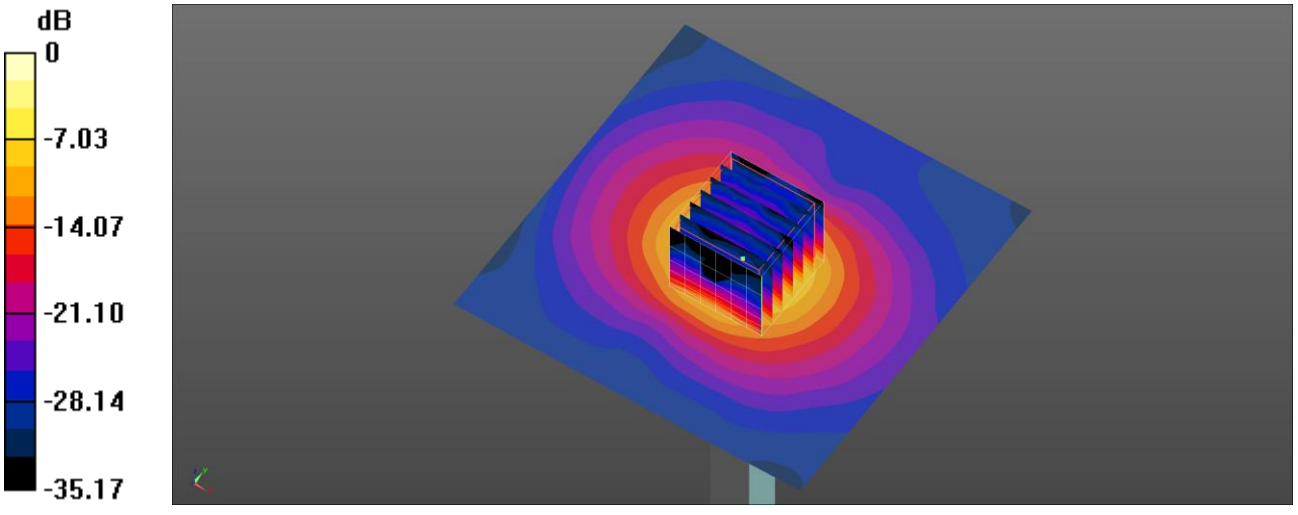
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.093 S/m; ε_r = 34.868; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 - SN3847; ConvF(4.9, 4.9, 4.9) @ 5750 MHz; Calibrated: 2022/3/24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2022/3/23
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- 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) = 10.2 W/kg

System Performance Check at 5750MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 50.74 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 3.99 W/kg; SAR(10 g) = 1.11 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 59.7%
Maximum value of SAR (measured) = 10.2 W/kg



0 dB = 10.2 W/kg = 10.09 dBW/kg

Date: 2022/10/25

System Performance Check at 5800 MHz

DUT: Dipole D5800V2 - SN1040

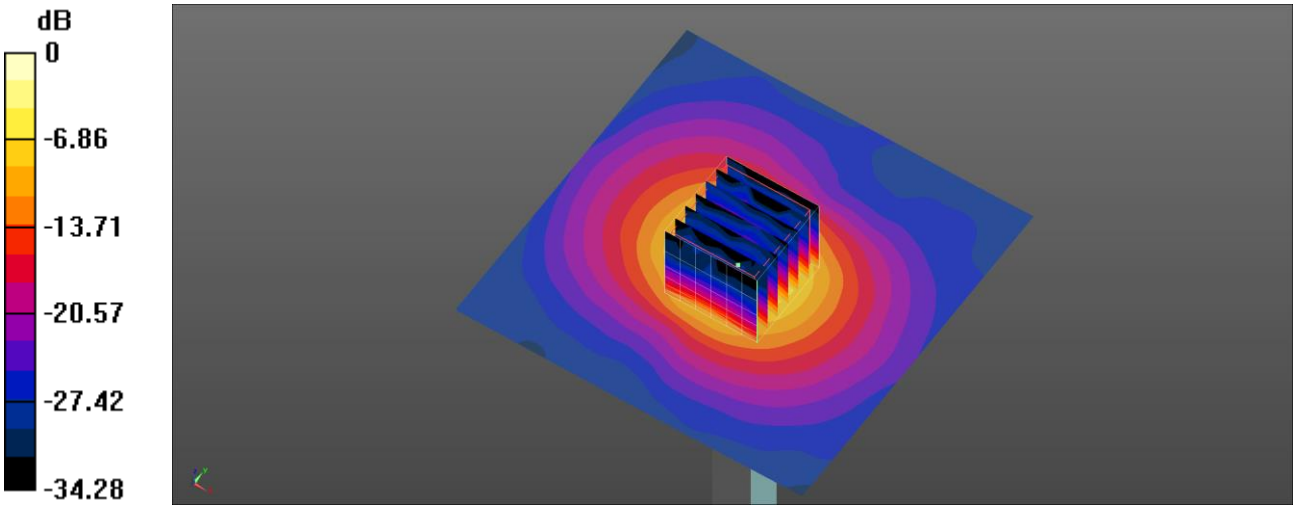
Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.257 S/m; ε_r = 35.53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 Sn541; Calibrated: 2022/3/23
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- 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) = 9.56 W/kg

System Performance Check at 5800MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.62 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 17.6 W/kg
SAR(1 g) = 3.8 W/kg; SAR(10 g) = 1.09 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 60%
Maximum value of SAR (measured) = 9.64 W/kg



0 dB = 9.64 W/kg = 9.84 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	6.14	34.8

Hardware Setup

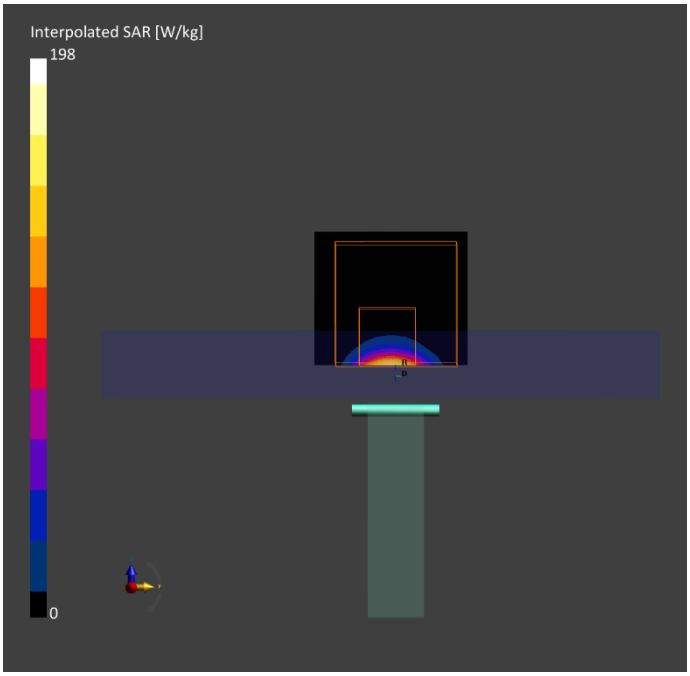
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2022-03-24	DAE4 Sn541, 2022-03-23

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	2022-10-27	2022-10-27
psSAR1g [W/Kg]	23.9	28.6
psSAR10g [W/Kg]	4.95	5.33
psPDab (1.0cm2, sq) [W/m2]		286
psPDab (4.0cm2, sq) [W/m2]		127
Power Drift [dB]	0.06	0.01
TSL Correction	Positive only	Positive only
M2/M1 [%]		47.8
Dist 3dB Peak [mm]		4.6



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	6.13	33.8

Hardware Setup

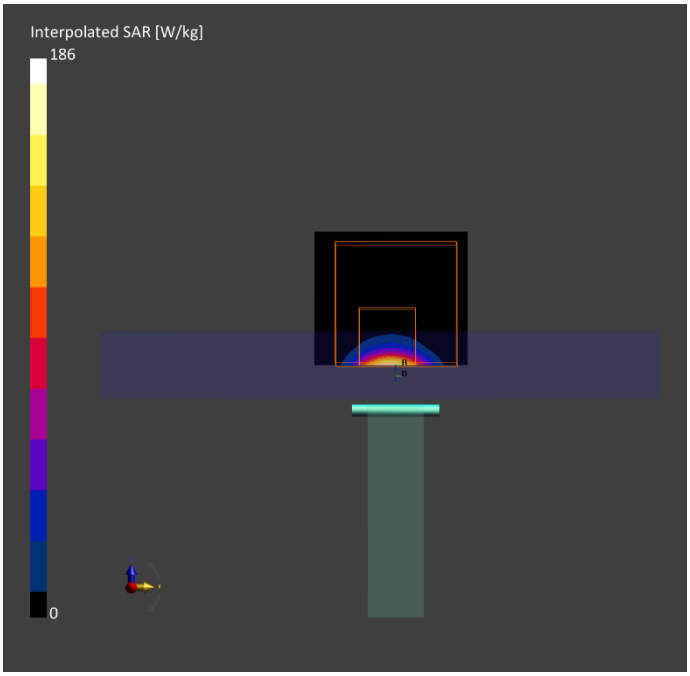
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2022-03-24	DAE4 Sn541, 2022-03-23

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	2022-10-28	2022-10-28
psSAR1g [W/Kg]	24.7	28.0
psSAR10g [W/Kg]	4.85	5.25
psPDab (1.0cm2, sq) [W/m2]		280
psPDab (4.0cm2, sq) [W/m2]		128
Power Drift [dB]	0.03	0.03
TSL Correction	Positive only	Positive only
M2/M1 [%]		47.5
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

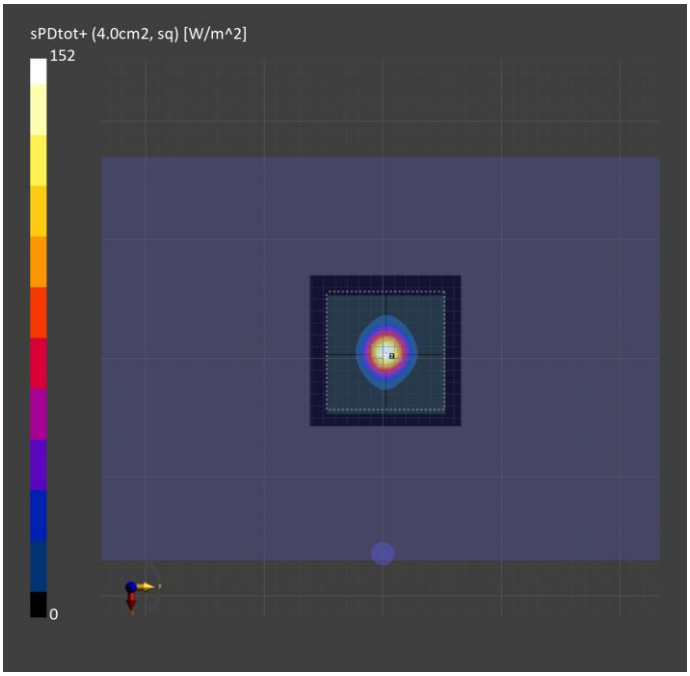
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 5G Phantom	Air	EUmmWV4 - SN9639_F1-55GHz, 2022-08-24	DAE4 Sn541, 2022-03-23

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	2022-10-29
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	148
psPDtot+ [W/m²]	150
psPDmod+ [W/m²]	153
E_{max} [V/m]	271
H_{max} [A/m]	0.739
Power Drift [dB]	0.05



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	2022-10-30
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	150
psPDtot+ [W/m²]	152
psPDmod+ [W/m²]	155
E_{max} [V/m]	278
H_{max} [A/m]	0.743
Power Drift [dB]	0.01