

Appendix B - System Performance Check Plots

Report Number: 2212FS13

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System Performance Check at 750 MHz

DUT: Dipole 750 MHz_SN1004

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1 Medium parameters used: f = 750 MHz; $\sigma = 0.893$ S/m; $\varepsilon_r = 42.464$; $\rho = 1000$ 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 SN3847; ConvF(9.55, 9.55, 9.55) @ 750 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 750MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.539 W/kg

System Performance Check at 750MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.76 V/m; Power Drift = -0.12 dB

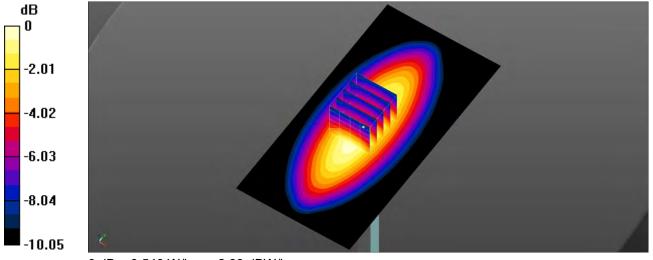
Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.417 W/kg; SAR(10 g) = 0.285 W/kg

Smallest distance from peaks to all points 3 dB below = 17.9 mm

Ratio of SAR at M2 to SAR at M1 = 69.6%

Maximum value of SAR (measured) = 0.540 W/kg



0 dB = 0.540 W/kg = -2.68 dBW/kg

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System Performance Check at 835 MHz

DUT: Dipole 835 MHz_SN4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1 Medium parameters used: f = 835 MHz; $\sigma = 0.907$ S/m; $\varepsilon_r = 41.358$; $\rho = 1000$ 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 SN3847; ConvF(9.27, 9.27, 9.27) @ 835 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 835MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.629 W/kg

System Performance Check at 835MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.73 V/m; Power Drift = -0.02 dB

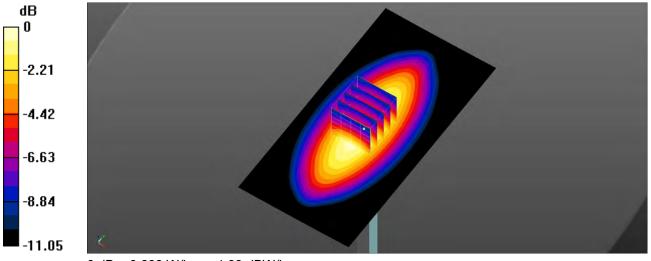
Peak SAR (extrapolated) = 0.704 W/kg

SAR(1 g) = 0.481 W/kg; SAR(10 g) = 0.320 W/kg

Smallest distance from peaks to all points 3 dB below = 16.3 mm

Ratio of SAR at M2 to SAR at M1 = 68.3%

Maximum value of SAR (measured) = 0.633 W/kg



0 dB = 0.633 W/kg = -1.99 dBW/kg

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System Performance Check at 900 MHz

DUT: Dipole 900 MHz_SN073

Communication System: UID 0, CW (0); Frequency: 900 MHz; Duty Cycle: 1:1 Medium parameters used: f = 900 MHz; $\sigma = 0.965$ S/m; $\epsilon_r = 40.396$; $\rho = 1000$ 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 SN3847; ConvF(9.22, 9.22, 9.22) @ 900 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 900MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.722 W/kg

System Performance Check at 900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.71 V/m; Power Drift = -0.02 dB

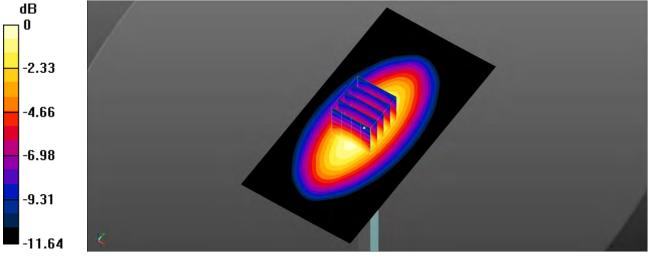
Peak SAR (extrapolated) = 0.822 W/kg

SAR(1 g) = 0.541 W/kg; SAR(10 g) = 0.354 W/kg

Smallest distance from peaks to all points 3 dB below = 16 mm

Ratio of SAR at M2 to SAR at M1 = 65.8%

Maximum value of SAR (measured) = 0.729 W/kg



0 dB = 0.729 W/kg = -1.37 dBW/kg

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System Performance Check at 1800 MHz

DUT: Dipole 1800 MHz_SN265

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1800 MHz; $\sigma = 1.378$ S/m; $\epsilon_r = 39.27$; $\rho = 1000$ 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 SN3847; ConvF(8.53, 8.53, 8.53) @ 1800 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 1800MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 2.83 W/kg

System Performance Check at 1800MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 46.83 V/m; Power Drift = -0.06 dB

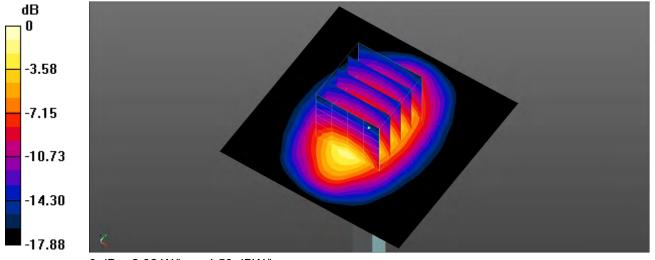
Peak SAR (extrapolated) = 3.36 W/kg

SAR(1 g) = 1.82 W/kg; SAR(10 g) = 0.971 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 54.4%

Maximum value of SAR (measured) = 2.82 W/kg



0 dB = 2.82 W/kg = 4.50 dBW/kg

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System Performance Check at 2000 MHz

DUT: Dipole 2000 MHz SN1008

Communication System: UID 0, CW (0); Frequency: 2000 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2000 MHz; $\sigma = 1.42$ S/m; $\varepsilon_r = 40.058$; $\rho = 1000$ 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 SN3847; ConvF(8.22, 8.22, 8.22) @ 2000 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 2000MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 3.07 W/kg

System Performance Check at 2000MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 47.47 V/m; Power Drift = 0.02 dB

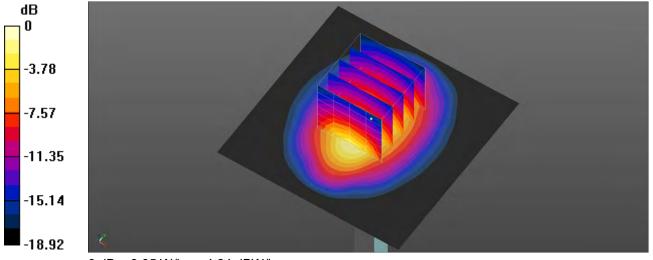
Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.03 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 54.9%

Maximum value of SAR (measured) = 3.05 W/kg



0 dB = 3.05 W/kg = 4.84 dBW/kg

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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; $\sigma = 1.799$ S/m; $\varepsilon_r = 39.206$; $\rho = 1000$ 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 (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 4.39 W/kg

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

Reference Value = 50.79 V/m; Power Drift = -0.05 dB

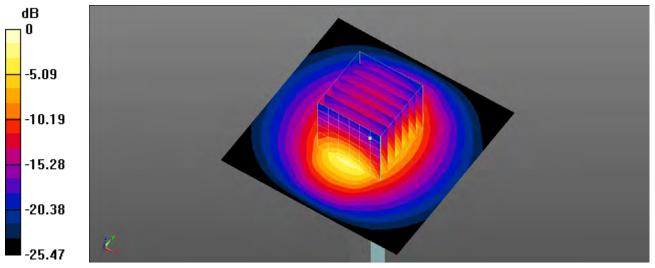
Peak SAR (extrapolated) = 5.51 W/kg

SAR(1 g) = 2.62 W/kg; SAR(10 g) = 1.23 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 48.2%

Maximum value of SAR (measured) = 4.42 W/kg



0 dB = 4.42 W/kg = 6.45 dBW/kg

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System Performance Check at 2600 MHz

DUT: Dipole 2600 MHz_SN1007

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2600 MHz; $\sigma = 1.983$ S/m; $\varepsilon_r = 38.889$; $\rho = 1000$ 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 SN3847; ConvF(7.29, 7.29, 7.29) @ 2600 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 2600MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 4.55 W/kg

System Performance Check at 2600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 49.64 V/m; Power Drift = -0.10 dB

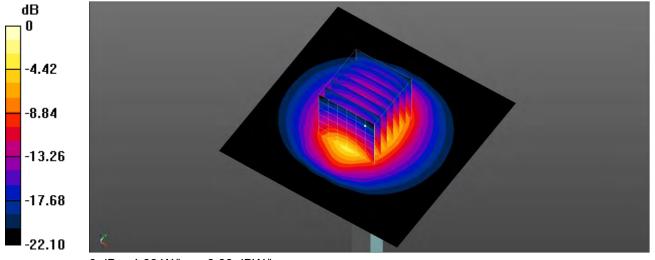
Peak SAR (extrapolated) = 5.75 W/kg

SAR(1 g) = 2.74 W/kg; SAR(10 g) = 1.26 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) = 4.63 W/kg



0 dB = 4.63 W/kg = 6.66 dBW/kg

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System Performance Check at 2600 MHz

DUT: Dipole 2600 MHz_SN1007

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2600 MHz; $\sigma = 1.979$ S/m; $\varepsilon_r = 38.837$; $\rho = 1000$ 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 SN3847; ConvF(7.29, 7.29, 7.29) @ 2600 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 2600MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 4.57 W/kg

System Performance Check at 2600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.00 V/m; Power Drift = -0.11 dB

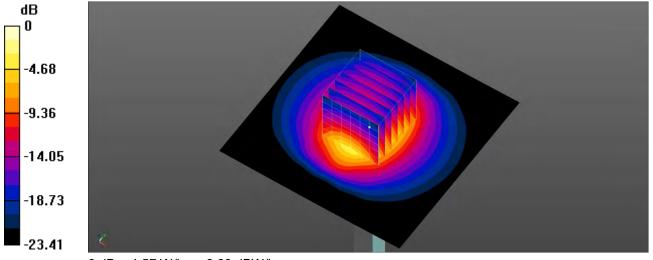
Peak SAR (extrapolated) = 5.72 W/kg

SAR(1 g) = 2.73 W/kg; SAR(10 g) = 1.26 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 48.8%

Maximum value of SAR (measured) = 4.57 W/kg



0 dB = 4.57 W/kg = 6.60 dBW/kg

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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; $\sigma = 4.649$ S/m; $\epsilon_r = 36.047$; $\rho = 1000$ 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) = 8.89 W/kg

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

Reference Value = 49.77 V/m; Power Drift = -0.09 dB

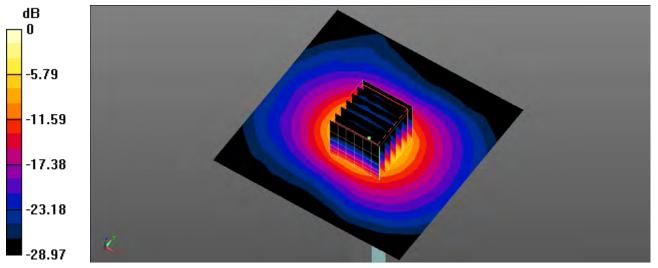
Peak SAR (extrapolated) = 16.2 W/kg

SAR(1 g) = 3.77 W/kg; SAR(10 g) = 1.1 W/kg

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 62.3%

Maximum value of SAR (measured) = 9.28 W/kg



0 dB = 9.28 W/kg = 9.68 dBW/kg

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System Performance Check at 5600 MHz

DUT: D5GHzV2 SN1021

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5600 MHz; $\sigma = 4.954$ S/m; $\epsilon_r = 35.476$; $\rho = 1000$ 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) = 9.93 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

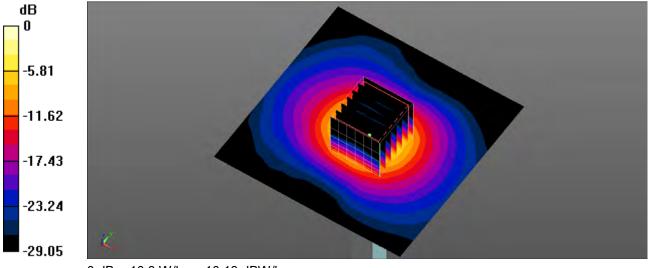
Peak SAR (extrapolated) = 19.0 W/kg

SAR(1 g) = 4.04 W/kg; SAR(10 g) = 1.17 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 59.2%

Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.3 W/kg = 10.13 dBW/kg

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System Performance Check at 5750 MHz

DUT: D5GHzV2 SN1021

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5750 MHz; $\sigma = 5.215$ S/m; $\epsilon_r = 35.084$; $\rho = 1000$ 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) @ 5750 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) = 9.38 W/kg

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

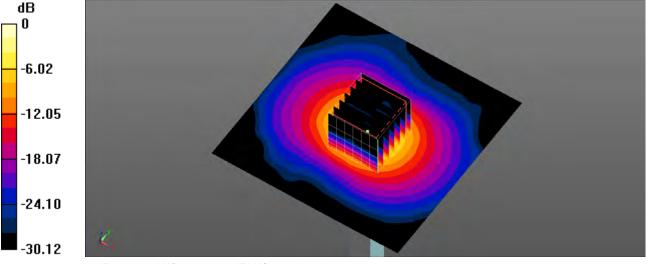
Reference Value = 48.26 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 18.3 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 = 8 mm Ratio of SAR at M2 to SAR at M1 = 58.5%

Maximum value of SAR (measured) = 9.78 W/kg



0 dB = 9.78 W/kg = 9.90 dBW/kg

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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		,	6500.0,	5.5	6.12	33.6

Hardware Setup

Sensor Surface [mm]

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

1.4

 Scan Setup

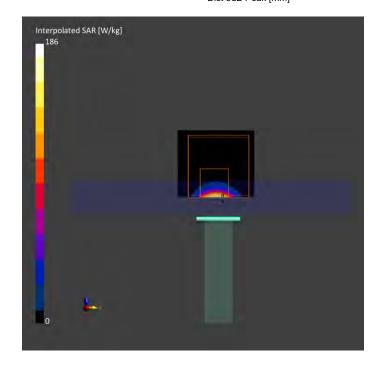
 Area Scan
 Zoom Scan

 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

3.0

Measurement Result	S	
	Area Scan	Zoom Scan
Date	2022-11-16	2022-11-16
psSAR1g [W/Kg]	24.5	27.8
psSAR10g [W/Kg]	4.83	5.22
psPDab (1.0cm2, sq) [W/m2]		278
psPDab (4.0cm2, sq) [W/m2]		125
Power Drift [dB]	0.09	0.11
TSL Correction	Positive only	Positive only
M2/M1 [%]		47.5
Dist 3dB Peak [mm]		4.6



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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

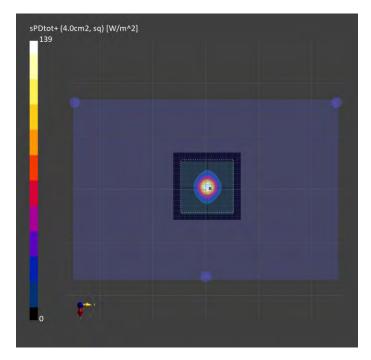
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 5G Phantom	Air	EUmmWV4 - SN9639_F1-55GHz, 2022-	DAE4 Sn541, 2022-03-23

Scan Setup

	og ocan
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	2022-11-17
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	148
psPDtot+ [W/m²]	149
psPDmod+ [W/m²]	154
E _{max} [V/m]	271
H _{max} [A/m]	0.731
Power Drift [dB]	0.01



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