

## Appendix B - System Performance Check Plots

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/31

### System Performance Check at 2450MHz\_Head

**DUT: Dipole 2450 MHz\_SN712**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.812$  S/m;  $\epsilon_r = 39.384$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section  
Measurement Standard: DASYS (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(7.59, 7.59, 7.59) @ 2450 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 22.6 W/kg

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

Reference Value = 111.8 V/m; Power Drift = 0.18 dB

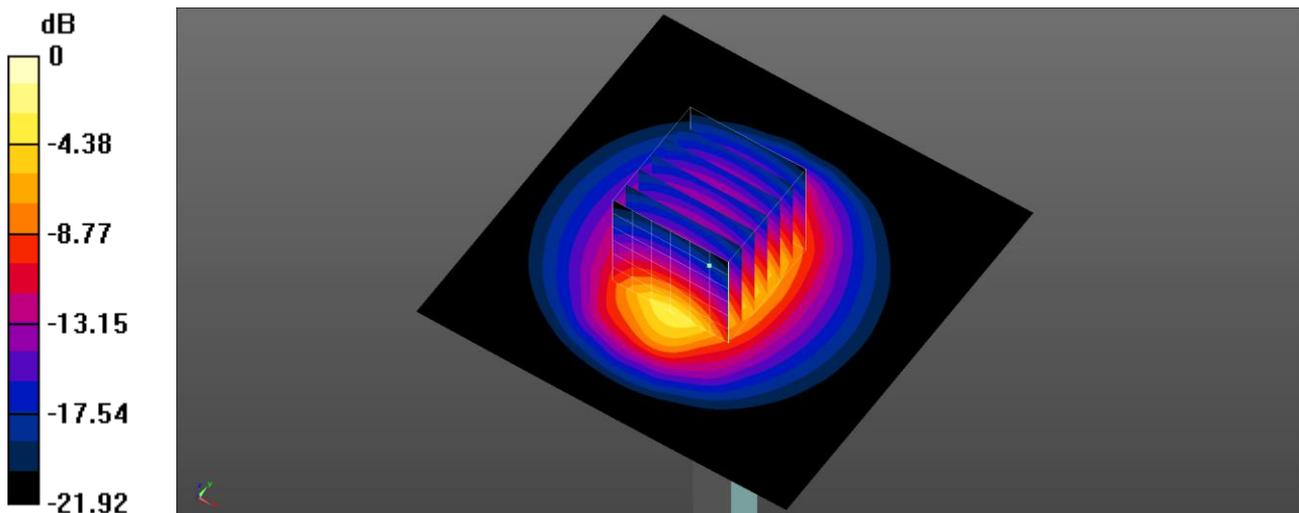
Peak SAR (extrapolated) = 28.2 W/kg

**SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.26 W/kg**

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

Ratio of SAR at M2 to SAR at M1 = 48.3%

Maximum value of SAR (measured) = 22.7 W/kg



0 dB = 22.7 W/kg = 13.56 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/29

### System Performance Check at 5250MHz\_Head

**DUT: Dipole 5250 MHz\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.706$  S/m;  $\epsilon_r = 36.553$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
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(5.34, 5.34, 5.34) @ 5250 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 19.3 W/kg

**System Performance Check at 5250MHz/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.29 V/m; Power Drift = 0.14 dB

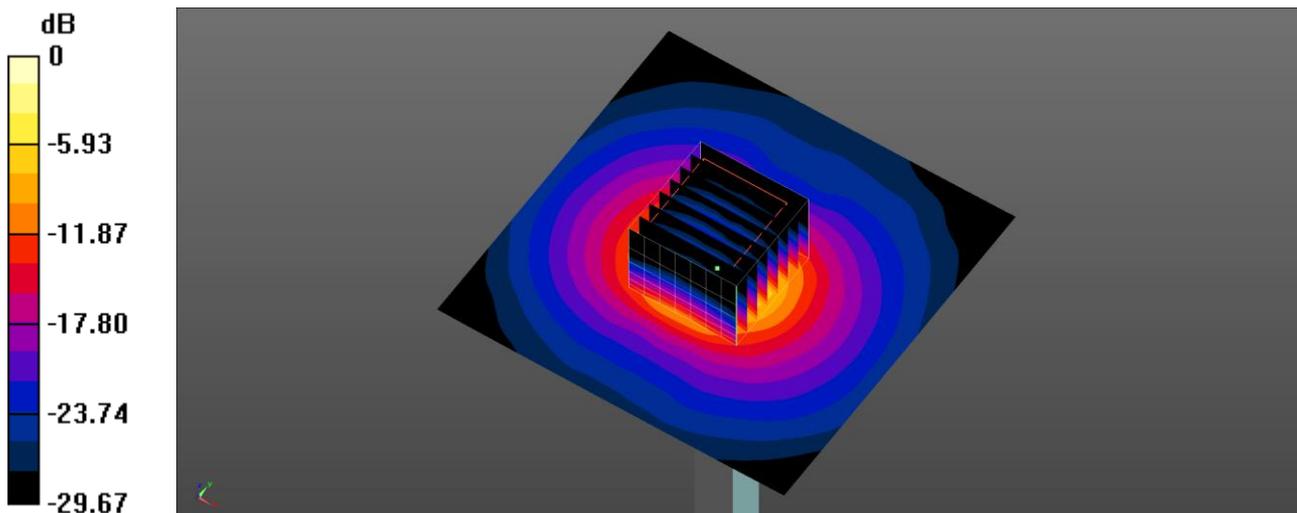
Peak SAR (extrapolated) = 35.7 W/kg

**SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.26 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 61.5%

Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg = 13.10 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/29

### System Performance Check at 5600MHz\_Head

**DUT: Dipole 5600 MHz\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.067$  S/m;  $\epsilon_r = 35.888$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
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(4.75, 4.75, 4.75) @ 5600 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 22.1 W/kg

**System Performance Check at 5600MHz/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 72.67 V/m; Power Drift = 0.11 dB

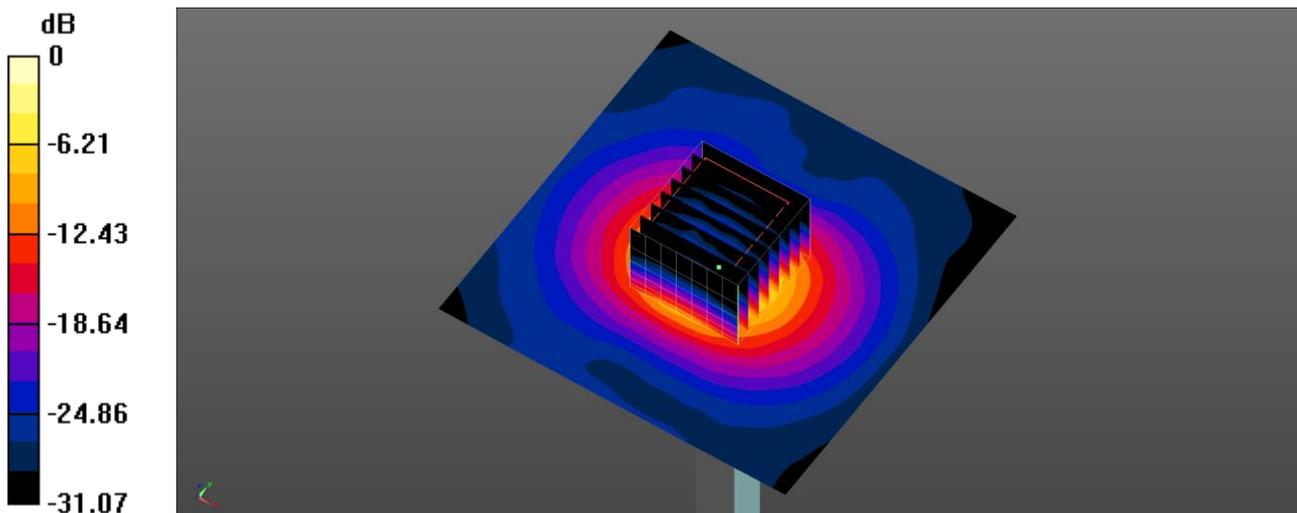
Peak SAR (extrapolated) = 42.0 W/kg

**SAR(1 g) = 8.71 W/kg; SAR(10 g) = 2.46 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 59.3%

Maximum value of SAR (measured) = 22.5 W/kg



0 dB = 22.5 W/kg = 13.52 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/30

### System Performance Check at 5600MHz\_Head

**DUT: Dipole 5600 MHz\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.047$  S/m;  $\epsilon_r = 35.784$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
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(4.75, 4.75, 4.75) @ 5600 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 20.5 W/kg

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

Reference Value = 65.51 V/m; Power Drift = 0.09 dB

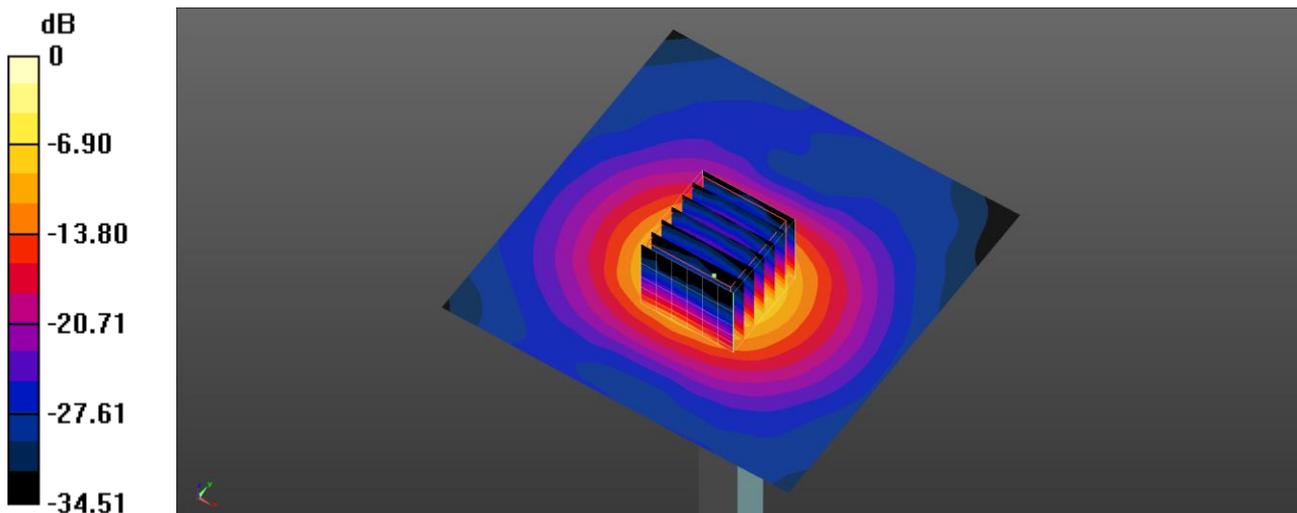
Peak SAR (extrapolated) = 40.7 W/kg

**SAR(1 g) = 8.63 W/kg; SAR(10 g) = 2.37 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 60.1%

Maximum value of SAR (measured) = 21.9 W/kg



0 dB = 21.9 W/kg = 13.40 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/29

### System Performance Check at 5750MHz\_Head

**DUT: Dipole 5750 MHz\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.208$  S/m;  $\epsilon_r = 35.592$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
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, 5, 5) @ 5750 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 19.9 W/kg

**System Performance Check at 5750MHz/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 68.37 V/m; Power Drift = 0.16 dB

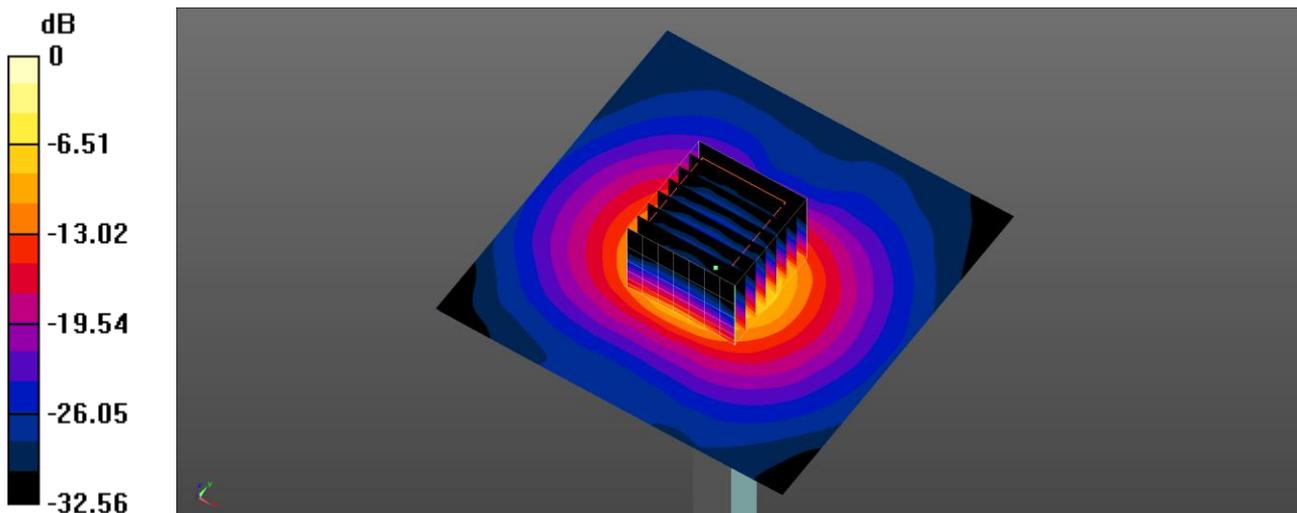
Peak SAR (extrapolated) = 39.2 W/kg

**SAR(1 g) = 7.83 W/kg; SAR(10 g) = 2.21 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 58.1%

Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 20.5 W/kg = 13.12 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/12/30

**System Performance Check at 5750MHz\_Head**

**DUT: Dipole 5750 MHz\_SN1021**

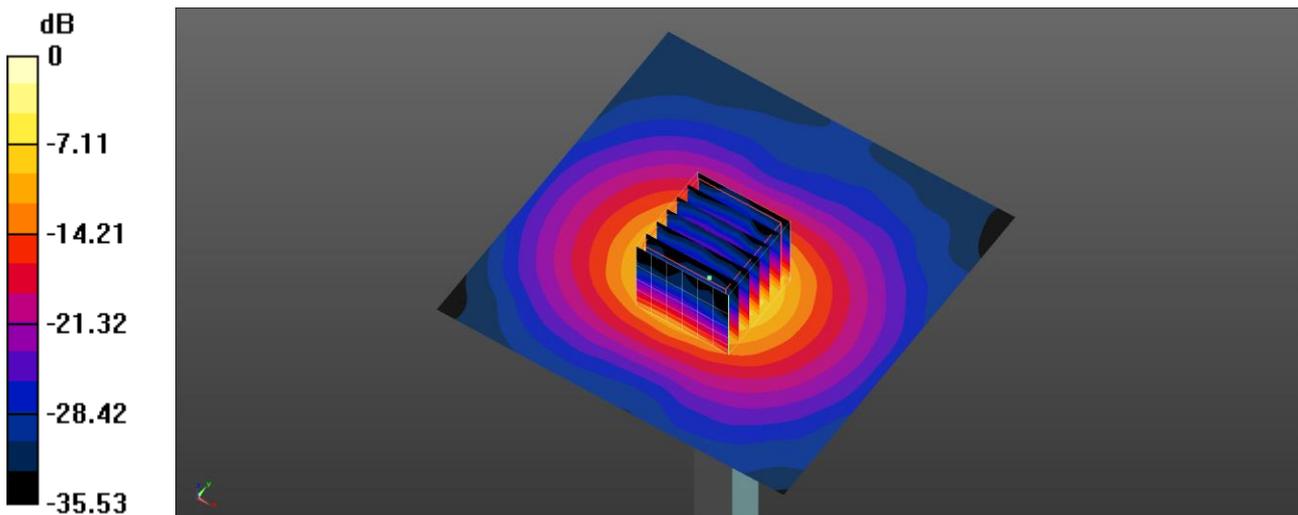
Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.187$  S/m;  $\epsilon_r = 35.489$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section  
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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, 5, 5) @ 5750 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V5.0; 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) = 18.8 W/kg

**System Performance Check at 5750MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm  
Reference Value = 62.06 V/m; Power Drift = 0.03 dB  
Peak SAR (extrapolated) = 38.3 W/kg  
**SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.13 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.5 mm  
Ratio of SAR at M2 to SAR at M1 = 58.8%  
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg = 13.01 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,	5		, 0--	6500.0, 0	5.6	6.17	34.9

### Hardware Setup

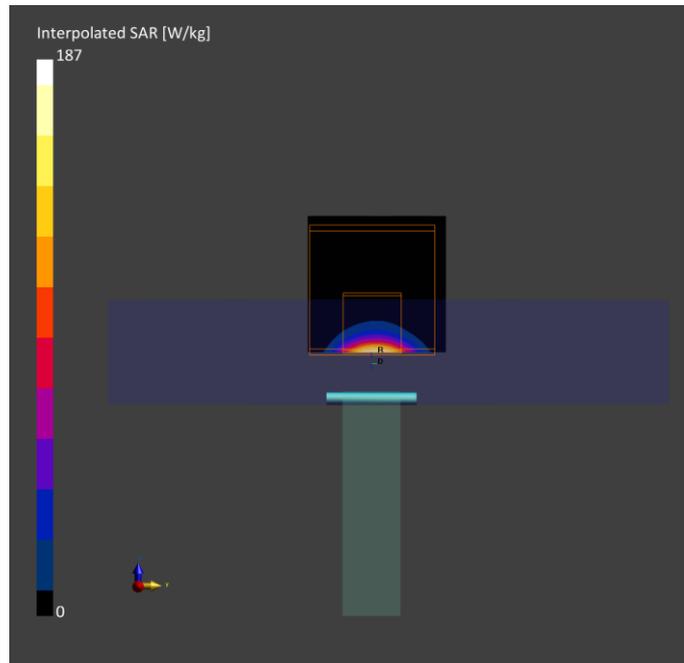
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2021-03-26	DAE4 Sn541, 2021-03-22

### 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	2021-12-27	2021-12-27
psSAR1g [W/Kg]	24.7	28.1
psSAR10g [W/Kg]	4.79	5.23
Power Drift [dB]	0.03	0.14
TSL Correction	Positive only	Positive only



## System Performance Check Report

### Summary

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	EUmmWV3 - SN9403_F1-55GHz, 2021-09-20	DAE4 Sn541, 2021-03-22

### 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	2022-01-03
Avg. Area [cm <sup>2</sup> ]	4.00
psPDn+ [W/m <sup>2</sup> ]	141
psPDtot+ [W/m <sup>2</sup> ]	142
psPDmod+ [W/m <sup>2</sup> ]	145
E <sub>max</sub> [V/m]	282
Power Drift [dB]	-0.03

