

## Appendix B - SAR System Performance Check Plots

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/11/15  
**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;  $\sigma = 1.848$  S/m;  $\epsilon_r = 38.639$ ;  $\rho = 1000$  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 - SN3977; ConvF(7.28, 7.28, 7.28) @ 2450 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; 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) = 21.7 W/kg

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

Reference Value = 112.9 V/m; Power Drift = -0.02 dB

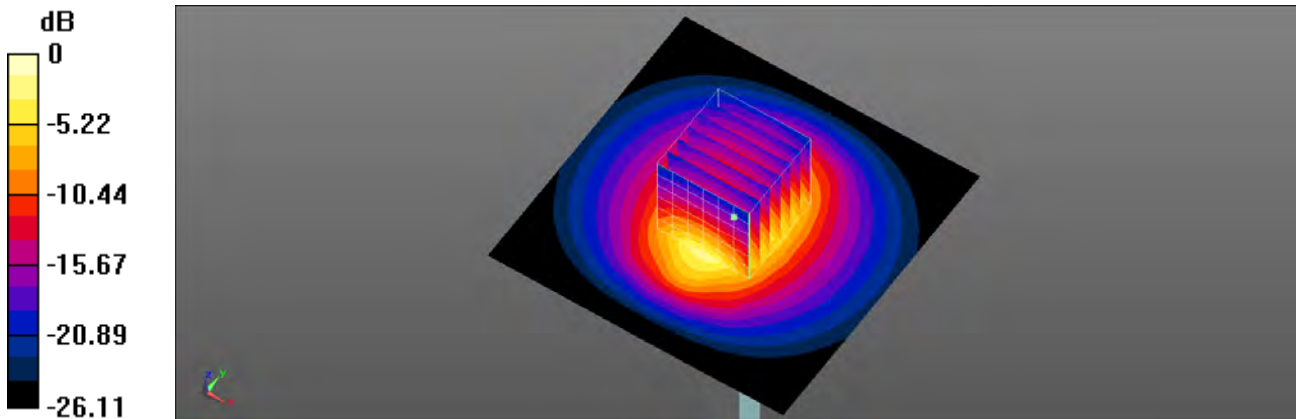
Peak SAR (extrapolated) = 27.2 W/kg

**SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.91 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.1 mm

Ratio of SAR at M2 to SAR at M1 = 46.9%

Maximum value of SAR (measured) = 21.6 W/kg



0 dB = 21.6 W/kg = 13.34 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/11/15

# **System Performance Check at 5250MHz\_Head**

**DUT: Dipole 5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.567$  S/m;  $\epsilon_r = 37.175$ ;  $\rho = 1000$  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 - SN3977; ConvF(5.04, 5.04, 5.04) @ 5250 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; 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) = 19.6 W/kg

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

Reference Value = 66.23 V/m; Power Drift = 0.17 dB

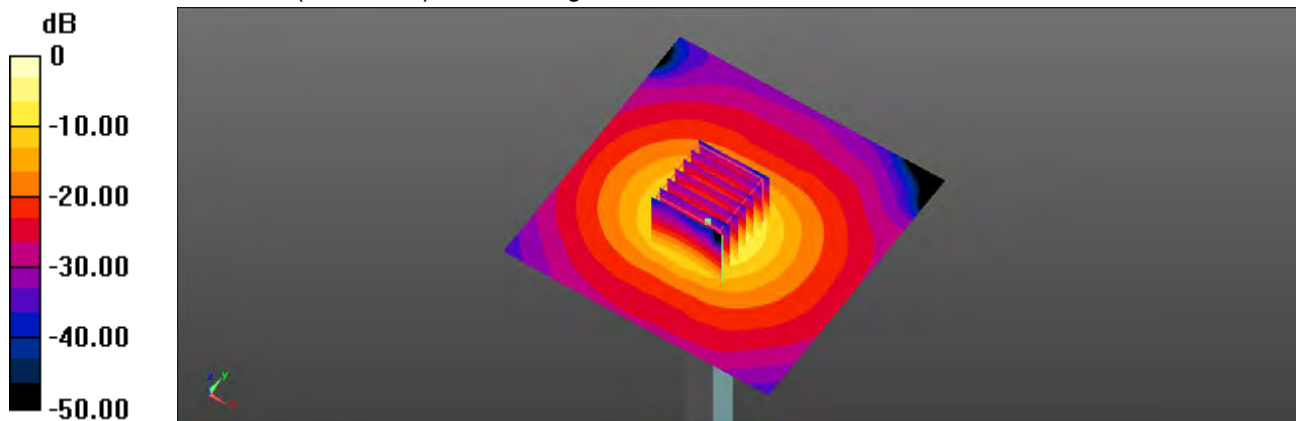
Peak SAR (extrapolated) = 33.7 W/kg

**SAR(1 g) = 8.45 W/kg; SAR(10 g) = 2.35 W/kg**

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

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

Maximum value of SAR (measured) = 20.1 W/kg



0 dB = 20.1 W/kg = 13.03 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/11/16  
**System Performance Check at 5600MHz\_Head**  
**DUT: Dipole 5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1  
Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.043$  S/m;  $\epsilon_r = 35.882$ ;  $\rho = 1000$  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 - SN3977; ConvF(4.61, 4.61, 4.61) @ 5600 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; 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) = 22.2 W/kg

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

Reference Value = 67.22 V/m; Power Drift = 0.16 dB

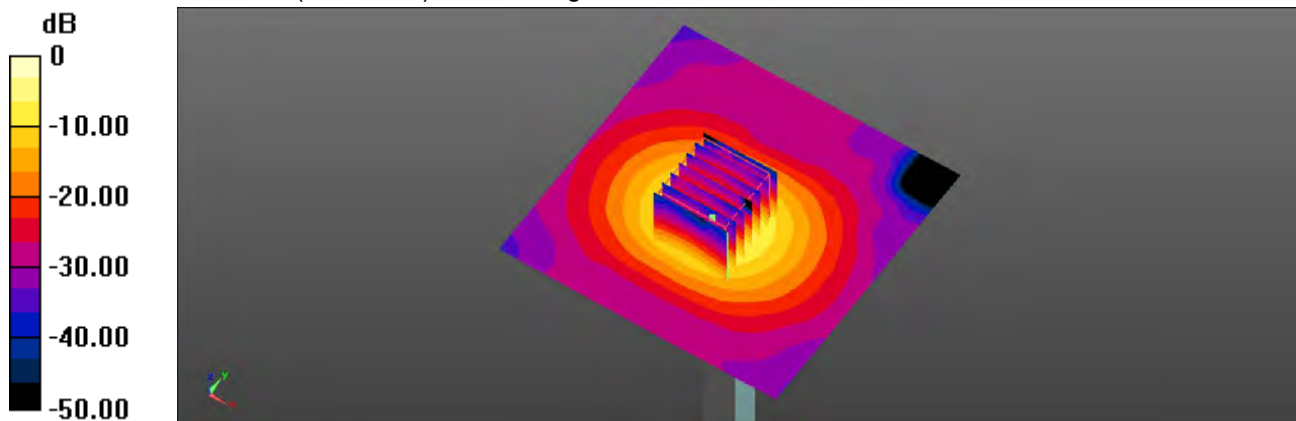
Peak SAR (extrapolated) = 39.8 W/kg

**SAR(1 g) = 8.89 W/kg; SAR(10 g) = 2.52 W/kg**

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

Ratio of SAR at M2 to SAR at M1 = 62.8%

Maximum value of SAR (measured) = 22.3 W/kg



0 dB = 22.3 W/kg = 13.48 dBW/kg

Test Laboratory: A Test Lab Techno Corp.  
Date: 2021/11/16

### System Performance Check at 5750MHz\_Head DUT: Dipole 5GHzV2

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1  
Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.311$  S/m;  $\epsilon_r = 35.559$ ;  $\rho = 1000$  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 - SN3977; ConvF(4.64, 4.64, 4.64) @ 5750 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; 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) = 21.6 W/kg

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

Reference Value = 65.19 V/m; Power Drift = 0.14 dB

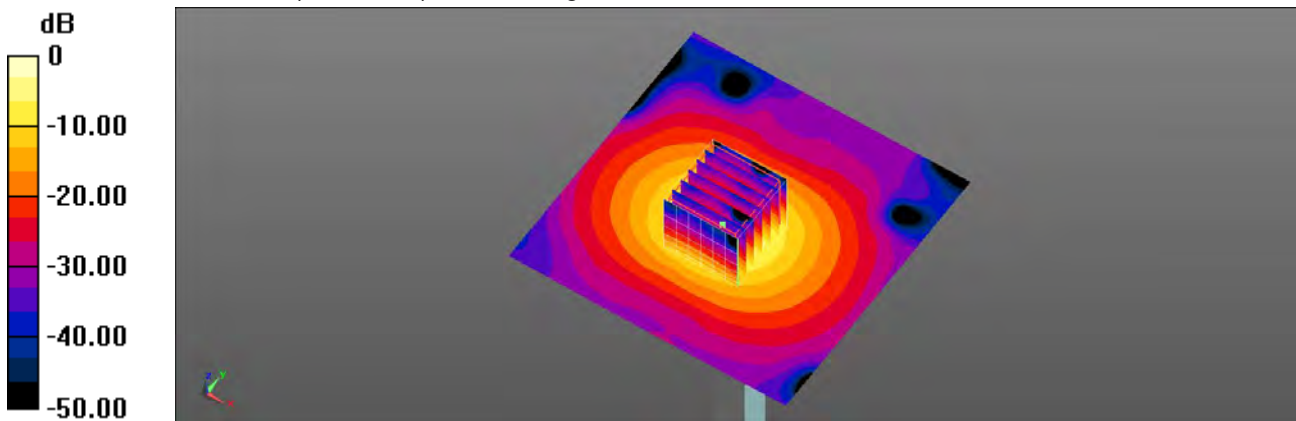
Peak SAR (extrapolated) = 40.7 W/kg

**SAR(1 g) = 8.42 W/kg; SAR(10 g) = 2.32 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) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 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	6.22	34.5

### Hardware Setup

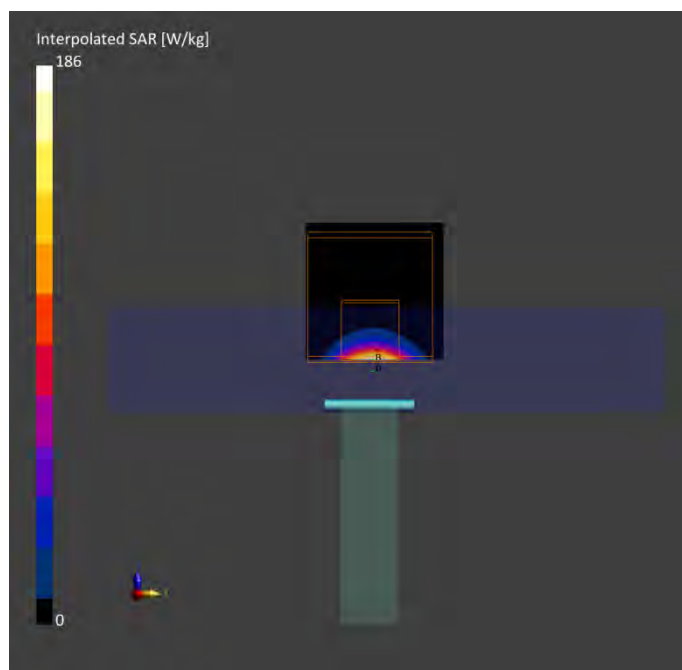
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2021-03-26	DAE4 Sn541, 2021-03-22

### 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	2021-11-18	2021-11-18
psSAR1g [W/Kg]	25.3	28.6
psSAR10g [W/Kg]	4.83	5.26
Power Drift [dB]	0.02	0.14
Scaling Factor [dB]		
TSL Correction	Positive only	Positive only



## 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	6.19	34.5

### Hardware Setup

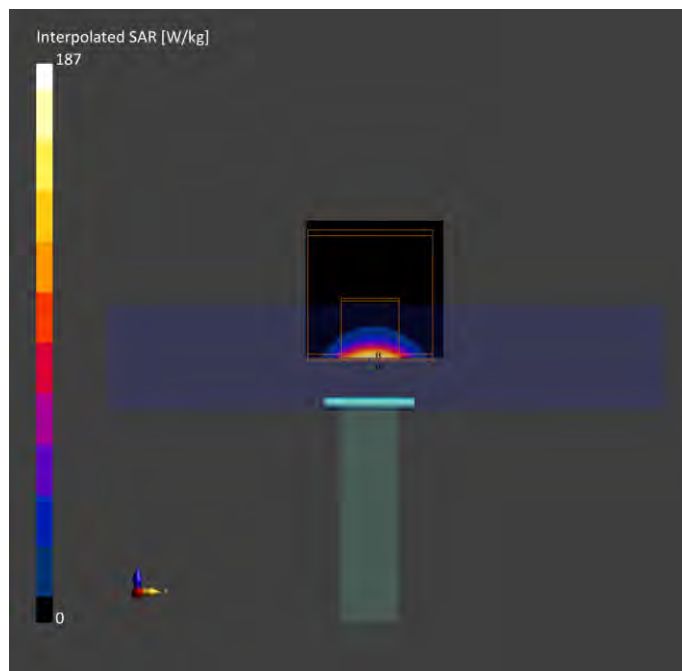
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2021-03-26	DAE4 Sn541, 2021-03-22

### 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	2021-11-19	2021-11-19
psSAR1g [W/Kg]	24.8	28.2
psSAR10g [W/Kg]	4.76	5.21
Power Drift [dB]	0.17	0.08
Scaling Factor [dB]		
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	2021-11-20
Avg. Area [cm <sup>2</sup> ]	4.00
psPDn+ [W/m <sup>2</sup> ]	148
psPDtot+ [W/m <sup>2</sup> ]	149
psPDmod+ [W/m <sup>2</sup> ]	153
E <sub>max</sub> [V/m]	289
Power Drift [dB]	-0.17

