

## **Appendix B – System Check Plots**

Date: 2024/7/30

**System Check\_13MHz**

**DUT: CLA-13 MHz ;Type: CLA-13 ;SN: 1018**

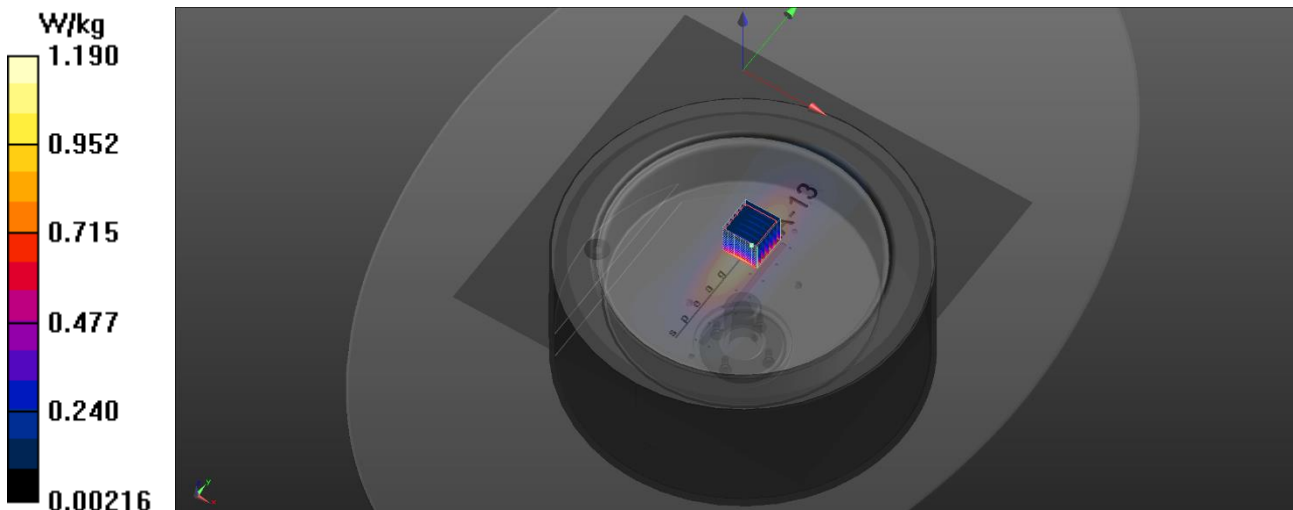
Communication System: UID 10453 - AAD, Validation (Square, 10ms, 1ms); Frequency: 13 MHz;Duty Cycle: 1:10  
Medium parameters used (interpolated):  $f = 13 \text{ MHz}$ ;  $\sigma = 0.731 \text{ S/m}$ ;  $\epsilon_r = 55.277$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section  
Measurement Standard: DASYS

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 - SN7650; ConvF(17.02, 18.46, 16.04) @ 13 MHz; Calibrated: 2024/6/4
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2024/3/11
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1175
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (121x121x1):** Interpolated grid:  $dx=2.000 \text{ mm}$ ,  $dy=2.000 \text{ mm}$   
Maximum value of SAR (interpolated) = 1.19 W/kg

**Zoom Scan (7x7x16)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$   
Reference Value = 39.55 V/m; Power Drift = -0.06 dB  
Peak SAR (extrapolated) = 2.02 W/kg  
**SAR(1 g) = 0.543 W/kg; SAR(10 g) = 0.351 W/kg** (SAR corrected for target medium)  
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 12 mm)  
Ratio of SAR at M2 to SAR at M1 = 68.6%  
Maximum value of SAR (measured) = 0.993 W/kg



Test Date : 2024-07-31 | Ambient Temp : 21.9 °C | Tissue Temp : 20.9 °C

**System Performance Check**

**System Performance Check at 2450 MHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.	Input Power [dBm]
SPEAG	D2450V2	1087	17.0

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	CW	2450.000	7.05	1.79	39.8

**Hardware Setup**

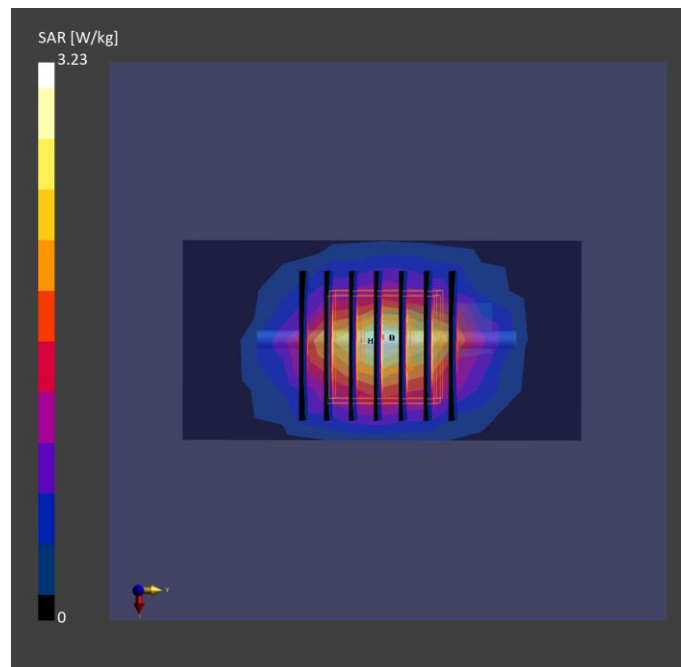
Phantom	Tissue Simulating Liquid	Probe   Calibration Date	DAE   Calibration Date
ELI V8.0 (20deg probe tilt) - 2180	HBBL-600-10000	EX3DV4 - SN7757   2023-08-22	DAE4 Sn1669   2024-05-16

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.5

**Measurement Results**

	Area Scan	Zoom Scan
psSAR-1g [W/kg]	2.47	<b>2.44</b>
psSAR-10g [W/kg]	1.15	<b>1.14</b>
Power Drift [dB]		0.01
TSL Correction	Positive only	Positive only



Test Date : 2024-08-01 | Ambient Temp : 22.1 °C | Tissue Temp : 21.2 °C

**System Performance Check**

**System Performance Check at 5250 MHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.	Input Power [dBm]
SPEAG	D5GHzV2	1358	17.0

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	CW	5250.000	5.02	4.53	36.2

**Hardware Setup**

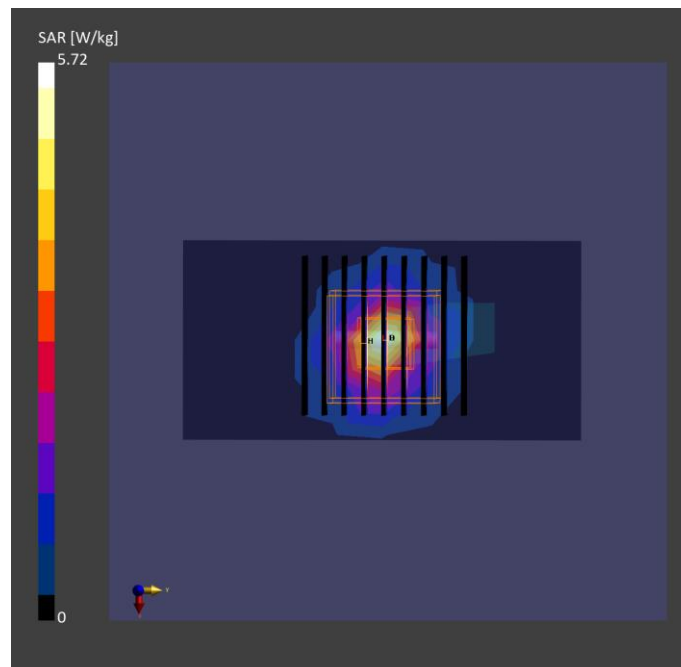
Phantom	Tissue Simulating Liquid	Probe   Calibration Date	DAE   Calibration Date
ELI V8.0 (20deg probe tilt) - 2180	HBBL-600-10000	EX3DV4 - SN7757   2023-08-22	DAE4 Sn1669   2024-05-16

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.4

**Measurement Results**

	Area Scan	Zoom Scan
psSAR-1g [W/kg]	3.49	<b>3.58</b>
psSAR-10g [W/kg]	0.995	<b>1.03</b>
Power Drift [dB]		0.02
TSL Correction	Positive only	Positive only



Test Date : 2024-08-01 | Ambient Temp : 22.1 °C | Tissue Temp : 21.2 °C

**System Performance Check**

**System Performance Check at 5600 MHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.	Input Power [dBm]
SPEAG	D5GHzV2	1358	17.0

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	CW	5600.000	4.29	4.92	35.6

**Hardware Setup**

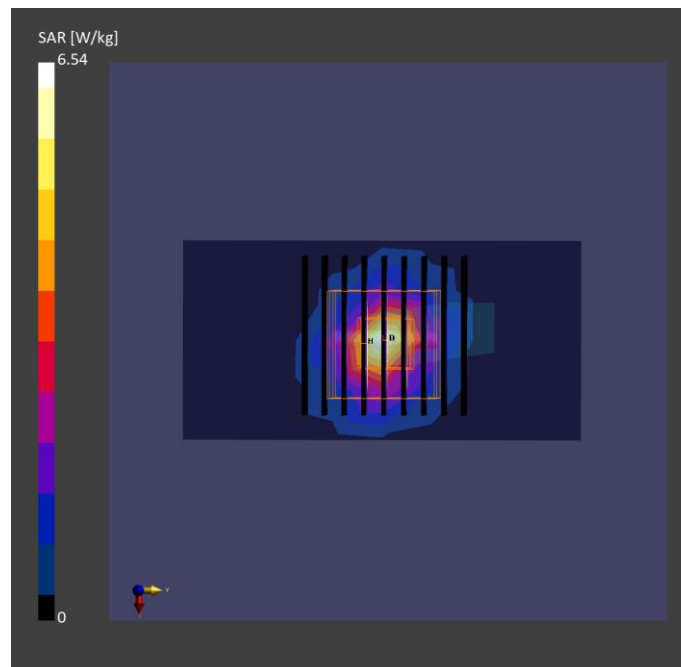
Phantom	Tissue Simulating Liquid	Probe   Calibration Date	DAE   Calibration Date
ELI V8.0 (20deg probe tilt) - 2180	HBBL-600-10000	EX3DV4 - SN7757   2023-08-22	DAE4 Sn1669   2024-05-16

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.4

**Measurement Results**

	Area Scan	Zoom Scan
psSAR-1g [W/kg]	4.05	<b>4.12</b>
psSAR-10g [W/kg]	1.14	<b>1.17</b>
Power Drift [dB]		0.02
TSL Correction	Positive only	Positive only



Test Date : 2024-08-01 | Ambient Temp : 22.1 °C | Tissue Temp : 21.2 °C

**System Performance Check**

**System Performance Check at 5800 MHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.	Input Power [dBm]
SPEAG	D5GHzV2	1358	17.0

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	CW	5800.000	4.36	5.15	35.3

**Hardware Setup**

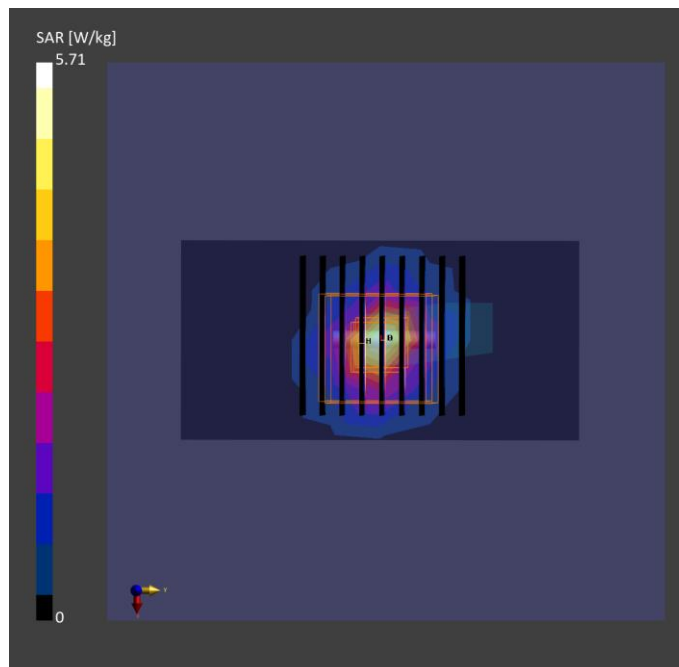
Phantom	Tissue Simulating Liquid	Probe   Calibration Date	DAE   Calibration Date
ELI V8.0 (20deg probe tilt) - 2180	HBBL-600-10000	EX3DV4 - SN7757   2023-08-22	DAE4 Sn1669   2024-05-16

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.4

**Measurement Results**

	Area Scan	Zoom Scan
psSAR-1g [W/kg]	3.56	<b>3.62</b>
psSAR-10g [W/kg]	1.00	<b>1.03</b>
Power Drift [dB]		0.01
TSL Correction	Positive only	Positive only



Test Date : 2024-07-31 | Ambient Temp : 21.9 °C | Tissue Temp : 20.9 °C

**System Performance Check**

**System Performance Check at 6500 MHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.	Input Power [dBm]
SPEAG	D6.5GHz	1081	20.0

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	CW	6500.000	4.47	6.05	33.3

**Hardware Setup**

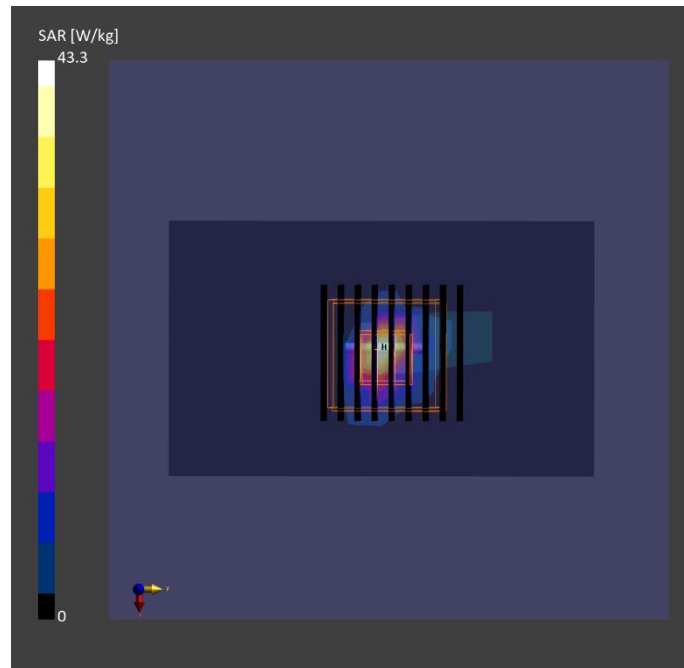
Phantom	Tissue Simulating Liquid	Probe   Calibration Date	DAE   Calibration Date
ELI V8.0 (20deg probe tilt) - 2180	HBBL-600-10000	EX3DV4 - SN7757   2023-08-22	DAE4 Sn1669   2024-05-16

**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
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.4

**Measurement Results**

	Area Scan	Zoom Scan
psSAR-1g [W/kg]	22.9	<b>26.3</b>
psSAR-8g [W/kg]	5.54	<b>6.01</b>
psSAR-10g [W/kg]	4.59	<b>4.98</b>
psAPD (1.0 cm <sup>2</sup> , sq) [W/m <sup>2</sup> ]		<b>263</b>
psAPD (4.0 cm <sup>2</sup> , sq) [W/m <sup>2</sup> ]		<b>120</b>
Power Drift [dB]		0.01
TSL Correction	Positive only	Positive only



Test Date : 2024-08-05 | Ambient Temp : 22.5 °C

**System Performance Check**

**System Performance Check at 10GHz**

**Verification Source Properties**

Manufacturer	Model No.	Serial No.
SPEAG	D10G	1060

**Exposure Conditions**

Phantom Section	Group	Frequency [MHz]	Conversion Factor
5G	CW	10000.0	1.0

**Hardware Setup**

Phantom	Medium	Probe   Calibration Date	DAE   Calibration Date
mmWave - 1102	Air	EUmmWV3 - SN9403_F1-55GHz   2023-12-05	DAE4 Sn1742   2023-08-17

**Scan Setup**

	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [mm]	0.125 x 0.125
Sensor Surface [mm]	10.0

**Measurement Results**

	5G Scan
Avg. Area [cm <sup>2</sup> ]	4.00
psPD n+ [W/m <sup>2</sup> ]	56.4
psPD tot+ [W/m <sup>2</sup> ]	56.5
psPD mod+ [W/m <sup>2</sup> ]	56.9
E max [V/m]	153
Power Drift [dB]	0.05

