

# Appendix A - System Verification

Test Laboratory: TUV Inc.

Date: 2024/3/20

## System Check\_HSL2450MHz

**DUT: D2450V2 - SN735**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450\_240320 Medium parameters used (interpolated):  $f = 2450$  MHz;  $\sigma = 1.855$  S/m;  $\epsilon_r =$

$40.418$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.1 °C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2023/4/25
- Probe: EX3DV4 - SN7400; ConvF(7.69, 7.69, 7.69) @ 2450 MHz; Calibrated: 2023/4/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection),  $z = -9.0, 31.0$
- Phantom: Right\_Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CC; Serial: TP-1467
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Pin=250mW/Area Scan (8x8x1):** Measurement grid:  $dx=12$ mm,  $dy=12$ mm

Maximum value of SAR (measured) = 17.7 W/kg

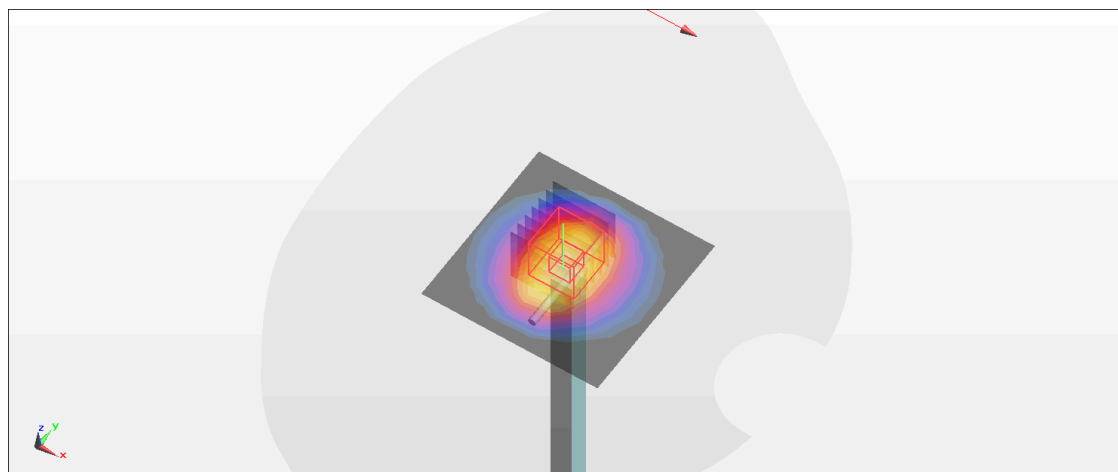
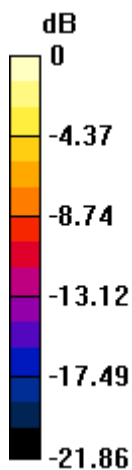
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 103.7 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 27.6 W/kg

**SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.17 W/kg**

Maximum value of SAR (measured) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 dBW/kg

## System Check\_HSL5250MHz

### DUT: D5GHzV2 - SN1145

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: HSL5G\_240413 Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.678$  S/m;  $\epsilon_r = 36.711$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.7 °C; Liquid Temperature : 22.6°C

### DASY Configuration:

- Electronics: DAE4 Sn917; Calibrated: 2024/3/11
- Probe: EX3DV4 - SN3804; ConvF(4.44, 4.44, 4.44) @ 5250 MHz; Calibrated: 2023/5/19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection),  $z = -9.0, 23.0$
- Phantom: Right\_Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CC; Serial: TP-1467
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Pin=100mW/Area Scan (9x9x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 17.6 W/kg

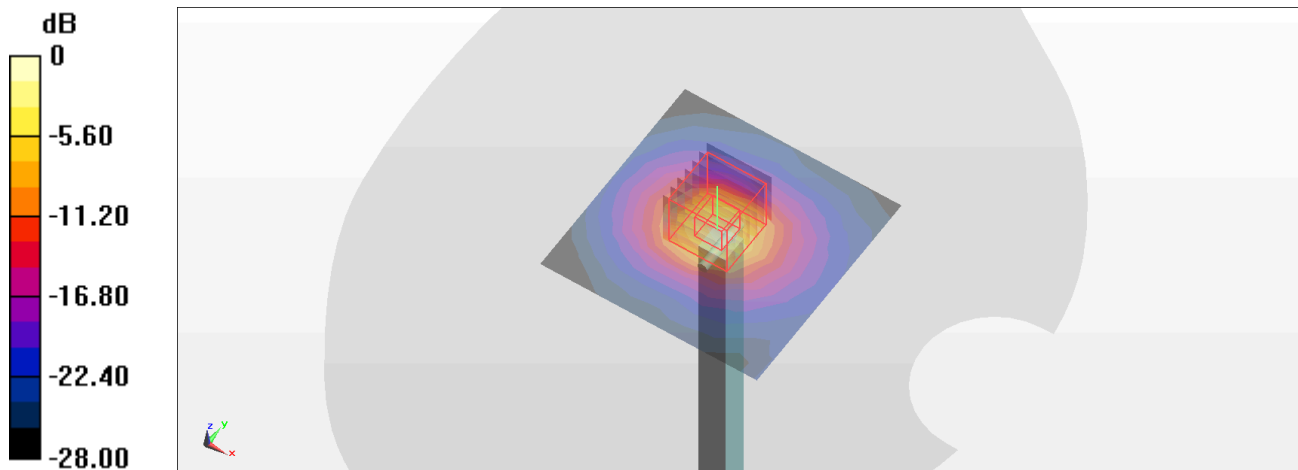
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 59.68 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 29.8 W/kg

**SAR(1 g) = 7.52 W/kg; SAR(10 g) = 2.19 W/kg**

Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 19.0 W/kg = 12.79 dBW/kg

## System Check\_HSL5600MHz

### DUT: D5GHzV2 - SN1145

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: HSL5G\_240413 Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.045$  S/m;  $\epsilon_r = 36.26$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.7 °C; Liquid Temperature : 22.6°C

### DASY Configuration:

- Electronics: DAE4 Sn917; Calibrated: 2024/3/11
- Probe: EX3DV4 - SN3804; ConvF(4.17, 4.17, 4.17) @ 5600 MHz; Calibrated: 2023/5/19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection),  $z = -9.0, 23.0$
- Phantom: Right\_Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CC; Serial: TP-1467
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Pin=100mW/Area Scan (9x9x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 18.7 W/kg

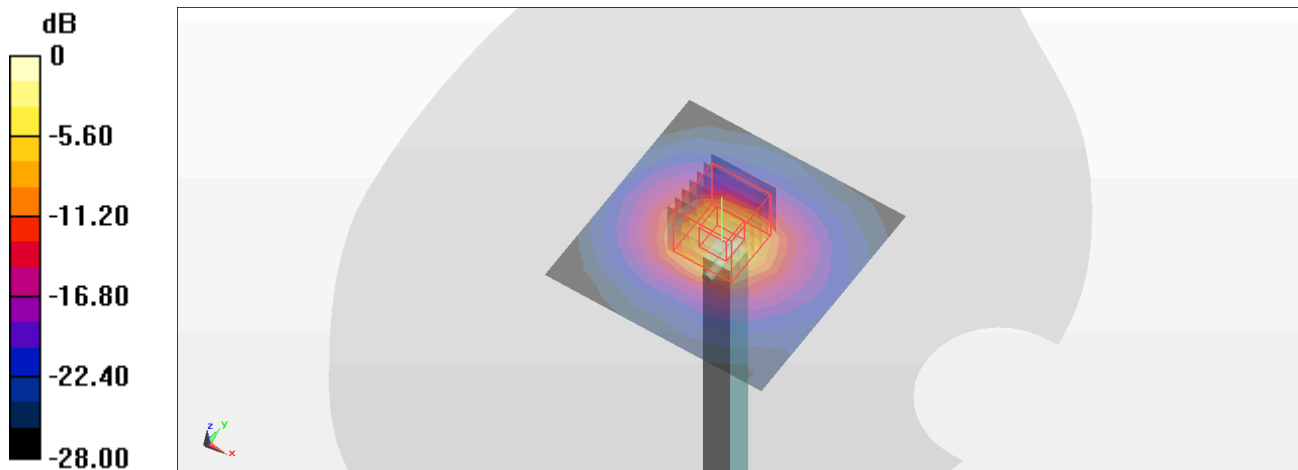
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 59.31 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 32.1 W/kg

**SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.34 W/kg**

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



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

## System Check\_HSL5750MHz

### DUT: D5GHzV2 - SN1145

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: HSL5G\_240413 Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.208$  S/m;  $\epsilon_r = 36.094$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.7 °C; Liquid Temperature : 22.6°C

### DASY Configuration:

- Electronics: DAE4 Sn917; Calibrated: 2024/3/11
- Probe: EX3DV4 - SN3804; ConvF(4.34, 4.34, 4.34) @ 5750 MHz; Calibrated: 2023/5/19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection),  $z = -9.0, 23.0$
- Phantom: Right\_Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CC; Serial: TP-1467
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**Pin=100mW/Area Scan (9x9x1):** Measurement grid:  $dx=10$ mm,  $dy=10$ mm

Maximum value of SAR (measured) = 18.4 W/kg

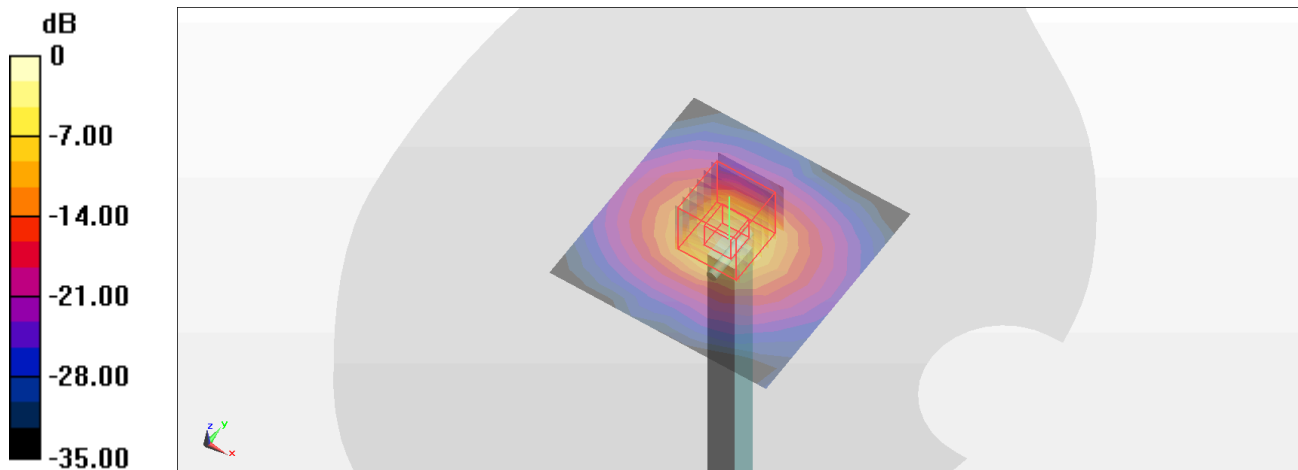
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 57.52 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 33.9 W/kg

**SAR(1 g) = 7.54 W/kg; SAR(10 g) = 2.16 W/kg**

Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.6 W/kg = 12.92 dBW/kg

**Test Laboratory: TUV International Inc.**

**System Check\_HSL6500\_20240401**

| Model, Manufacturer | Dimensions [mm]                    | IMEI     | DUT Type      |
|---------------------|------------------------------------|----------|---------------|
| DeviceD6.5GHzV2     | N/AN/AN/A x x , 16.0 x 6.0 x 300.0 | SN: 1044 | Phone, Dipole |

**Exposure Conditions**

| Phantom Section, TSL | Position, Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|------------------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat, HSL            | 5,                           |      | CW, 0--    | 6500.000, 0                     | 5.3               | 5.54                   | 30.8             |

**Hardware Setup**

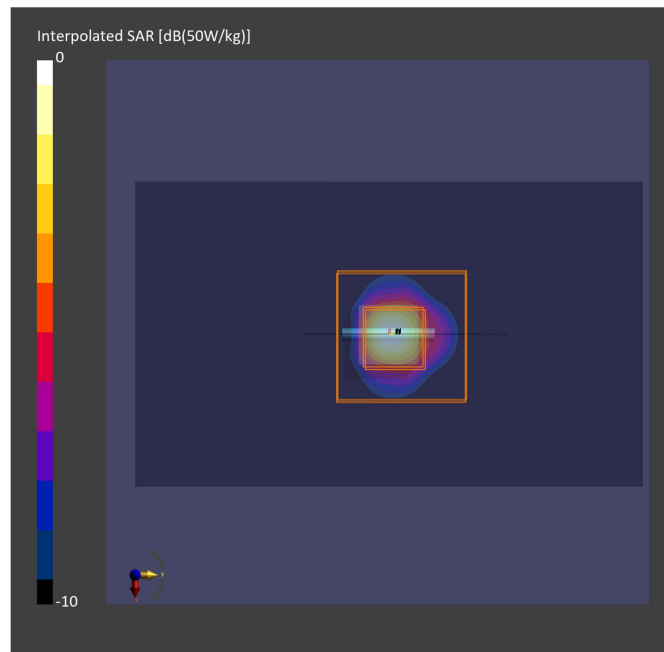
| Phantom                                 | TSL, Measured Date    | Probe, Calibration Date     | DAE, Calibration Date  |
|-----------------------------------------|-----------------------|-----------------------------|------------------------|
| Twin-SAM V4.0 (30deg probe tilt) - 1467 | HSL6500_20240401 , -- | EX3DV4 - SN7400, 2023-04-28 | DAE4 Sn855, 2023-04-25 |

**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                |
| MAIA                | N/A         | N/A                |
| Surface Detection   | VMS + 6p    | VMS + 6p           |
| Scan Method         | Measured    | Measured           |

**Measurement Results**

|                     | Area Scan         | Zoom Scan         |
|---------------------|-------------------|-------------------|
| Date                | 2024-04-01, 11:50 | 2024-04-01, 12:07 |
| psSAR1g [W/kg]      | 23.9              | 27.9              |
| psSAR10g [W/kg]     | 4.62              | 5.14              |
| Power Drift [dB]    | -0.00             | 0.02              |
| Power Scaling       | Disabled          | Disabled          |
| Scaling Factor [dB] |                   |                   |
| TSL Correction      | No correction     | No correction     |
| M2/M1 [%]           |                   | 49.8              |
| Dist 3dB Peak [mm]  |                   | 4.8               |



## Test Laboratory: TUV International Inc.

### Device under Test Properties

| Model, Manufacturer | Dimensions [mm]       | IMEI     | DUT Type                   |
|---------------------|-----------------------|----------|----------------------------|
| Device ,10GHz       | 100.0 x 100.0 x 100.0 | SN: 2013 | Phone ,Verification Source |

### Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Band            | Group, UID | Frequency [MHz], Channel Number | Conversion Factor |
|-----------------|------------------------------|-----------------|------------|---------------------------------|-------------------|
| 5G Air          | FRONT, 10.00                 | Validation band | CW, 0--    | 10000.0, 10000                  | 1.0               |

### Hardware Setup

| Phantom      | Medium | Probe, Calibration Date               | DAE, Calibration Date  |
|--------------|--------|---------------------------------------|------------------------|
| mmWave- 1089 | ---Air | EUmmWV4 - SN9599_F1-55GHz, 2023-04-19 | DAE4 Sn855, 2023-04-25 |

### Scan Setup

|                     | 5G Scan |
|---------------------|---------|
| Sensor Surface [mm] | 10.0    |
| MAIA                | N/A     |

### Measurement Results

|                              | 5G Scan           |
|------------------------------|-------------------|
| Date                         | 2024-03-25, 10:14 |
| Avg. Area [cm <sup>2</sup> ] | 4.00              |
| psPDn+ [W/m <sup>2</sup> ]   | 151               |
| psPDtot+ [W/m <sup>2</sup> ] | 153               |
| psPDmod+ [W/m <sup>2</sup> ] | 157               |
| E <sub>max</sub> [V/m]       | 280               |
| Power Drift [dB]             | 0.01              |

