

Appendix B - SAR Measurement

Test Laboratory: TUV Inc.

Date: 2025/11/10

#30_470MHz-608MHz_200KG2E_HandHeld side_0mm_Freq607.900 MHz

DUT: Astral HH

Communication System: Microphone; Frequency: 607.9 MHz; Duty Cycle: 1:1

Medium: HSL600_251110 Medium parameters used: $f = 608 \text{ MHz}$; $\sigma = 0.848 \text{ S/m}$; $\epsilon_r = 43.951$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.6°C ; Liquid Temperature : 22.5°C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN3804; ConvF(8.95, 8.95, 8.95) @ 607.9 MHz; Calibrated: 2025/9/24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.0857 W/kg

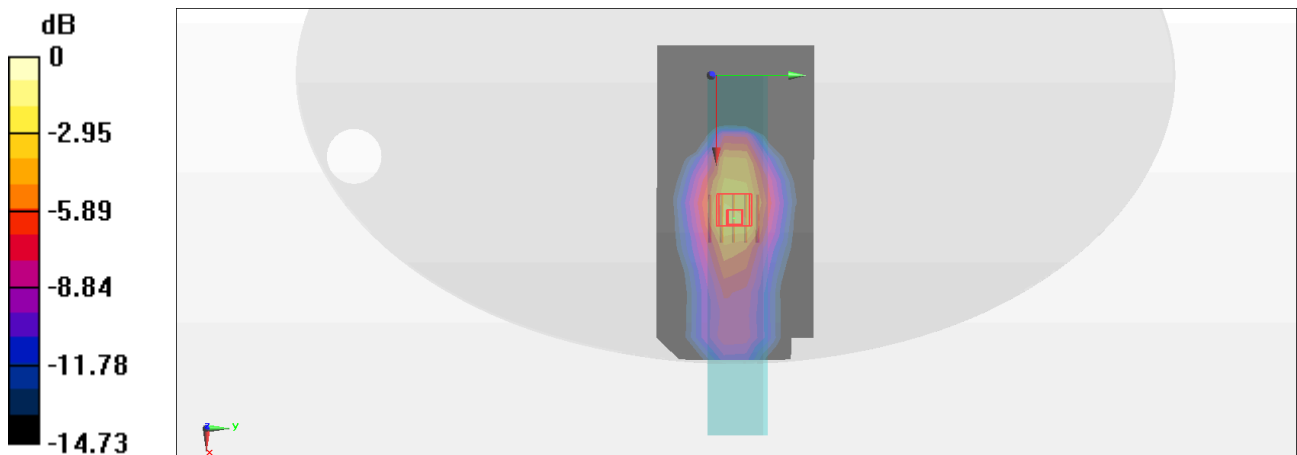
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.505 V/m ; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.211 W/kg

SAR(1 g) = 0.084 W/kg ; SAR(10 g) = 0.047 W/kg

Maximum value of SAR (measured) = 0.159 W/kg



0 dB = 0.159 W/kg = -7.99 dBW/kg

#01_902MHz-928MHz_200KG2E_HandHeld side_0mm_Freq902.400 MHz**DUT: Astral HH**

Communication System: Microphone; Frequency: 902.4 MHz; Duty Cycle: 1:1

Medium: HSL900_251107 Medium parameters used: $f = 902.4$ MHz; $\sigma = 0.966$ S/m; $\epsilon_r = 42.813$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(9.33, 8.33, 9.64) @ 902.4 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.117 W/kg

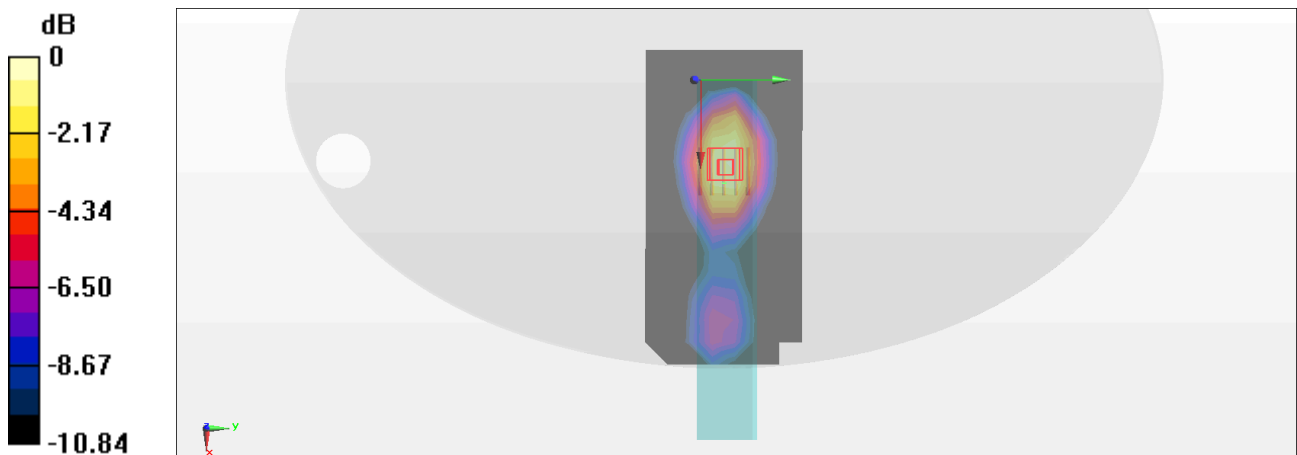
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 11.85 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.152 W/kg

SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.133 W/kg



0 dB = 0.133 W/kg = -8.76 dBW/kg

#02_941.5MHz-952MHz_200KG2E_HandHeld side_0mm_Freq946.750 MHz**DUT: Astral HH**

Communication System: Microphone; Frequency: 946.75 MHz; Duty Cycle: 1:1

Medium: HSL900_251107 Medium parameters used: $f = 946.75$ MHz; $\sigma = 0.979$ S/m; $\epsilon_r = 42.731$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(9.33, 8.33, 9.64) @ 946.75 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.0786 W/kg

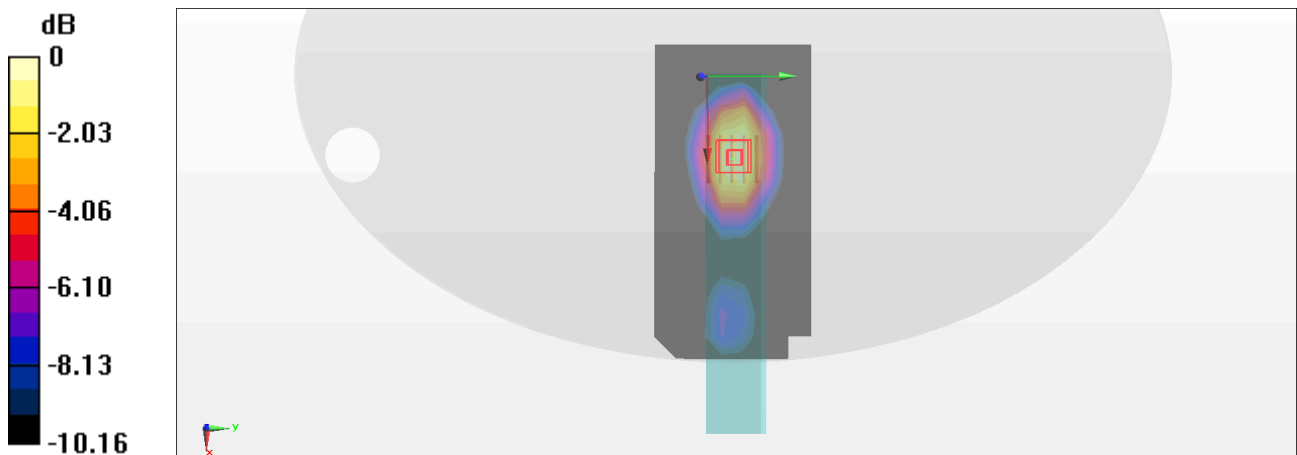
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.572 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.0960 W/kg

SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.0872 W/kg



0 dB = 0.0872 W/kg = -10.59 dBW/kg

#03_952.85MHz-956.25MHz_200KG2E_HandHeld side_0mm_Freq952.950 MHz**DUT: Astral HH**

Communication System: Microphone; Frequency: 952.95 MHz; Duty Cycle: 1:1

Medium: HSL900_251107 Medium parameters used: $f = 952.95$ MHz; $\sigma = 0.98$ S/m; $\epsilon_r = 42.724$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(9.33, 8.33, 9.64) @ 952.95 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.0770 W/kg

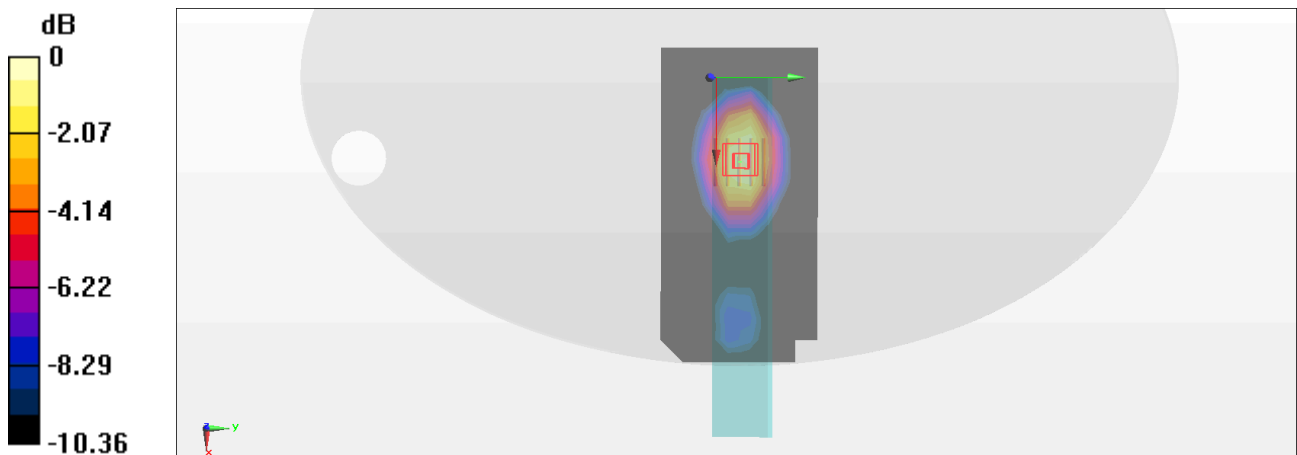
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.547 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.0960 W/kg

SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.0867 W/kg



#05_956.45MHz-959.85MHz_200KG2E_HandHeld side_0mm_Freq959.750 MHz**DUT: Astral HH**

Communication System: Microphone; Frequency: 959.75 MHz; Duty Cycle: 1:1

Medium: HSL900_251107 Medium parameters used: $f = 960$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 42.727$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 22.1 °C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(9.33, 8.33, 9.64) @ 959.75 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.0771 W/kg

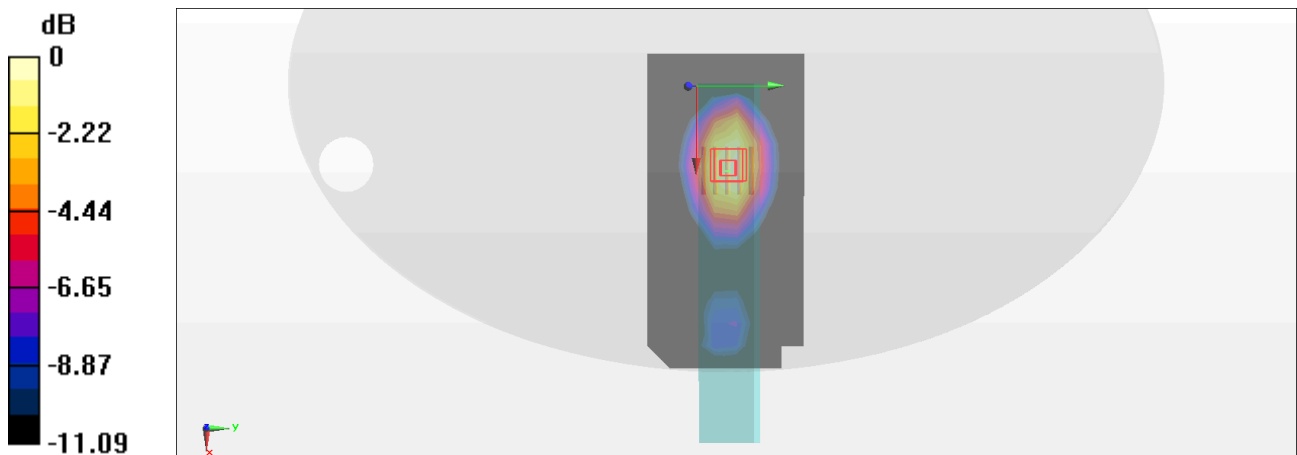
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.480 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.0920 W/kg

SAR(1 g) = 0.065 W/kg; SAR(10 g) = 0.043 W/kg

Maximum value of SAR (measured) = 0.0828 W/kg



0 dB = 0.0828 W/kg = -10.82 dBW/kg

#10_1435MHz-1525MHz_200KG2E_HandHeld side_0mm_Freq1524.815 MHz**DUT: Astral HH**

Communication System: Microphone; Frequency: 1524.82 MHz; Duty Cycle: 1:1

Medium: HSL1450_251110 Medium parameters used: $f = 1524.82$ MHz; $\sigma = 1.222$ S/m; $\epsilon_r = 40.327$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.6 °C; Liquid Temperature : 22.5°C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(7.94, 7.1, 8.21) @ 1524.82 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (15x8x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.130 W/kg

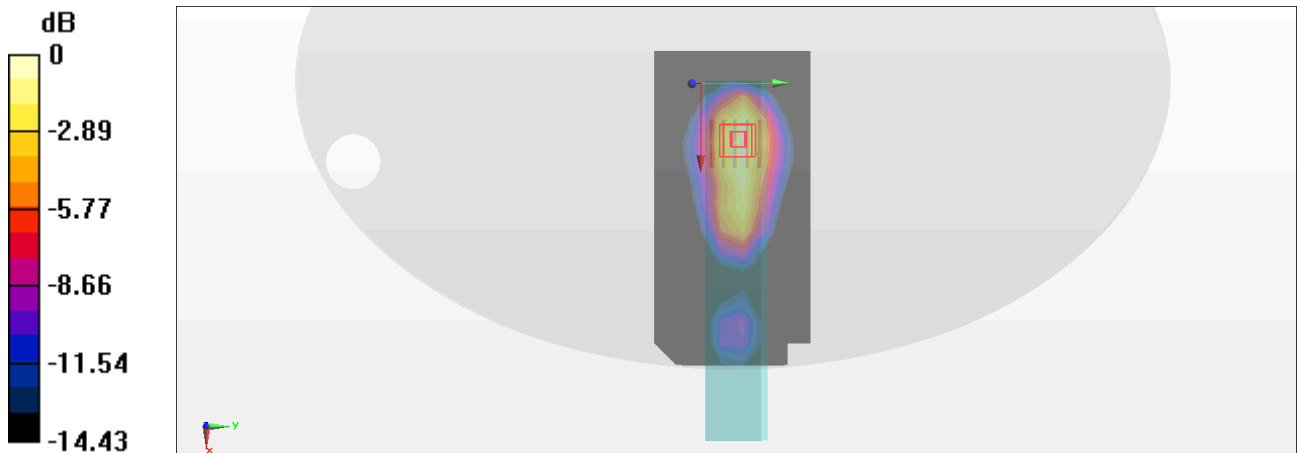
Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.206 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.149 W/kg

SAR(1 g) = 0.100 W/kg; SAR(10 g) = 0.060 W/kg

Maximum value of SAR (measured) = 0.132 W/kg



0 dB = 0.132 W/kg = -8.79 dBW/kg

#37_BLE_1Mbps_HandHeld side_0mm_Freq2440 MHz**DUT: Astral HH**

Communication System: BLE; Frequency: 2440 MHz; Duty Cycle: 1:1

Medium: HSL2450_251112 Medium parameters used: $f = 2440$ MHz; $\sigma = 1.803$ S/m; $\epsilon_r = 39.956$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2°C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(7.07, 6.32, 7.31) @ 2440 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (18x10x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.0103 W/kg

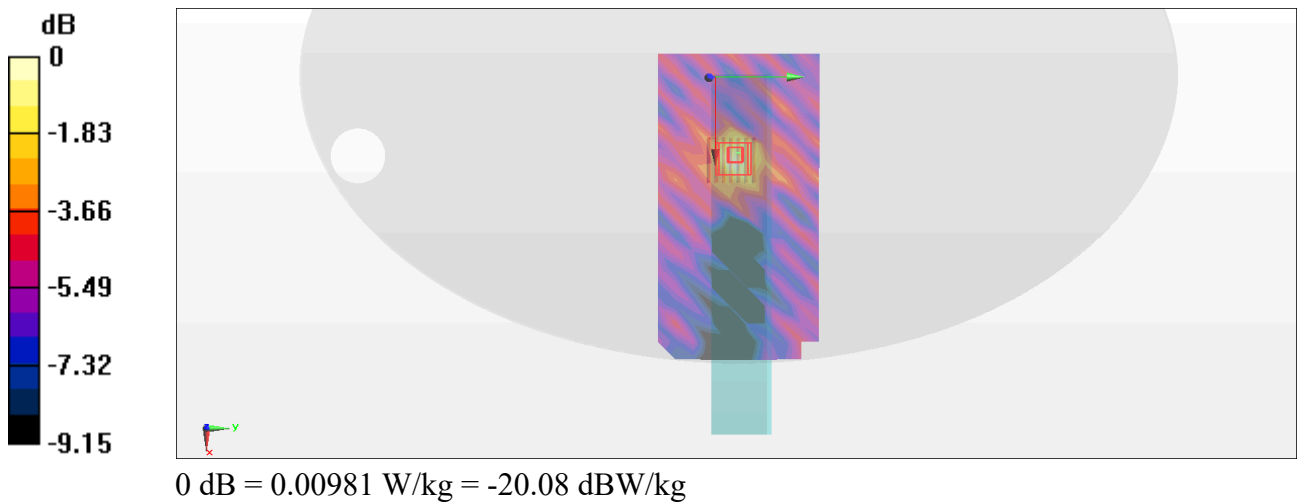
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 1.471 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.0220 W/kg

SAR(1 g) = 0.007 W/kg; SAR(10 g) = 0.005 W/kg

Maximum value of SAR (measured) = 0.00981 W/kg



#42_2.4G LoRa_1.09 kbits_HandHeld side_0mm_Freq2481.6 MHz**DUT: Astral HH**

Communication System: LoRa; Frequency: 2481.6 MHz; Duty Cycle: 1:1

Medium: HSL2450_251112 Medium parameters used: $f = 2482$ MHz; $\sigma = 1.836$ S/m; $\epsilon_r = 39.872$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.2°C

DASY Configuration:

- Electronics: DAE4 Sn855; Calibrated: 2025/4/23
- Probe: EX3DV4 - SN7400; ConvF(7.07, 6.32, 7.31) @ 2481.6 MHz; Calibrated: 2025/5/21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), $z = -39.0, 31.0$
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 AA; Serial: 1153
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Area Scan (18x10x1): Measurement grid: $dx=12$ mm, $dy=12$ mm

Maximum value of SAR (measured) = 0.0147 W/kg

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

Reference Value = 1.001 V/m; Power Drift = 1.90 dB

Peak SAR (extrapolated) = 0.0210 W/kg

SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.006 W/kg

Maximum value of SAR (measured) = 0.0167 W/kg

