

Calibration Laboratory of  
Schmid & Partner  
Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst  
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S Servizio svizzero di taratura  
S Swiss Calibration Service

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **Sporton**  
**Taoyuan City**

Certificate No. **CLA13-1022\_Sep25**

## CALIBRATION CERTIFICATE

Object **CLA13 - SN: 1022**

Calibration procedure(s) **QA CAL-15.v11  
Calibration Procedure for SAR Validation Sources below 700 MHz**

Calibration date: **September 12, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards               | ID #             | Cal Date (Certificate No.)        | Scheduled Calibration  |
|---------------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP2                | SN: 104778       | 26-Mar-25 (No. 217-04289)         | Mar-26                 |
| Power sensor NRP-Z91            | SN: 103245       | 26-Mar-25 (No. 217-04289)         | Mar-26                 |
| Reference 20 dB Attenuator      | SN: CC2552 (20x) | 26-Mar-25 (No. 217-04284)         | Mar-26                 |
| 3.5mm mismatch combination      | SN: L1152        | 24-Mar-25 (No. 217-04293)         | Mar-26                 |
| Reference Probe EX3DV4          | SN: 3877         | 06-Jan-25 (No. EX3-3877_Jan25)    | Jan-26                 |
| DAE4                            | SN: 654          | 18-Oct-24 (No. DAE4-654_Oct24)    | Oct-25                 |
| Secondary Standards             | ID #             | Check Date (in house)             | Scheduled Check        |
| Power meter NRP2                | SN: 107193       | 08-Nov-21 (in house check Jun-24) | In house check: Jun-26 |
| Power sensor NRP-Z91            | SN: 100922       | 15-Dec-09 (in house check Jun-24) | In house check: Jun-26 |
| Power sensor NRP-Z91            | SN: 100418       | 01-Jan-04 (in house check Jun-24) | In house check: Jun-26 |
| RF generator HP 8648C           | SN: US3642U01700 | 04-Aug-99 (in house check Jun-24) | In house check: Jun-26 |
| Network Analyzer Agilent E8358A | SN: US41080477   | 31-Mar-14 (in house check Sep-24) | In house check: Sep-26 |

Calibrated by: **Krešimir Franjić**      Name      Function  
Laboratory Technician

Approved by: **Sven Kühn**      Technical Manager

Signature

Issued: September 16, 2025

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Accreditation No.: **SCS 0108**

#### Glossary:

|       |                                 |
|-------|---------------------------------|
| TSL   | tissue simulating liquid        |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A   | not applicable or not measured  |

#### Calibration is Performed According to the Following Standards:

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

#### Additional Documentation:

- DASY System Handbook

#### Methods Applied and Interpretation of Parameters:

- Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- SAR measured:* SAR measured at the stated antenna input power.
- SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                      |                                  |                                  |
|----------------------|----------------------------------|----------------------------------|
| DASY Version         | DASY5                            | V52.10.4                         |
| Extrapolation        | Advanced Extrapolation           |                                  |
| Phantom              | ELI4 Flat Phantom                | Shell thickness: $2 \pm 0.2$ mm  |
| EUT Positioning      | Touch Position                   |                                  |
| Zoom Scan Resolution | $dx, dy = 4.0$ mm, $dz = 1.4$ mm | Graded Ratio = 1.4 (Z direction) |
| Frequency            | 13 MHz $\pm$ 1 MHz               |                                  |

## HSL parameters

The following parameters and calculations were applied.

|                                    | Temperature         | Permittivity   | Conductivity           |
|------------------------------------|---------------------|----------------|------------------------|
| Nominal HSL parameters             | 22.0 °C             | 55.0           | 0.75 mho/m             |
| Measured HSL parameters            | $(22.0 \pm 0.2)$ °C | $52.7 \pm 6$ % | $0.73$ mho/m $\pm 6$ % |
| HSL temperature change during test | $< 0.5$ °C          | ---            | ---                    |

## SAR result with HSL

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                                                 |
|--------------------------------------------------|------------------|-------------------------------------------------|
| SAR measured                                     | 1 W input power  | 0.529 W/kg                                      |
| SAR for nominal HSL parameters                   | normalized to 1W | <b>0.536 W/kg <math>\pm</math> 18.4 % (k=2)</b> |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                                                 |
|----------------------------------------------------|------------------|-------------------------------------------------|
| SAR measured                                       | 1 W input power  | 0.333 W/kg                                      |
| SAR for nominal HSL parameters                     | normalized to 1W | <b>0.337 W/kg <math>\pm</math> 18.0 % (k=2)</b> |

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with HSL

|                                      |                               |
|--------------------------------------|-------------------------------|
| Impedance, transformed to feed point | 47.7 $\Omega$ + 4.7 $j\Omega$ |
| Return Loss                          | - 25.5 dB                     |

Additional EUT Data

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

## DASY5 Validation Report for HSL

Date: 12.09.2025

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: CLA13; Type: CLA13; Serial: CLA13 - SN: 1022**

Communication System: UID 0 - CW; Frequency: 13 MHz

Medium parameters used:  $f = 13 \text{ MHz}$ ;  $\sigma = 0.73 \text{ S/m}$ ;  $\epsilon_r = 52.7$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3877; ConvF(15.48, 15.48, 15.48) @ 13 MHz; Calibrated: 06.01.2025
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 18.10.2024
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2034
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

**CLA Calibration for HSL-LF Tissue/CLA-13, touch configuration, Pin=1W/Zoom Scan, dist=1.4mm (8x10x8)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$

Reference Value = 30.46 V/m; Power Drift = -0.00 dB

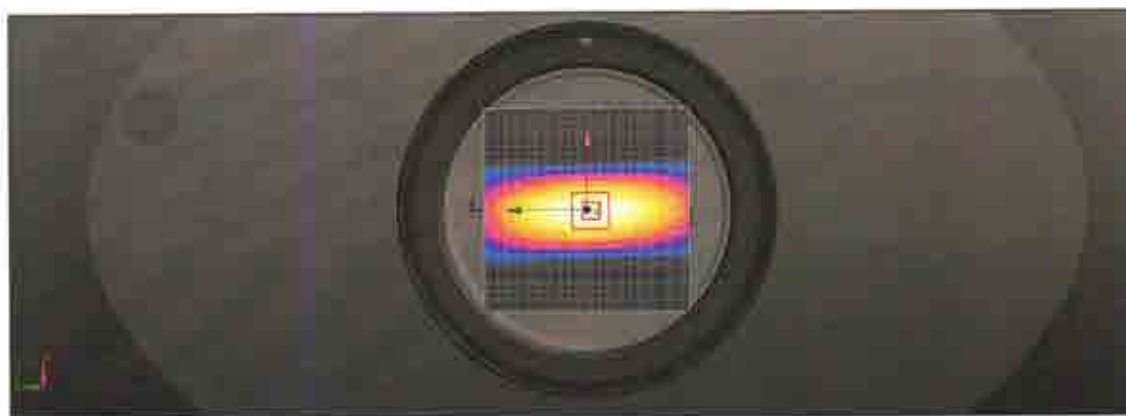
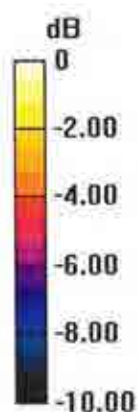
Peak SAR (extrapolated) = 1.05 W/kg

**SAR(1 g) = 0.529 W/kg; SAR(10 g) = 0.333 W/kg**

Smallest distance from peaks to all points 3 dB below = 26.9 mm

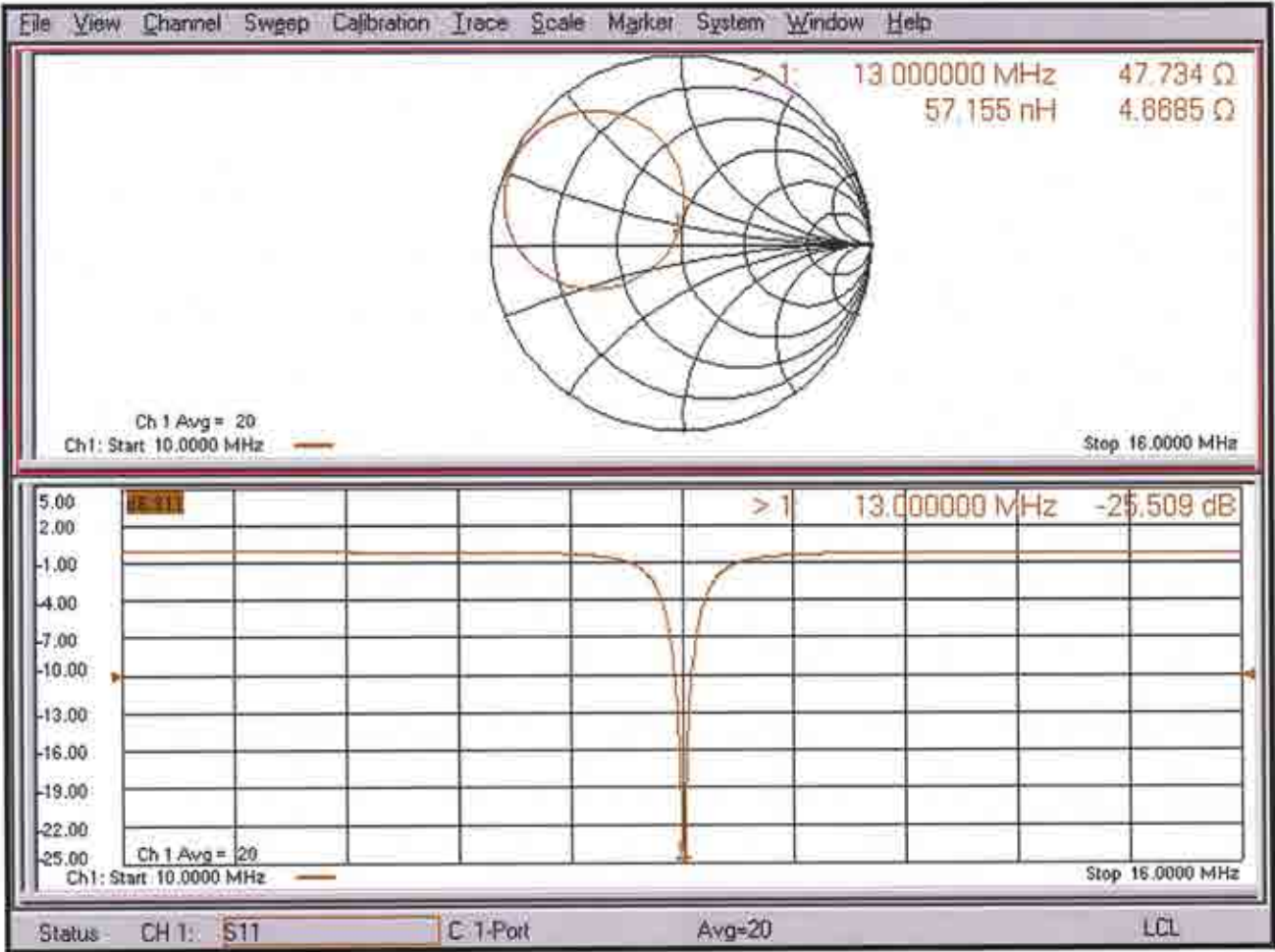
Ratio of SAR at M2 to SAR at M1 = 79.2%

Maximum value of SAR (measured) = 0.766 W/kg



0 dB = 0.766 W/kg = -1.16 dBW/kg

Impedance Measurement Plot for HSL



### CLA13, serial no. 1022 Extended Dipole Calibrations

If dipoles are verified in return loss ( $<-20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

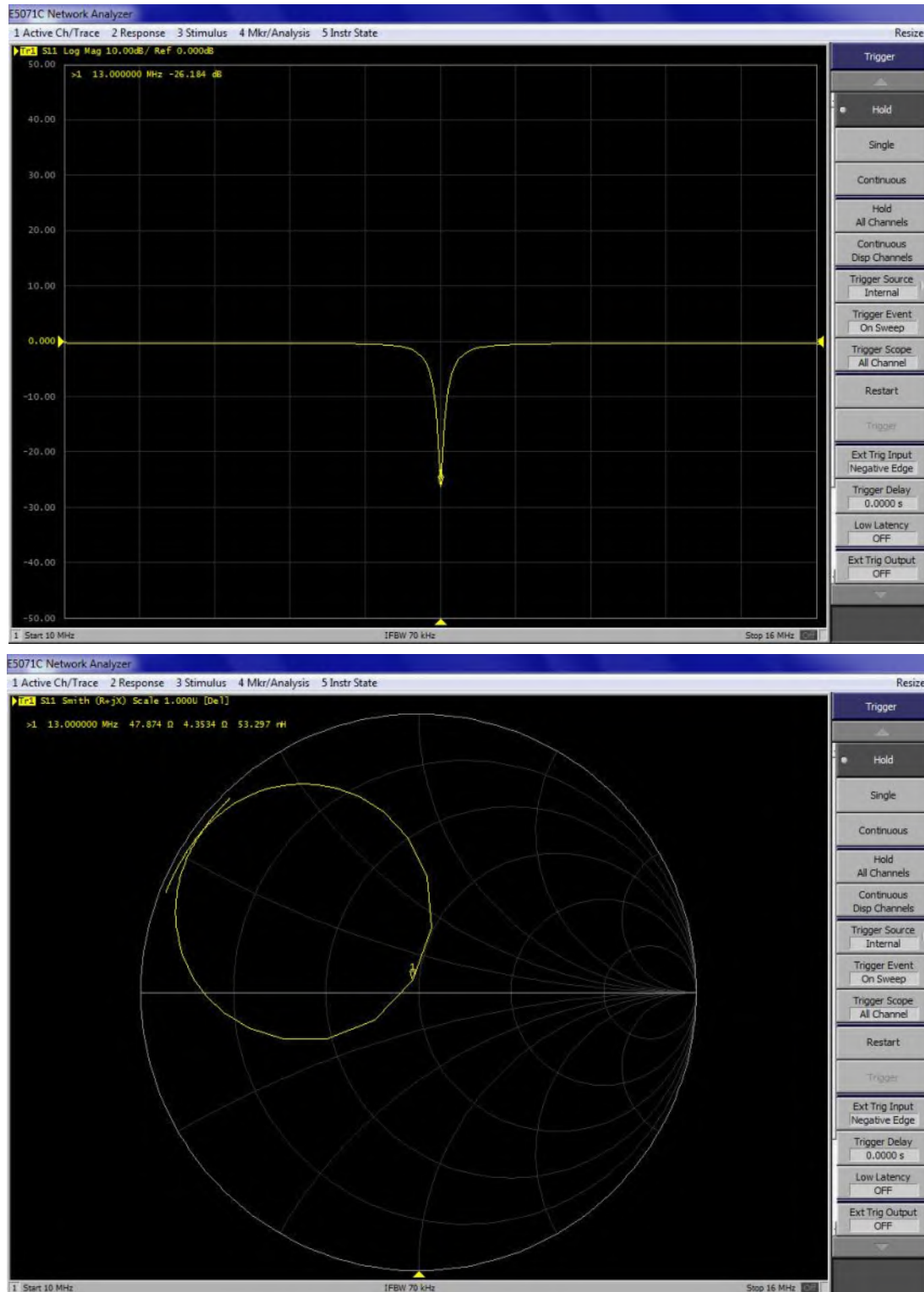
#### <Justification of the extended calibration>

| CLA13 – serial no. 1022     |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 13MHZ                       |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 09.12.2025<br>(Cal. Report) | -25.5            |           | 47.7                 |             | 4.7                       |             |
| 09.11.2026<br>(extended)    | -26.184          | -2.68     | 47.874               | 0.174       | 4.3534                    | -0.3466     |

The return loss is  $<-20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

# <Dipole Verification Data> -CLA13, serial no. 1022 (Data of Measurement : 09.11.2026)

## 13MHz - Head



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Accreditation No.: SCS 0108

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D750V3-1117\_Mar25****CALIBRATION CERTIFICATE**

Object

**D750V3 - SN: 1117**

Calibration procedure(s)

**QA CAL-05.v12****Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date

**March 12, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards                          | ID         | Cal Date (Certificate No.)            | Scheduled Cal |
|--------------------------------------------|------------|---------------------------------------|---------------|
| Power Sensor R&S NRP-33T                   | SN: 100967 | 28-Mar-24 (No. 217-04038)             | Mar-25        |
| Power Sensor R&S NRP18A                    | SN: 101859 | 06-Feb-25 (No. 4030A315009541)        | Feb-26        |
| Spectrum Analyzer R&S FSV40                | SN: 101832 | 29-Jan-25 (No. 4030A315009658)        | Jan-26        |
| Mismatch; Short [S4188] Attenuator [S4423] | SN: 1152   | 28-Mar-24 (No. 217-04050)             | Mar-25        |
| OCP DAK-12                                 | SN: 1016   | 24-Sep-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                                | SN: 1249   | 23-Sep-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4                     | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)        | Jan-26        |
| DAE4ip                                     | SN: 1836   | 28-Oct-24 (No. DAE4ip-1836_Oct24)     | Oct-25        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Source Box              | SN: 1000   | 28-May-24 (No. 675-ACAD_Source_Box-240528) | May-25          |
| Signal Generator R&S SMB100A | SN: 182081 | 28-May-24 (No. 675-CAL16-S4588-240528)     | May-25          |
| Mismatch; SMA                | SN: 1102   | 22-May-24 (No. 675-Mismatch_SMA-240522)    | May-25          |

|               |                  |                       |           |
|---------------|------------------|-----------------------|-----------|
|               | Name             | Function              | Signature |
| Calibrated by | Krešimir Franjić | Laboratory Technician |           |
| Approved by   | Sven Kühn        | Technical Manager     |           |

Issued: March 12, 2025

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**Accreditation No.: SCS 0108**

## Glossary

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 15 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 6mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 750MHz $\pm$ 1MHz        |                                     |

## HSL parameters at 750 MHz

The following parameters and calculations were applied.

|                                    | Temperature        | Permittivity  | Conductivity         |
|------------------------------------|--------------------|---------------|----------------------|
| Nominal HSL parameters             | 22.0 °C            | 41.9          | 0.890 mho/m          |
| Measured HSL parameters            | (22.0 $\pm$ 0.2)°C | 42.7 $\pm$ 6% | 0.890 mho/m $\pm$ 6% |
| HSL temperature change during test | < 0.5 °C           |               |                      |

## SAR result with HSL at 750 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                               |
|--------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                   | 24 dBm input power | 2.16 W/kg                     |
| SAR for nominal HSL parameters                   | normalized to 1W   | 8.60 W/kg $\pm$ 17.0% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                               |
|----------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                     | 24 dBm input power | 1.40 W/kg                     |
| SAR for nominal HSL parameters                     | normalized to 1W   | 5.57 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 750 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 52.2 $\Omega$ – 3.3 j $\Omega$ |
| Return Loss | -28.2 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.035 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D750V3 - SN: 1117

March 12, 2025

System Performance Check Report

Summary

| Dipole          | Frequency [MHz] | TSL | Power [dBm] |
|-----------------|-----------------|-----|-------------|
| D750V3 - SN1117 | 750             | HSL | -24         |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 15                 |      | CW, 0---   | 750, 0                          | 9.55              | 0.89                   | 42.7             |

Hardware Setup

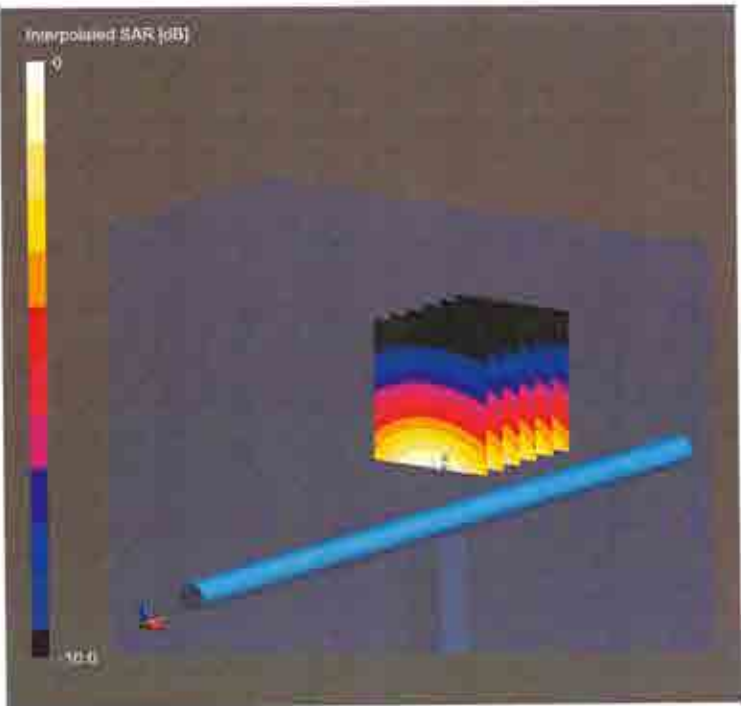
| Phantom       | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|---------------|--------------------|-----------------------------|---------------------------|
| Flat V4.9 mod | HSL, 2025-03-12    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip-Sn1836, 2024-10-28 |

Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS = 6p        |
| Scan Method         | Measured        |

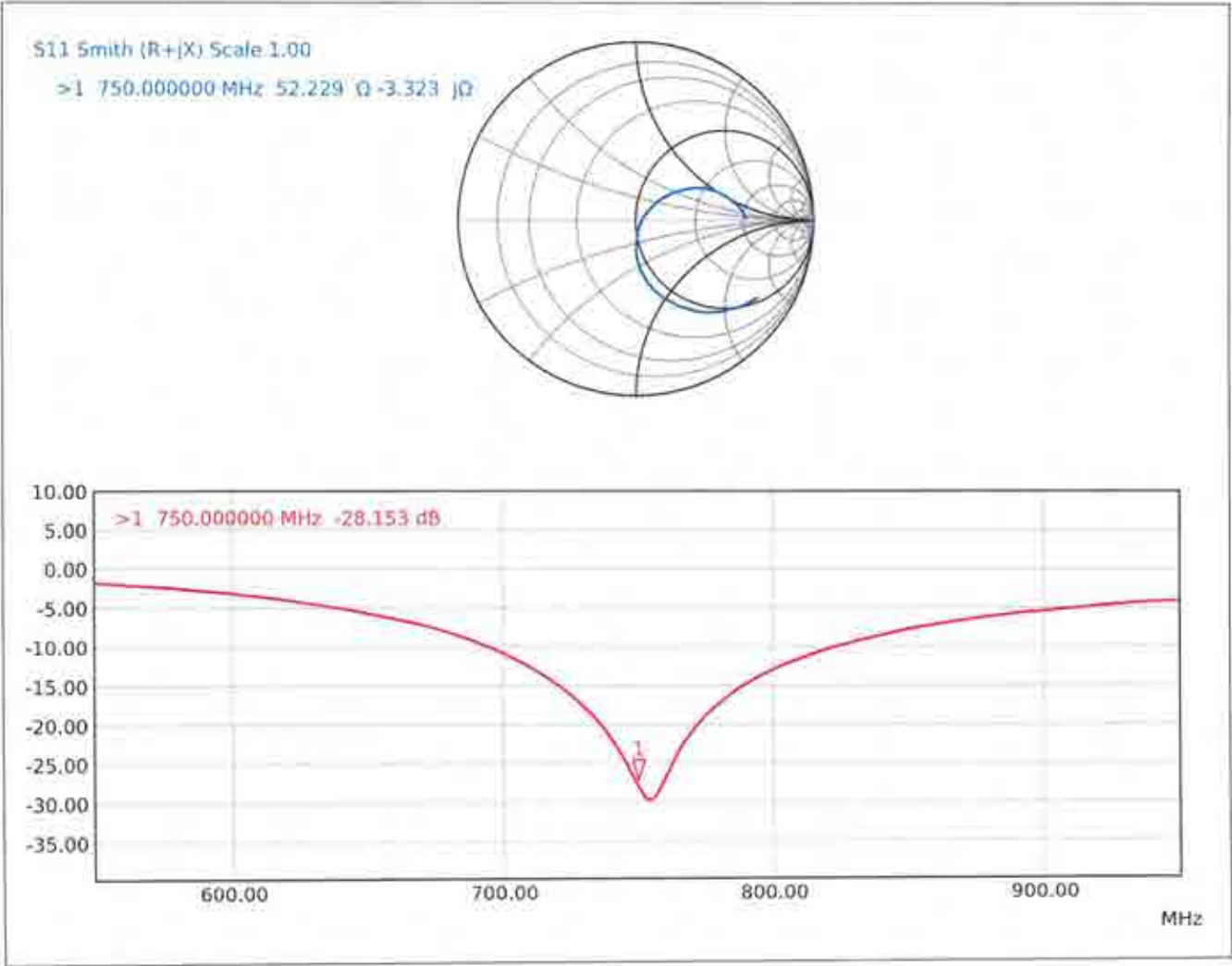
Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-03-12          |
| psSAR1g [W/Kg]      | 2.16                |
| psSAR10g [W/Kg]     | 1.40                |
| Power Drift [dB]    | -0.04               |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 3.31 W/Kg

Impedance Measurement Plot for HSL



### D750V3, serial no. 1117 Extended Dipole Calibrations

If dipoles are verified in return loss ( $< -20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

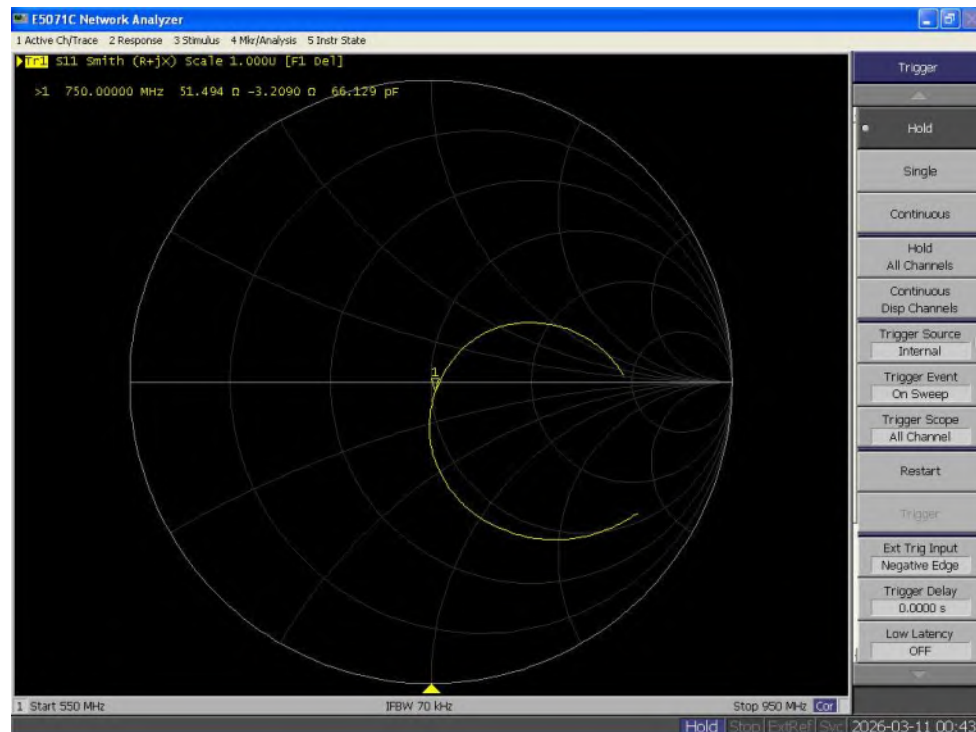
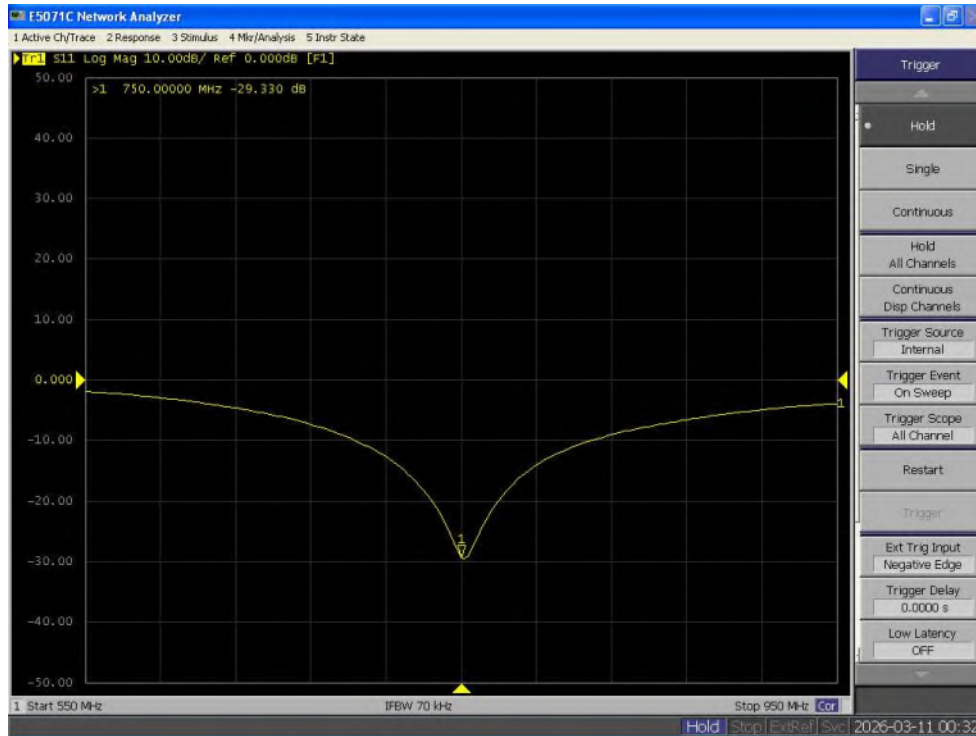
#### <Justification of the extended calibration>

| D750V3 – serial no. 1117    |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 750MHZ                      |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 03.12.2025<br>(Cal. Report) | -28.2            |           | 52.2                 |             | -3.3                      |             |
| 03.11.2026<br>(extended)    | -29.33           | -4        | 51.494               | -0.706      | -3.209                    | 0.091       |

The return loss is  $< -20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

# <Dipole Verification Data> - D750 V3, serial no. 1117 (Data of Measurement : 03.11.2026)

## 750MHz - Head



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Accreditation No.: **SCS 0108**

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D750V3-1107\_Jun25**

## CALIBRATION CERTIFICATE

Object **D750V3 - SN: 1107**

Calibration procedure(s) **QA CAL-05.v12**  
**Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date **June 11, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T    | SN: 100967 | 26-Mar-25 (No. 217-04290)              | Mar-26        |
| Power Sensor R&S NRP18A     | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 29-Jan-25 (No. 4030A315009658)         | Jan-26        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-25 (No. 217-04293)              | Mar-26        |
| OCP DAK-12                  | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                 | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4      | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4lp                      | SN: 1836   | 17-Apr-25 (No. DAE4lp-1836_Apr25)      | Apr-26        |

| Secondary Standards          | ID         | Check Date (In house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 27-Feb-25 (No. OCP-DAK12-1029_Feb25)       | Feb-26          |
| OCP DAK-3.5                  | SN: 1336   | 09-Dec-24 (No. OCP-DAK3.5-1336_Dec24)      | Dec-25          |

|               |            |                       |           |
|---------------|------------|-----------------------|-----------|
|               | Name       | Function              | Signature |
| Calibrated by | Paulo Pina | Laboratory Technician |           |
| Approved by   | Sven Kühn  | Technical Manager     |           |

Issued: June 11, 2025

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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

## Glossary

TSL tissue simulating liquid  
 ConvF sensitivity in TSL / NORM x,y,z  
 N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 15 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 6mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 750MHz $\pm$ 1MHz        |                                     |

## HSL parameters at 750 MHz

The following parameters and calculations were applied.

|                                    | Temperature         | Permittivity  | Conductivity         |
|------------------------------------|---------------------|---------------|----------------------|
| Nominal HSL parameters             | 22.0 °C             | 41.9          | 0.890 mho/m          |
| Measured HSL parameters            | (22.0 $\pm$ 0.2) °C | 43.0 $\pm$ 6% | 0.910 mho/m $\pm$ 6% |
| HSL temperature change during test | < 0.5 °C            |               |                      |

## SAR result with HSL at 750 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                               |
|--------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                   | 24 dBm input power | 2.22 W/kg                     |
| SAR for nominal HSL parameters                   | normalized to 1W   | 8.84 W/kg $\pm$ 17.0% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                               |
|----------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                     | 24 dBm input power | 1.46 W/kg                     |
| SAR for nominal HSL parameters                     | normalized to 1W   | 5.81 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 750 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 52.8 $\Omega$ – 3.0 j $\Omega$ |
| Return Loss | -28.0 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.031 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D750V3 - SN: 1107

System Performance Check Report

Summary

| Dipole          | Frequency [MHz] | TSL | Power [dBm] |
|-----------------|-----------------|-----|-------------|
| D750V3 - SN1107 | 750             | HSL | 24          |

Exposure Conditions

| Phantom Section: TSL | Test Distance [mm] | Band    | Group: UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|---------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 15                 | CW, 0-- |            | 750, 0                          | 9.55              | 0.91                   | 43.0             |

Hardware Setup

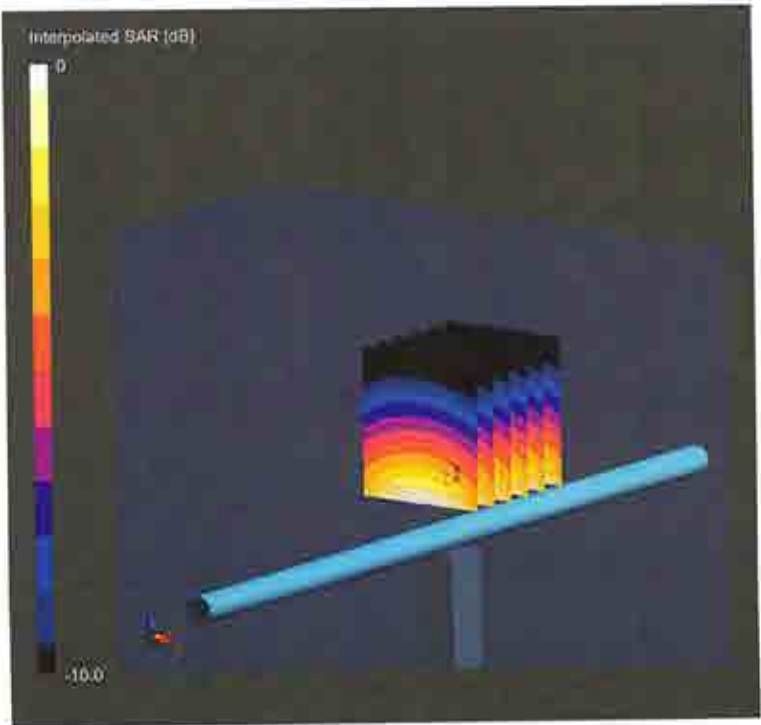
| Phantom       | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|---------------|--------------------|-----------------------------|---------------------------|
| Flat V4.9 mod | HSL, 2025-06-11    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip Sn1836, 2025-04-17 |

Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | All points      |
| Scan Method         | Measured        |

Measurement Results

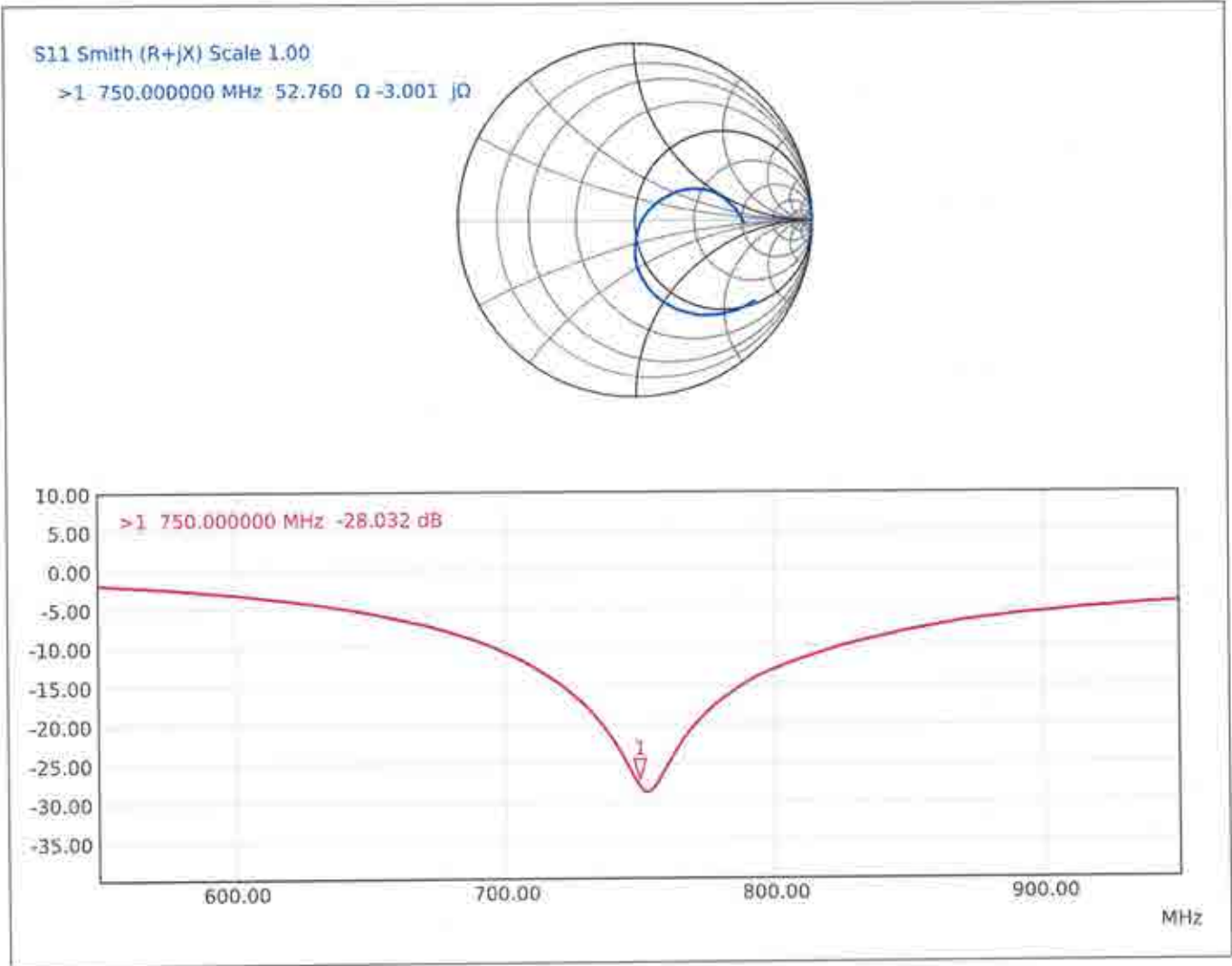
|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-06-11          |
| psSAR1g [W/Kg]      | 2.22                |
| psSAR10g [W/Kg]     | 1.46                |
| Power Drift [dB]    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 3.38 W/Kg

D750V3 - SN: 1107

Impedance Measurement Plot for HSL



### D750V3, serial no. 1107 Extended Dipole Calibrations

If dipoles are verified in return loss ( $< -20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

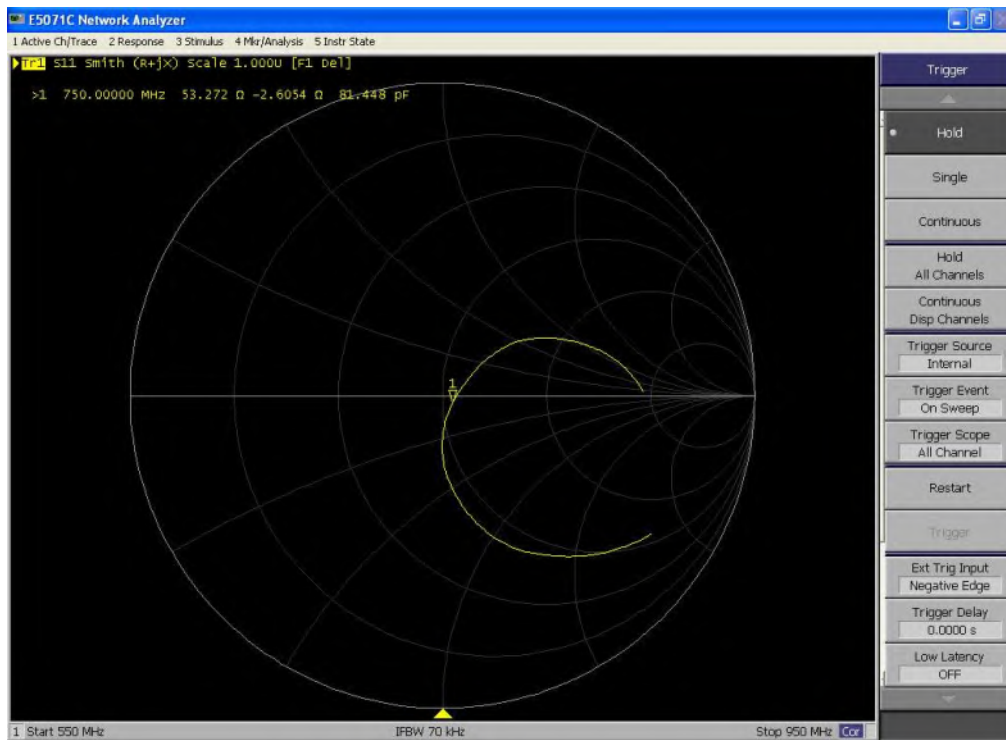
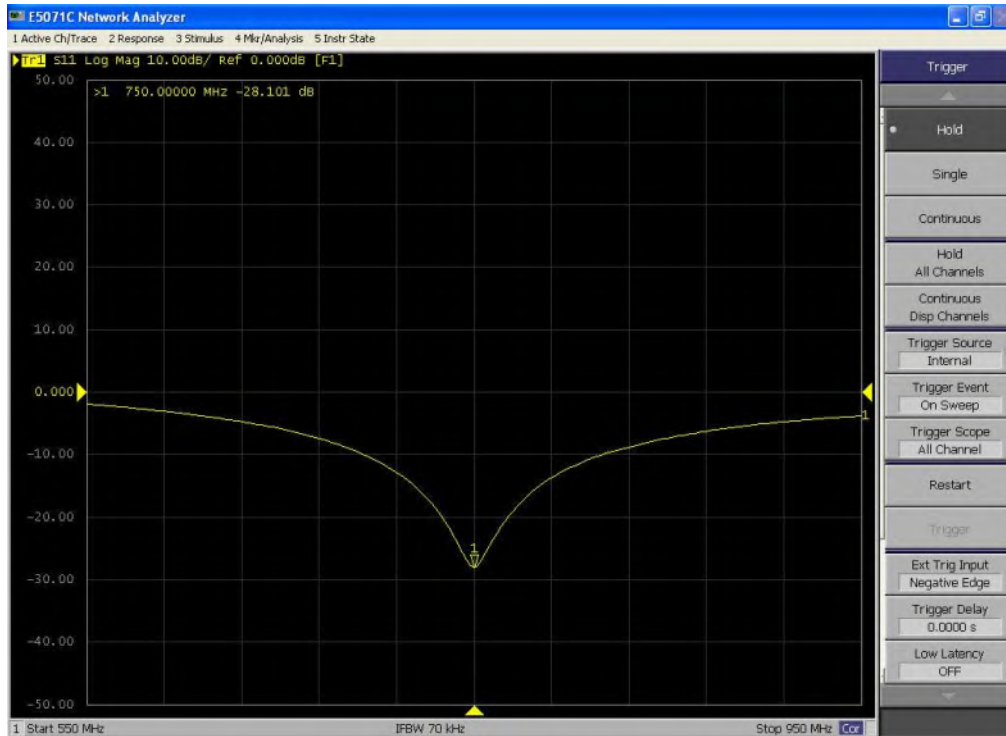
#### <Justification of the extended calibration>

| D750V3 – serial no. 1107    |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 750MHZ                      |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 06.11.2025<br>(Cal. Report) | -28.0            |           | 52.8                 |             | -3.0                      |             |
| 06.10.2026<br>(extended)    | -28.101          | -0.36     | 53.272               | 0.472       | -2.6054                   | 0.3946      |

The return loss is  $< -20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

# <Dipole Verification Data> - D750 V3, serial no. 1107 (Data of Measurement : 06.10.2026)

## 750MHz - Head



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Accreditation No.: **SCS 0108**

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D835V2-4d167\_Apr26/2****CALIBRATION CERTIFICATE (Replacement of No: D835V2-4d167\_Apr26)**

Object

**D835V2 - SN: 4d167**

Calibration procedure(s)

**QA CAL-05.v13****Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date

**April 23, 2026**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP40T     | SN: 101861 | 29-Apr-25 (No. 2025-001450)            | Apr-26        |
| Power Sensor R&S NRP18AN    | SN: 100961 | 22-Aug-25 (No. 4030A315010971)         | Aug-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 23-Jan-26 (No. 4030A315011865)         | Jan-27        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-26 (No. 2026-005594)            | Mar-27        |
| OCP DAK-12                  | SN: 1016   | 16-Sept-25 (No. OCP-DAK12-1016_Sep25)  | Sep-26        |
| OCP DAK-3.5                 | SN: 1249   | 16-Sept-25 (No. OCP-DAK3.5-1249_Sep25) | Sep-26        |
| Reference Probe EX3DV4      | SN: 7349   | 29-Jan-26 (No. EX3-7349_Jan26)         | Jan-27        |
| DAE4lp                      | SN: 1836   | 18-Feb-26 (No. DAE4lp-1836_Feb26)      | Feb-27        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 24-Feb-26 (No. OCP-DAK12-1029_Feb26)       | Feb-27          |
| OCP DAK-3.5                  | SN: 1336   | 10-Dec-25 (No. OCP-DAK3.5-1336_Dec25)      | Dec-26          |

|                                                                                                                                                     | Name       | Function              | Signature |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|
| Calibrated by                                                                                                                                       | Paulo Pina | Laboratory Technician |           |
| Approved by                                                                                                                                         | Sven Kühn  | Technical Manager     |           |
| <p>Issued: July 03, 2026</p> <p>This calibration certificate shall not be reproduced except in full without written approval of the laboratory.</p> |            |                       |           |

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## Glossary

TSL tissue simulating liquid  
 ConvF sensitivity in TSL / NORM x,y,z  
 N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                        |             |
|-------------------------------------|------------------------|-------------|
| <b>DASY Version</b>                 | DASY8 Module SAR       | 17.0.4      |
| <b>Extrapolation</b>                | Advanced Extrapolation |             |
| <b>Phantom</b>                      | Modular Flat Phantom   |             |
| <b>Distance Dipole Center - TSL</b> | 15 mm                  | with spacer |
| <b>Frequency</b>                    | 835MHz $\pm$ 1MHz      |             |

## HSL parameters at 835 MHz

The following parameters and calculations were applied.

|                                           | Temperature         | Permittivity  | Conductivity        |
|-------------------------------------------|---------------------|---------------|---------------------|
| <b>Nominal HSL parameters</b>             | 22.0 °C             | 41.5          | 0.90 mho/m          |
| <b>Measured HSL parameters</b>            | (22.0 $\pm$ 0.2) °C | 41.7 $\pm$ 6% | 0.92 mho/m $\pm$ 6% |
| <b>HSL temperature change during test</b> | < 0.5 °C            |               |                     |

## SAR result with HSL at 835 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of HSL</b> | Condition          |                               |
|--------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                         | 24 dBm input power | 2.40 W/kg                     |
| SAR for nominal HSL parameters                         | normalized to 1W   | 9.55 W/kg $\pm$ 17.0% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of HSL</b> | Condition          |                               |
|----------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                           | 24 dBm input power | 1.57 W/kg                     |
| SAR for nominal HSL parameters                           | normalized to 1W   | 6.25 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 835 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 51.9 $\Omega$ - 0.4 j $\Omega$ |
| Return Loss | -34.3 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.392 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

## System Performance Check Report

## Summary

| Dipole           | Frequency [MHz] | TSL | Power [dBm] |
|------------------|-----------------|-----|-------------|
| D835V2 - SN4d167 | 835             | HSL | 24          |

## Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band   | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|--------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 15                 | CW, 0— | 835, 0     |                                 | 9.5               | 0.92                   | 41.7             |

## Hardware Setup

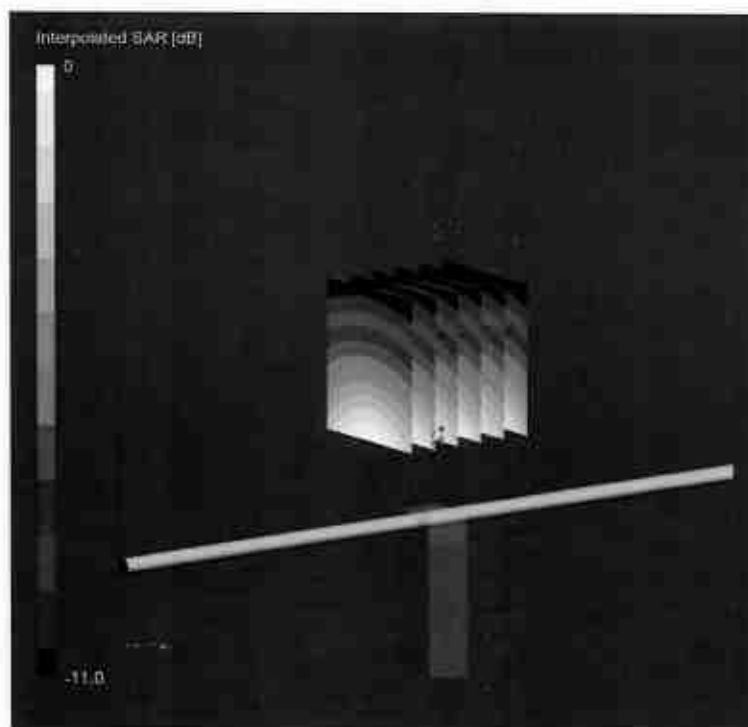
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MEP V8.0 Center | HSL, 2026-04-23    | EX3DV4 - SN7349, 2026-01-29 | DAE4ip Sn1836, 2026-02-18 |

## Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 6p        |
| Scan Method         | Measured        |

## Measurement Results

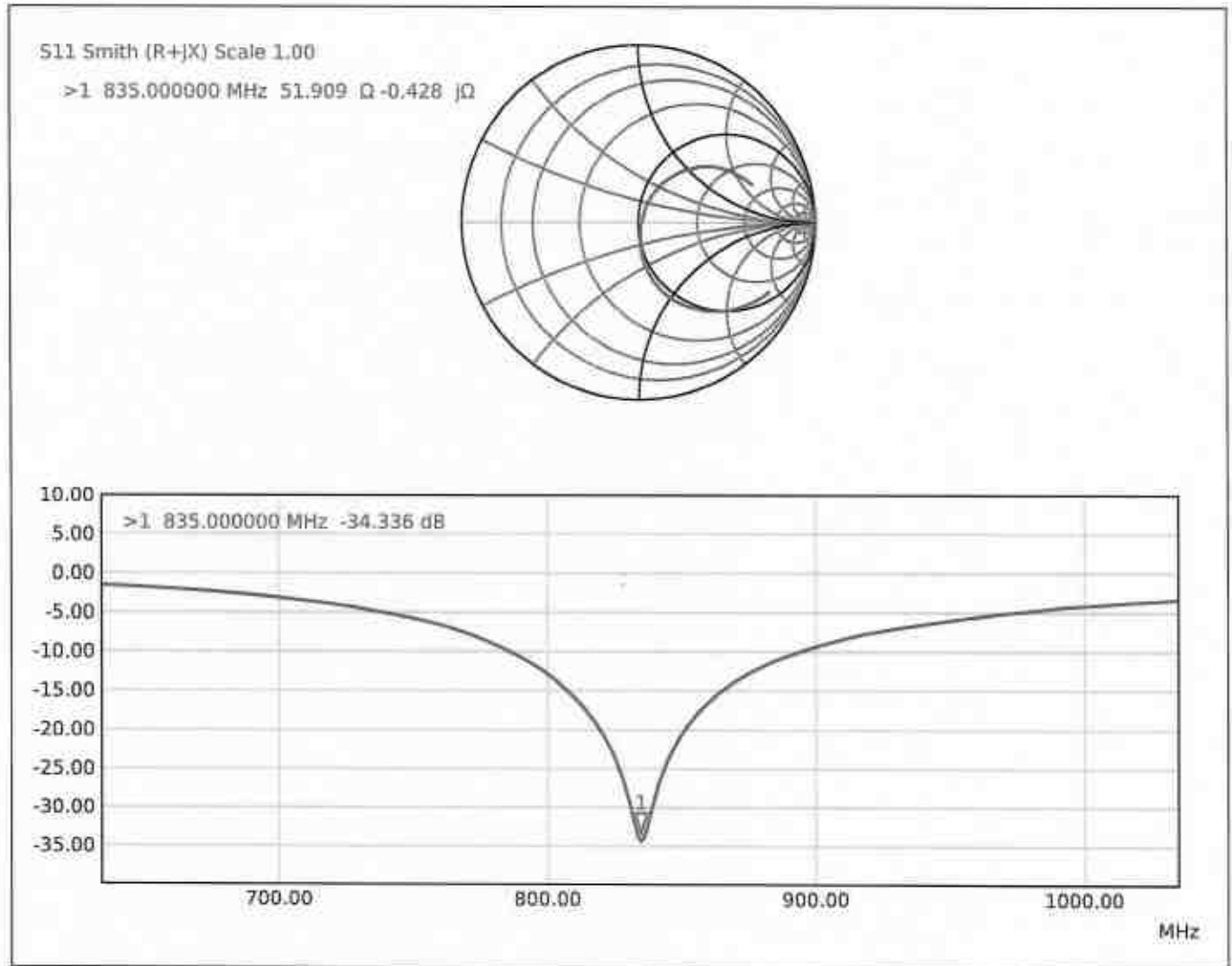
|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2026-04-23          |
| psSAR1g [W/Kg]      | 2.40                |
| psSAR10g [W/Kg]     | 1.57                |
| Power Drift [dB]    | 0.01                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 3.67 W/Kg

D835V2 - SN: 4d167

April 23, 2026

**Impedance Measurement Plot for HSL**

## Appendix: Transfer Calibration at Four Validation Locations on SAM Head<sup>1</sup>

### Evaluation Condition

|         |                  |                             |
|---------|------------------|-----------------------------|
| Phantom | SAM Head Phantom | For usage with cSAR3DV2-R/L |
|---------|------------------|-----------------------------|

### SAR result with SAM Head (Top $\cong$ C0)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 9.08 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 6.04 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Mouth $\cong$ F90)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 9.53 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 6.43 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Neck $\cong$ H0)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 9.06 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 6.15 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Ear $\cong$ D90)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 7.79 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 5.27 W/kg $\pm$ 16.9 % (k=2) |

<sup>1</sup> Additional assessments outside the current scope of SCS 0108

**Calibration Laboratory of**  
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Accreditation No.: **SCS 0108**

Client

**Sporton**  
Taoyuan City

Certificate No.

**D1750V2-1112\_Feb25**

## CALIBRATION CERTIFICATE

Object

**D1750V2 - SN: 1112**

Calibration procedure(s)

**QA CAL-05.v12**

**Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date

**February 20, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility; environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards                          | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|--------------------------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T                   | SN: 100967 | 28-Mar-24 (No. 217-04038)              | Mar-25        |
| Power Sensor R&S NRP18A                    | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40                | SN: 101832 | 29-Jan-25 (No. 4030A315009658)         | Jan-26        |
| Mismatch; Short [S4188] Attenuator [S4423] | SN: 1152   | 28-Mar-24 (No. 217-04050)              | Mar-25        |
| OCP DAK-12                                 | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                                | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4                     | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                                     | SN: 1836   | 28-Oct-24 (No. DAE4ip-1836_Oct24)      | Oct-25        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Source Box              | SN: 1000   | 28-May-24 (No. 675-ACAD_Source_Box-240528) | May-25          |
| Signal Generator R&S SMB100A | SN: 182081 | 28-May-24 (No. 675-CAL16-S4588-240528)     | May-25          |
| Mismatch; SMA                | SN: 1102   | 22-May-24 (No. 675-Mismatch_SMA-240522)    | May-25          |

|               |                  |                       |
|---------------|------------------|-----------------------|
|               | Name             | Function              |
| Calibrated by | Krešimir Franjić | Laboratory Technician |
| Approved by   | Sven Kühn        | Technical Manager     |

Signature

Issued: February 20, 2025

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Accreditation No.: SCS 0108

**Glossary**

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

**Calibration is Performed According to the Following Standards**

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation**

- DASY System Handbook

**Methods Applied and Interpretation of Parameters**

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 10 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 6mm; dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 1750MHz $\pm$ 1MHz       |                                     |

## Head TSL parameters at 1750 MHz

The following parameters and calculations were applied.

|                                         | Temperature        | Permittivity  | Conductivity        |
|-----------------------------------------|--------------------|---------------|---------------------|
| Nominal Head TSL parameters             | 22.0 °C            | 40.1          | 1.37 mho/m          |
| Measured Head TSL parameters            | (22.0 $\pm$ 0.2)°C | 39.7 $\pm$ 6% | 1.32 mho/m $\pm$ 6% |
| Head TSL temperature change during test | < 0.5 °C           |               |                     |

## SAR result with Head TSL at 1750 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL | Condition          |                               |
|-------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                   | 24 dBm input power | 9.12 W/kg                     |
| SAR for nominal Head TSL parameters                   | normalized to 1W   | 36.3 W/kg $\pm$ 17.0% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL | Condition          |                               |
|---------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                     | 24 dBm input power | 4.84 W/kg                     |
| SAR for nominal Head TSL parameters                     | normalized to 1W   | 19.3 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL at 1750 MHz**

|             |                             |
|-------------|-----------------------------|
| Impedance   | $51.2 \Omega + 1.8 j\Omega$ |
| Return Loss | -33.2 dB                    |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.212 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D1750V2 - SN: 1112

February 20, 2025

System Performance Check Report

Summary

| Dipole           | Frequency (MHz) | TSL | Power (dBm) |
|------------------|-----------------|-----|-------------|
| D1750V2 - SN1112 | 1750            | HSL | 24          |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0--    | 1750, 0                         | 7.96              | 1.32                   | 39.7             |

Hardware Setup

| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-02-20    | EX3DV4 - SN7345, 2025-01-10 | DAE4ip Sn1836, 2024-10-28 |

Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 10 x 30 x 30    |
| Grid Steps [mm]     | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS - 6p        |
| Scan Method         | Measured        |

Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-02-20          |
| psSAR1g [W/Kg]      | 9.12                |
| psSAR10g [W/Kg]     | 4.84                |
| Power Drift [dB]    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |

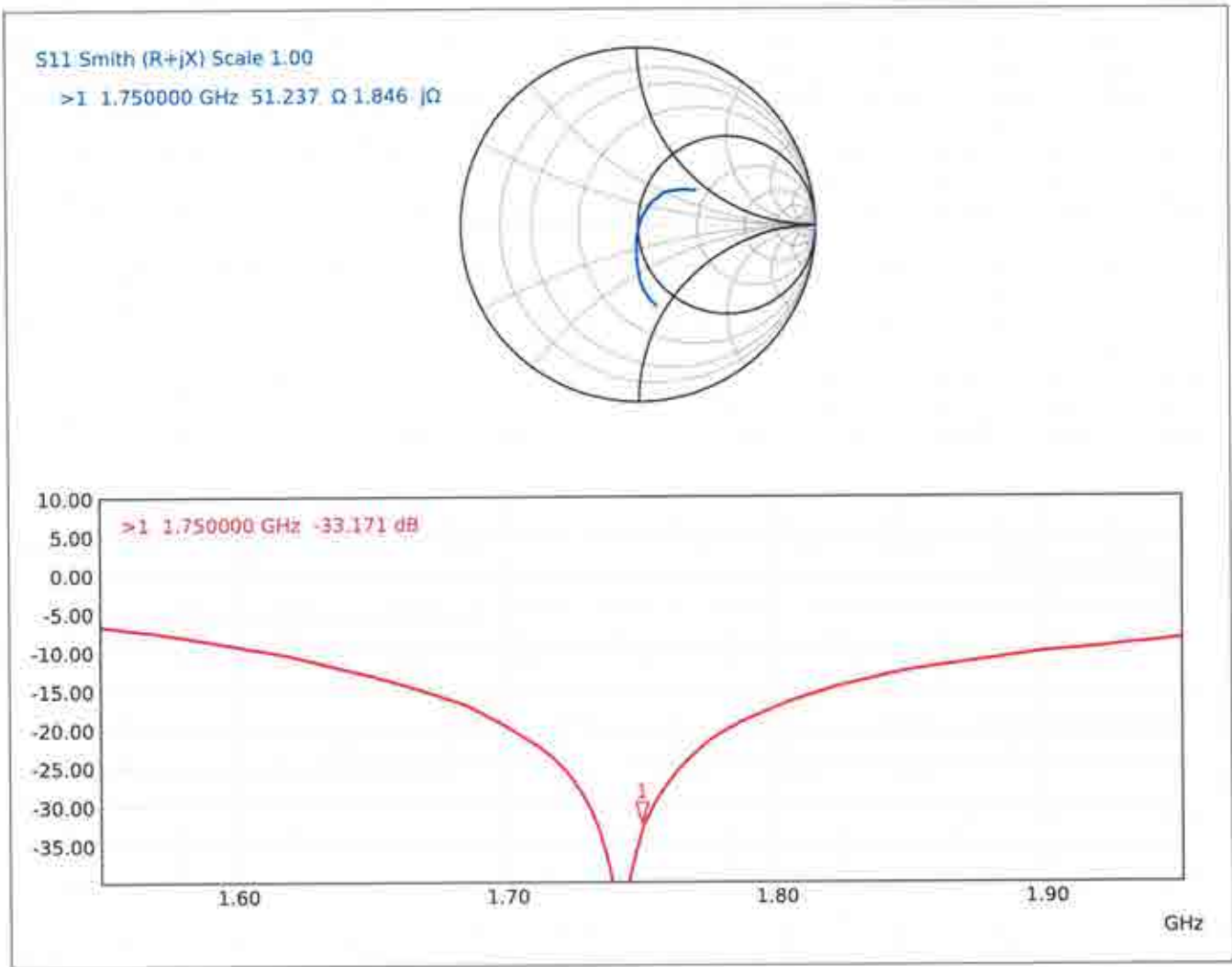


0 dB = 15.7 W/Kg

D1750V2 - SN: 1112

February 20, 2025

Impedance Measurement Plot for Head TSL



## D1750V2, serial no. 1112 Extended Dipole Calibrations

If dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

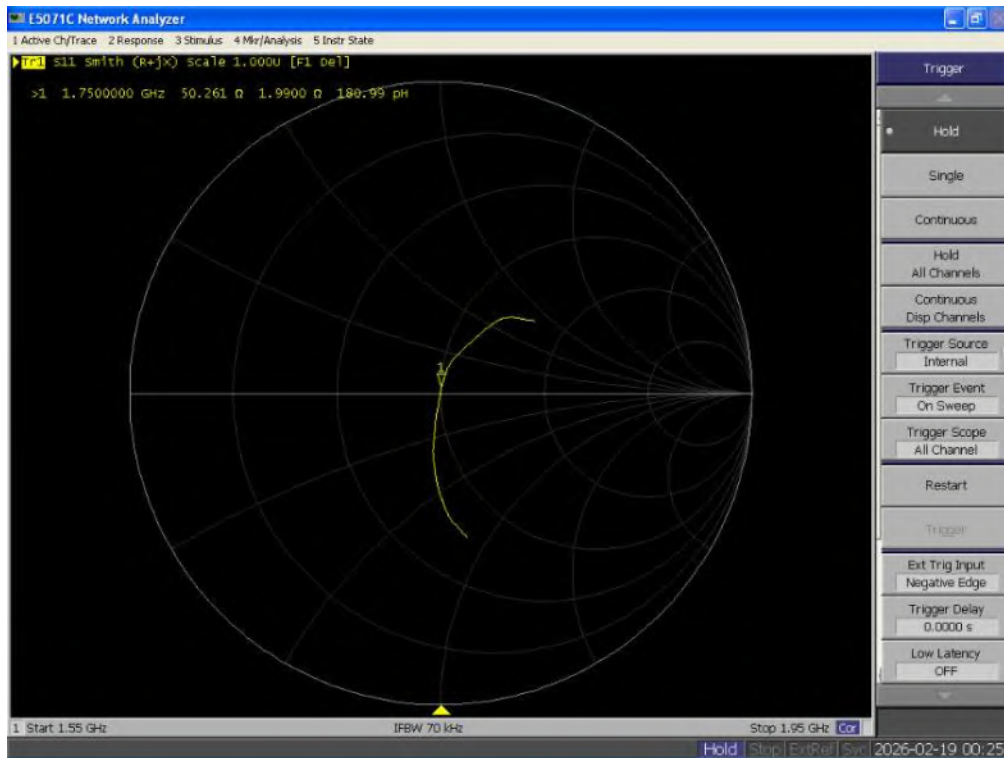
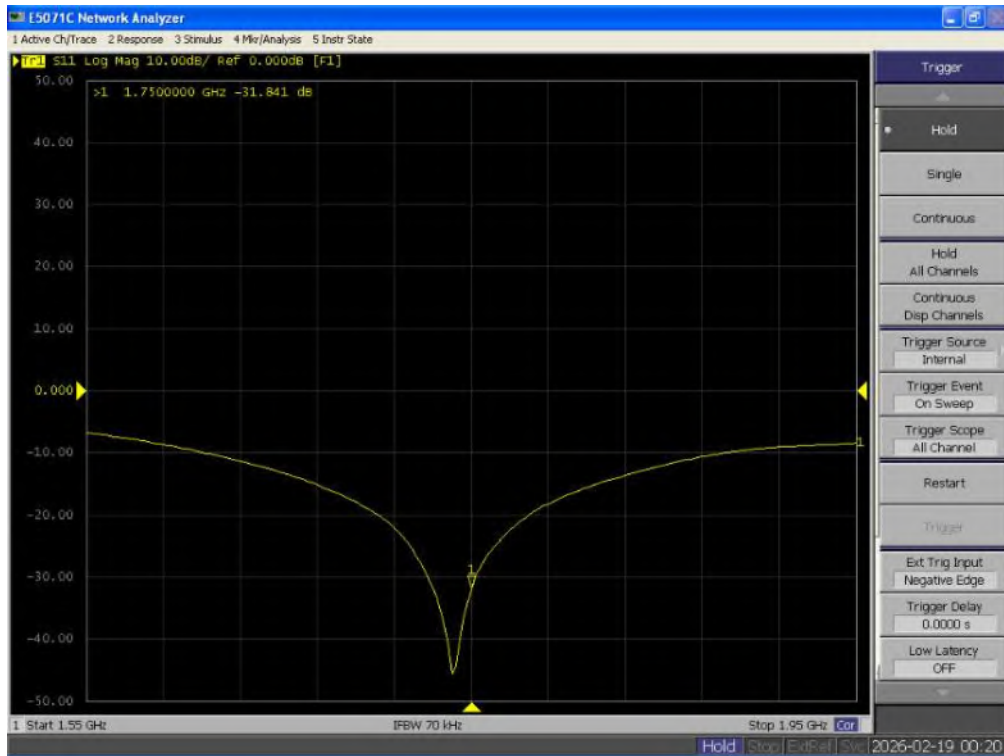
### <Justification of the extended calibration>

| D1750V2 – serial no. 1112   |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 1750MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 02.20.2025<br>(Cal. Report) | -33.2            |           | 51.2                 |             | 1.8                       |             |
| 02.19.2026<br>(extended)    | -31.841          | -4.09     | 50.261               | -0.939      | 1.99                      | 0.19        |

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data> - D1750 V2, serial no. 1112 (Data of Measurement : 02.19.2026)

1750MHz - Head



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Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: **SCS 0108**

Client

**Sporton**

Taoyuan City

Certificate No.

**D1900V2-5d185\_Jun25****CALIBRATION CERTIFICATE**

Object

**D1900V2 - SN: 5d185**

Calibration procedure(s)

**QA CAL-05.v12****Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date

**June 11, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T    | SN: 100967 | 26-Mar-25 (No. 217-04290)              | Mar-26        |
| Power Sensor R&S NRP18A     | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 29-Jan-25 (No. 4030A315009658)         | Jan-26        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-25 (No. 217-04293)              | Mar-26        |
| OCP DAK-12                  | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                 | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4      | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                      | SN: 1836   | 17-Apr-25 (No. DAE4ip-1836_Apr25)      | Apr-26        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 27-Feb-25 (No. OCP-DAK12-1029_Feb25)       | Feb-26          |
| OCP DAK-3.5                  | SN: 1336   | 09-Dec-24 (No. OCP-DAK3.5-1336_Dec24)      | Dec-25          |

|               |            |                       |           |
|---------------|------------|-----------------------|-----------|
|               | Name       | Function              | Signature |
| Calibrated by | Paulo Pina | Laboratory Technician |           |
| Approved by   | Sven Kühn  | Technical Manager     |           |

Issued: June 11, 2025

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108****Glossary**

TSL tissue simulating liquid  
 ConvF sensitivity in TSL / NORM x,y,z  
 N/A not applicable or not measured

**Calibration is Performed According to the Following Standards**

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation**

- DASY System Handbook

**Methods Applied and Interpretation of Parameters**

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 10 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 6mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 1900MHz $\pm$ 1MHz       |                                     |

## HSL parameters at 1900 MHz

The following parameters and calculations were applied.

|                                    | Temperature         | Permittivity  | Conductivity        |
|------------------------------------|---------------------|---------------|---------------------|
| Nominal HSL parameters             | 22.0 °C             | 40.0          | 1.40 mho/m          |
| Measured HSL parameters            | (22.0 $\pm$ 0.2) °C | 40.2 $\pm$ 6% | 1.38 mho/m $\pm$ 6% |
| HSL temperature change during test | < 0.5 °C            |               |                     |

## SAR result with HSL at 1900 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                               |
|--------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                   | 24 dBm input power | 9.94 W/kg                     |
| SAR for nominal HSL parameters                   | normalized to 1W   | 39.6 W/kg $\pm$ 17.0% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                               |
|----------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                     | 24 dBm input power | 5.23 W/kg                     |
| SAR for nominal HSL parameters                     | normalized to 1W   | 20.8 W/kg $\pm$ 16.5% (k = 2) |

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with HSL at 1900 MHz

|             |                                |
|-------------|--------------------------------|
| Impedance   | 53.2 $\Omega$ + 4.0 j $\Omega$ |
| Return Loss | -26.1 dB                       |

General Antenna Parameters and Design

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.203 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D1900V2 - SN: 5d185

System Performance Check Report

Summary

| Dipole            | Frequency [MHz] | TSL | Power [dBm] |
|-------------------|-----------------|-----|-------------|
| D1900V2 - 5N5d185 | 1900            | HSL | 24          |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0---   | 1900, 0                         | 7.68              | 1.38                   | 40.2             |

Hardware Setup

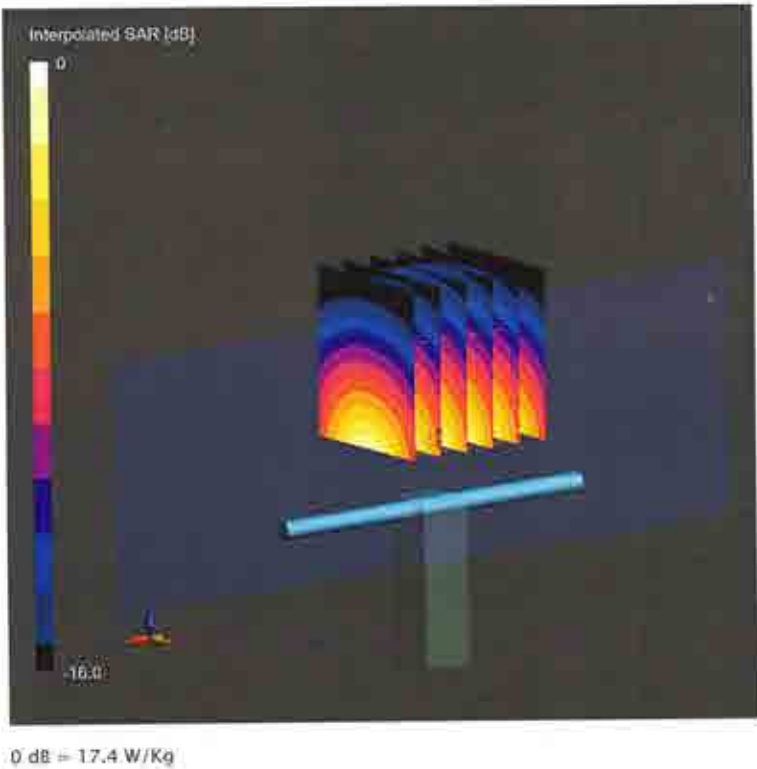
| Phantom        | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Right | HSL, 2025-06-11    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip Sn1836, 2025-04-17 |

Scans Setup

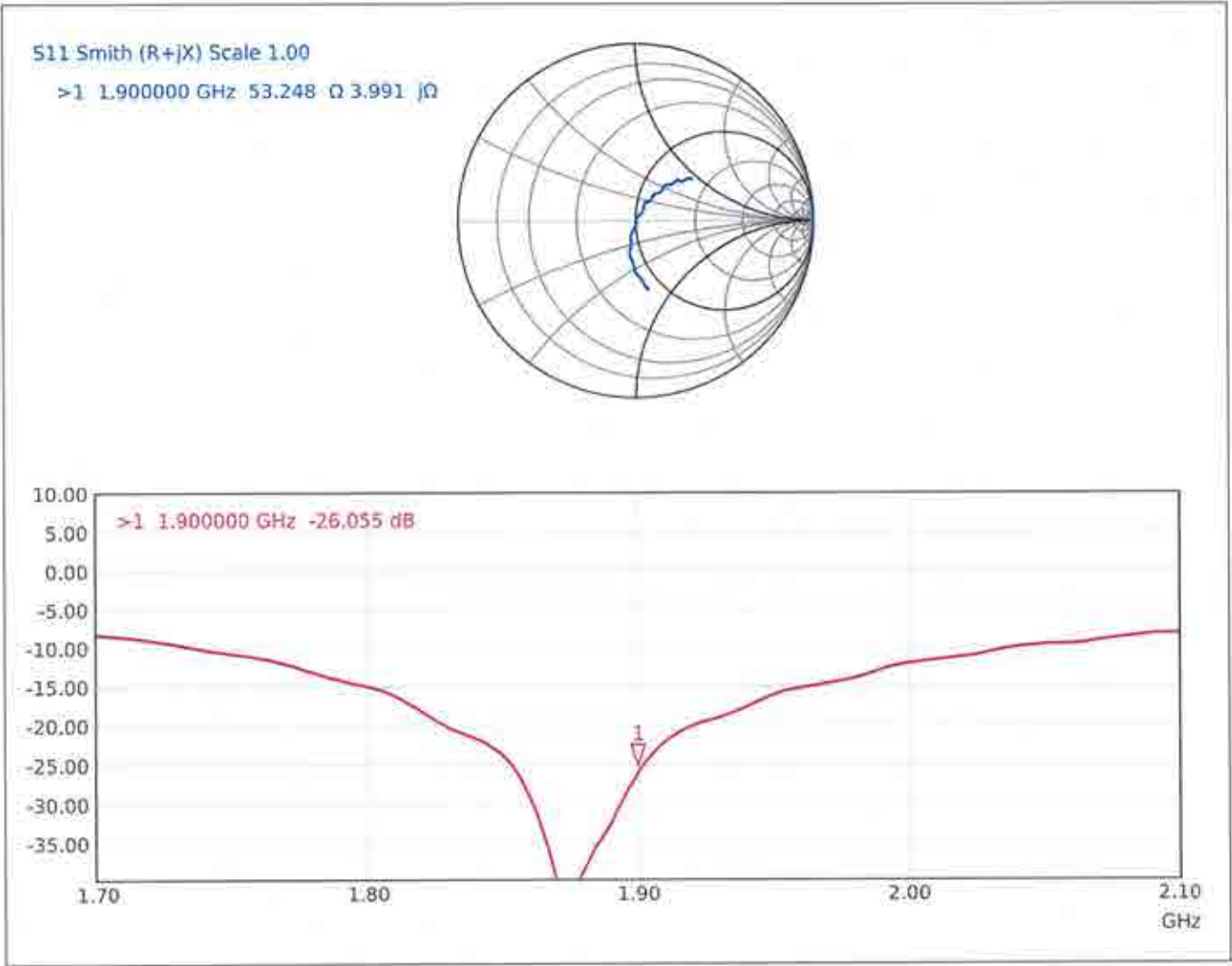
|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS +/- 6p      |
| Scan Method         | Measured        |

Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-06-11          |
| psSAR1g [W/Kg]      | 9.94                |
| psSAR10g [W/Kg]     | 5.23                |
| Power Drift [dB]    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



Impedance Measurement Plot for HSL



## D1900V2, serial no. 5d185 Extended Dipole Calibrations

If dipoles are verified in return loss ( $<-20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

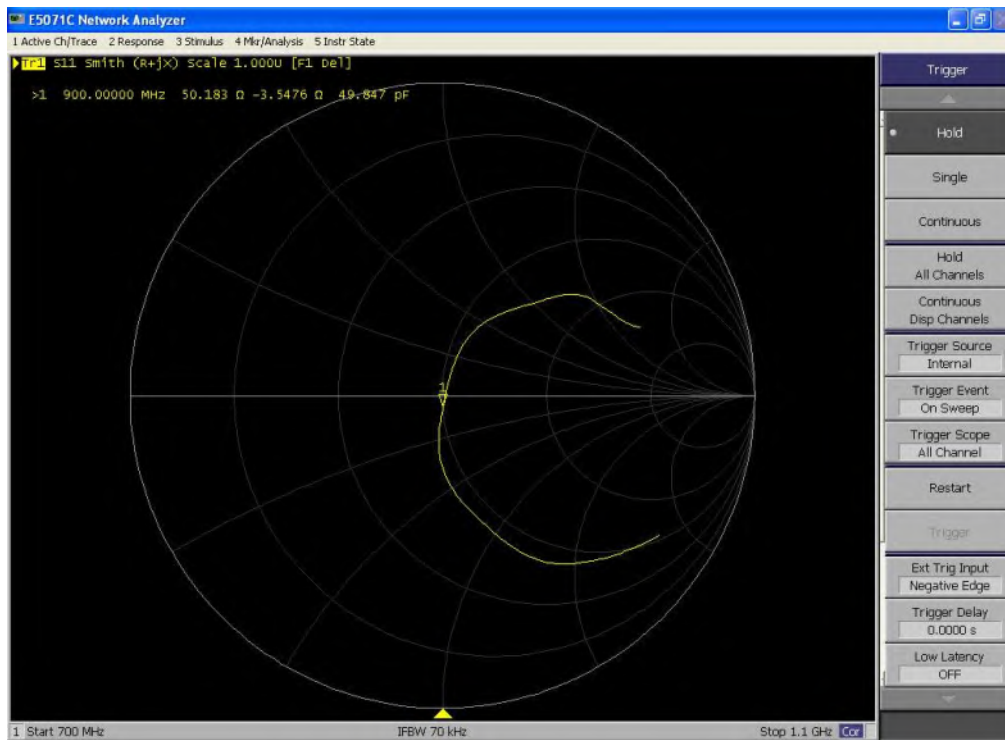
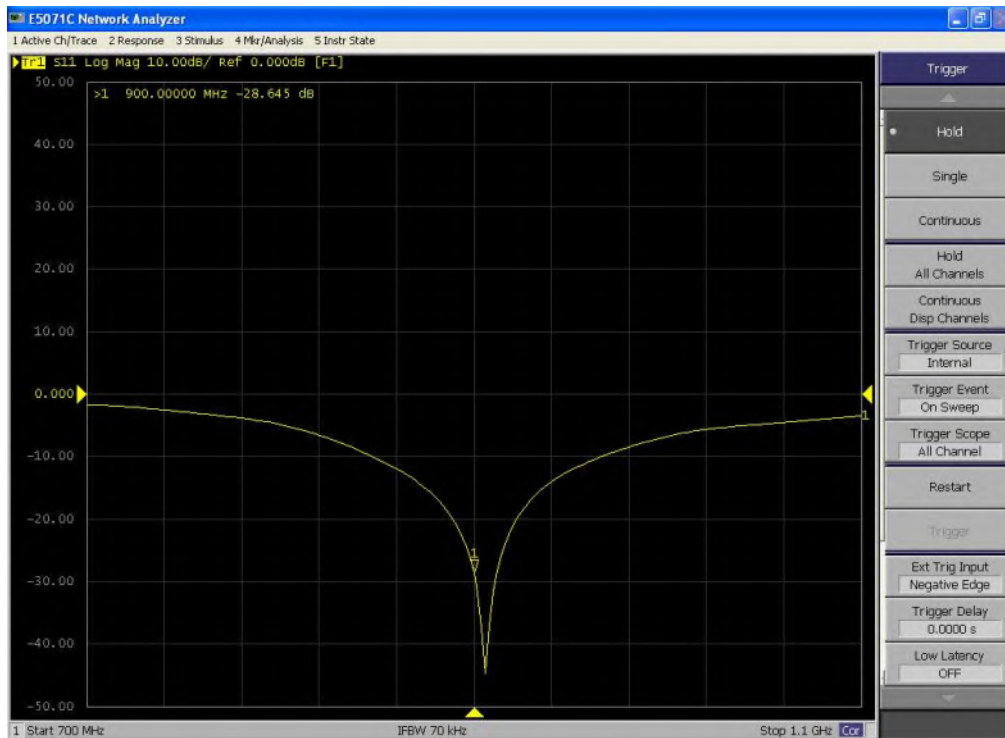
### <Justification of the extended calibration>

| D1900V2 – serial no. 5d185  |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 1900MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 06.11.2025<br>(Cal. Report) | -26.1            |           | 53.2                 |             | 4.0                       |             |
| 06.10.2026<br>(extended)    | -26.687          | -2.24     | 51.609               | -1.591      | 4.1513                    | 0.1513      |

The return loss is  $<-20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data> - D1900 V2, serial no. 5d185 (Data of Measurement : 06.10.2026)

1900MHz - Head



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Client

**Sporton**  
Taoyuan City

Certificate No.

**D2300V2-1006\_Jan25****CALIBRATION CERTIFICATE**

Object

**D2300V2 - SN: 1006**

Calibration procedure(s)

**QA CAL-05.v12****Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date

**January 14, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards                          | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|--------------------------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T                   | SN: 100967 | 28-Mar-24 (No. 217-04038)              | Mar-25        |
| Power Sensor R&S NRP18A                    | SN: 101859 | 22-Jul-24 (No. 4030A315008547)         | Jul-25        |
| Spectrum Analyzer R&S FSV40                | SN: 101832 | 25-Jan-24 (No. 4030-315007551)         | Jan-25        |
| Mismatch; Short [S4188] Attenuator [S4423] | SN: 1152   | 28-Mar-24 (No. 217-04050)              | Mar-25        |
| OCP DAK-12                                 | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                                | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4                     | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                                     | SN: 1836   | 28-Oct-24 (No. DAE4ip-1836_Oct24)      | Oct-25        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Source Box              | SN: 1000   | 28-May-24 (No. 675-ACAD_Source_Box-240528) | May-25          |
| Signal Generator R&S SMB100A | SN: 182081 | 28-May-24 (No. 675-CAL16-S4588-240528)     | May-25          |
| Mismatch; SMA                | SN: 1102   | 22-May-24 (No. 675-Mismatch_SMA-240522)    | May-25          |

|                                                                                                                 | Name       | Function              | Signature |
|-----------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|
| Calibrated by                                                                                                   | Paulo Pina | Laboratory Technician |           |
| Approved by                                                                                                     | Sven Kühn  | Technical Manager     |           |
| Issued: January 14, 2025                                                                                        |            |                       |           |
| This calibration certificate shall not be reproduced except in full without written approval of the Laboratory. |            |                       |           |

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The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108****Glossary**

|       |                                 |
|-------|---------------------------------|
| TSL   | tissue simulating liquid        |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A   | not applicable or not measured  |

**Calibration is Performed According to the Following Standards**

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation**

- DASY System Handbook

**Methods Applied and Interpretation of Parameters**

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                          |                                     |
|-------------------------------------|--------------------------|-------------------------------------|
| <b>DASY Version</b>                 | DASY8 Module SAR         | 16.4.0                              |
| <b>Extrapolation</b>                | Advanced Extrapolation   |                                     |
| <b>Phantom</b>                      | Modular Flat Phantom     |                                     |
| <b>Distance Dipole Center - TSL</b> | 10 mm                    | with spacer                         |
| <b>Zoom Scan Resolution</b>         | dx, dy = 5mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| <b>Frequency</b>                    | 2300MHz $\pm$ 1MHz       |                                     |

## Head TSL parameters at 2300 MHz

The following parameters and calculations were applied.

|                                                | Temperature        | Permittivity  | Conductivity        |
|------------------------------------------------|--------------------|---------------|---------------------|
| <b>Nominal Head TSL parameters</b>             | 22.0 °C            | 39.5          | 1.67 mho/m          |
| <b>Measured Head TSL parameters</b>            | (22.0 $\pm$ 0.2)°C | 38.5 $\pm$ 6% | 1.71 mho/m $\pm$ 6% |
| <b>Head TSL temperature change during test</b> | < 0.5 °C           |               |                     |

## SAR result with Head TSL at 2300 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b> | Condition          |                               |
|-------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                         | 24 dBm input power | 12.1 W/kg                     |
| SAR for nominal Head TSL parameters                         | normalized to 1W   | 48.2 W/kg $\pm$ 17.0% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b> | Condition          |                               |
|---------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                           | 24 dBm input power | 5.83 W/kg                     |
| SAR for nominal Head TSL parameters                           | normalized to 1W   | 23.2 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL at 2300 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 49.0 $\Omega$ – 3.1 j $\Omega$ |
| Return Loss | -29.5 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.168 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D2300V2 - SN: 1006

January 14, 2025

System Performance Check Report

Summary

| Dipole           | Frequency [MHz] | TSL | Power [dBm] |
|------------------|-----------------|-----|-------------|
| D2300V2 - SN1006 | 2300            | HSL | 24          |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band    | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|---------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 | CW, 0-- |            | 2300, 0                         | 7.48              | 1.71                   | 38.5             |

Hardware Setup

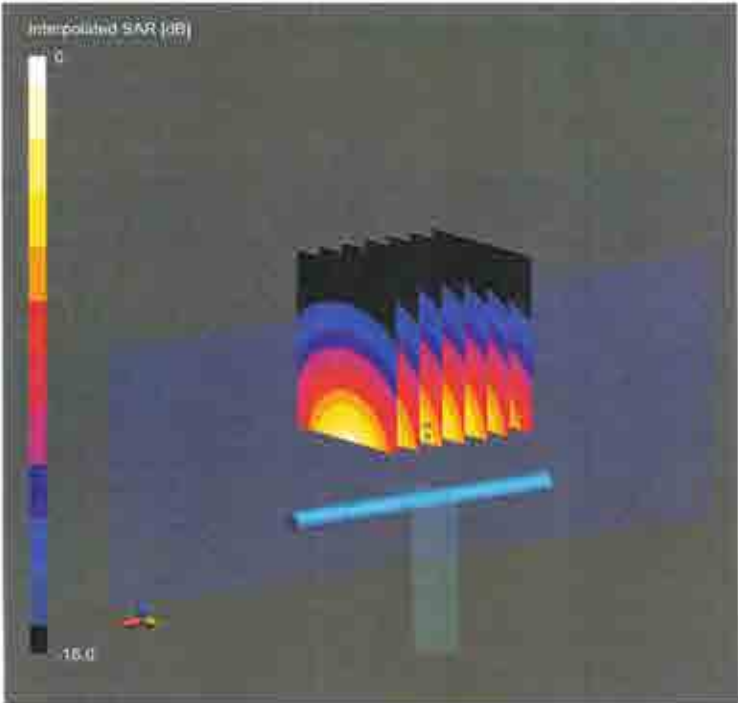
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-01-14    | EX3DV# - SN7349, 2025-01-10 | DAE4ip Sn1836, 2024-10-28 |

Scans Setup

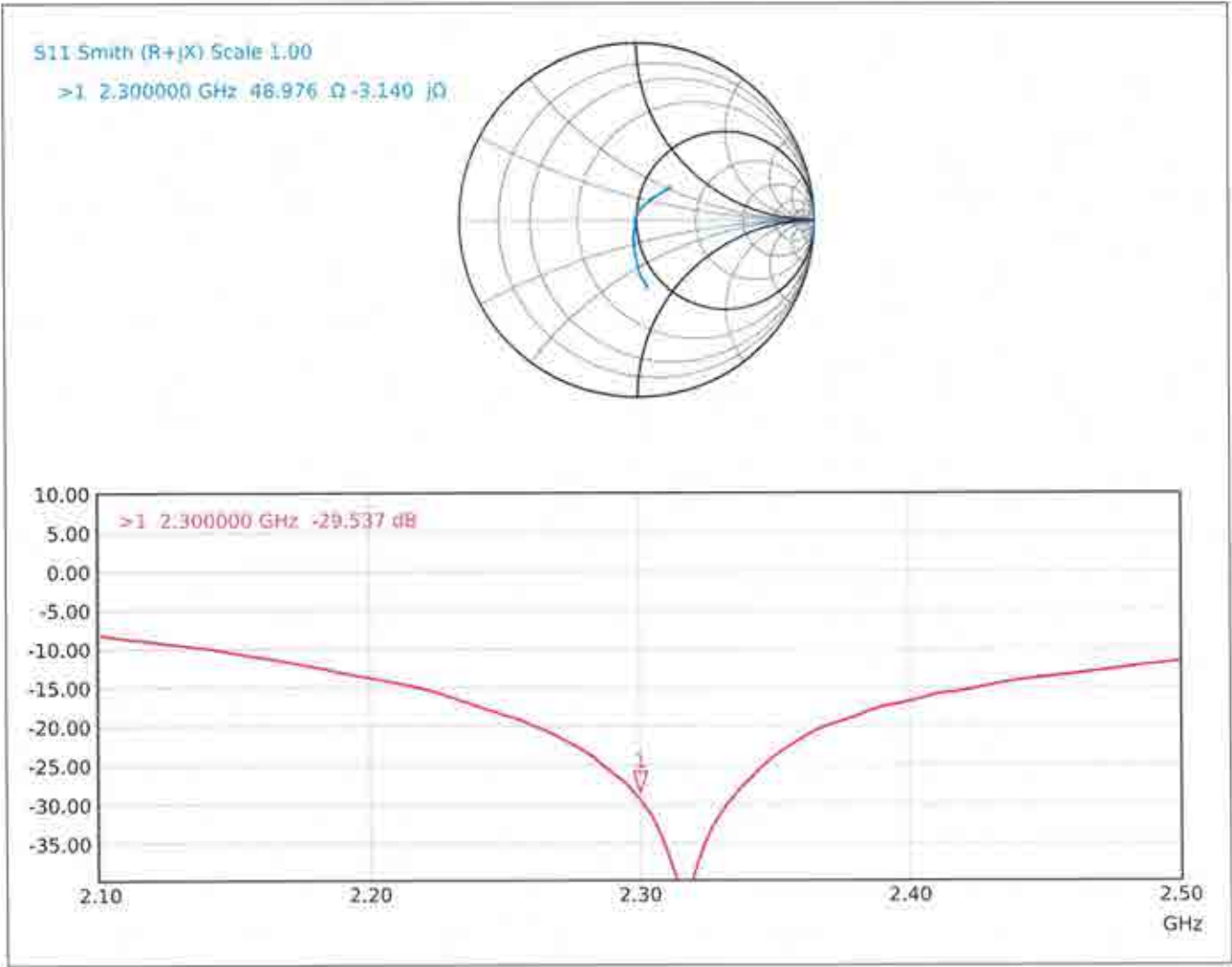
|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 6p        |
| Scan Method         | Measured        |

Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-01-14          |
| psSAR1g [W/Kg]      | 12.1                |
| psSAR10g [W/Kg]     | 5.81                |
| Power Drift [dB]    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



Impedance Measurement Plot for Head TSL



## D2300V2, serial no. 1006 Extended Dipole Calibrations

If dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

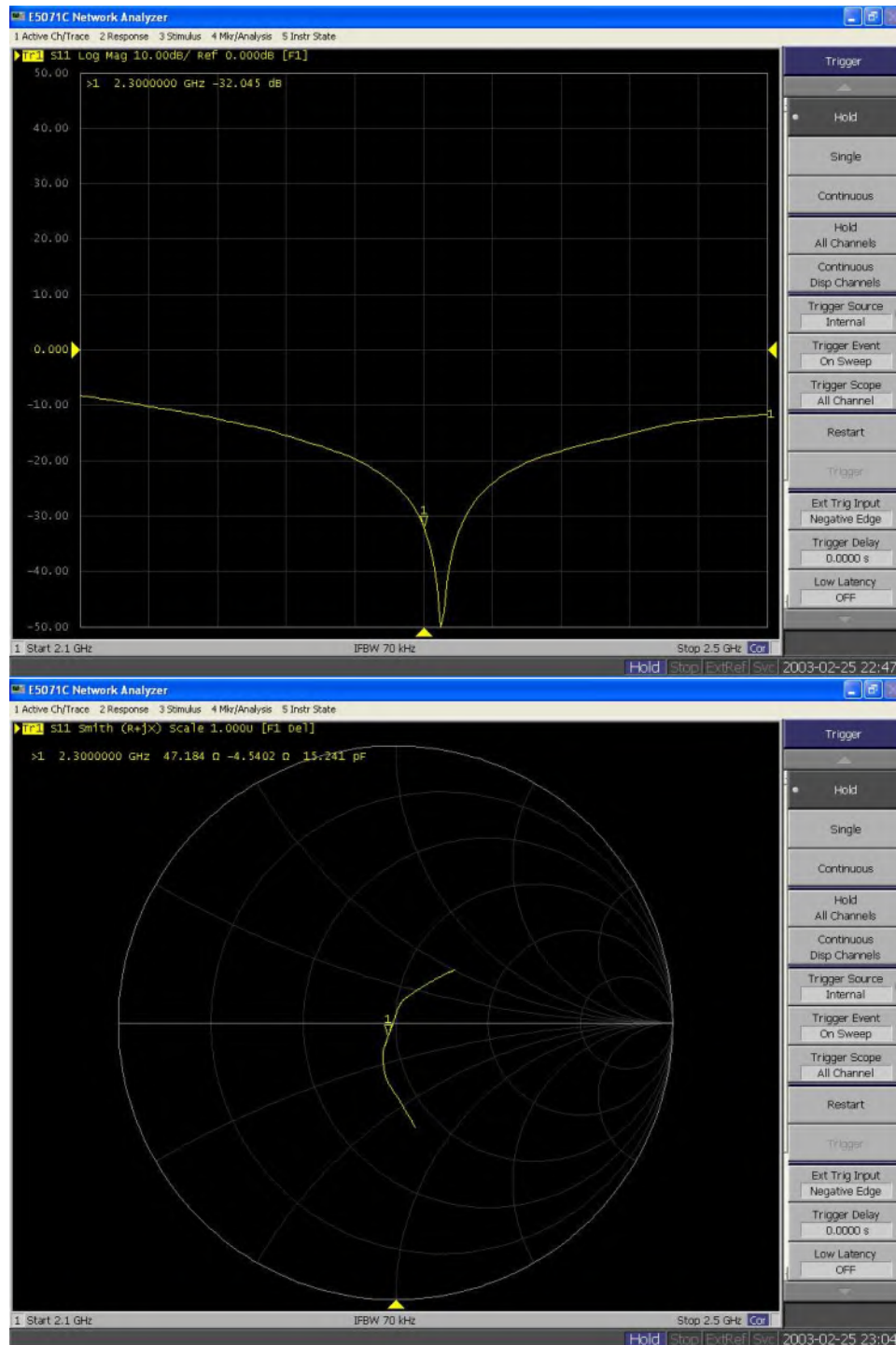
### <Justification of the extended calibration>

| D2300V2 – serial no. 1006   |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 2300MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 01.14.2025<br>(Cal. Report) | -29.5            |           | 49                   |             | -3.1                      |             |
| 01.13.2026<br>(extended)    | -32.045          | -7.94     | 47.184               | -1.816      | -4.5402                   | -1.4402     |

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data> - D2300 V2, serial no. 1006 (Data of Measurement : 01.13.2026)

2300MHz - Head



**Calibration Laboratory of****Schmid & Partner  
Engineering AG**

Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: SCS 0108

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D2450V2-929\_Nov25/2****CALIBRATION CERTIFICATE (Replacement of No: D2450V2-929\_Nov25)**

Object

D2450V2 - SN: 929

Calibration procedure(s)

QA CAL-05.v13

Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

November 12, 2025

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T    | SN: 100967 | 29-Oct-25 (No. Part of L1407)          | Oct-26        |
| Power Sensor R&S NRP18A     | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 29-Jan-25 (No. 4030A315009558)         | Jan-26        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-25 (No. 217-04293)              | Mar-26        |
| OCP DAK-12                  | SN: 1016   | 16-Sept-25 (No. OCP-DAK12-1016_Sep25)  | Sep-26        |
| OCP DAK-3.5                 | SN: 1249   | 16-Sept-25 (No. OCP-DAK3.5-1249_Sep25) | Sep-26        |
| Reference Probe EX3DV4      | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                      | SN: 1910   | 11-Mar-25 (No. DAE4ip-1910_Mar25)      | Mar-26        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 27-Feb-25 (No. OCP-DAK12-1029_Feb25)       | Feb-26          |
| OCP DAK-3.5                  | SN: 1336   | 09-Dec-24 (No. OCP-DAK3.5-1336_Dec24)      | Dec-25          |

|                                                                                                                 | Name             | Function              | Signature |
|-----------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-----------|
| Calibrated by                                                                                                   | Krešimir Franjić | Laboratory Technician |           |
| Approved by                                                                                                     | Sven Kühn        | Technical Manager     |           |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                  |                       |           |
| Issued: July 03, 2026                                                                                           |                  |                       |           |

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The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

**Glossary**

TSL tissue simulating liquid  
 ConvF sensitivity in TSL / NORM  $x,y,z$   
 N/A not applicable or not measured

**Calibration is Performed According to the Following Standards**

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation**

- DASY System Handbook

**Methods Applied and Interpretation of Parameters**

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                          |                                     |
|-------------------------------------|--------------------------|-------------------------------------|
| <b>DASY Version</b>                 | DASY8 Module SAR         | 17.0.2                              |
| <b>Extrapolation</b>                | Advanced Extrapolation   |                                     |
| <b>Phantom</b>                      | Modular Flat Phantom     |                                     |
| <b>Distance Dipole Center - TSL</b> | 10 mm                    | with spacer                         |
| <b>Zoom Scan Resolution</b>         | dx, dy = 5mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| <b>Frequency</b>                    | 2450MHz $\pm$ 1MHz       |                                     |

## HSL parameters at 2450 MHz

The following parameters and calculations were applied.

|                                           | Temperature         | Permittivity  | Conductivity        |
|-------------------------------------------|---------------------|---------------|---------------------|
| <b>Nominal HSL parameters</b>             | 22.0 °C             | 39.2          | 1.80 mho/m          |
| <b>Measured HSL parameters</b>            | (22.0 $\pm$ 0.2) °C | 38.3 $\pm$ 6% | 1.87 mho/m $\pm$ 6% |
| <b>HSL temperature change during test</b> | < 0.5 °C            |               |                     |

## SAR result with HSL at 2450 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of HSL</b> | Condition          |                               |
|--------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                         | 24 dBm input power | 13.4 W/kg                     |
| SAR for nominal HSL parameters                         | normalized to 1W   | 53.3 W/kg $\pm$ 17.0% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of HSL</b> | Condition          |                               |
|----------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                           | 24 dBm input power | 6.32 W/kg                     |
| SAR for nominal HSL parameters                           | normalized to 1W   | 25.2 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 2450 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 52.9 $\Omega$ + 3.4 j $\Omega$ |
| Return Loss | -27.2 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.162 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D2450V2 - SN: 929

November 12, 2025

## System Performance Check Report

## Summary

| Dipole          | Frequency [MHz] | TSL | Power [dBm] |
|-----------------|-----------------|-----|-------------|
| D2450V2 - SN929 | 2450            | HSL | 24          |

## Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0--    | 2450, 0                         | 7.06              | 1.87                   | 38.3             |

## Hardware Setup

| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-11-12    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip Sn1910, 2025-03-11 |

## Scans Setup

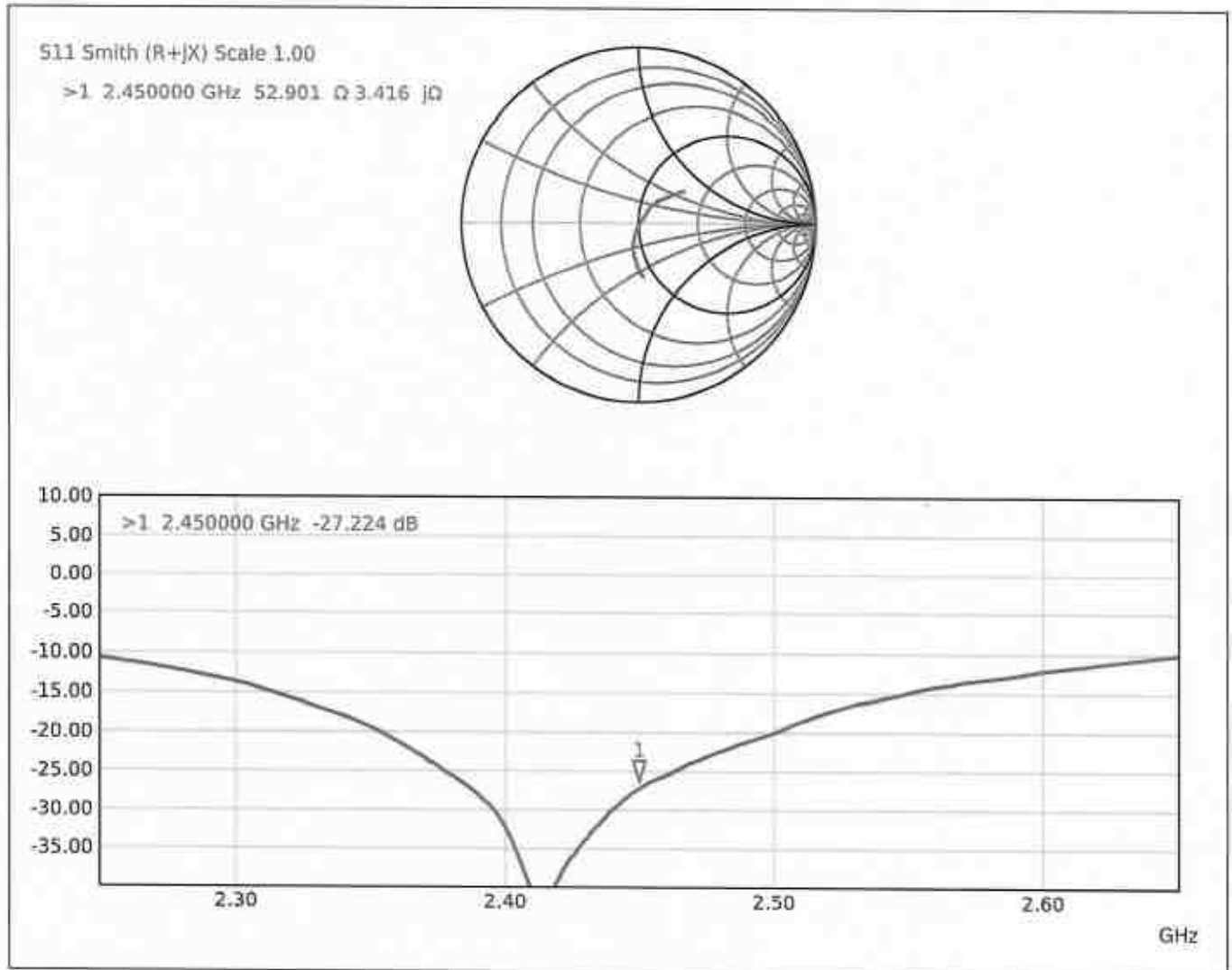
|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 8p        |
| Scan Method         | Measured        |

## Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-11-12          |
| psSAR1g [W/Kg]      | 13.4                |
| psSAR10g [W/Kg]     | 6.32                |
| Power Drift [dB]    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 27.2 W/Kg

**Impedance Measurement Plot for HSL**

## Appendix: Transfer Calibration at Four Validation Locations on SAM Head<sup>1</sup>

### Evaluation Condition

|         |                  |                             |
|---------|------------------|-----------------------------|
| Phantom | SAM Head Phantom | For usage with cSAR3DV2-R/L |
|---------|------------------|-----------------------------|

### SAR result with SAM Head (Top $\cong$ C0)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 56.9 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 26.7 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Mouth $\cong$ F90)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 58.0 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 28.0 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Neck $\cong$ H0)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 54.7 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 25.6 W/kg $\pm$ 16.9 % (k=2) |

### SAR result with SAM Head (Ear $\cong$ D90)

|                                                  |                  |                              |
|--------------------------------------------------|------------------|------------------------------|
| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition        |                              |
| SAR for nominal HSL parameters                   | normalized to 1W | 35.0 W/kg $\pm$ 17.5 % (k=2) |

|                                                    |                  |                              |
|----------------------------------------------------|------------------|------------------------------|
| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | condition        |                              |
| SAR for nominal HSL parameters                     | normalized to 1W | 17.8 W/kg $\pm$ 16.9 % (k=2) |

<sup>1</sup> Additional assessments outside the current scope of SCS 0108

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Accreditation No.: SCS 0108

Client

**Sporton**

Taoyuan City

Certificate No.

**D2600V2-1078\_Jun25****CALIBRATION CERTIFICATE**

Object

D2600V2 - SN: 1078

Calibration procedure(s)

QA CAL-05.v12

Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

June 11, 2025

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T    | SN: 100967 | 26-Mar-25 (No. 217-04290)              | Mar-26        |
| Power Sensor R&S NRP18A     | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 29-Jan-25 (No. 4030A315009658)         | Jan-26        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-25 (No. 217-04293)              | Mar-26        |
| OCP DAK-12                  | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                 | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4      | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                      | SN: 1836   | 17-Apr-25 (No. DAE4ip-1836_Apr25)      | Apr-26        |

| Secondary Standards          | ID         | Check Date (In house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 27-Feb-25 (No. OCP-DAK12-1029_Feb25)       | Feb-26          |
| OCP DAK-3.5                  | SN: 1336   | 09-Dec-24 (No. OCP-DAK3.5-1336_Dec24)      | Dec-25          |

|                                                                                                                 |            |                       |                       |
|-----------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------------------|
|                                                                                                                 | Name       | Function              | Signature             |
| Calibrated by                                                                                                   | Paulo Pina | Laboratory Technician |                       |
| Approved by                                                                                                     | Sven Kühn  | Technical Manager     |                       |
|                                                                                                                 |            |                       | Issued: June 17, 2025 |
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**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
 The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

## Glossary

TSL tissue simulating liquid  
 ConvF sensitivity in TSL / NORM x,y,z  
 N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 10 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 5mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 2600MHz $\pm$ 1MHz       |                                     |

## HSL parameters at 2600 MHz

The following parameters and calculations were applied.

|                                    | Temperature        | Permittivity  | Conductivity        |
|------------------------------------|--------------------|---------------|---------------------|
| Nominal HSL parameters             | 22.0 °C            | 39.0          | 1.96 mho/m          |
| Measured HSL parameters            | (22.0 $\pm$ 0.2)°C | 37.4 $\pm$ 6% | 2.00 mho/m $\pm$ 6% |
| HSL temperature change during test | < 0.5 °C           |               |                     |

## SAR result with HSL at 2600 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                               |
|--------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                   | 24 dBm input power | 13.9 W/kg                     |
| SAR for nominal HSL parameters                   | normalized to 1W   | 55.3 W/kg $\pm$ 17.0% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                               |
|----------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                     | 24 dBm input power | 6.26 W/kg                     |
| SAR for nominal HSL parameters                     | normalized to 1W   | 24.9 W/kg $\pm$ 16.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 2600 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 49.6 $\Omega$ – 7.2 j $\Omega$ |
| Return Loss | -22.8 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.153 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

D2600V2 - SN: 1078

System Performance Check Report

Summary

| Dipole           | Frequency [MHz] | TSL  | Power [dBm] |
|------------------|-----------------|------|-------------|
| D2600V2 - SN1078 | 2600            | JeSL | -24         |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band     | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|----------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 | CW, 0--- |            | 2600, 0                         | 7.26              | 2.00                   | 37.4             |

Hardware Setup

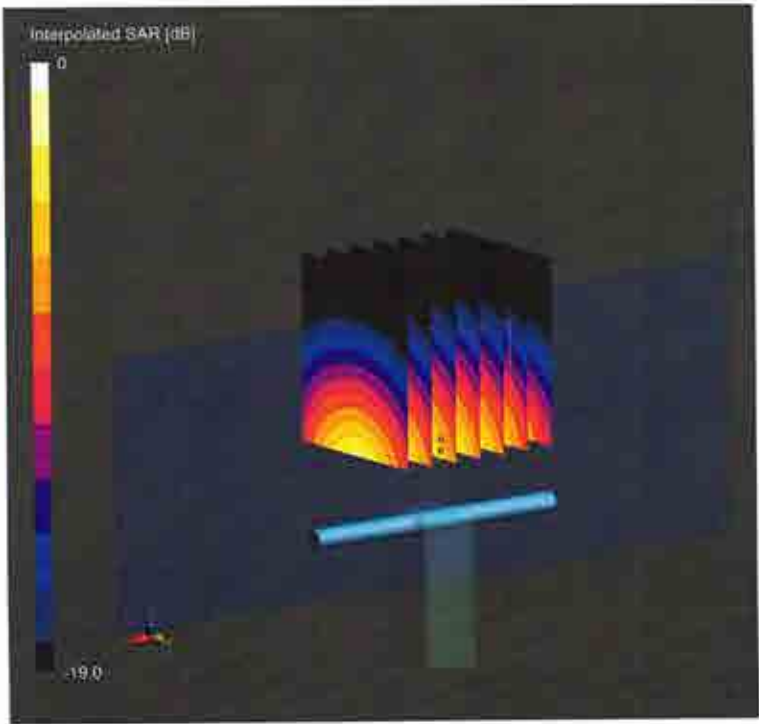
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-06-11    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip SntB36, 2025-04-17 |

Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 30 x 30 x 30    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 1x1             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS = 6p        |
| Scan Method         | Measured        |

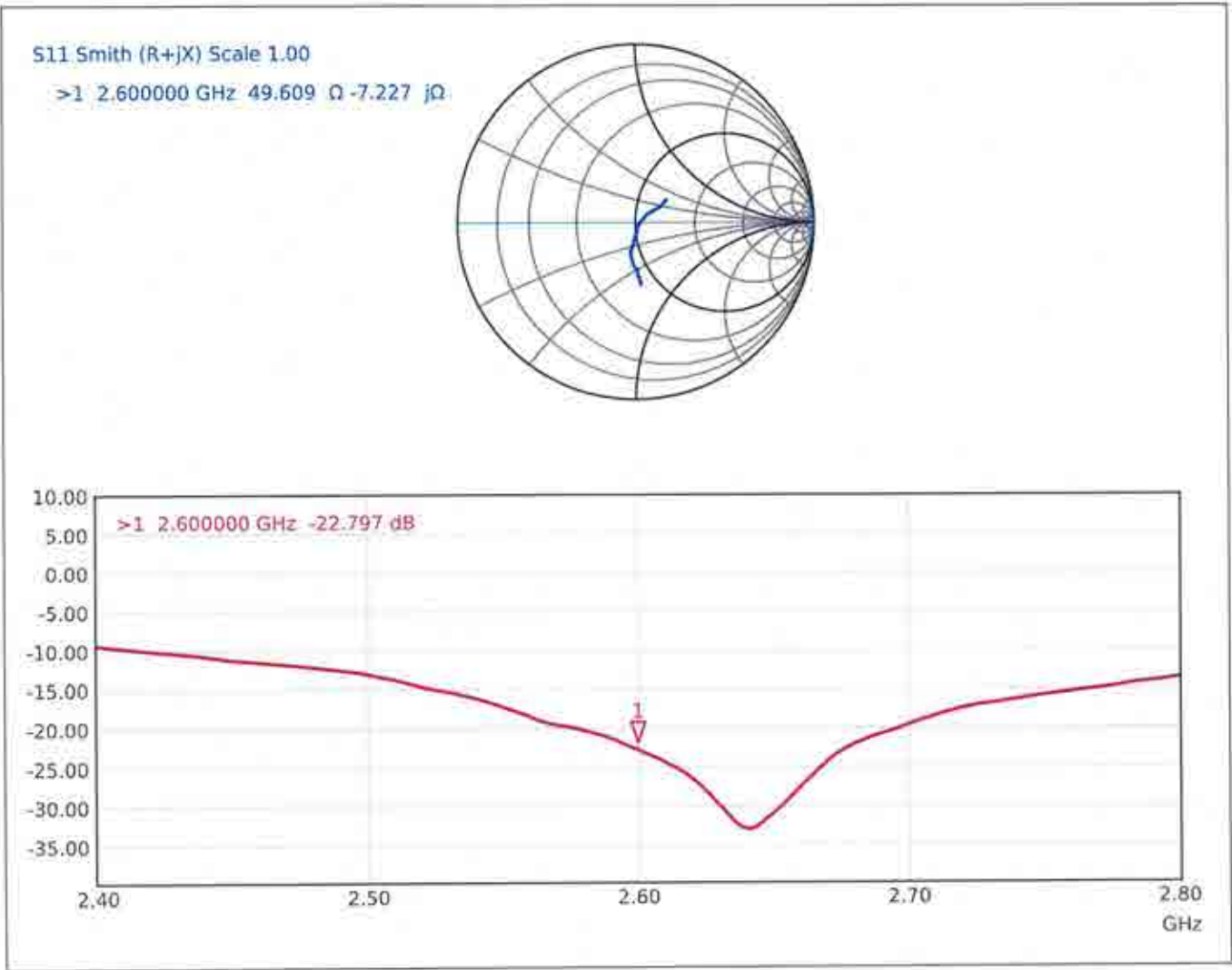
Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-06-11          |
| psSAR1g [W/Kg]      | 13.9                |
| psSAR10g [W/Kg]     | 6.26                |
| Power Drift [dB]    | 0.02                |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 29.8 W/Kg

Impedance Measurement Plot for HSL



## D2600V2, serial no. 1078 Extended Dipole Calibrations

If dipoles are verified in return loss ( $< -20\text{dB}$ , within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

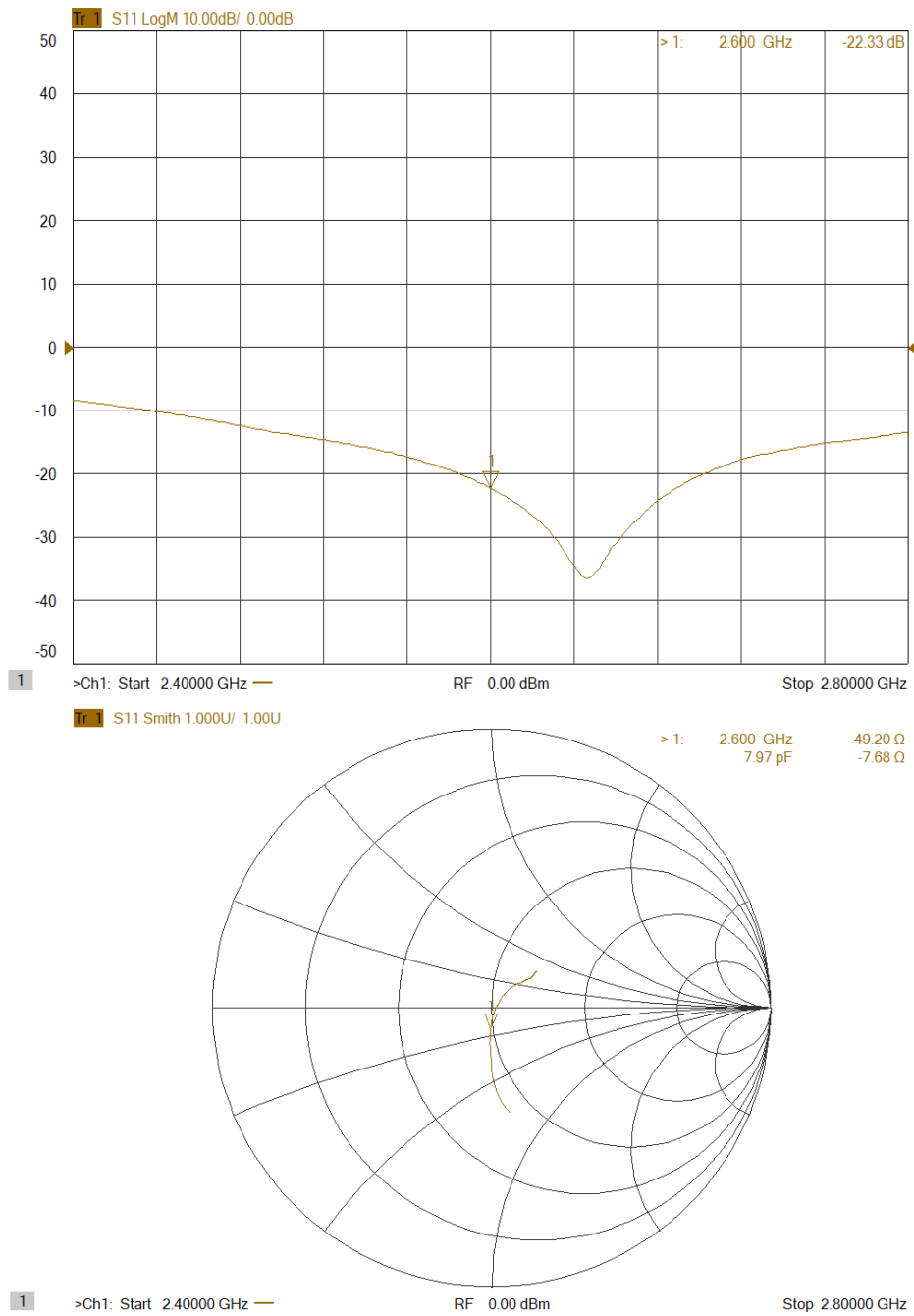
### <Justification of the extended calibration>

| D2600V2 – serial no. 1078   |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 2600MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 06.11.2025<br>(Cal. Report) | -22.797          |           | 49.609               |             | -7.227                    |             |
| 06.10.2026<br>(extended)    | -22.33           | 2.049     | 49.2                 | -0.409      | -7.68                     | -0.453      |

The return loss is  $< -20\text{dB}$ , within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

# <Dipole Verification Data> - D2600V2, serial no. 1078 (Data of Measurement : 06.10.2026)

## 2600 MHz - Head



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Accreditation No.: SCS 0108

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D3500V2-1014\_Jan25****CALIBRATION CERTIFICATE**

Object

**D3500V2 - SN: 1014**

Calibration procedure(s)

**QA CAL-22.v7****Calibration Procedure for SAR Validation Sources between 3 - 10 GHz**

Calibration date

**January 15, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards                          | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|--------------------------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T                   | SN: 100967 | 28-Mar-24 (No. 217-04038)              | Mar-25        |
| Power Sensor R&S NRP18A                    | SN: 101859 | 22-Jul-24 (No. 4030A315008547)         | Jul-25        |
| Spectrum Analyzer R&S FSV40                | SN: 101832 | 25-Jan-24 (No. 4030-315007551)         | Jan-25        |
| Mismatch; Short [S4188] Attenuator [S4423] | SN: 1152   | 28-Mar-24 (No. 217-04050)              | Mar-25        |
| OCP DAK-12                                 | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                                | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4                     | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                                     | SN: 1836   | 28-Oct-24 (No. DAE4ip-1836_Oct24)      | Oct-25        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Source Box              | SN: 1000   | 28-May-24 (No. 675-ACAD_Source_Box-240528) | May-25          |
| Signal Generator R&S SMB100A | SN: 182081 | 28-May-24 (No. 675-CAL16-S4588-240528)     | May-25          |
| Mismatch; SMA                | SN: 1102   | 22-May-24 (No. 675-Mismatch_SMA-240522)    | May-25          |

|               |            |                       |           |
|---------------|------------|-----------------------|-----------|
|               | Name       | Function              | Signature |
| Calibrated by | Paulo Pina | Laboratory Technician |           |
| Approved by   | Sven Kühn  | Technical Manager     |           |

Issued: January 16, 2025

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

## Glossary

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                          |                                     |
|-------------------------------------|--------------------------|-------------------------------------|
| <b>DASY Version</b>                 | DASY8 Module SAR         | 16.4.0                              |
| <b>Extrapolation</b>                | Advanced Extrapolation   |                                     |
| <b>Phantom</b>                      | Modular Flat Phantom     |                                     |
| <b>Distance Dipole Center - TSL</b> | 10 mm                    | with spacer                         |
| <b>Zoom Scan Resolution</b>         | dx, dy = 5mm, dz = 1.4mm | Graded Ratio = 1.5 mm (Z direction) |
| <b>Frequency</b>                    | 3500MHz $\pm$ 1MHz       |                                     |

## Head TSL parameters at 3500 MHz

The following parameters and calculations were applied.

|                                                | Temperature         | Permittivity  | Conductivity        |
|------------------------------------------------|---------------------|---------------|---------------------|
| <b>Nominal Head TSL parameters</b>             | 22.0 °C             | 37.9          | 2.91 mho/m          |
| <b>Measured Head TSL parameters</b>            | (22.0 $\pm$ 0.2) °C | 37.9 $\pm$ 6% | 2.93 mho/m $\pm$ 6% |
| <b>Head TSL temperature change during test</b> | < 0.5 °C            |               |                     |

## SAR result with Head TSL at 3500 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b> | Condition          |                               |
|-------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                         | 20 dBm input power | 6.57 W/kg                     |
| SAR for nominal Head TSL parameters                         | normalized to 1W   | 65.7 W/kg $\pm$ 19.9% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b> | Condition          |                               |
|---------------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters                           | 20 dBm input power | 2.49 W/kg                     |
| SAR for nominal Head TSL parameters                           | normalized to 1W   | 24.9 W/kg $\pm$ 19.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL at 3500 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 54.0 $\Omega$ – 4.1 j $\Omega$ |
| Return Loss | -25.2 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.133 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

System Performance Check Report

Summary

| Dipole           | Frequency [MHz] | TSL | Power [dBm] |
|------------------|-----------------|-----|-------------|
| D3500V2 - SN1014 | 3500            | HSL | 20          |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0---   | 3500, 0                         | 6.63              | 2.93                   | 37.9             |

Hardware Setup

| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-01-15    | EX3DV4 - SN7349, 2025-01-10 | DAE4ip Sn1836, 2024-10-28 |

Scans Setup

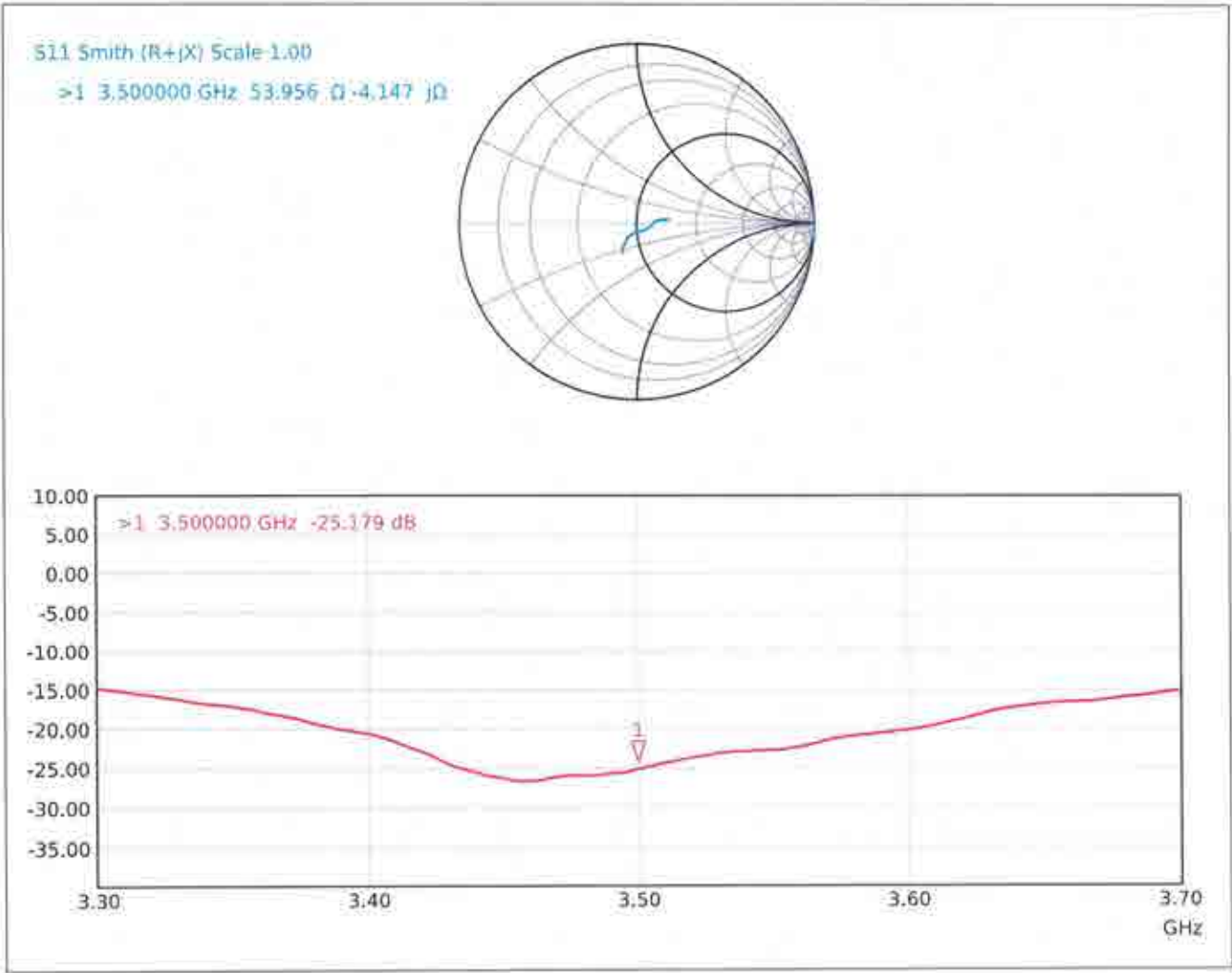
|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 28 x 28 x 28    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.4 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS = 6p        |
| Scan Method         | Measured        |

Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-01-15          |
| psSAR1g [W/Kg]      | 6.57                |
| psSAR10g [W/Kg]     | 2.49                |
| Power Drift [dB]    | -0.04               |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



Impedance Measurement Plot for Head TSL



## D3500V2, serial no. 1014 Extended Dipole Calibrations

If dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

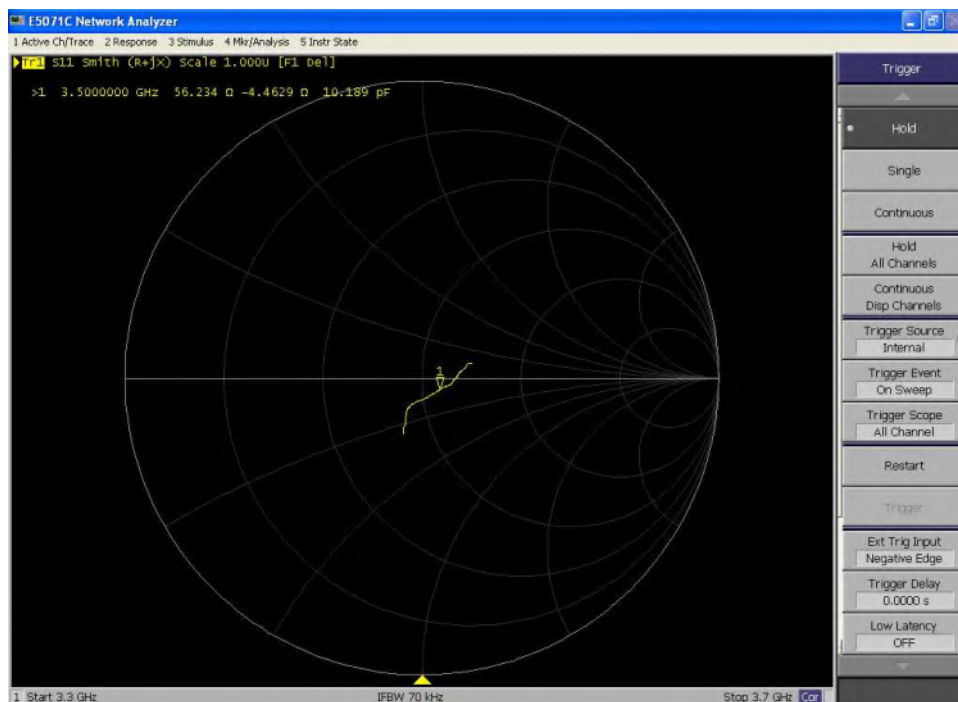
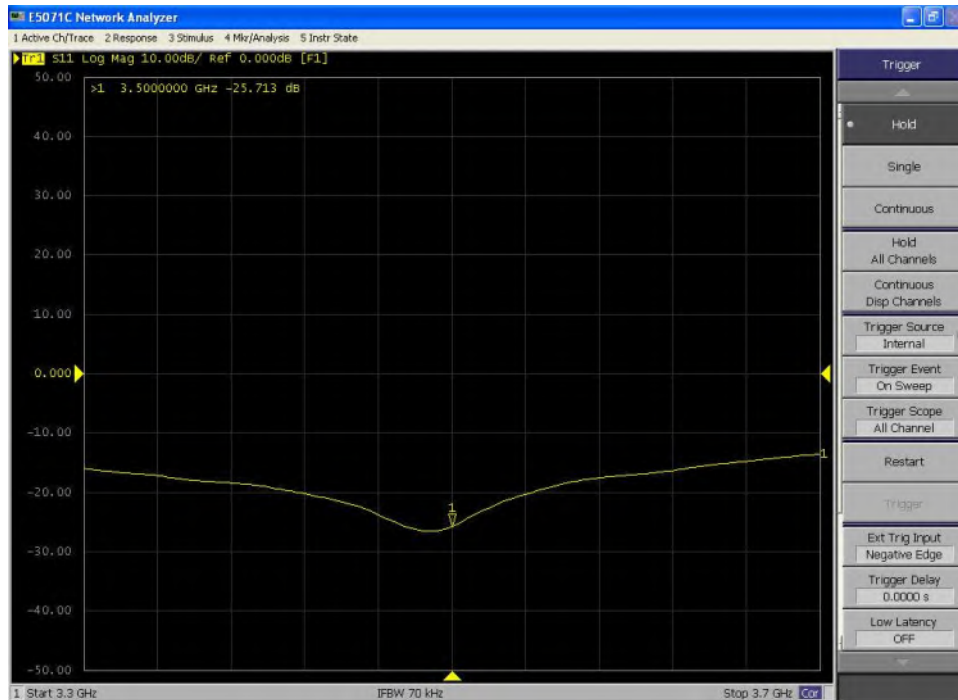
### <Justification of the extended calibration>

| D3500V2 – serial no. 1014   |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 3500MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 01.15.2025<br>(Cal. Report) | -25.2            |           | 54                   |             | -4.1                      |             |
| 01.14.2026<br>(extended)    | -25.713          | -1.99     | 56.234               | 2.234       | -4.4629                   | -0.3629     |

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data> - D3500 V2, serial no. 1014 (Data of Measurement : 01.14.2026)

3500MHz - Head



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Accreditation No.: SCS 0108

Client

**Sporton**

Taoyuan City

Certificate No.

**D3700V2-1006\_Jun25****CALIBRATION CERTIFICATE**

Object

**D3700V2 - SN: 1006**

Calibration procedure(s)

**QA CAL-22.v7****Calibration Procedure for SAR Validation Sources between 3 - 10 GHz**

Calibration date

**June 12, 2025**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP-33T    | SN: 100967 | 26-Mar-25 (No. 217-04290)              | Mar-26        |
| Power Sensor R&S NRP18A     | SN: 101859 | 06-Feb-25 (No. 4030A315009541)         | Feb-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 29-Jan-25 (No. 4030A315009658)         | Jan-26        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-25 (No. 217-04293)              | Mar-26        |
| OCP DAK-12                  | SN: 1016   | 24-Sept-24 (No. OCP-DAK12-1016_Sep24)  | Sep-25        |
| OCP DAK-3.5                 | SN: 1249   | 23-Sept-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25        |
| Reference Probe EX3DV4      | SN: 7349   | 10-Jan-25 (No. EX3-7349_Jan25)         | Jan-26        |
| DAE4ip                      | SN: 1836   | 17-Apr-25 (No. DAE4ip-1836_Apr25)      | Apr-26        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch: SMA                | SN: 1102   | 24-Apr-25 (No. 675-Mismatch_SMA-250424)    | Apr-26          |
| OCP DAK-12                   | SN: 1029   | 27-Feb-25 (No. OCP-DAK12-1029_Feb25)       | Feb-26          |
| OCP DAK-3.5                  | SN: 1336   | 09-Dec-24 (No. OCP-DAK3.5-1336_Dec24)      | Dec-25          |

|                                                                                                                 | Name       | Function              | Signature             |
|-----------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------------------|
| Calibrated by                                                                                                   | Paulo Pina | Laboratory Technician |                       |
| Approved by                                                                                                     | Sven Kühn  | Technical Manager     |                       |
|                                                                                                                 |            |                       | Issued: June 12, 2025 |
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Accreditation No.: SCS 0108

## Glossary

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                              |                          |                                     |
|------------------------------|--------------------------|-------------------------------------|
| DASY Version                 | DASY8 Module SAR         | 16.4.0                              |
| Extrapolation                | Advanced Extrapolation   |                                     |
| Phantom                      | Modular Flat Phantom     |                                     |
| Distance Dipole Center - TSL | 10 mm                    | with spacer                         |
| Zoom Scan Resolution         | dx, dy = 5mm, dz = 1.4mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency                    | 3700MHz $\pm$ 1MHz       |                                     |

## HSL parameters at 3700 MHz

The following parameters and calculations were applied.

|                                    | Temperature        | Permittivity  | Conductivity        |
|------------------------------------|--------------------|---------------|---------------------|
| Nominal HSL parameters             | 22.0 °C            | 37.7          | 3.12 mho/m          |
| Measured HSL parameters            | (22.0 $\pm$ 0.2)°C | 38.8 $\pm$ 6% | 3.11 mho/m $\pm$ 6% |
| HSL temperature change during test | < 0.5 °C           |               |                     |

## SAR result with HSL at 3700 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                               |
|--------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                   | 20 dBm input power | 6.99 W/kg                     |
| SAR for nominal HSL parameters                   | normalized to 1W   | 69.9 W/kg $\pm$ 19.9% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                               |
|----------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                     | 20 dBm input power | 2.56 W/kg                     |
| SAR for nominal HSL parameters                     | normalized to 1W   | 25.6 W/kg $\pm$ 19.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 3700 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 50.6 $\Omega$ – 7.8 j $\Omega$ |
| Return Loss | -22.2 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.137 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

System Performance Check Report

Summary

| Dipole           | Frequency (MHz) | TSL | Power (dWm) |
|------------------|-----------------|-----|-------------|
| D3700V2 - SN1006 | 3700            | HSL | 20          |

Exposure Conditions

| Phantom Section, TSL | Test Distance (mm) | Band     | Group, UID | Frequency (MHz), Channel Number | Conversion Factor | TSL Conductivity (S/m) | TSL Permittivity |
|----------------------|--------------------|----------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 | CW, 0--- |            | 3700, 6                         | 6.45              | 3.11                   | 38.8             |

Hardware Setup

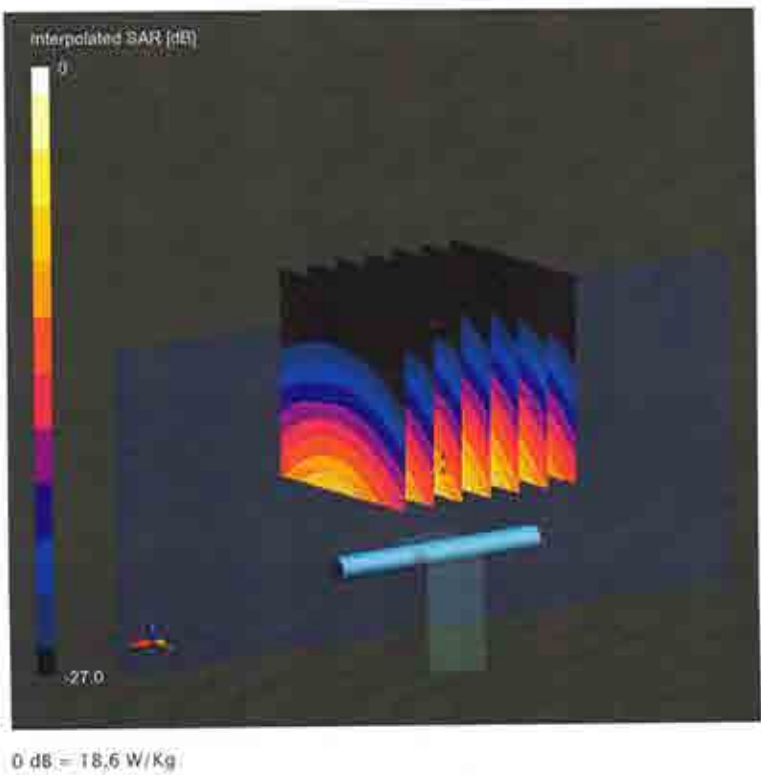
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2025-06-12    | EX3DV4 - SN7349, 2025-01-10 | DAI4lp Sn1836, 2025-04-17 |

Scans Setup

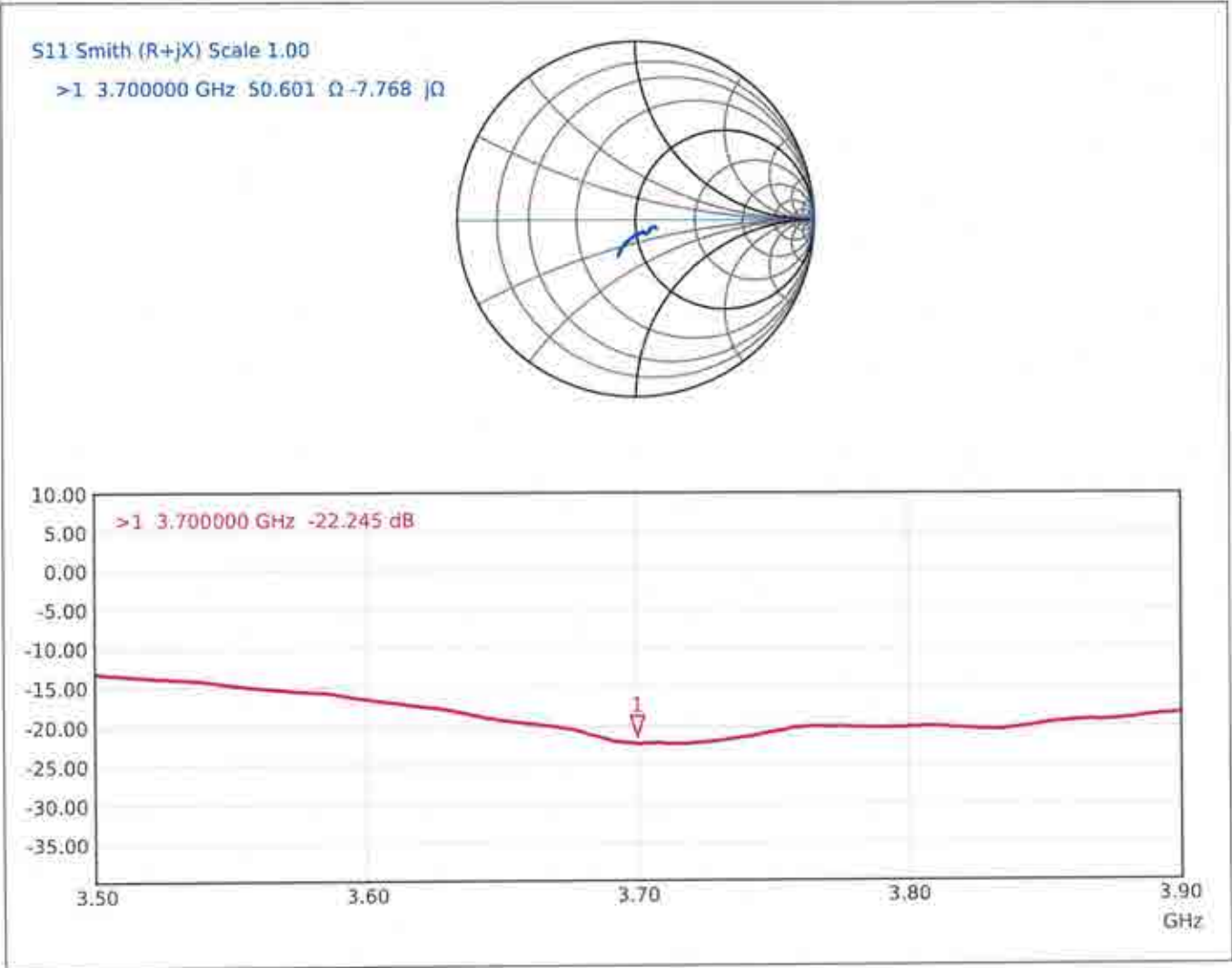
|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents (mm)   | 28 x 28 x 28    |
| Grid Steps (mm)     | 5.0 x 5.0 x 1.4 |
| Sensor Surface (mm) | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | All points      |
| Scan Method         | Measured        |

Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2025-06-12          |
| psSAR1g (W/Kg)      | 6.99                |
| psSAR10g (W/Kg)     | 2.56                |
| Power Drift (dB)    | 0.00                |
| Power Scaling       | Disabled            |
| Scaling Factor (dB) |                     |
| TSL Correction      | Positive / Negative |



Impedance Measurement Plot for HSL



## D3700V2, serial no. 1006 Extended Dipole Calibrations

If dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

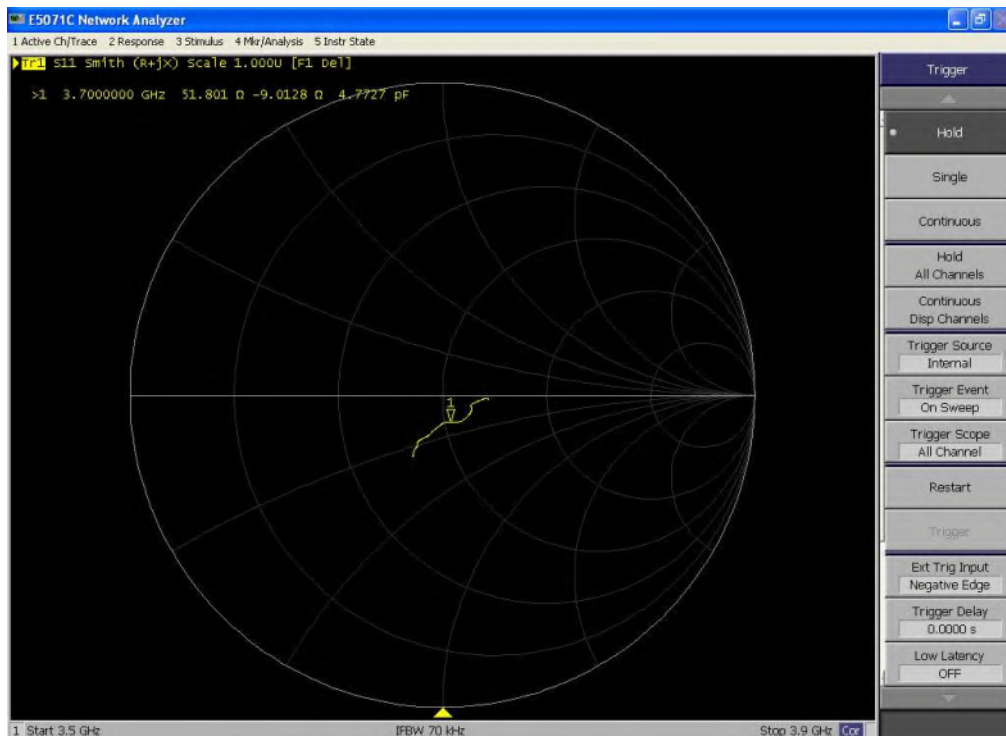
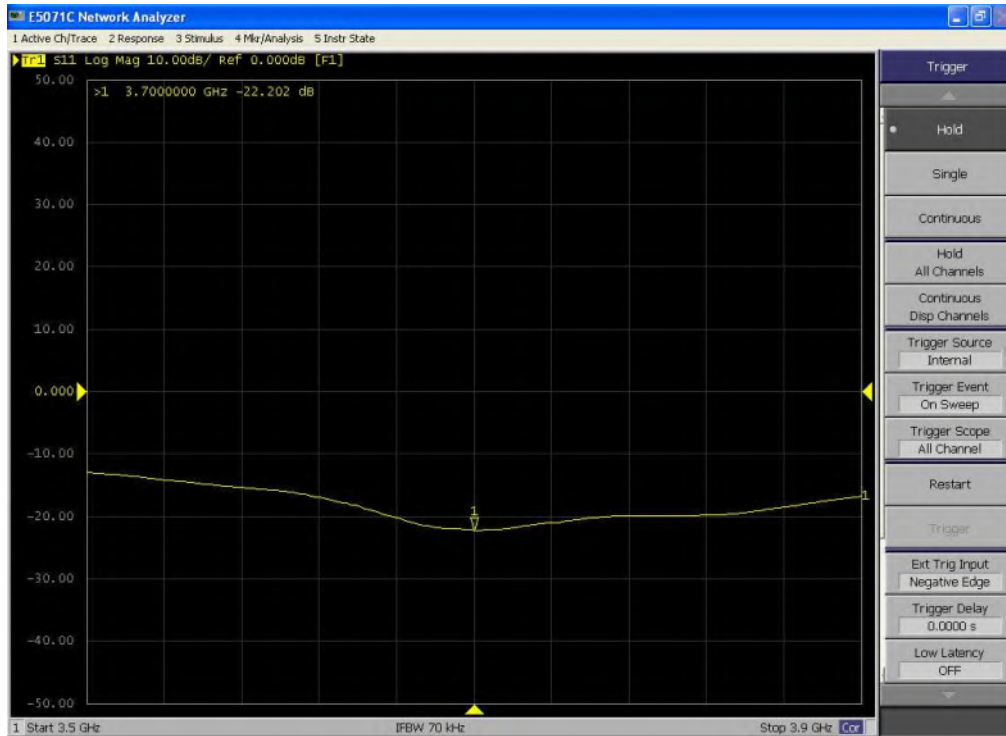
### <Justification of the extended calibration>

| D3700V2 – serial no. 1006   |                  |           |                      |             |                           |             |
|-----------------------------|------------------|-----------|----------------------|-------------|---------------------------|-------------|
| 3700MHZ                     |                  |           |                      |             |                           |             |
| Date of Measurement         | Return-Loss (dB) | Delta (%) | Real Impedance (ohm) | Delta (ohm) | Imaginary Impedance (ohm) | Delta (ohm) |
| 06.12.2025<br>(Cal. Report) | -22.2            |           | 50.6                 |             | -7.8                      |             |
| 06.11.2026<br>(extended)    | -22.202          | -0.01     | 51.801               | 1.201       | -9.0128                   | -1.2128     |

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data> - D3700 V2, serial no. 1006 (Data of Measurement : 06.11.2026)

3700MHz - Head



**Calibration Laboratory of****Schmid & Partner  
Engineering AG**

Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client

**Sporton**  
 Taoyuan City

Certificate No.

**D3900V2-1092\_May26****CALIBRATION CERTIFICATE**

Object

**D3900V2 - SN: 1092**

Calibration procedure(s)

**QA CAL-22.v8****Calibration Procedure for SAR Validation Sources between 3 - 10 GHz**

Calibration date

**May 11, 2026**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards           | ID         | Cal Date (Certificate No.)             | Scheduled Cal |
|-----------------------------|------------|----------------------------------------|---------------|
| Power Sensor R&S NRP40T     | SN: 101861 | 22-Apr-26 (No. 2026-007003)            | Apr-27        |
| Power Sensor R&S NRP18AN    | SN: 100961 | 22-Aug-25 (No. 4030A315010971)         | Aug-26        |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 23-Jan-26 (No. 4030A315011865)         | Jan-27        |
| 3.5mm mismatch combination  | SN: 1152   | 24-Mar-26 (No. 2026-005594)            | Mar-27        |
| OCP DAK-12                  | SN: 1016   | 16-Sept-25 (No. OCP-DAK12-1016_Sep25)  | Sep-26        |
| OCP DAK-3.5                 | SN: 1249   | 16-Sept-25 (No. OCP-DAK3.5-1249_Sep25) | Sep-26        |
| Reference Probe EX3DV4      | SN: 7349   | 29-Jan-26 (No. EX3-7349_Jan26)         | Jan-27        |
| DAE4ip                      | SN: 1836   | 18-Feb-26 (No. DAE4ip-1836_Feb26)      | Feb-27        |

| Secondary Standards          | ID         | Check Date (in house)                      | Scheduled Check |
|------------------------------|------------|--------------------------------------------|-----------------|
| ACAD Setup 1                 | SN: 1000   | 27-May-25 (No. 675-ACAD_Source_Box-250527) | May-26          |
| Signal Generator R&S SMB100A | SN: 182081 | 27-May-25 (No. 675-CAL16-S4588-250527)     | May-26          |
| Mismatch; SMA                | SN: 1102   | 24-Apr-26 (No. IHCK_L1102_Mismatch_Apr26)  | Apr-27          |
| OCP DAK-12                   | SN: 1029   | 24-Feb-26 (No. OCP-DAK12-1029_Feb26)       | Feb-27          |
| OCP DAK-3.5                  | SN: 1336   | 10-Dec-25 (No. OCP-DAK3.5-1336_Dec25)      | Dec-26          |

|                                                                                                                                                    | Name               | Function              | Signature |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|-----------|
| Calibrated by                                                                                                                                      | Aldonia Georgiadou | Laboratory Technician |           |
| Approved by                                                                                                                                        | Sven Kühn          | Technical Manager     |           |
| <p>Issued: May 13, 2026</p> <p>This calibration certificate shall not be reproduced except in full without written approval of the laboratory.</p> |                    |                       |           |

**Calibration Laboratory of**  
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**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
**The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates**

**Accreditation No.: SCS 0108**

## Glossary

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

## Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation

- DASY System Handbook

## Methods Applied and Interpretation of Parameters

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

|                                     |                                          |             |
|-------------------------------------|------------------------------------------|-------------|
| <b>DASY Version</b>                 | DASY8 Module SAR                         | 17.0.4      |
| <b>Extrapolation</b>                | Advanced Extrapolation                   |             |
| <b>Phantom</b>                      | Modular Flat Phantom                     |             |
| <b>Distance Dipole Center - TSL</b> | 10 mm                                    | with spacer |
| <b>Frequency</b>                    | 3900MHz $\pm$ 1MHz<br>4100MHz $\pm$ 1MHz |             |

## HSL parameters at 3900 MHz

The following parameters and calculations were applied.

|                                           | Temperature        | Permittivity  | Conductivity        |
|-------------------------------------------|--------------------|---------------|---------------------|
| <b>Nominal HSL parameters</b>             | 22.0 °C            | 37.5          | 3.32 mho/m          |
| <b>Measured HSL parameters</b>            | (22.0 $\pm$ 0.2)°C | 39.1 $\pm$ 6% | 3.32 mho/m $\pm$ 6% |
| <b>HSL temperature change during test</b> | < 0.5 °C           |               |                     |

## SAR result with HSL at 3900 MHz

| <b>SAR averaged over 1 cm<sup>3</sup> (1 g) of HSL</b> | Condition          |                               |
|--------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                         | 20 dBm input power | 6.57 W/kg                     |
| SAR for nominal HSL parameters                         | normalized to 1W   | 65.7 W/kg $\pm$ 19.9% (k = 2) |

| <b>SAR averaged over 10 cm<sup>3</sup> (10 g) of HSL</b> | Condition          |                               |
|----------------------------------------------------------|--------------------|-------------------------------|
| SAR for nominal HSL parameters                           | 20 dBm input power | 2.31 W/kg                     |
| SAR for nominal HSL parameters                           | normalized to 1W   | 23.1 W/kg $\pm$ 19.5% (k = 2) |

**HSL parameters at 4100 MHz**

The following parameters and calculations were applied.

|                                    | Temperature   | Permittivity | Conductivity   |
|------------------------------------|---------------|--------------|----------------|
| Nominal HSL parameters             | 22.0 °C       | 37.2         | 3.53 mho/m     |
| Measured HSL parameters            | (22.0 ±0.2)°C | 38.8 ±6%     | 3.51 mho/m ±6% |
| HSL temperature change during test | < 0.5 °C      |              |                |

**SAR result with HSL at 4100 MHz**

| SAR averaged over 1 cm <sup>3</sup> (1 g) of HSL | Condition          |                          |
|--------------------------------------------------|--------------------|--------------------------|
| SAR for nominal HSL parameters                   | 20 dBm input power | 6.48 W/kg                |
| SAR for nominal HSL parameters                   | normalized to 1W   | 64.8 W/kg ±19.9% (k = 2) |

| SAR averaged over 10 cm <sup>3</sup> (10 g) of HSL | Condition          |                          |
|----------------------------------------------------|--------------------|--------------------------|
| SAR for nominal HSL parameters                     | 20 dBm input power | 2.26 W/kg                |
| SAR for nominal HSL parameters                     | normalized to 1W   | 22.6 W/kg ±19.5% (k = 2) |

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with HSL at 3900 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 47.6 $\Omega$ – 1.4 j $\Omega$ |
| Return Loss | -30.8 dB                       |

**Antenna Parameters with HSL at 4100 MHz**

|             |                                |
|-------------|--------------------------------|
| Impedance   | 54.7 $\Omega$ + 7.5 j $\Omega$ |
| Return Loss | -21,5 dB                       |

**General Antenna Parameters and Design**

|                                  |          |
|----------------------------------|----------|
| Electrical Delay (one direction) | 1.112 ns |
|----------------------------------|----------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

|                 |       |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

## System Performance Check Report

## Summary

| Dipole           | Frequency [MHz] | TSL | Power [dBm] |
|------------------|-----------------|-----|-------------|
| D3900V2 - SN1092 | 3900            | HSL | 20          |

## Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0---   | 3900, 0                         | 6.62              | 3.32                   | 39.1             |

## Hardware Setup

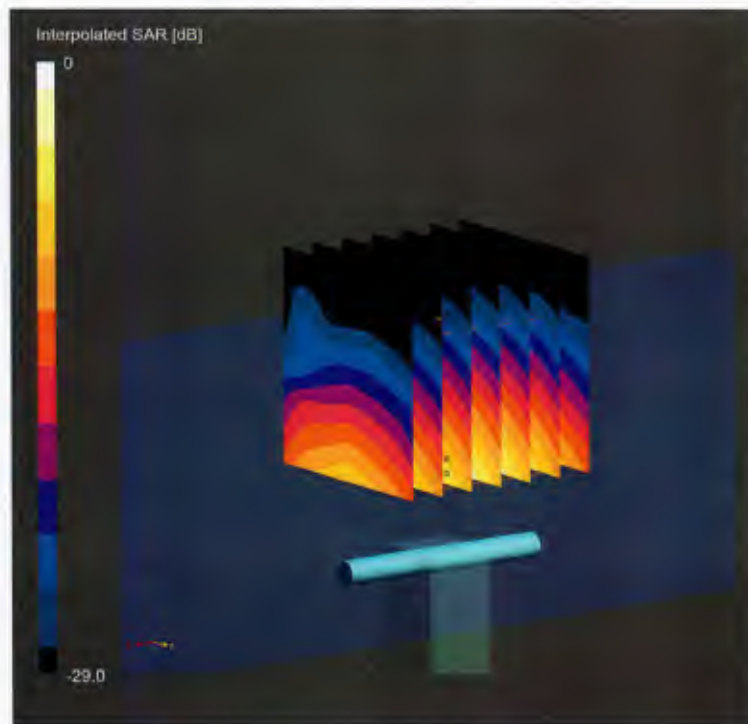
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2026-05-11    | EX3DV4 - SN7349, 2026-01-29 | DAE4lp Sn1836, 2026-02-18 |

## Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 28 x 28 x 28    |
| Grid Steps [mm]     | 5.0 x 5.0 x 1.4 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.5             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 6p        |
| Scan Method         | Measured        |

## Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2026-05-11          |
| psSAR1g [W/Kg]      | 6.57                |
| psSAR10g [W/Kg]     | 2.31                |
| Power Drift [dB]    | -0.08               |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



0 dB = 18.7 W/Kg

D3900V2 - SN: 1092

May 11, 2026

## System Performance Check Report

## Summary

| Dipole           | Frequency [MHz] | TSL | Power [dBm] |
|------------------|-----------------|-----|-------------|
| D3900V2 - SN1092 | 4100            | HSL | 20          |

## Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat                 | 10                 |      | CW, 0---   | 4100, 0                         | 6.49              | 3.51                   | 38.8             |

## Hardware Setup

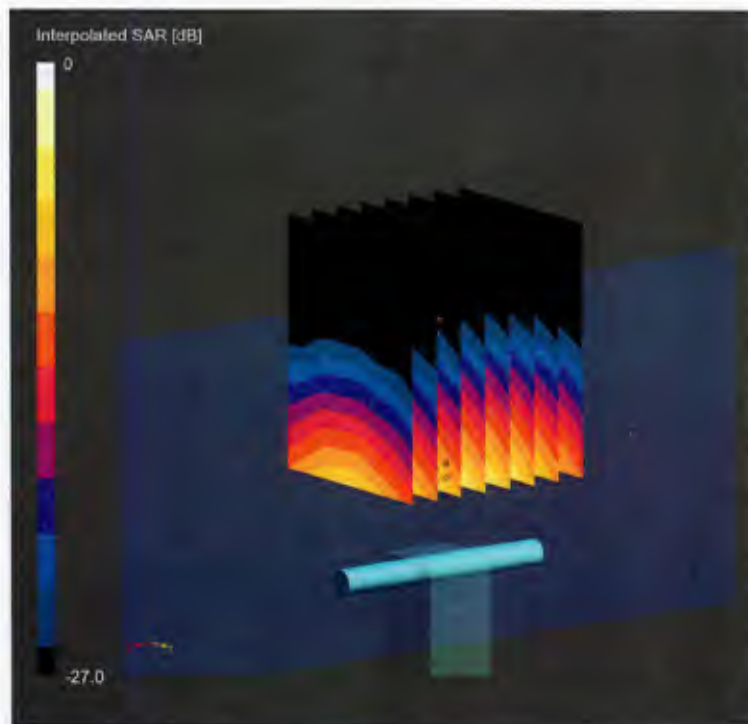
| Phantom         | TSL, Measured Date | Probe, Calibration Date     | DAE, Calibration Date     |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2026-05-11    | EX3DV4 - 5N7349, 2026-01-29 | DAE4ip 5n1836, 2026-02-18 |

## Scans Setup

|                     | Zoom Scan       |
|---------------------|-----------------|
| Grid Extents [mm]   | 25 x 25 x 25    |
| Grid Steps [mm]     | 4.0 x 4.0 x 1.4 |
| Sensor Surface [mm] | 1.4             |
| Graded Grid         | Yes             |
| Grading Ratio       | 1.4             |
| MAIA                | N/A             |
| Surface Detection   | VMS + 6p        |
| Scan Method         | Measured        |

## Measurement Results

|                     | Zoom Scan           |
|---------------------|---------------------|
| Date                | 2026-05-11          |
| psSAR1g [W/Kg]      | 6.48                |
| psSAR10g [W/Kg]     | 2.26                |
| Power Drift [dB]    | -0.02               |
| Power Scaling       | Disabled            |
| Scaling Factor [dB] |                     |
| TSL Correction      | Positive / Negative |



## Impedance Measurement Plot for HSL

