D835V2 - SN: 4d069 July 9, 2024

#### System Performance Check Report

Phantom

Flat V4.9 mod

Dipole		F	requency [MH	[z] TSL	Power [dBm]		
D835V2 - SN4d069		8	35	HSL	24		
Exposure Condition Phantom Section, TSL	Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity

Probe, Calibration Date

EX3DV4 - \$N7349, 2024-06-03

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

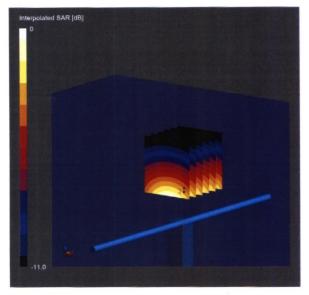
TSL, Measured Date

HSL, 2024-07-09

	Zoom Scan
Date	2024-07-09
psSAR1g [W/Kg]	2.38
psSAR10g [W/Kg]	1.53
Power Drift [dB]	0.00
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative

DAE, Calibration Date

DAE4ip Sn1836, 2024-01-10



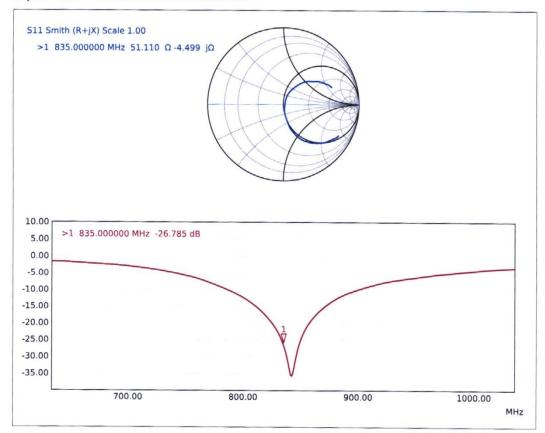
0~dB=3.85~W/Kg

Certificate No: D835V2-4d069\_Jul24

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D835V2 - SN: 4d069 July 9, 2024

## Impedance Measurement Plot for Head TSL



Certificate No: D835V2-4d069\_Jul24

Page 6 of 6

## 1750 MHz Dipole Calibration Certificate

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



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

Accreditation No.: SCS 0108

Client

CTTL Beijing Certificate No.

D1750V2-1003\_Jul24

#### **CALIBRATION CERTIFICATE**

Object

D1750V2 - SN: 1003

Calibration procedure(s)

QA CAL-05.v12

Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

July 11, 2024

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  $(22\pm3)^{\circ}C$  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	21-Mar-24 (No. 4030A315007801)	Mar-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	05-Oct-23 (No. OCP-DAK12-1016_Oct23)	Oct-24
OCP DAK-3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jan-24 (No. DAE4ip-1836_Jan24)	Jan-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. 0001-300719404)	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	I.V. Halles
Approved by	Sven Kühn	Technical Manager	Sinc
			Issued: July 11 2024

Issued: July 11, 2024

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Certificate No: D1750V2-1003\_Jul24

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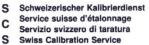
## Calibration Laboratory of Schmid & Partner

Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland







Accreditation No.: SCS 0108

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

#### 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%.

Certificate No: D1750V2-1003\_Jul24

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D1750V2 - SN: 1003 July 11, 2024

#### **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 ±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 ±0.2)°C	40.6 ±6%	1.35 mho/m ±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	9.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	$37.2 \text{ W/kg} \pm 17.0\% (k = 2)$

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	4.97 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.8 W/kg ±16.5% (k = 2)

Certificate No: D1750V2-1003\_Jul24

D1750V2 - SN: 1003 July 11, 2024

## Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL at 1750 MHz

Impedance	49.2 Ω – 0.4 jΩ	
Return Loss	-41.0 dB	

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.214 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
730000 TO	Control Artifaction Control Co

Certificate No: D1750V2-1003\_Jul24

July 11, 2024 D1750V2 - SN: 1003

#### System Performance Check Report

MFP V8.0 Right

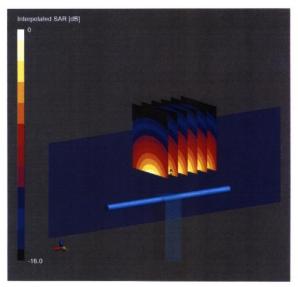
Summary						
Dipole		Frequency [MHz	r) TSL	Power [dBm]		
D1750V2 - SN1003		1750	HSL	24		
Exposure Condition	s					
Phantom Section, TSL	Test Distance [mm] B	Band Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	10	CW, 0	1750, 0	7.96	1.35	40.6
Hardware Setup						
Phantom	TSL, Measured Date	Pro	be, Calibration Date	DAE,	Calibration Date	
MFP V8.0 Right	HSL, 2024-07-11	EX3DV4 - SN7349, 2024-06-03		DAE4	ip Sn1836, 2024-01-10	

EX3DV4 - SN7349, 2024-06-03

	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

HSL, 2024-07-11

	Zoom Scan
Date	2024-07-11
psSAR1g [W/Kg]	9.34
psSAR10g [W/Kg]	4.97
Power Drift [dB]	0.00
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative



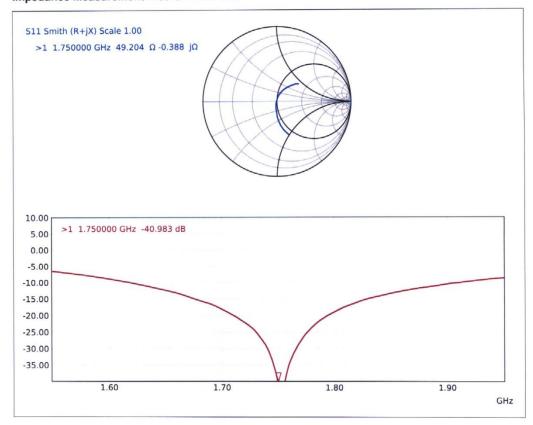
0~dB = 16.6~W/Kg

Certificate No: D1750V2-1003\_Jul24

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D1750V2 - SN: 1003 July 11, 2024

## Impedance Measurement Plot for Head TSL



## 1900 MHz Dipole Calibration Certificate

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





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Accreditation No.: SCS 0108

Client

CTTL Beijing

Certificate No.

D1900V2-5d101\_Jul24

#### **CALIBRATION CERTIFICATE**

Object

D1900V2 - SN: 5d101

Calibration procedure(s)

QA CAL-05.v12

Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

July 8, 2024

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 ± 3)°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	21-Mar-24 (No. 4030A315007801)	Mar-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	05-Oct-23 (No. OCP-DAK12-1016_Oct23)	Oct-24
OCP DAK-3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jan-24 (No. DAE4ip-1836_Jan24)	Jan-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. 0001-300719404)	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: July 8, 2024

orv.

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Certificate No: D1900V2-5d101\_Jul24

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#### Calibration Laboratory of

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland





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S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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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%.

Certificate No: D1900V2-5d101\_Jul24

Page 2 of 6

#### **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 ±1MHz		

## Head TSL parameters at 1900 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	41.3 ±6%	1.38 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL at 1900 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	9.83 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.1 W/kg ±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	5.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.6 W/kg ±16.5% (k = 2)

Certificate No: D1900V2-5d101\_Jul24

#### Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL at 1900 MHz

Impedance	49.4 Ω + 4.2 jΩ	
Return Loss	-27.3 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
Ivianulactured by	SFEAG

Certificate No: D1900V2-5d101\_Jul24

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## System Performance Check Report

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Dipole	Frequency [MHz]	TSL	Power [dBm]	
D1900V2 - SN5d101	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	7.73	1.38	41.3

#### Hardware Setup

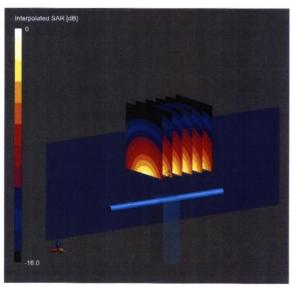
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date	
MFP V8.0 Right	HSL, 2024-07-08	EX3DV4 - SN7349, 2024-06-03	DAE4ip Sn1836, 2024-01-10	

#### 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 Result

reasurement Results	
	Zoom Scan
Date	2024-07-08
psSAR1g [W/Kg]	9.83
psSAR10g [W/Kg]	5.18
Power Drift [dB]	-0.01
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative

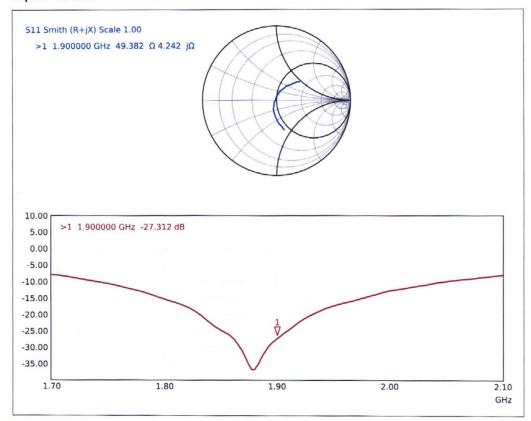


0 dB = 17.3 W/Kg

Certificate No: D1900V2-5d101\_Jul24

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## Impedance Measurement Plot for Head TSL



Certificate No: D1900V2-5d101\_Jul24

## 2450 MHz Dipole Calibration Certificate

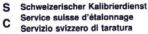
## **Calibration Laboratory of**

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland







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Client

CTTL Beijing Certificate No.

D2450V2-853\_Jul24

#### **CALIBRATION CERTIFICATE**

Object

D2450V2 - SN: 853

Calibration procedure(s)

QA CAL-05.v12

Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

July 10, 2024

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  $(22\pm3)^{\circ}C$  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	21-Mar-24 (No. 4030A315007801)	Mar-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	05-Oct-23 (No. OCP-DAK12-1016_Oct23)	Oct-24
OCP DAK-3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jan-24 (No. DAE4ip-1836_Jan24)	Jan-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. 0001-300719404)	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	tenthe
Approved by	Sven Kühn	Technical Manager	Sin
			Issued: July 10, 2024

tory

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Certificate No: D2450V2-853\_Jul24

Page 1 of 6

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

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S Swiss Calibration Service

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%.

Certificate No: D2450V2-853\_Jul24 Page 2 of 6

#### **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	2450MHz ±1MHz	

## Head TSL parameters at 2450 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	38.0 ±6%	1.83 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL at 2450 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	13.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.2 W/kg ±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	6.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.5 W/kg ±16.5% (k = 2)

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# Appendix (Additional assessments outside the scope of SCS 0108) Antenna Parameters with Head TSL at 2450 MHz

Impedance	$52.4 \Omega + 2.6 j\Omega$	
Return Loss	-29.2 dB	

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.163 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**

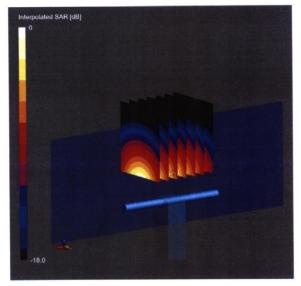
Manufactured by	SPEAG
Wallulactured by	0. 1

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#### System Performance Check Report

Dipole	Frequency [MHz] TSI			TSL	Power [dBm]			
D2450V2 - SN853		2450 H		HSL	24			
Exposure Condition	s							
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		7.24	1.83	38.0
Hardware Setup								
Phantom	TSL, Measured Date Probe, Calibration Date			DAE, Calibration Date				
MFP V8.0 Center	HSL, 2024-07-10 EX3DV4 - SN7349, 2024-06-03			DAE	4ip Sn1836, 2024-01-10			
Scans Setup					Measureme	nt Results		
				Zoom Scan				Zoom Scan
Grid Extents [mm]				30 x 30 x 30	Date			2024-07-10
Grid Steps [mm]	5.0 x 5.0 x 1.5			.0 x 5.0 x 1.5	psSAR1g [W/	psSAR1g [W/Kg]		
Sensor Surface [mm]	1.4			psSAR10g [W	psSAR10g [W/Kg]			
Graded Grid				Yes	Power Drift [	dB)		0.00
Grading Ratio				1.5	Power Scaling	9		Disabled
MAIA				N/A	Scaling Factor	or [dB]		
Surface Detection				VMS + 6p	TSL Correction	on		Positive / Negative
Scan Method				Measured				

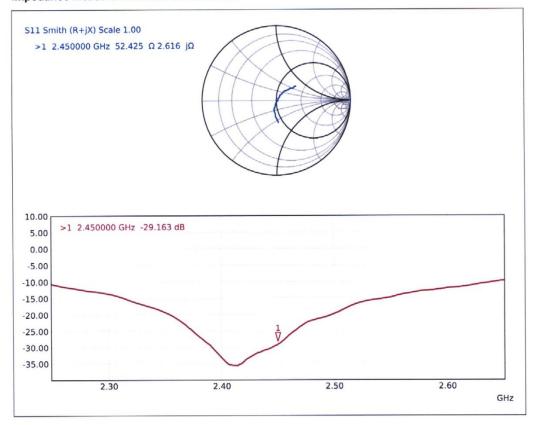


0 dB = 26.6 W/Kg

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## Impedance Measurement Plot for Head TSL



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