ANNEX H Dipole Calibration Certificate

750 MHz Dipole Calibration Certificate

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



Service suisse d'étalonnage Servizio svizzero di taratura **Swiss Calibration Service**

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

Client CTTL

Certificate No. D750V3-1017_Jul23

Object	D750V3 - SN:10	17	
Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	edure for SAR Validation Sources	s between 0.7-3 GHz
Calibration date:	July 14, 2023		
	ed in the closed laborator	robability are given on the following pages an ry facility: environment temperature $(22\pm3)^\circ$ (
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
ower sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator	SN: BH9394 (20k)	30-Mar-23 (No. 217-03809)	Mar-24
ype-N mismatch combination	SN: 310982 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
ype-N mismatch combination Reference Probe EX3DV4	SN: 310982 / 06327 SN: 7349	30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23)	Mar-24 Jan-24
Type-N mismatch combination Reference Probe EX3DV4			
Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	SN: 7349 SN: 601	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter E4419B	SN: 7349 SN: 601 ID # SN: GB39512475	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22)	Jan-24 Dec-23
Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter E4419B Power sensor HP 8481A	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house)	Jan-24 Dec-23 Scheduled Check
Fype-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	Jan-24 Dec-23 Scheduled Check In house check: Oct-24
Fype-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24
Fype-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A RF generator R&S SMT-06	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972 SN: US41080477	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E44198 Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by:	SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972 SN: US41080477	10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (In house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22)	Jan-24 Dec-23 Scheduled Check In house check: Oct-24

Certificate No: D750V3-1017_Jul23

Page 1 of 6

Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





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

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:

- a) 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.
- b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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%.

Certificate No: D750V3-1017_Jul23

Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy , $dz = 5 mm$	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.42 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.49 W/kg ± 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.4 Ω - 0.3 jΩ	
Return Loss	- 29.6 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.034 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

Certificate No: D750V3-1017_Jul23 Page 4 of 6

DASY5 Validation Report for Head TSL

Date: 14.07.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1017

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used: f = 750 MHz; $\sigma = 0.9 \text{ S/m}$; $\varepsilon_r = 42.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(10.11, 10.11, 10.11) @ 750 MHz; Calibrated: 10.01.2023

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 19.12.2022

Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001

DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 60.17 V/m; Power Drift = -0.09 dB

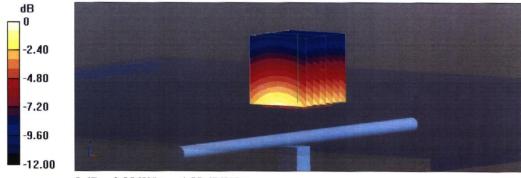
Peak SAR (extrapolated) = 3.19 W/kg

SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.38 W/kg

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)

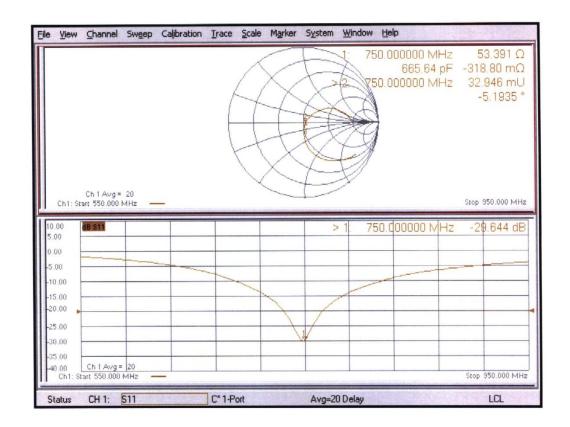
Ratio of SAR at M2 to SAR at M1 = 66%

Maximum value of SAR (measured) = 2.85 W/kg



0 dB = 2.85 W/kg = 4.55 dBW/kg

Impedance Measurement Plot for Head TSL



900 MHz Dipole Calibration Certificate

Calibration Laboratory of

Schmid & Partner **Engineering AG**





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

Accreditation No.: SCS 0108

Zeughausstrasse 43, 8004 Zurich, Switzerland

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

Client CTTL

Beijing

Certificate No. D900V2-1d051_Jul23

CALIBRATION CERTIFICATE

Object

D900V2 - SN:1d051

Calibration procedure(s)

QA CAL-05.v12

Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date:

July 14, 2023

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 Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k)	Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809)	Scheduled Calibration Mar-24 Mar-24 Mar-24
Power sensor NRP-Z91	SN: 103244 SN: 103245 SN: BH9394 (20k)	30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805)	Mar-24
	SN: 103245 SN: BH9394 (20k)	30-Mar-23 (No. 217-03805)	
Power sensor NRP-Z91	SN: BH9394 (20k)		Mar-24
		30-Mar-23 (No. 217-03800)	
Reference 20 dB Attenuator	Chi	30-Mai-23 (No. 217-03009)	Mar-24
Type-N mismatch combination	SN: 310982 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
Reference Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23
Secondary Standards	ID#	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24
	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	11116
			THE X
Approved by:	Sven Kühn	Technical Manager	
			S.Cr

Issued: July 19, 2023

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

Calibration Laboratory of

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





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

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

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

Calibration is Performed According to the Following Standards:

- a) 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.
- b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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
- 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: D900V2-1d051_Jul23	Page 2 of 6		

Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy , $dz = 5 mm$	
Frequency	900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.7 ± 6 %	0.95 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.69 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	10.9 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	7.05 W/kg ± 16.5 % (k=2)

Certificate No: D900V2-1d051_Jul23

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.6 \Omega + 0.4 j\Omega$
Return Loss	- 43.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.403 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
-----------------	-------

Certificate No: D900V2-1d051_Jul23

Page 4 of 6

DASY5 Validation Report for Head TSL

Date: 14.07.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 1d051

Communication System: UID 0 - CW; Frequency: 900 MHz

Medium parameters used: f = 900 MHz; $\sigma = 0.95 \text{ S/m}$; $\varepsilon_r = 41.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(9.62, 9.62, 9.62) @ 900 MHz; Calibrated: 10.01.2023

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 19.12.2022

Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001

• DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 65.58 V/m; Power Drift = -0.03 dB

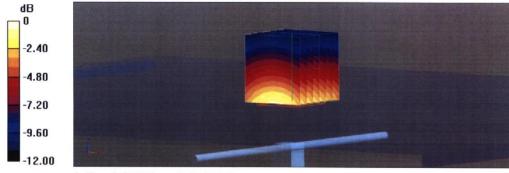
Peak SAR (extrapolated) = 4.09 W/kg

SAR(1 g) = 2.69 W/kg; SAR(10 g) = 1.74 W/kg

Smallest distance from peaks to all points 3 dB below = 18 mm

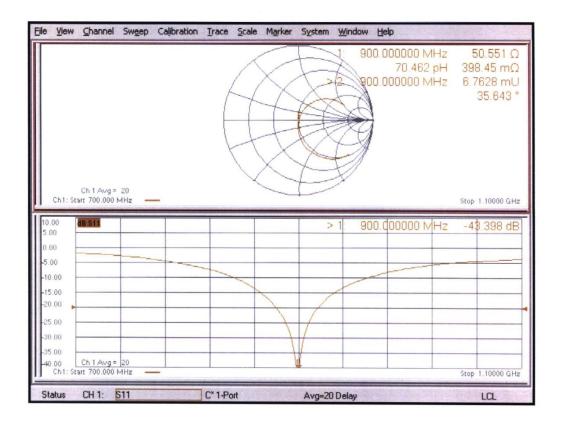
Ratio of SAR at M2 to SAR at M1 = 65.4%

Maximum value of SAR (measured) = 3.64 W/kg



0 dB = 3.64 W/kg = 5.61 dBW/kg

Impedance Measurement Plot for Head TSL



Certificate No: D900V2-1d051_Jul23

1800 MHz Dipole Calibration Certificate

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





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

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

Client CTTL

Certificate No. D1800V2-2d145_Jul23

	ERTIFICATE		
Object	D1800V2 - SN:20	1145	
Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	dure for SAR Validation Sources	between 0.7-3 GHz
Calibration date:	July 12, 2023		
he measurements and the uncerta	ainties with confidence pr	onal standards, which realize the physical unitobability are given on the following pages an y facility: environment temperature $(22 \pm 3)^{\circ}$ C	d are part of the certificate.
Calibration Equipment used (M&TE			
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
Power sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator	SN: BH9394 (20k) SN: 310982 / 06327	30-Mar-23 (No. 217-03809)	Mar-24 Mar-24
Type-N mismatch combination Reference Probe EX3DV4	SN: 7349	30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349 Jan23)	Mar-24 Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23
	ID#	Check Date (in house)	Scheduled Check
Secondary Standards	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power meter E4419B			In house check: Oct-24
Power meter E4419B Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	
Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06			In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: MY41093315 SN: 100972	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: MY41093315 SN: 100972 SN: US41080477	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24
Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	SN: MY41093315 SN: 100972 SN: US41080477 Name	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22) Function	In house check: Oct-24 In house check: Oct-24

Certificate No: D1800V2-2d145_Jul23

Page 1 of 6

Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





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

Accreditation No.: SCS 0108

Zeughausstrasse 43, 8004 Zurich, Switzerland
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:

- a) 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.
- b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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%.

Certificate No: D1800V2-2d145 Jul23 Page 2 of 6

Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	3.0
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters
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	39.9 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.9 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.90 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.8 W/kg ± 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.4Ω - $3.2 j\Omega$	
Return Loss	- 28.7 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

Certificate No: D1800V2-2d145_Jul23 Page 4 of 6

DASY5 Validation Report for Head TSL

Date: 12.07.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d145

Communication System: UID 0 - CW; Frequency: 1800 MHz

Medium parameters used: f = 1800 MHz; $\sigma = 1.37$ S/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

Probe: EX3DV4 - SN7349; ConvF(8.63, 8.63, 8.63) @ 1800 MHz; Calibrated: 10.01.2023

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

• Electronics: DAE4 Sn601; Calibrated: 19.12.2022

Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001

DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 110.2 V/m; Power Drift = -0.05 dB

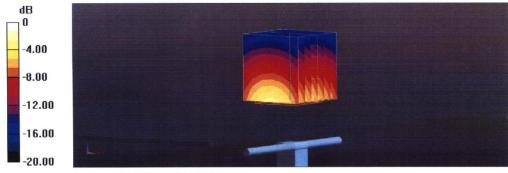
Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 9.35 W/kg; SAR(10 g) = 4.9 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

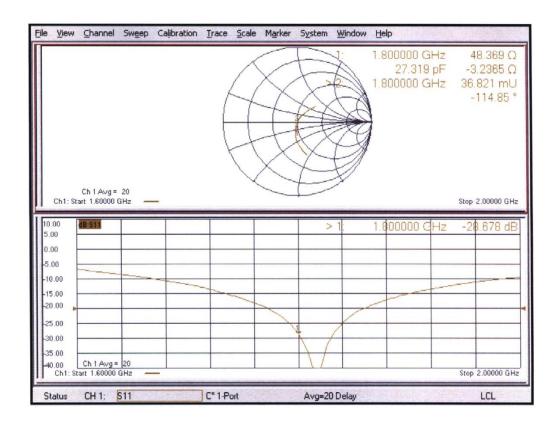
Ratio of SAR at M2 to SAR at M1 = 54.8%

Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg = 11.61 dBW/kg

Impedance Measurement Plot for Head TSL



1900 MHz Dipole Calibration Certificate

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





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

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

Client CTTL

Certificate No. D1900V2-5d101_Jul23

Object	D1900V2 - SN:50	d101	
Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	edure for SAR Validation Sources	between 0.7-3 GHz
Calibration date:	July 17, 2023		
		y facility: environment temperature (22 ± 3)°C	C and humidity < 70%.
Calibration Equipment used (M&TE	1		
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Primary Standards Power meter NRP2	ID # SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91	ID # SN: 104778 SN: 103244	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804)	Mar-24 Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91	ID # SN: 104778 SN: 103244 SN: 103245	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805)	Mar-24 Mar-24 Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k)	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809)	Mar-24 Mar-24 Mar-24 Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k)	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID #	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Recondary Standards Power meter E4419B Power sensor HP 8481A	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972 SN: US41080477	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Primary Standards Power meter NRP2 Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 601 ID # SN: GB39512475 SN: US37292783 SN: MY41093315 SN: 100972 SN: US41080477 Name	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. EX3-7349_Jan23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-Oct-14 (in house check Oct-22) 07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Dec-23 Scheduled Check In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24

Certificate No: D1900V2-5d101_Jul23

Page 1 of 6

Calibration Laboratory of Schmid & Partner





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

Accreditation No.: SCS 0108

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

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 N/A

sensitivity in TSL / NORM x,y,z not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) 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.
- b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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
- 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_Jul23	Page 2 of 6	

Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy , $dz = 5 mm$	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

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	39.4 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.89 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.8 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.7 W/kg ± 16.5 % (k=2)

Page 3 of 6 Certificate No: D1900V2-5d101_Jul23