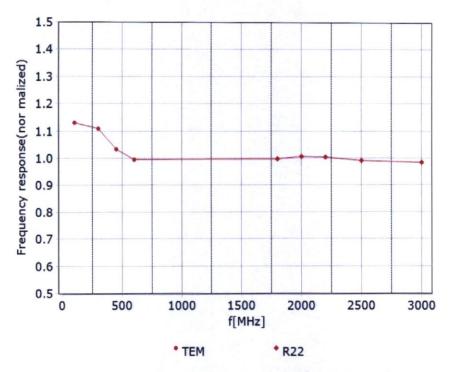




Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62304633-2117 E-mail: emf@caict.ac.cn http://www.caict.ac.cn

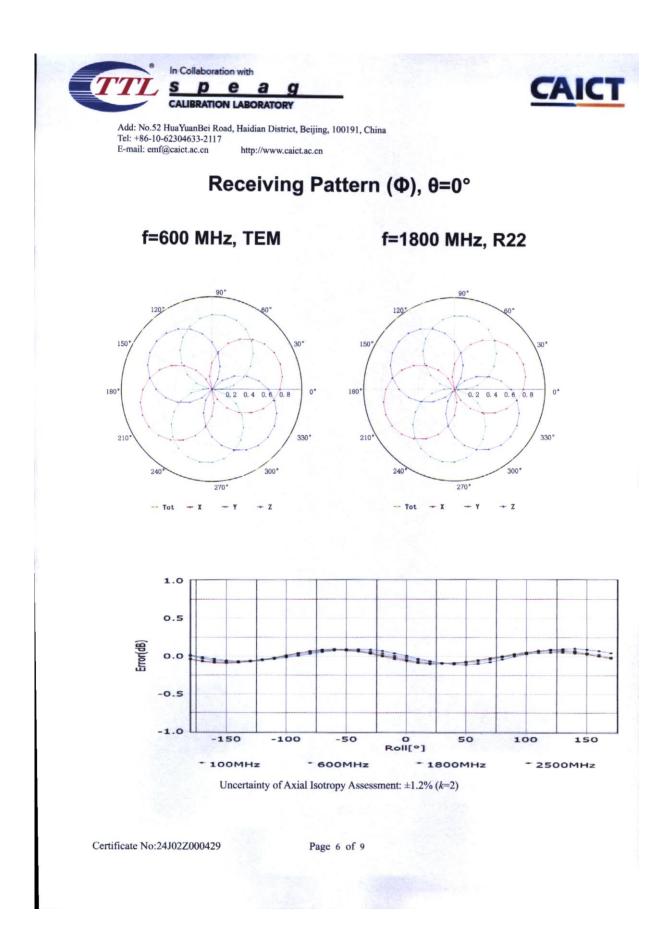
Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)

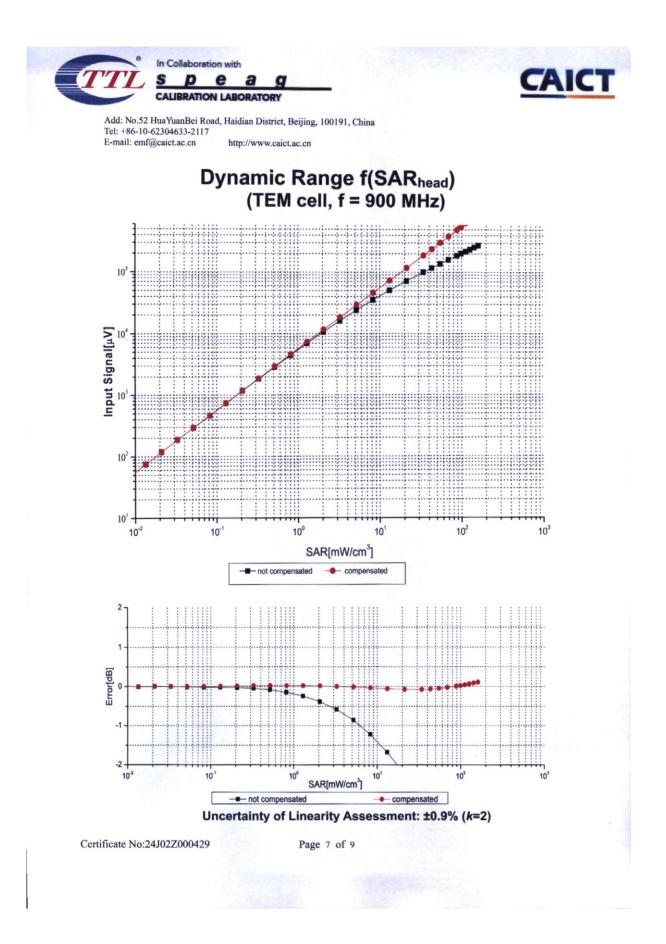


Uncertainty of Frequency Response of E-field: ±7.4% (k=2)

Certificate No:24J02Z000429

Page 5 of 9







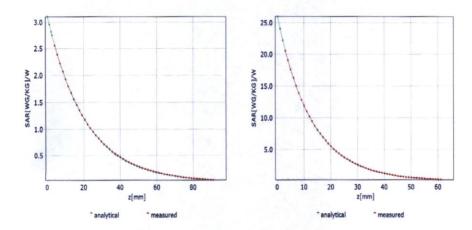


Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62304633-2117 E-mail: emf@caict.ac.cn http://www.caict.ac.cn

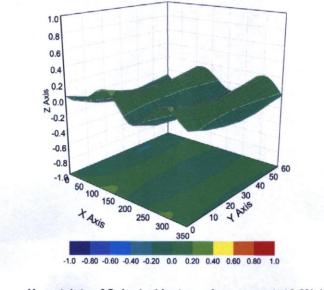
Conversion Factor Assessment

f=750 MHz,WGLS R9(H_convF)

f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±3.2% (k=2)

Certificate No:24J02Z000429

Page 8 of 9





Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China Tel: +86-10-62304633-2117 E-mail: emf@caict.ac.cn http://www.caict.ac.cn

DASY/EASY – Parameters of Probe: EX3DV4 – SN:7673

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	146.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm

Certificate No:24J02Z000429

Page 9 of 9

ANNEX H DIPOLE CALIBRATION CERTIFICATE

750 MHz Dipole Calibration Certificate

Calibration Labor Schmid & Partner Engineering AG eughausstrasse 43, 800	·			chweizerischer Kalibri ervice suisse d'étalon ervizio svizzero di tara wiss Calibration Servi	nage atura
ccredited by the Swiss he Swiss Accreditatio luitilateral Agreement	on Service is one of th	e signatories	to the EA	ditation No.: SCS 0	108
lient CTTL Beijing			Certificate No. D75	0V3-1017_Jul24	
CALIBRATIO	N CERTIFICAT	ΓE			-
Object	D750V3	- SN: 1017		1 100	
Calibration procedure(re for SAR Validation Sources be	etween 0.7 - 3 GH	z
Calibration date	July 9, 2	024			
			nal standards, which realize the physical un		
The measurements an All calibrations have be	nd the uncertainties with	o confidence pro cosed laboratory	hal standards, which realize the physical un bability are given on the following pages an facility: environment temperature $(22\pm3)^{\circ}$	nd are part of the certific	
The measurements an All calibrations have be	nd the uncertainties with een conducted in the cl	o confidence pro cosed laboratory	bability are given on the following pages an	nd are part of the certific	cate.
The measurements an All calibrations have be Calibration Equipment	nd the uncertainties with een conducted in the cl used (M&TE critical for	a confidence pro osed laboratory calibration)	bability are given on the following pages an facility: environment temperature (22±3)°(nd are part of the certific C and humidity < 70%.	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF	nd the uncertainties with een conducted in the cl used (M&TE critical for RP-33T RP18A	confidence pro osed laboratory calibration)	bability are given on the following pages an facility: environment temperature (22±3)°(Cal Date (Certificate No.)	nd are part of the certific C and humidity < 70%. Scheduled	cate.
The measurements an All calibrations have by Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R&	ad the uncertainties with een conducted in the cl used (M&TE critical for used (M&TE critical for service) RP-33T RP18A S FSV40	ID ID ID IN: 100967 SN: 101859 SN: 101832	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007551)	and are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Jan-25	ate.
The measurements an All calibrations have by Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418	ad the uncertainties with een conducted in the cl used (M&TE critical for used (M&TE critical for service) RP-33T RP18A S FSV40	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030A315007551) 28-Mar-24 (No. 217-04038)	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Mar-25 Mar-25	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12	ad the uncertainties with een conducted in the cl used (M&TE critical for used (M&TE critical for service) RP-33T RP18A S FSV40	ID ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 101832 SN: 101832 SN: 101832	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 020-215007551) 28-Mar-24 (No. 217-04038)	and are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Mar-25 3) Oct-24	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5	nd the uncertainties with een conducted in the cl sused (M&TE critical for RP-33T RP18A .S FSV40 I8] Attenuator [S4423]	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 116 SN: 1249	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2	A are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Jan-25 3) Oct-24 3) Oct-24	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30	nd the uncertainties with een conducted in the cl sused (M&TE critical for RP-33T RP18A .S FSV40 I8] Attenuator [S4423]	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 116 SN: 1249 SN: 7349	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030A315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2 03-Jun-24 (No. EX3-7349_Jun24)	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Jan-25 3) Oct-24 3) Oct-24 Jun-25	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5	nd the uncertainties with een conducted in the cl sused (M&TE critical for RP-33T RP18A .S FSV40 I8] Attenuator [S4423]	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 116 SN: 1249	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2	A are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Jan-25 3) Oct-24 3) Oct-24	cate.
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30	nd the uncertainties with een conducted in the cl sused (M&TE critical for RP-33T RP18A .S FSV40 I8] Attenuator [S4423]	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 116 SN: 1249 SN: 7349	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030A315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2 03-Jun-24 (No. EX3-7349_Jun24)	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Jan-25 3) Oct-24 3) Oct-24 Jun-25	Cal
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30 DAE4ip Secondary Standards ACAD Source Box	nd the uncertainties with een conducted in the cl sused (M&TE critical for AP-33T AP18A .S FSV40 I8] Attenuator [S4423] DV4	confidence pro- osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 1836	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct22 05-Oct-23 (No. OCP-DAK12-1016_Oct22 03-Jun-24 (No. CP-JAK12-1016_Oct22 03-Jun-24 (No. DCP-DAK3-5-1249_Oct2 03-Jun-24 (No. DAE4ip-1836_Jan24)	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Mar-25 Mar-25 Mar-25 3) Oct-24 3) Oct-24 Jun-25 Jan-25 Scheduled	Cal
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30 DAE4ip Secondary Standards ACAD Source Box Signal Generator R&S	nd the uncertainties with een conducted in the cl sused (M&TE critical for AP-33T AP18A .S FSV40 I8] Attenuator [S4423] DV4	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 1000	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 303-315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house)	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Mar-25 Mar-25 Mar-25 3) Oct-24 3) Oct-24 Jun-25 Jan-25 Scheduled	Cal
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30 DAE4ip Secondary Standards ACAD Source Box	nd the uncertainties with een conducted in the cl sused (M&TE critical for AP-33T AP18A .S FSV40 I8] Attenuator [S4423] DV4	ID ID ID SN: 100967 SN: 101859 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 1152 SN: 1152 SN: 1249 SN: 7349 SN: 7349 SN: 1836	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-315007501) 25-Jan-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK12-1016_Oct23 05-Oct-23 (No. OCP-DAK3.5-1249_Oct2 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Mar-25 3) Oct-24 3) Oct-24 Jun-25 Jan-25 Scheduled -240528) May-25	Cal
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30 DAE4ip Secondary Standards ACAD Source Box Signal Generator R&S	nd the uncertainties with een conducted in the cl sused (M&TE critical for AP-33T AP18A .S FSV40 I8] Attenuator [S4423] DV4	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 1000	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct22 05-Oct-23 (No. OCP-DAK12-1016_Oct22 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box 28-May-24 (No. 675-Mismatch_SMA-240	ad are part of the certific C and humidity < 70%. Scheduled Mar-25 Jan-25 Mar-25 3) Oct-24 3) Oct-24 Jun-25 Jan-25 Scheduled -240528) May-25	Cal
The measurements an All calibrations have be Calibration Equipment Primary Standards Power Sensor R&S NF Power Sensor R&S NF Spectrum Analyzer R& Mismatch; Short [S418 OCP DAK-12 OCP DAK-12 OCP DAK-3.5 Reference Probe EX30 DAE4ip Secondary Standards ACAD Source Box Signal Generator R&S	ad the uncertainties with een conducted in the cl used (M&TE critical for RP-33T RP18A S FSV40 I8] Attenuator [S4423] DV4 SMB100A	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101859 SN: 1016 SN: 1152 SN: 1152 SN: 1152 SN: 1152 SN: 1152 SN: 1152 SN: 1249 SN: 7349 SN: 1836 ID SN: 182081 SN: 182081 SN: 1102	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030A315007801) 25-Jan-24 (No. 4030A315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct22 03-Jun-24 (No. CP-DAK12-1016_Oct22 03-Jun-24 (No. CP-DAK3-5-1249_Oct2 03-Jun-24 (No. 675-ACAD_Source_Box 28-May-24 (No. 675-Mismatch_SMA-240 E-May-24 (No. 675-Mismatch_SMA-240 Function Standard	ad are part of the certific C and humidity < 70%. Mar-25 Jan-25 Jan-25 3) Oct-24 3) Oct-24 3) Oct-24 Jan-25 Scheduled -240528) May-25 May-25 J522) May-25	Cal

Issued: July 9, 2024 This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D750V3-1017_Jul24

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

S

C

S

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: D750V3-1017_Jul24

Page 2 of 6

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 ±1MHz	

Head TSL parameters at 750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.890 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	42.5 ±6%	0.910 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	2.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.52 W/kg ±17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	1.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.53 W/kg ±16.5% (k = 2)

Certificate No: D750V3-1017_Jul24

Page 3 of 6

D750V3 - SN: 1017

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 750 MHz

Impedance	53.2 Ω – 0.7 jΩ
Return Loss	-30.1 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
-----------------	-------

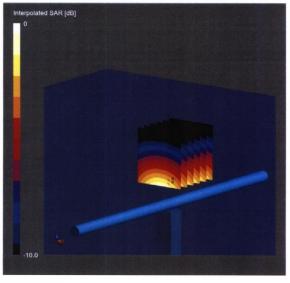
Certificate No: D750V3-1017_Jul24

Page 4 of 6

D750V3 - SN: 1017

System Performance Check Report

Dipole	Frequency [MHz] TSL			TSL	Power [dBm]			
D750V3 - SN1017		750		HSL	24			
Exposure Condition	5							
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		9.9	0.91	42.5
Hardware Setup								
Phantom	TSL, Measured Dat	e	Pro	be, Calibration Dat	e	DAE,	Calibration Date	
Flat V4.9 mod	HSL, 2024-07-09		EX3	DV4 - SN7349, 20	24-06-03	DAE4	p Sn1836, 2024-01-10	
Scans Setup					Measuremer	t Results		
				Zoom Scan				Zoom Scar
Grid Extents [mm]				30 × 30 × 30	Date			2024-07-0
Grid Steps [mm]			6.	0 x 6.0 x 1.5	psSAR1g [W/K	[g]		2.14
Sensor Surface (mm)				1.4	psSAR10g [W/	Kg]		1.39
Graded Grid		Yes		Yes	Power Drift [d	B]		0.00
Grading Ratio		1.5 Power Scalin		Power Scaling			Disabled	
MAIA				N/A	Scaling Factor	[dB]		
Surface Detection				VMS + 6p	TSL Correction	1		Positive / Negative



0 dB = 3.48 W/Kg

Certificate No: D750V3-1017_Jul24

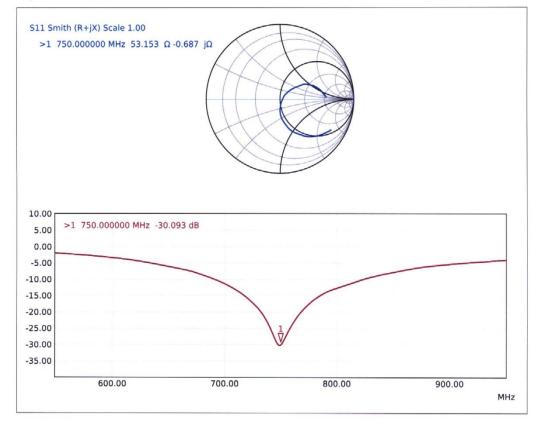
Page 5 of 6

July 9, 2024

D750V3 - SN: 1017

July 9, 2024

Impedance Measurement Plot for Head TSL



Certificate No: D750V3-1017_Jul24

Page 6 of 6

835 MHz Dipole Calibration Certificate

Calibration Laboratory of Schmid & Partner Engineering AG			1		scher Kalibrierdier isse d'étalonnage izzero di taratura
					bration Service
Zeughausstrasse 43, 8004 Zurich, Switzerland					
he Swis	ed by the Swiss Accred ss Accreditation Serv ral Agreement for the	ice is one of th	e signatories t	to the EA	o.: SCS 0108
lient	CTTL Beijing			Certificate No. D835V2-4d	069_Jul24
CAL	IBRATION CE	RTIFICAT	Έ		
Object		D835V2	- SN: 4d069	9	
Calibra	ation procedure(s)	QA CAL- Calibratio		re for SAR Validation Sources between (0.7 - 3 GHz
This ca			ability to natior	nal standards, which realize the physical units of meas bability are given on the following pages and are part	
This ca The mo All cali	alibration certificate doo easurements and the u ibrations have been cor	cuments the trace incertainties with inducted in the clo	eability to nation confidence pro osed laboratory		of the certificate.
This ca The mo All cali	alibration certificate doc easurements and the u	cuments the trace incertainties with inducted in the clo	eability to nation confidence pro osed laboratory	bability are given on the following pages and are part	of the certificate.
This ca The mo All cali Calibra	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (cuments the trace incertainties with inducted in the clo	eability to natior confidence pro psed laboratory calibration)	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum	of the certificate. idity < 70%.
This ca The mo All cali Calibra	alibration certificate doo easurements and the u ibrations have been cor ation Equipment used (y Standards	cuments the trace incertainties with inducted in the clo	eability to nation confidence pro osed laboratory	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.)	of the certificate.
This ca The ma All cali Calibra Primary Power	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (y Standards Sensor R&S NRP-33T	cuments the trace incertainties with inducted in the clo	eability to nation confidence pro osed laboratory calibration)	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum	of the certificate. idity < 70%.
This ca The ma All cali Calibra Primary Power	alibration certificate doo easurements and the u ibrations have been cor ation Equipment used (y Standards Sensor R&S NRP-33T Sensor R&S NRP18A	cuments the trace incertainties with nducted in the clo M&TE critical for	ability to nation confidence pro osed laboratory calibration) ID SN: 100967	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038)	of the certificate. iidity < 70%. Scheduled Cal Mar-25
This ca The mo All cali Calibra Primary Power Spectru	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (y Standards Sensor R&S NRP-33T	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25
This ca The mo All cali Calibra Primary Power Spectru	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP18A um Analyzer R&S FSV tch; Short [S4188] Atte	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030-315007551)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25
This ca The mo All cali Calibra Primary Power Spectru Mismati OCP D	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP18A um Analyzer R&S FSV tch; Short [S4188] Atte	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 1152	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007801) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	of the certificate. iidity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24
This ca The man All cali Calibra Primar Power Spectri Mismat OCP D OCP D Referen	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 116 SN: 1249 SN: 7349	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23) 03-Jun-24 (No. EX3-7349_Jun24)	of the certificate. iidity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25
This ca The mo All cali Calibra Power Power Spectru Mismat OCP D OCP D	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ID SN: 100967 SN: 101832 SN: 101832 SN: 1152 SN: 1016 SN: 1249	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007801) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	of the certificate. iidity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24
This ca The manufacture All calibra Calibra Power Power Spectru Mismat OCP D Referen DAE4ip	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 116 SN: 1249 SN: 7349	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23) 03-Jun-24 (No. EX3-7349_Jun24)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Oct-24 Jun-25 Jan-25 Jan-25
This ca The manual of the manu	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T Sensor R&S NRP18A um Analyzer R&S FSV- tch; Short [S4188] Atte JAK-12 JAK-3.5 nce Probe EX3DV4	cuments the trace incertainties with nducted in the clo M&TE critical for 40	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030A315007801) 25-Jan-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Oct-24 Jun-25 Jan-25 Jan-25
This ca The ma All cali Calibra Power Spectri Mismati OCP D Referen DAE4ip Second ACAD	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T	AUMENTS the trace incertainties with nducted in the clo M&TE critical for 40 nuator [S4423]	ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 1249 SN: 7349 SN: 1836	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007801) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box-240528) 28-May-24 (No. 001-300719404)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Check
This ca The m All cali Calibre Primary Power Power Spectri Mismal OCP D OCP D Referee DAE4ip Second Signal	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S NRP-33T Sensor R&S NRP-18A um Analyzer R&S FSV- tch; Short [S4188] Atter AK-12 AK-3.5 nce Probe EX3DV4 p dary Standards Source Box	AUMENTS the trace incertainties with nducted in the clo M&TE critical for 40 nuator [S4423]	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030-315007551) 28-Mar-24 (No. 0CP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box-240528)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Check May-25
This ca The m All cali Calibre Primary Power Power Spectri Mismal OCP D OCP D Referee DAE4ip Second Signal	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S SMD dary Standards Source Box Generator R&S SMD10	AUMENTS the trace incertainties with nducted in the clo M&TE critical for 40 nuator [S4423]	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101839 SN: 101832 SN: 1016 SN: 1249 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007801) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box-240528) 28-May-24 (No. 001-300719404)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Check May-25 May-25 May-25
This ca The m All cali Calibre Primary Power Power Spectri Mismal OCP D OCP D Referee DAE4ip Second Signal	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S SMD dary Standards Source Box Generator R&S SMD10	AUMENTS the trace incertainties with nducted in the clo M&TE critical for 40 nuator [S4423]	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101839 SN: 101832 SN: 1016 SN: 1249 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-315007801) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box-240528) 28-May-24 (No. 001-300719404)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Check May-25 May-25 May-25
This ca The m All cali Calibra Primar Power Power Spectrr Mismat OCP D OCP D DAE4ip DAE4ip Second ACAD Signal Mismat	alibration certificate doc easurements and the u ibrations have been cor ation Equipment used (i y Standards Sensor R&S NRP-33T Sensor R&S SMD dary Standards Source Box Generator R&S SMD10	AU AU AU AU AU AU AU AU AU AU AU AU AU A	ability to nation confidence pro osed laboratory calibration) ID SN: 100967 SN: 101839 SN: 101832 SN: 1016 SN: 1249 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	bability are given on the following pages and are part facility: environment temperature (22±3)°C and hum Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A315007801) 25-Jan-24 (No. 4030-315007501) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK12-1016_Oct23) 05-Oct-23 (No. OCP-DAK3.5-1249_Oct23) 03-Jun-24 (No. EX3-7349_Jun24) 10-Jan-24 (No. DAE4ip-1836_Jan24) Check Date (in house) 28-May-24 (No. 675-ACAD_Source_Box-240528) 28-May-24 (No. 675-Mismatch_SMA-240522)	of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Check May-25 May-25 May-25

Certificate No: D835V2-4d069_Jul24

Page 1 of 6

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland Ilac-MRA

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

Accreditation No.: SCS 0108

S

С

S

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: D835V2-4d069_Jul24

Page 2 of 6

D835V2 - SN: 4d069

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	835MHz ±1MHz	

Head TSL parameters at 835 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.900 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	42.3 ±6%	0.930 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 835 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.47 W/kg ±17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	1.53 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.09 W/kg ±16.5% (k = 2)

Certificate No: D835V2-4d069_Jul24

Page 3 of 6

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 835 MHz

Impedance	51.1 Ω−4.5 jΩ
Return Loss	-26.8 dB

General Antenna Parameters and Design

1.393 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: D835V2-4d069_Jul24

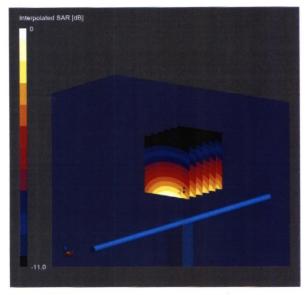
Page 4 of 6

D835V2 - SN: 4d069

System Performance Check Report

Scan Method

Dipole		Frequency [MHz]	TSL	Power [dBm]		
D835V2 - SN4d069		835	HSL	24		
Exposure Condition	5					
Phantom Section, TSL	Test Distance [mm] Ban	d Group, UID Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat	15	CW, 0 835, 0		9.61	0.93	42.3
Hardware Setup						
Phantom	TSL, Measured Date	Probe, Calibration Da	te	DAE, (Calibration Date	
Flat V4.9 mod	HSL, 2024-07-09	EX3DV4 - SN7349, 20	024-06-03	DAE4	p Sn1836, 2024-01-10	
Scans Setup			Measureme	nt Results		
		Zoom Scan				Zoom Scan
Grid Extents [mm]		30 × 30 × 30	Date			2024-07-09
		6.0 × 6.0 × 1.5	psSAR1g [W/	Kg]		2.38
Grid Steps [mm]						
Grid Steps [mm] Sensor Surface [mm]		1.4	psSAR10g [W	/Kg]		1.53
		1.4 Yes	psSAR10g [W Power Drift [d			0.00
Sensor Surface [mm]				[8]		
Sensor Surface (mm) Graded Grid		Yes	Power Drift [1B] 9		0.00



Measured

0 dB = 3.85 W/Kg

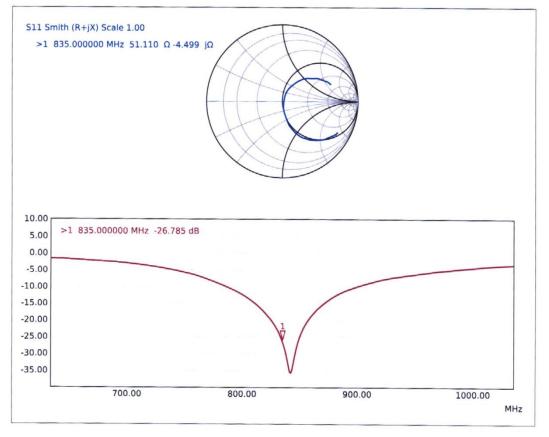
Certificate No: D835V2-4d069_Jul24

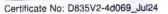
Page 5 of 6

July 9, 2024

D835V2 - SN: 4d069

Impedance Measurement Plot for Head TSL





Page 6 of 6

1750 MHz Dipole Calibration Certificate

ccredited	strasse 43, 8004 Zuric d by the Swiss Accredi s Accreditation Servi	itation Service (ice is one of th	e signatories t		State of State	Accreditation N	o.: SCS 01
lultilater	al Agreement for the	recognition of	calibration ce	ertificates			
lient	CTTL Beijing				Certificate No.	D1750V2-1	003_Jul24
CAL	IBRATION CE	RTIFICA	ſE				
Object		D1750V	2 - SN: 100	3			
Calibrat	tion procedure(s)	QA CAL Calibrati		re for SAR \	Validation Sou	urces between (0.7 - 3 GH
Calibrat	tion date	July 11,	2024				
Calibrat	orations have been con tion Equipment used (f		r calibration)	Cal Date (Cer	rtificate No.)	(22±3)°C and hum	Scheduled
All calib Calibrat Primary Power S Power S Spectru Mismate OCP D/ Referen	tion Equipment used (f standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-12 AK-3.5 ice Probe EX3DV4	M&TE critical for	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349	Cal Date (Cer 28-Mar-24 (N 25-Jan-24 (N 28-Mar-24 (N 05-Oct-23 (Nr 05-Oct-23 (Nr 05-Oct-23 (Nr 03-Jun-24 (Nr	rtificate No.) lo. 217-04038) lo. 4030A3150078 lo. 217-04050) o. OCP-DAK12-10 o. OCP-DAK3.5-11 o. EX3-7349_Jun2	001) 51) 016_Oct23) 249_Oct23) 24)	Scheduled Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Jun-25
All calib Calibrat Primary Power S Power S Spectru Mismate OCP D/ Referen DAE4ip Second	tion Equipment used (f standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-12 AK-3.5 icce Probe EX3DV4 ary Standards	M&TE critical for	ID SN: 100967 SN: 101859 SN: 101832 SN: 1249 SN: 7349 SN: 1836 ID	Cal Date (Cer 28-Mar-24 (N 21-Mar-24 (N 25-Jan-24 (N 25-Jan-24 (N 05-Oct-23 (N 05-Oct-23 (N 03-Jun-24 (N 10-Jan-24 (N Check Date (i	rtificate No.) io. 217-04038) io. 4030A31500785 io. 4030-31500785 io. 217-04050) o. OCP-DAK12-10 o. OCP-DAK3.5-1 o. EX3-7349_Jun2 o. DAE4ip-1836_J in house)	001) 51) 016_Oct23) 249_Oct23) 24) Jan24)	Scheduled Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled
All calib Calibrat Primary Power S Power S Spectru Mismate OCP D/ Referen DAE4ip Second ACAD S Signal C	tion Equipment used (f Standards Sensor R&S NRP-33T Sensor R&S NRP18A Im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-12 AK-3.5 Icce Probe EX3DV4	M&TE critical for 40 huator [S4423]	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836	Cal Date (Cer 28-Mar-24 (N 25-Jan-24 (N 25-Jan-24 (N 28-Mar-24 (N 05-Oct-23 (N 03-Jun-24 (N 10-Jan-24 (N 10-Jan-24 (N Check Date (i 28-May-24 (N	rtificate No.) io. 217-04038) io. 4030A31500785 io. 4030-31500785 io. 217-04050) o. OCP-DAK12-10 o. OCP-DAK3.5-1 o. EX3-7349_Jun2 o. DAE4ip-1836_J in house)	001) 016_Oct23) 249_Oct23) 24) 1an24) urce_Box-240528) 04)	Scheduled Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25
All calib Calibrat Primary Power S Power S Spectru Mismate OCP D/ Referen DAE4ip Second ACAD S Signal C	tion Equipment used (f Standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-3.5 icce Probe EX3DV4 arry Standards Source Box Senerator R&S SMB10	M&TE critical for 40 huator [S4423]	ID SN: 100967 SN: 101859 SN: 101852 SN: 1152 SN: 1152 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	Cal Date (Cer 28-Mar-24 (N 25-Jan-24 (N 25-Jan-24 (N 28-Mar-24 (N 05-Oct-23 (N 03-Jun-24 (N 10-Jan-24 (N 10-Jan-24 (N Check Date (i 28-May-24 (N	rtificate No.) io. 217-04038) io. 4030A31500785 io. 217-04050) io. CCP-DAK12-10 o. CCP-DAK3.5-11 o. CCP-DAK3.5-11 o. CCP-DAK3.5-11 io. AC75-749_Jun/2 in house) io. 675-ACAD_So io. 0001-30071944 io. 675-Mismatch_	001) 016_Oct23) 249_Oct23) 24) 1an24) urce_Box-240528) 04)	Scheduled Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled May-25 May-25 May-25
All calib Calibrat Primary Power S Power S Spectru Mismate OCP D/ Referen DAE4ip Second ACAD S Signal C	tion Equipment used (f Standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV2 ch; Short [S4188] Atter AK-3.5 icce Probe EX3DV4 ary Standards Source Box Generator R&S SMB10 ch; SMA	M&TE critical for 40 huator [S4423] 00A	ID SN: 100967 SN: 101859 SN: 101852 SN: 1152 SN: 1152 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081 SN: 1102	Cal Date (Cer 28-Mar-24 (N 25-Jan-24 (N 25-Jan-24 (N 25-Jan-24 (N 05-Oct-23 (N 03-Jun-24 (N 03-Jun-24 (N 10-Jan-24 (N 28-May-24 (N 28-May-24 (N 28-May-24 (N 22-May-24 (N	rtificate No.) io. 217-04038) io. 4030A31500785 io. 217-04050) io. CCP-DAK12-10 o. CCP-DAK3.5-11 o. CCP-DAK3.5-11 o. CCP-DAK3.5-11 io. AC75-749_Jun/2 in house) io. 675-ACAD_So io. 0001-30071944 io. 675-Mismatch_	001) 016_Oct23) 249_Oct23) 24) lan24) urce_Box-240528) 04) _SMA-240522) Signature	Scheduled Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Jun-25 Jan-25 Scheduled May-25 May-25 May-25
All calib Calibra Primary Power S Spectru Mismate OCP D/ Referen DAE4ip Second ACAD S Signal C Mismate	tion Equipment used (f Standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-12 AK-3.5 ince Probe EX3DV4 ary Standards Source Box 3enerator R&S SMB10 ch; SMA	M&TE critical for 40 huator [S4423] 00A Name	ID SN: 100967 SN: 101859 SN: 101832 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081 SN: 1102	Cal Date (Cer 28-Mar-24 (N 21-Mar-24 (N 25-Jan-24 (N 05-Oct-23 (Nr 03-Jun-24 (Nr 03-Jun-24 (Nr 10-Jan-24 (Nr Check Date (i 28-May-24 (N 28-May-24 (N 28-May-24 (N 22-May-24 (N 22-May-24 (N	rtificate No.) lo. 217-04038) lo. 4030A31500785 lo. 2470-04050) lo. 217-04050) lo. 207-04050) lo. CCP-DAK12-10 lo. CCP-DAK3.5-11 lo. EX3-7349_Jun2 lo. CCP-DAK3.5-11 lo. EX3-7349_Jun2 lo. CCP-DAK3.5-11 lo. CCP-DAK3.5-12 lo. 2007-04050 lo. 0001-30071944 lo. 675-Mismatch_12 n	001) 016_Oct23) 249_Oct23) 24) lan24) urce_Box-240528) 04) _SMA-240522) Signature	Scheduled Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled May-25 May-25 May-25
All calibra Calibra Primary Power S Spectru Mismatu OCP D/ Referen DAE4ip Second ACAD S Signal (Mismatu Calibra Approv	tion Equipment used (f Standards Sensor R&S NRP-33T Sensor R&S NRP18A im Analyzer R&S FSV4 ch; Short [S4188] Atter AK-12 AK-3.5 ince Probe EX3DV4 ary Standards Source Box 3enerator R&S SMB10 ch; SMA	M&TE critical for 40 huator [S4423] 00A Name Paulo Pina Sven Kühn	ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081 SN: 1102	Cal Date (Cer 28-Mar-24 (N 21-Mar-24 (N 25-Jan-24 (N 05-Oct-23 (N 03-Jun-24 (N 10-Jan-24 (N 28-May-24 (N 28-M	rtificate No.) Io. 217-04038) Io. 4030A31500785 Io. 217-04050) Io. 217-04050) IO. CP-DAK12-10 IO. CP-DAK3.5-1 IO. CP-D	801) 51) 016_Oct23) 249_Oct23) 24) Jan24) urce_Box-240528) 04) SMA-240522) Signature I.V. Superior Signature I.V. Superior Signature I.V. Superior S	Schedule Mar-25 Mar-25 Jan-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Schedule May-25 May-25 May-25

Calibration Laboratory of Schmid & Partner

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland BC MRA

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

Accreditation No.: SCS 0108

S

С

S

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

Page 2 of 6

D1750V2 - SN: 1003

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 ³ (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 W/kg ±17.0% (k = 2)

SAR averaged over 10 cm ³ (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

Page 3 of 6

D1750V2 - SN: 1003

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
-----------------	-------

Certificate No: D1750V2-1003_Jul24

Page 4 of 6

Positive / Negative

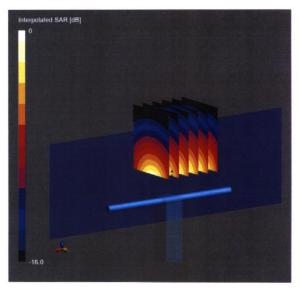
D1750V2 - SN: 1003

Surface Detection

Scan Method

System Performance Check Report

Dipole		1	Frequency [MH	[z]	TSL	Power [dBm]		
D1750V2 - SN1003	1750			_	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	1750, 0		7.96	1.35	40.6
Hardware Setup								
Phantom	TSL, Measured Date Probe, Calibration I			obe, Calibration D	ate	DAE,	Calibration Date	
MFP V8.0 Right	HSL, 2024-07-11 EX3DV4 - 5N7349,		3DV4 - SN7349, 2	024-06-03	DAE4	ip Sn1836, 2024-01-10		
Scans Setup					Measureme	nt Results		
				Zoom Scan				Zoom Scan
Grid Extents [mm]				30 × 30 × 30	Date			2024-07-11
Grid Steps [mm]			6.	0 x 6.0 x 1.5	psSAR1g [W/	<g]< td=""><td></td><td>9.34</td></g]<>		9.34
Sensor Surface [mm]	te [mm] 1.4			1.4	psSAR10g [W	SAR10g [W/Kg] 4		4.97
Graded Grid				Yes	Power Drift (d	Power Drift [dB] 0.		
Grading Ratio				1.5	Power Scaling	g Disabled		
MAIA				N/A	Scaling Facto	r (dB)		



All points

Measured

TSL Correction

 $0 \, dB = 16.6 \, W/Kg$

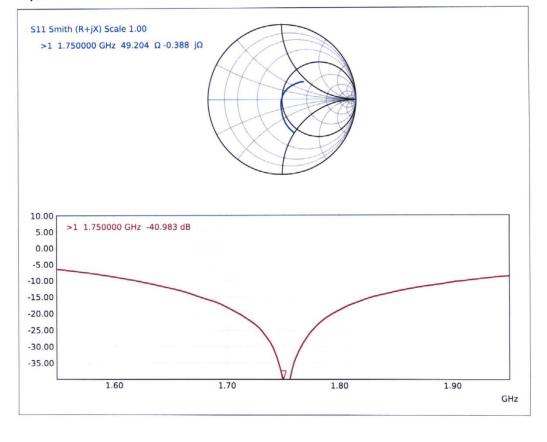
Certificate No: D1750V2-1003_Jul24

Page 5 of 6

D1750V2 - SN: 1003

July 11, 2024





Certificate No: D1750V2-1003_Jul24

Page 6 of 6

1900 MHz Dipole Calibration Certificate

•	Ition Laboratory & Partner ering AG estrasse 43, 8004 Zuric		The second s		C Service su Servizio su	ischer Kalibrierdie Ilsse d'étalonnage vizzero di taratura Ibration Service
he Swis	d by the Swiss Accred s Accreditation Servical Agreement for the	ice is one of th	e signatories		Accreditation N	No.: SCS 0108
lient	CTTL Beijing			Certificate No.	D1900V2-5	id101_Jul24
CAL	IBRATION CE	RTIFICAT	E			
Object		D1900V	2 - SN: 5d1	01		
Calibrat	ion procedure(s)	QA CAL Calibrati		re for SAR Validation Sou	rces between	0.7 - 3 GHz
Calibrat	ion date	July 8, 2	024			
All calib	rations have been con	ncertainties with ducted in the clo	confidence pro	nal standards, which realize the phy bability are given on the following facility: environment temperature (pages and are part	t of the certificate.
All calib		ncertainties with ducted in the clo	confidence pro	bability are given on the following	pages and are part	t of the certificate.
All calib Calibrat	rations have been con ion Equipment used (M Standards	ncertainties with ducted in the clo	confidence pro osed laboratory calibration)	bability are given on the following facility: environment temperature (Gal Date (Certificate No.)	pages and are part	t of the certificate. hidity < 70%.
All calib Calibrat Primary Power S	rations have been con ion Equipment used (N Standards iensor R&S NRP-33T	ncertainties with ducted in the clo	confidence pro osed laboratory calibration) ID SN: 100967	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038)	pages and are part	t of the certificate. hidity < 70%.
All calib Calibrat Primary Power S Power S	rations have been con ion Equipment used (N Standards iensor R&S NRP-33T iensor R&S NRP18A	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780	pages and are part 22 ± 3)°C and hum 11)	t of the certificate. indity < 70%. Scheduled Cal Mar-25 Mar-25
All calib Calibrat Primary Power S Power S Spectrur	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780 25-Jan-24 (No. 4030-31500755	pages and are part 22 ± 3)°C and hum 11)	t of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25
All calib Calibrat Primary Power S Power S Spectrur Mismatc	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 1152	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500785 25-Jan-24 (No. 203-31500755 28-Mar-24 (No. 217-04050)	pages and are part 22 ± 3)°C and hum 21) 11)	t of the certificate. idity < 70%. Scheduled Cal Mar-25 Mar-25 Jan-25 Mar-25
All calib Calibrat Primary Power S Power S Spectrum Mismatc OCP DA	rations have been con ion Equipment used (N Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 h; Short [S4188] Atten iK-12	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 1152	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-31500780 25-Jan-24 (No. 4030-31500780 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10	pages and are part 22 ± 3)°C and hum (1) (1) (6_Oct23)	scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Mar-25 Oct-24
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten K-12 KK-12	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 101832 SN: 1152 SN: 1016 SN: 1249	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780 25-Jan-24 (No. 4030A31500750) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12)	pages and are part 22 ± 3)°C and hum (1) (1) (6_Oct23) 49_Oct23)	scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Oct-24 Oct-24
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA	rations have been con ion Equipment used (N Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 h; Short [S4188] Atten iK-12	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 1152 SN: 1152	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-31500780 25-Jan-24 (No. 4030-31500780 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10	pages and are part 22 ± 3)°C and hum (1) (6_Oct23) 49_Oct23) 4)	scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Mar-25 Oct-24
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA Reference DAE4ip	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ch; Short [S4188] Atten K-12 K-3.5 ce Probe EX3DV4	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101832 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030-31500755) 28-Mar-24 (No. 4030-31500755) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja	pages and are part 22 ± 3)°C and hum (1) (6_Oct23) 49_Oct23) 4)	scheduled Cal Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25 Jan-25
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA OCP DA Reference DAE4ip Seconda	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP-33T iensor R&S NRP-18A m Analyzer R&S FSV4 h; Short [S4188] Atten K-12 kK-3.5 ce Probe EX3DV4 ary Standards	ncertainties with ducted in the clo M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101852 SN: 101832 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836 ID	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500786 25-Jan-24 (No. 4030-31500755 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house)	pages and are part 22 ± 3)°C and hum 21) 11) 16_Oct23) 49_Oct23) 4) 11) 12)	scheduled Cal Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec
All calib Calibrat Primary Power S Power S Spectrur Mismato OCP DA Reference DAE4ip Seconda ACAD S	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten iK-12 iK-3.5 ce Probe EX3DV4 ary Standards iource Box	ncertainties with ducted in the clo M&TE critical for M&TE critical for M&TE critical for M&TE critical for M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-31500786) 25-Jan-24 (No. 4030-31500756) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house) 28-May-24 (No. 675-ACAD_Sou	pages and are part 22 ± 3)°C and hum (22 ± 3)°C and hum (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA Referenc DAE4ip Seconda ACAD S Signal G	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten K<12 K<3.5 ce Probe EX3DV4 ary Standards iource Box ienerator R&S SMB10	ncertainties with ducted in the clo M&TE critical for M&TE critical for M&TE critical for M&TE critical for M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 10183 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780 25-Jan-24 (No. 4030-31500755) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house) 28-May-24 (No. 675-ACAD_Sou 28-May-24 (No. 001-30071940)	pages and are part 22 ± 3)°C and hum (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	scheduled Cal Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25 May-25 May-25
All calib Calibrat Primary Power S Power S Spectrur Mismato OCP DA Reference DAE4ip Seconda ACAD S	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten K<12 K<3.5 ce Probe EX3DV4 ary Standards iource Box ienerator R&S SMB10	ncertainties with ducted in the clo M&TE critical for M&TE critical for M&TE critical for M&TE critical for M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 1152 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 1836 ID SN: 1000	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030-31500786) 25-Jan-24 (No. 4030-31500756) 28-Mar-24 (No. 217-04050) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house) 28-May-24 (No. 675-ACAD_Sou	pages and are part 22 ± 3)°C and hum (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	scheduled Cal Mar-25 Mar-25 Mar-25 Mar-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA Referenc DAE4ip Seconda ACAD S Signal G	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 ih; Short [S4188] Atten K<12 K<3.5 ce Probe EX3DV4 ary Standards iource Box ienerator R&S SMB10	ncertainties with ducted in the clo M&TE critical for M&TE critical for M&TE critical for M&TE critical for M&TE critical for	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 10183 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780 25-Jan-24 (No. 4030-31500755) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house) 28-May-24 (No. 675-ACAD_Sou 28-May-24 (No. 001-30071940)	pages and are part 22 ± 3)°C and hum (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	scheduled Cal Mar-25 Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25 May-25 May-25 May-25
All calib Calibrat Primary Power S Power S Spectrur Mismatc OCP DA Referenc DAE4ip Seconda ACAD S Signal G	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP-18A m Analyzer R&S FSV4 ih; Short [S4188] Atten K-12 K-3.5 ce Probe EX3DV4 ary Standards iource Box ienerator R&S SMB10 ih; SMA	ncertainties with ducted in the clo M&TE critical for M&TE critical for huator [S4423]	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 10183 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 4030A31500780 25-Jan-24 (No. 4030-31500750 28-Mar-24 (No. 207-04050) 05-Oct-23 (No. OCP-DAK12-10 05-Oct-23 (No. OCP-DAK12-10 05-Oct-23 (No. OCP-DAK12-10 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. CP-DAK3.5-12 03-Jun-24 (No. CP-DA	pages and are part 22 ± 3)°C and hum (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	scheduled Cal Mar-25 Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25 May-25 May-25 May-25
All calib Calibrat Primary Power S Spectrur Mismato OCP DA Referenc DAE4ip Seconda ACAD S Signal G Mismato	rations have been con ion Equipment used (M Standards iensor R&S NRP-33T iensor R&S NRP-33T iensor R&S NRP18A m Analyzer R&S FSV4 th; Short [S4188] Atter KK-12 KK-3.5 ce Probe EX3DV4 ary Standards iource Box ienerator R&S SMB10 th; SMA ed by	Name	confidence pro osed laboratory calibration) ID SN: 100967 SN: 101859 SN: 101859 SN: 101832 SN: 10183 SN: 1152 SN: 1016 SN: 1249 SN: 7349 SN: 7349 SN: 1836 ID SN: 1000 SN: 182081	Cal Date (Certificate No.) 28-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 21-Mar-24 (No. 217-04038) 25-Jan-24 (No. 4030A31500780 25-Jan-24 (No. 4030A31500750) 05-Oct-23 (No. OCP-DAK12-10) 05-Oct-23 (No. OCP-DAK3.5-12 03-Jun-24 (No. EX3-7349_Jun2) 10-Jan-24 (No. DAE4ip-1836_Ja Check Date (in house) 28-May-24 (No. 675-ACAD_Sou 28-May-24 (No. 675-Mismatch_Sou 28-May-24 (No. 675-Mismatch_Sou 28-May-24 (No. 675-Mismatch_Sou 28-May-24 (No. 675-Mismatch_Sou	pages and are part 22 ± 3)°C and hum 22 ± 3)°C and hum 12 ± 3)°C and hum 13 ± 30°C 14 ± 30°C 15 ± 30°C 16 ± 00000000000000000000000000000000000	scheduled Cal Mar-25 Mar-25 Mar-25 Jan-25 Oct-24 Oct-24 Jun-25 Jan-25 Scheduled Chec May-25 May-25 May-25 May-25

Certificate No: D1900V2-5d101_Jul24

Page 1 of 6

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



S Schw C Servi S Swise

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

- 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