In Collaboration with
CALIBRATION LABORATORY
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Tel: +86-10-62304633-2117
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CALIBRATION CNAS L0570

Client	TOWE(Shenzhen)	Certificate No:	26J02Z000346

CALIBRATION CERTIFICATE

Object	D750V3 - SN: 1231
Calibration Procedure(s)	FF-Z11-0003-02 Calibration Procedures for dipole validation kits
Calibration date:	May 18, 2026

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	20-Oct-25 (CTTL, No. 25J02X100272)	Oct-26
Power sensor NRP8S	104291	20-Oct-25 (CTTL, No. 25J02X100272)	Oct-26
Reference Probe EX3DV4	SN 7600	19-Jan-26(CTTL-SPEAG, No. 26J02Z000008)	Jan-27
DAE4	SN 1588	29-Aug-25(CTTL-SPEAG, No. 25J02Z000631)	Aug-26
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGeneratorSMA200A	107732	01-Dec-25 (CTTL, No. 25J02X102467)	Nov-26
NetworkAnalyzer E5071C	MY46110673	26-Nov-25 (CTTL, No. 25J02X102468)	Nov-26
OCP DAKS-3.5	0015	20-Oct-25(SPEAG, No. OCP-DAKS-0015_Oct25)	Oct-26

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Jun	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May 25, 2026

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,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-mounted 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.
- *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%.

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Measurement Conditions

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

DASY Version	DASY6	V17.0.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Frequency	750 MHz ± 1 MHz	

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	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.4 ± 6 %	0.87 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 750 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	24 dBm input power	2.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.54 W/kg ± 20 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	24 dBm input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.58 W/kg ± 20 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 750 MHz

Impedance, transformed to feed point	50.4Ω- 3.06jΩ
Return Loss	- 30.3dB

General Antenna Parameters and Design

Electrical Delay (one direction)	0.938 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point 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 feed-point may be damaged.

Additional EUT Data

Manufactured by	SPEAG

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DASY6 Validation Report for Head TSL

Date: 2026-05-18

Test Laboratory: CTTL, Beijing, China

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D750V3 – SN 1231	750	HSL	24

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band Group, UID	Frequency [MHz]	Conversion Factor	TSL Cond. [S/m]	TSL Permittivity
Flat	15	CW,	750	10.82	0.873	41.4

Hardware Setup

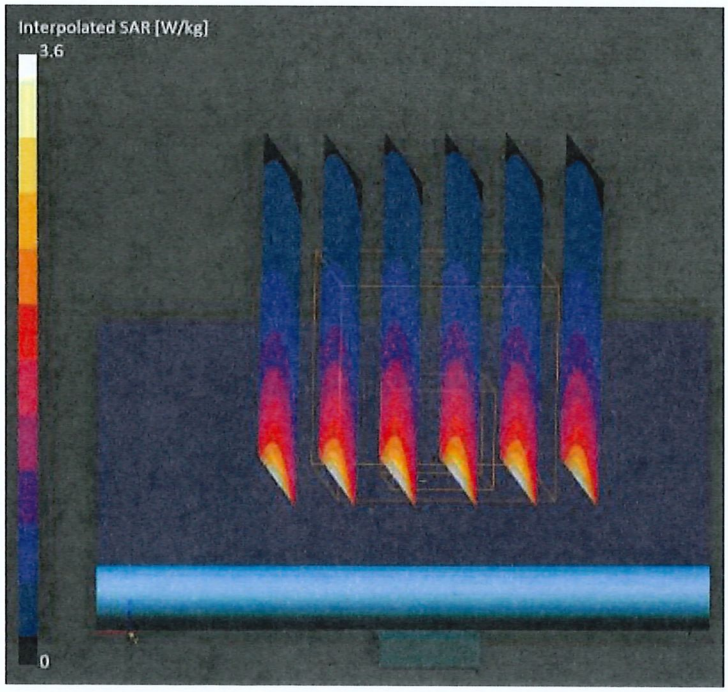
Phantom	TSL	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	750Head	EX3DV4 - SN7600, 2026-01-19	DAE4 Sn1588, 2025-08-29

Scan Setup

	Zoom Scan
Grid Extents [mm]	30.0×30.0×30.0
Grid Steps [mm]	6.0×6.0×1.5
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.5
MAIA	N/A
Surface Detection	All points
Scan Method	Measured

Measurement Results

	Zoom Scan
psSAR1g [W/kg]	2.11
psSAR10g [W/kg]	1.38
Power Drift [dB]	-0.00
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	No correction
M2/M1 [%]	82.2
Dist 3dB Peak [mm]	19.6



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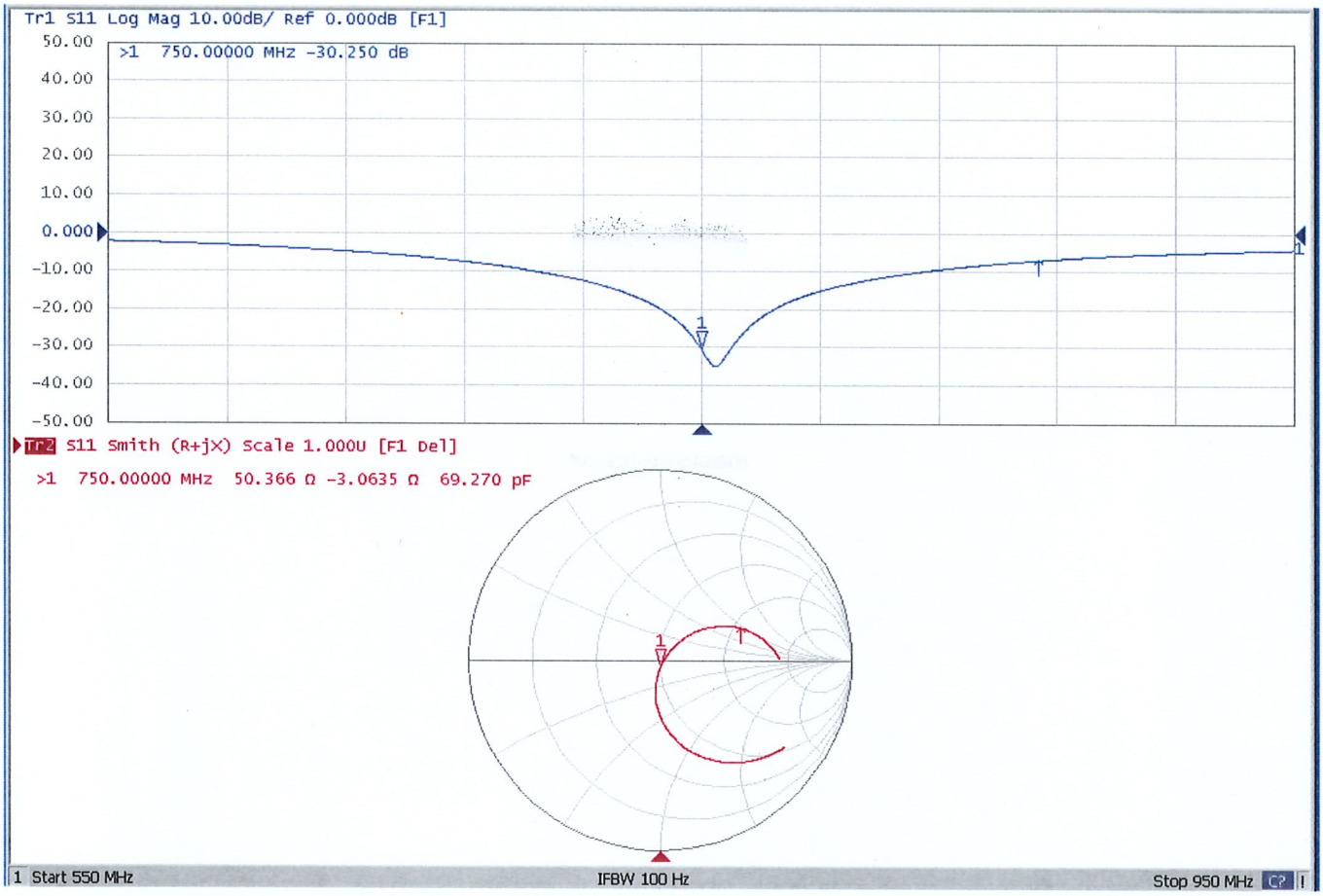
Impedance Measurement Plot for Head TSL



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Client **TOWE(Shenzhen)** **Certificate No: 26J02Z000093**

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1115
Calibration Procedure(s)	FF-Z11-0003-02 Calibration Procedures for dipole validation kits
Calibration date:	February 5, 2026

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106276	16-May-25 (CTTL, No. 25J02X003423)	May-26
Power sensor NRP6A	101369	16-May-25 (CTTL, No. 25J02X003423)	May-26
Reference Probe EX3DV4	SN 7600	19-Jan-26(CTTL-SPEAG, No. 26J02Z000008)	Jan-27
DAE4	SN 1588	29-Aug-25(CTTL-SPEAG, No. 25J02Z000631)	Aug-26
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGeneratorSMA200A	107732	01-Dec-25 (CTTL, No. 25J02X102467)	Nov-26
NetworkAnalyzer E5071C	MY46110673	26-Nov-25 (CTTL, No. 25J02X102468)	Nov-26
OCP DAKS-3.5	0015	20-Oct-25(SPEAG, No. OCP-DAKS-0015_Oct25)	Oct-26

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Jun	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: February 13, 2026

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,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-mounted 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.
- *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%.

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Measurement Conditions

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

DASY Version	DASY6	V17.0.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Frequency	1750 MHz ± 1 MHz	

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	40.0 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 1750 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	24 dBm input power	9.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.7 W/kg ± 20 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	24 dBm input power	4.89 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.5 W/kg ± 20 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 1750 MHz

Impedance, transformed to feed point	50.3Ω- 1.28jΩ
Return Loss	- 37.6dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.127 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point 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 feed-point may be damaged.

Additional EUT Data

Manufactured by	SPEAG

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DASY6 Validation Report for Head TSL

Date: 2026-02-05

Test Laboratory: CTTL, Beijing, China

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D1750V2 – SN 1115	1750	HSL	24

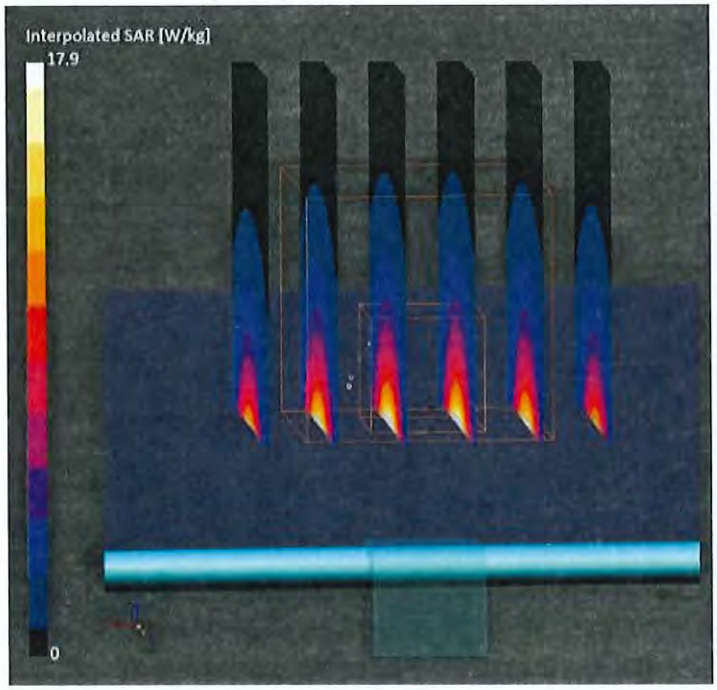
Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band Group, UID	Frequency [MHz]	Conversion Factor	TSL Cond. [S/m]	TSL Permittivity
Flat	10	CW,	1750	8.93	1.38	40.0

Hardware Setup

Phantom	TSL	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	1750Head	EX3DV4 - SN7600, 2026-01-19	DAE4 Sn1588, 2025-08-29

Scan Setup	Zoom Scan	Measurement Results	Zoom Scan
Grid Extents [mm]	30.0×30.0×30.0	psSAR1g [W/kg]	9.22
Grid Steps [mm]	6.0×6.0×1.5	psSAR10g [W/kg]	4.89
Sensor Surface [mm]	1.4	Power Drift [dB]	0.01
Graded Grid	Yes	Power Scaling	Disabled
Grading Ratio	1.5	Scaling Factor [dB]	
MAIA	N/A	TSL Correction	No correction
Surface Detection	VMS + 6p	M2/M1 [%]	80.2
Scan Method	Measured	Dist 3dB Peak [mm]	9.9



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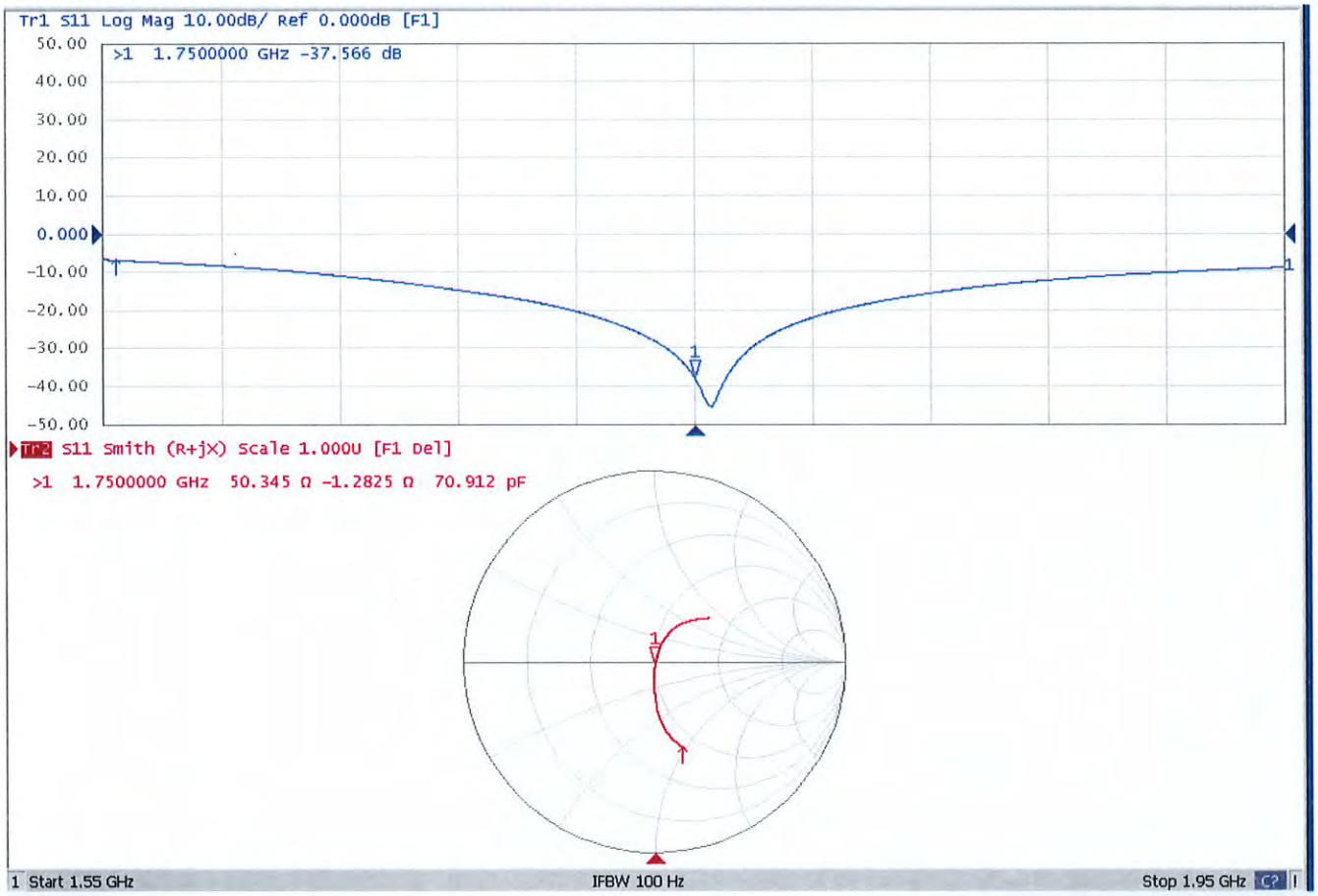
Impedance Measurement Plot for Head TSL



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CALIBRATION CNAS L0570

Client **TOWE(Shenzhen)** **Certificate No: 26J02Z000094**

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 512
Calibration Procedure(s)	FF-Z11-0003-02 Calibration Procedures for dipole validation kits
Calibration date:	February 4, 2026

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
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Reference Probe EX3DV4	SN 7600	19-Jan-26(CTTL-SPEAG, No. 26J02Z000008)	Jan-27
DAE4	SN 1588	29-Aug-25(CTTL-SPEAG, No. 25J02Z000631)	Aug-26
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGeneratorSMA200A	107732	01-Dec-25 (CTTL, No. 25J02X102467)	Nov-26
NetworkAnalyzer E5071C	MY46110673	26-Nov-25 (CTTL, No. 25J02X102468)	Nov-26
OCP DAKS-3.5	0015	20-Oct-25(SPEAG, No. OCP-DAKS-0015_Oct25)	Oct-26

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Jun	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: February 13, 2026

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- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY System Handbook

Methods Applied and Interpretation of Parameters:

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Measurement Conditions

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

DASY Version	DASY6	V17.0.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters at 1900 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.7 ± 6 %	1.42 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 1900 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	24 dBm input power	10.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.9 W/kg ± 20 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	24 dBm input power	5.20 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.8 W/kg ± 20 % (*k*=2)**