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## DASY6 Validation Report for Head TSL

Date: 2025-12-31

Test Laboratory: CTTL, Beijing, China

### Summary

| Dipole                            | Frequency [MHz] | TSL | Power [dBm] |
|-----------------------------------|-----------------|-----|-------------|
| SID2600 - SN: 13/15 DIP 2G600-365 | 2600            | HSL | 20          |

### Exposure Conditions

| Phantom      | Position, Test | Band Group, | Frequency | Conversion | TSL Cond. | TSL          |
|--------------|----------------|-------------|-----------|------------|-----------|--------------|
| Section, TSL | Distance [mm]  | UID         | [MHz]     | Factor     | [S/m]     | Permittivity |
| Flat         | 10             | CW,         | 2600      | 7.03       | 2.00      | 39.7         |

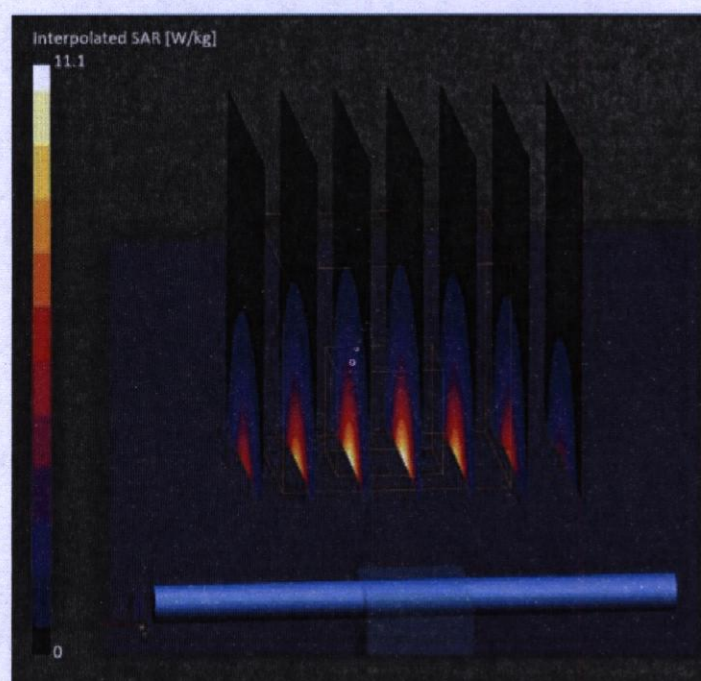
### Hardware Setup

| Phantom        | TSL           | Probe, Calibration Date     | DAE, Calibration Date   |
|----------------|---------------|-----------------------------|-------------------------|
| MFP V8.0 Right | 2600 Head, -- | EX3DV4 - SN7464, 2025-01-28 | DAE4 Sn1588, 2025-08-29 |

### Scan Setup

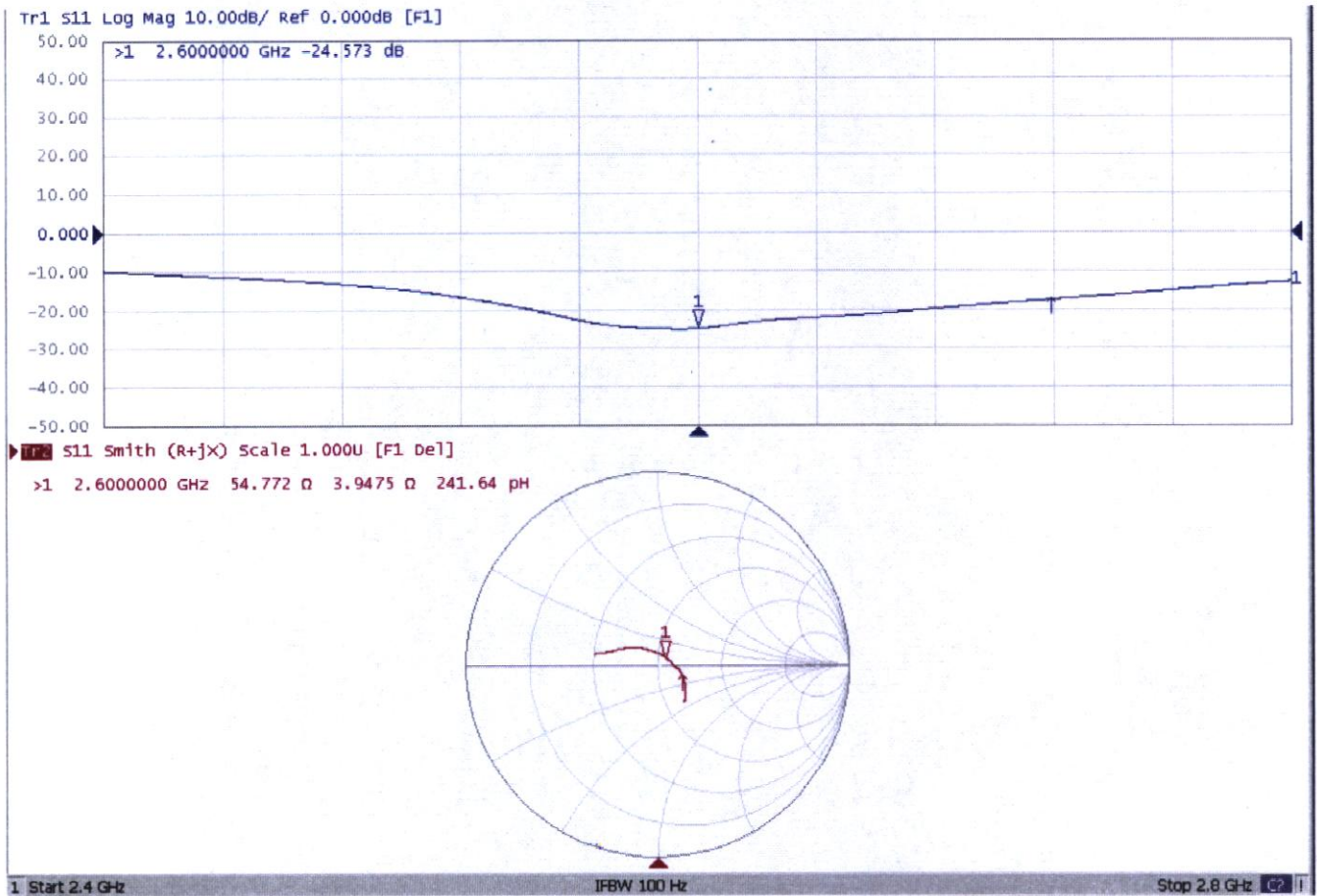
### Measurement Results

|                     | Zoom Scan      |                     | Zoom Scan     |
|---------------------|----------------|---------------------|---------------|
| Grid Extents [mm]   | 30.0×30.0×30.0 | psSAR1g [W/kg]      | 5.50          |
| Grid Steps [mm]     | 5.0×5.0×1.5    | psSAR10g [W/kg]     | 2.49          |
| 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 [%]           | 81.9          |
| Scan Method         | Measured       | Dist 3dB Peak [mm]  | 8.6           |



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## Impedance Measurement Plot for Head TSL





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中国认可  
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校准  
CALIBRATION  
CNAS L0570



Client

Waitek Testing Group (Shenzhen) Co., Ltd.

Certificate No: 25J02Z000758

## CALIBRATION CERTIFICATE

Object SID835 - SN: 47/12 DIP 0G835-204

Calibration Procedure(s) FF-Z11-0003-02  
Calibration Procedures for dipole validation kits

Calibration date: October 22, 2025

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

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22\pm3)^{\circ}\text{C}$  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 7464    | 28-Jan-25(SPEAG, No. EX-7464_Jan25)         | Jan-26                |
| 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     | 22-Jan-25 (CTTL, No. 25J02X000388)          | Jan-26                |
| NetworkAnalyzer E5071C | MY46110673 | 18-Dec-24 (CTTL, No. 24J02X103932)          | Dec-25                |
| OCP DAK-3.5            | 1040       | 20-Jan-25(SPEAG, No. OCP-DAK3.5-1040_Jan25) | Jan-26                |

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

Signature

Issued: October 29, 2025

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

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### Glossary:

|       |                                            |
|-------|--------------------------------------------|
| TSL   | tissue simulating liquid                   |
| ConvF | sensitivity in TSL / NORM <sub>x,y,z</sub> |
| 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                      |
| Zoom Scan Resolution         | dx, dy = 6 mm, dz = 1.5 mm | Graded Ratio = 1.5 (Z direction) |
| Frequency                    | 835 MHz $\pm$ 1 MHz        |                                  |

## 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           | 0.90 mho/m           |
| Measured Head TSL parameters            | (22.0 $\pm$ 0.2) °C | 42.1 $\pm$ 6 % | 0.89 mho/m $\pm$ 6 % |
| Head TSL temperature change during test | <1.0 °C             | ----           | ----                 |

## SAR result with Head TSL at 835 MHz

| SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL   | Condition          |                            |
|---------------------------------------------------------|--------------------|----------------------------|
| SAR measured                                            | 24 dBm input power | 2.34 W/kg                  |
| SAR for nominal Head TSL parameters                     | normalized to 1W   | 9.49 W/kg $\pm$ 20 % (k=2) |
| SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL | Condition          |                            |
| SAR measured                                            | 24 dBm input power | 1.54 W/kg                  |
| SAR for nominal Head TSL parameters                     | normalized to 1W   | 6.22 W/kg $\pm$ 20 % (k=2) |

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## Appendix (Additional assessments outside the scope of CNAS L0570)

### Antenna Parameters with Head TSL at 835 MHz

|                                      |               |
|--------------------------------------|---------------|
| Impedance, transformed to feed point | 54.5Ω- 4.55jΩ |
| Return Loss                          | - 24.3dB      |

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 | MVG |
|-----------------|-----|

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## DASY6 Validation Report for Head TSL

Date: 2025-10-22

Test Laboratory: CTTL, Beijing, China

### Summary

| Dipole                           | Frequency [MHz] | TSL | Power [dBm] |
|----------------------------------|-----------------|-----|-------------|
| SID835 - SN: 47/12 DIP 0G835-204 | 835             | HSL | 24          |

### Exposure Conditions

| Phantom      | Position, Test | Band Group, | Frequency | Conversion | TSL Cond. | TSL          |
|--------------|----------------|-------------|-----------|------------|-----------|--------------|
| Section, TSL | Distance [mm]  | UID         | [MHz]     | Factor     | [S/m]     | Permittivity |
| Flat         | 15             | CW,         | 835       | 9.11       | 0.888     | 42.1         |

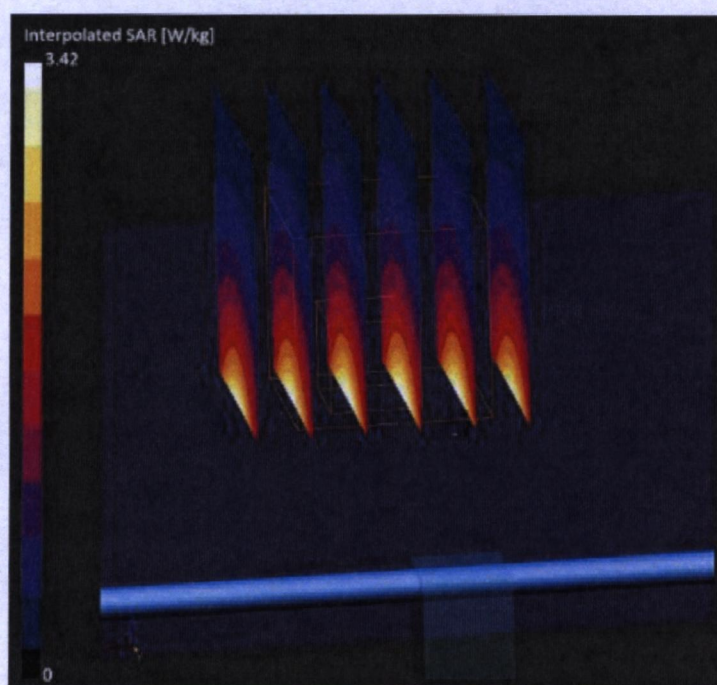
### Hardware Setup

| Phantom        | TSL          | Probe, Calibration Date     | DAE, Calibration Date   |
|----------------|--------------|-----------------------------|-------------------------|
| MFP V8.0 Right | 835 Head, -- | EX3DV4 - SN7464, 2025-01-28 | DAE4 Sn1588, 2025-08-29 |

### Scan Setup

### Measurement Results

|                     | Zoom Scan      |                     | Zoom Scan     |
|---------------------|----------------|---------------------|---------------|
| Grid Extents [mm]   | 30.0×30.0×30.0 | psSAR1g [W/kg]      | 2.34          |
| Grid Steps [mm]     | 6.0×6.0×1.5    | psSAR10g [W/kg]     | 1.54          |
| 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 [%]           | 87.8          |
| Scan Method         | Measured       | Dist 3dB Peak [mm]  | 16.4          |



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## Impedance Measurement Plot for Head TSL

