



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn



DASY5 Validation Report for Body TSL

Date: 01.09.2014

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Communication System: UID 0, CW, Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.988 \text{ S/m}$; $\epsilon_r = 51.25$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Center Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3149; ConvF(4.21, 4.21, 4.21); Calibrated: 2013-09-03;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAB3 Sn536; Calibrated: 2014-01-23
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1161/2
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at Frequencies above 1 GHz/ $d=10\text{mm}$, $P_{in}=250 \text{ mW}$,

 $\text{dist}=3.0\text{mm}$ (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

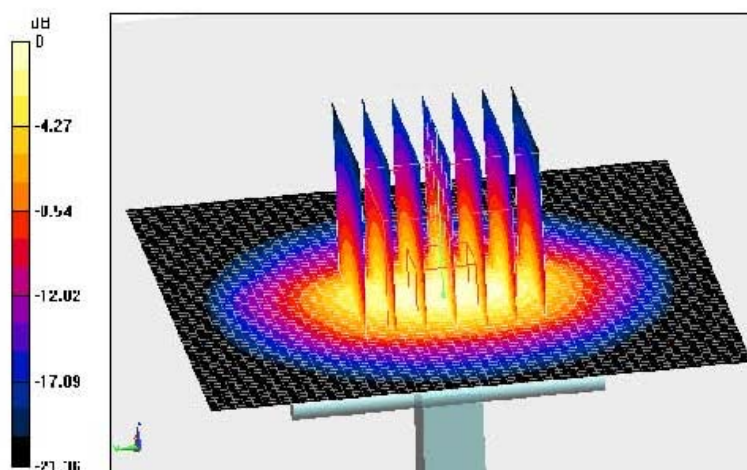
 $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.120 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 27.8 W/kg

SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.2 W/kg

Maximum value of SAR (measured) = 17.7 W/kg



0 dB = 17.7 W/kg = 12.48 dBW/kg

Certificate No: Z14-97075

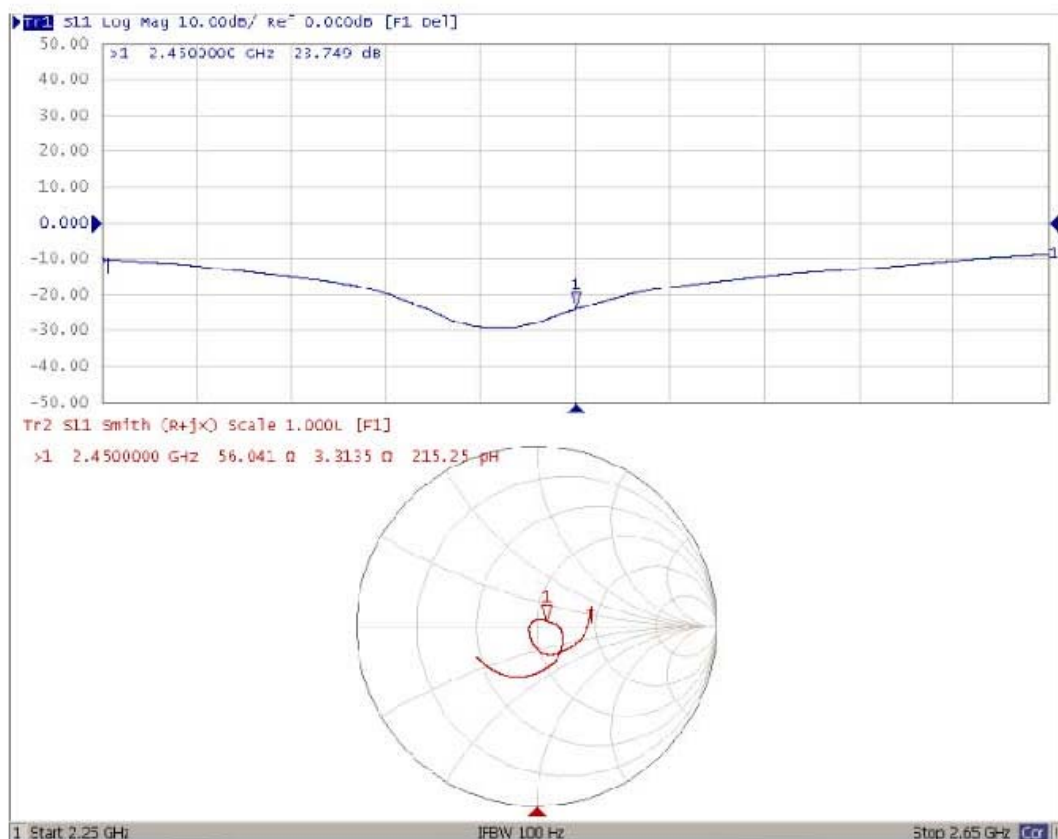
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Impedance Measurement Plot for Body TSL



**ANNEX H: DAE4 Calibration Certificate**

In Collaboration with
s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2218 Fax: +86-10-62304633-2209
E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)



CALIBRATION
No. L0570

Client : **TA(Shanghai)**Certificate No: **Z15-97194****CALIBRATION CERTIFICATE**Object **DAE4 - SN: 871**Calibration Procedure(s) **FD-Z11-2-002-01
Calibration Procedure for the Data Acquisition Electronics
(DAEx)**Calibration date: **November 17, 2015**

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)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Process Calibrator 753	1971018	06-July-15 (CTTL, No:J15X04257)	July-16

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Qi Dianyuan	SAR Project Leader	
Approved by:	Lu Bingsong	Deputy Director of the laboratory	

Issued: November 18, 2015

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

Certificate No: Z15-97194

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Glossary:

DAE data acquisition electronics
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters:

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The report provide only calibration results for DAE, it does not contain other performance test results.



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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.728 ± 0.15% (k=2)	404.712 ± 0.15% (k=2)	405.156 ± 0.15% (k=2)
Low Range	3.98308 ± 0.7% (k=2)	3.93782 ± 0.7% (k=2)	3.97048 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	90.5° ± 1 °
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ANNEX I: The EUT Appearances and Test Configuration



Front Side



Back Side

a: EUT



b: Battery



Adapter 1

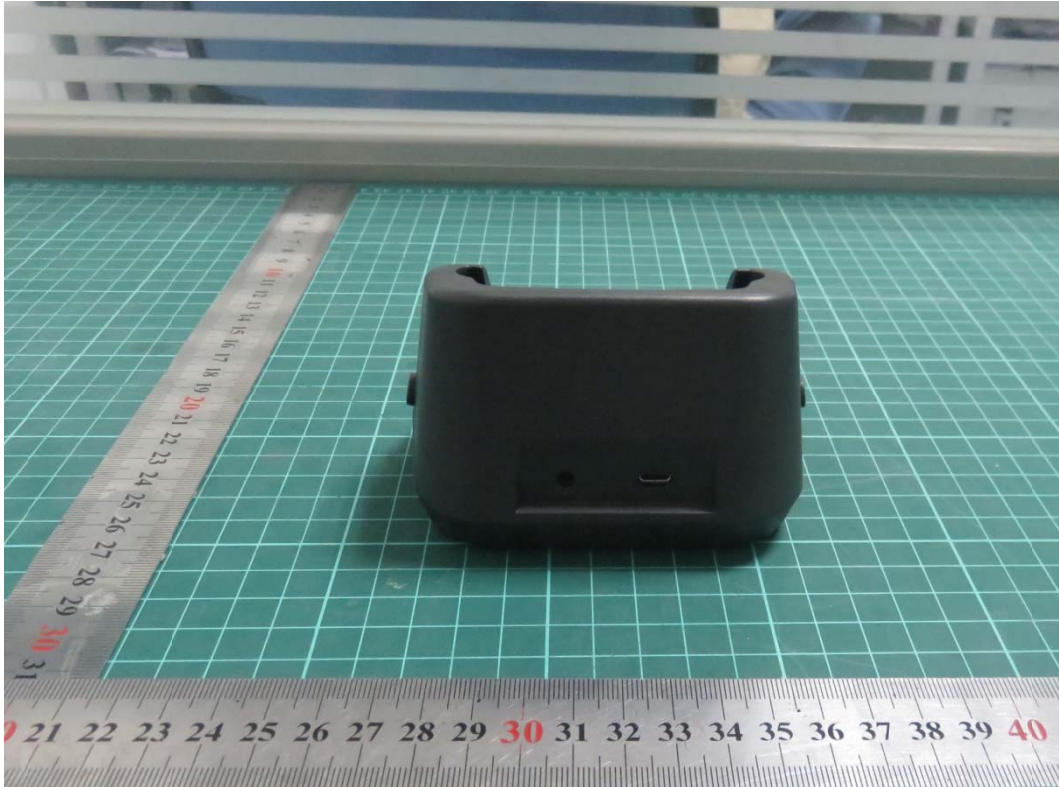






Adapter 2





d: Charger Pedestal Holder
Picture 9: Constituents of EUT



Picture10: Left Hand Touch Cheek Position



Picture11: Left Hand Tilt 15 Degree Position



Picture12: Right Hand Touch Cheek Position



Picture13: Right Hand Tilt 15 Degree Position



Picture14: Back Side, the distance from handset to the bottom of the Phantom is 10mm



Picture15: Front Side, the distance from handset to the bottom of the Phantom is 10mm



Picture16: Left Side, the distance from handset to the bottom of the Phantom is 10mm



Picture17: Right Side, the distance from handset to the bottom of the Phantom is 10mm



Picture18: Top Side, the distance from handset to the bottom of the Phantom is 10mm



Picture19: Bottom Side, the distance from handset to the bottom of the Phantom is 10mm