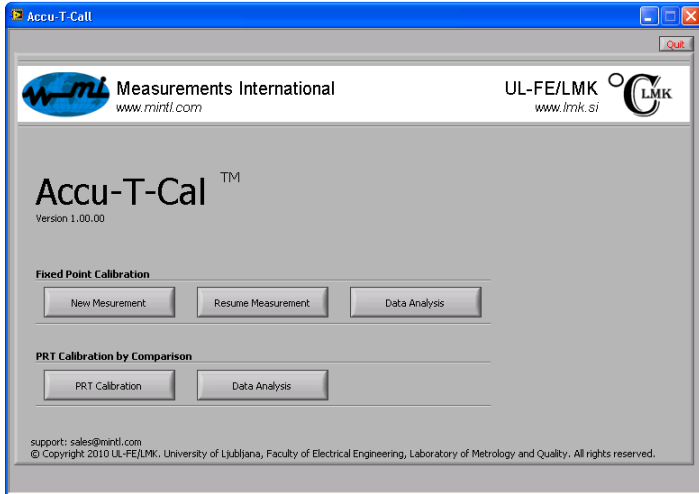


## Model Accu-T-Cal™



## Software for Automated Resistance Thermometry Bridge

- Compatible with all MIL bridges
- Calibration at fixed point cells
- Calibration by comparison
- Automatic Self-heating correction
- Easy Measurement setup
- Detailed Data Analysis

## MODEL INFORMATION

Measurements International's Accu-T-Cal™ SW is a software package for the automation of measurements and calibrations of platinum resistance thermometers at primary and secondary level. Accu-T-Cal™ SW is based on over 15 years of experience and research of metrologists from Laboratory of Metrology and Quality, Faculty of Electrical Engineering, University of Ljubljana (UL-FE/LMK). UL-FE/LMK is the holder of the National Standard for Thermodynamic Temperature in Slovenia.

Platinum resistance thermometers (PRTs) are calibrated at the highest level in fixed points, as specified in the International temperature scale ITS90. In this method the PRT is calibrated by making measurements at the fixed temperature maintained by the fixed point cell. This method gives the best achievable calibration uncertainties, usually down to about 1 mK.

In order to reduce cost and time, platinum resistance thermometers can also be calibrated by comparison. In this method the PRT is calibrated by comparing its reading with the reading of a reference thermometer, placed at the same

temperature inside the temperature controlled calibration medium. The reference thermometer and the UUT are measured with the same resistance bridge. The resistance bridge uses a switching matrix (scanner) to switch between both thermometers and alternately take resistance readings. Measurement method allows appropriate handling of readings from both thermometers to minimize possible sources of errors resulting from short term stability of the calibration medium temperature and measurement speed of the bridge. In the temperature range from -50 °C to 300 °C it is possible to achieve uncertainties down to 5 mK, which is 3 to 5 times larger compared to calibration in fixed points.

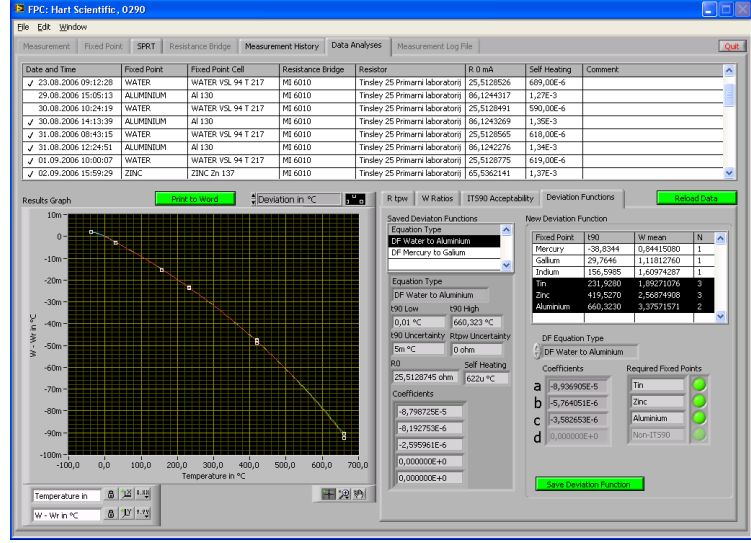
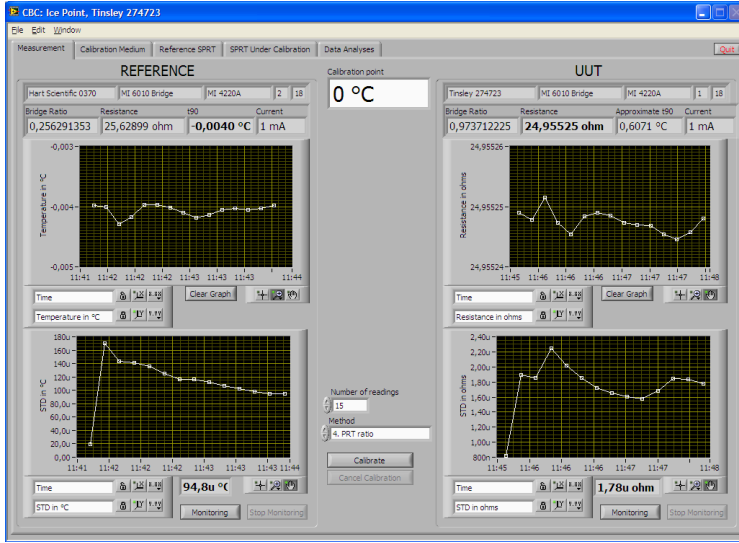
Accu-T-Cal™ SW has built drivers for all Measurements International Temperature and Resistance bridges as well as the MIL scanners, allowing to configure multiple PRT's to be calibrated. Communication with all equipment uses the IEEE-488 bus that comes standard with all MIL equipment. Configuration of hardware, standard PRT's as well as DUT's is easily entered into SW and is stored for future use or for later measurement data analysis.

# Measurements International

Metrology is Our Science, Accuracy is Our Business™

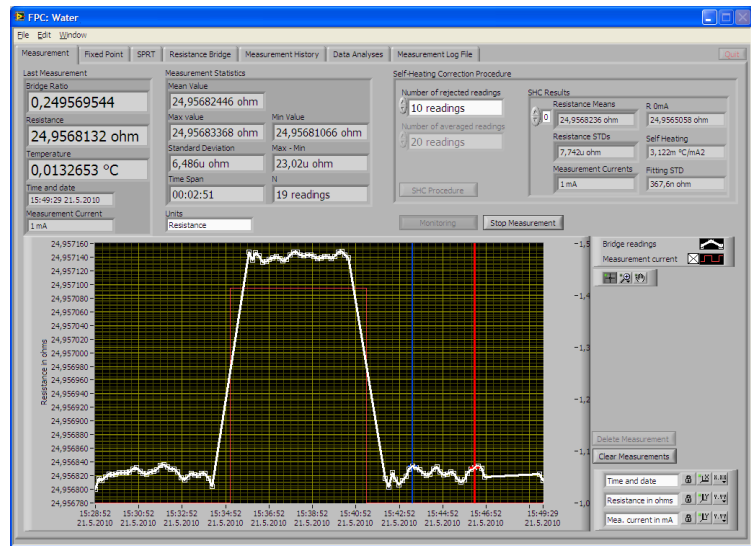
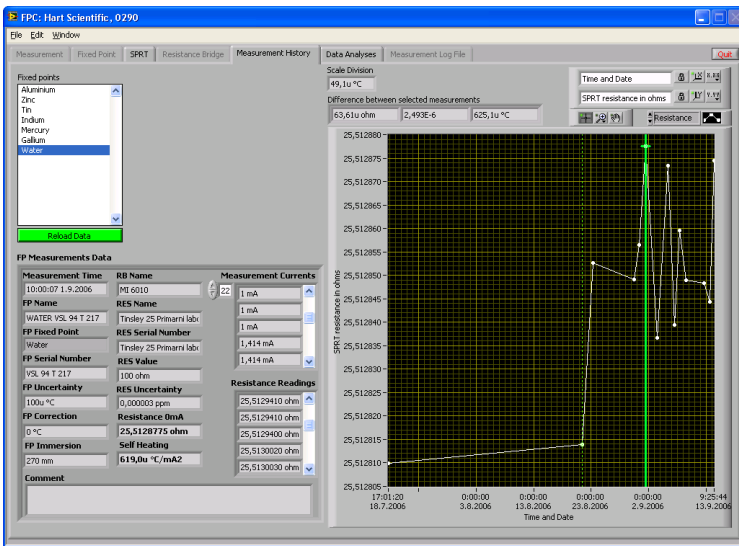
SW includes a list of the ITS90 fixed point cells parameters for use when configuring new measurements. Accu-T-Cal™ SW has built in

automatically saved for detailed analysis and calibration report generation. Users can select evaluation of deviation function as per the



procedure for evaluation and correction of the PRT's self heating, with user selectable steps at the measurement current. All measured data are available as graphical and tabular format and are

ITS90, or polynomial representation of the PRT's characteristics from the data obtained during calibration. Accu-T-Cal™ SW gives the user full freedom of selection or rejection of particular results from the analysis.



Form MI 66, Rev. 6, Dated 09-0-03 (QAP19, App. "N")

Data Subject to Change- Rev 1 05/10

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