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Smart Tweezers Calibration Procedure

Smart Tweezers do not require periodical calibration, test devices that had been manufactured 4-5 years ago still perform according to the Smart Tweezers Accuracy Specifications. It should be mentioned though that if Smart Tweezers are used intensively the gold plated on the tweezer tips gets worn-out and therefore parasitic resistance of the tweezer tips may increase significantly (from 20 to 500 mOhms). This fact has nothing to do with the calibration and it is advisable to replace the tweezer tips if the paraasitic resistance (short circuit resistance of Smart Tweezers) exceeds 30-40 mOhms. The only known exception when re-calibration is mandatory to ensure desired accuracy is when the PCB had been modified due to a repair.

In order to calibrate Digital Multimeter Smart Tweezers you need to have the Calibration Fixture designed particularly for Smart Tweezers' calibration and adjustment of the calibration parameters. This calibration fixture needs to be calibrated annually.

Sometimes Smart Tweezers are "calibrated" using comparison of its measurement results to values of components known with a high accuracy. We call to this process a "verification" rather than a calibration.

The Smart Tweezers' Calibration Fixture is a semi-automatic equipment that updates the calibration parameters stored in the ROM of every Smart Tweezers unit. The update is based on comparing the results of measurements obtained using Smart Tweezers and with values of a few high-accuracy components called "the standard components". The calibration coefficients are eventually adjusted by finding the best fit to the values of standard components.

Before doing the Smart Tweezers' calibration the unit has to be disassembled. Remove all the screws from the Smart Tweezers' housing and remove the PCB and tweezers' assembly. Then desolder the PCB from the assembly and place the PCB on the Calibration Fixtures pins. After visually inspection of the correct pads position on the pins press the "Calibrate" button. The progress of the calibration process is displayed on the computer screen.

If the message on the computer screen confirms that the calibration is completed successfully, print the calibration certificate.