E3631A calibration script

The script engine (editor) does not need installation. Simply, copy it to a temporary folder, together with the script file (extension *.tss). The executable does not contain any malware, or does not read and report any information from your computer.

At startup the installation of the NI GPIB libraries is verified, also the existences of a GPIB interface (PCI, USB interface). If these are not found, in the LOG window (the lower window) the corresponding error messages will be displayed. If no GPIB dll is detected, the GPIB functionality of the script is disabled. If only the interface is missing, the GPIB functionality will be enabled, but during the run of a script, error messages will be generated.

Please change the GPIB addresses of the DMM and PS, to the actual ones.

The script files can be opened from the toolbar, menu or with CTRL+O.

The attached script contains some comments, which should give some hints about what is necessary to change.

Running the script can be done with the green arrow button from the toolbar or with F9. With the red rectangle button or with CTRL+F2 it can be stopped (while is running). The script can be compiled (this will check for static/syntax errors, but runtime errors will be not discovered only while the script is running) with the toothed wheel button from the toolbar or with CTRL+F9. The main central window contains the editor

I tested the program and the calibration before I started to write this short guide on Windows XP, 7 and 10 machines, and I have not found any errors. It does not means that they do not exist. I made this program for my use, and added features as I needed them. Unfortunately I have not made yet a written documentation. But if you would like to use it also for other small GPIB applications, I will do it. Comment and criticism is welcomed, but please be merciful.

Unfortunately the E3633/3664 needs some more tweaking, changing the security password is not enough. But reading the manual, it would be easy to make the changes. Both current and voltage calibrations are made in 3 points (so it does not have a low and high value pair, instead it uses a min/mid/max triple). There are also over voltage, over current and DAC error calibration routines, which don't exist in the case of the 3631. These should be added to the script to perform the calibration of the 3633/3634.

When connecting the DMM please follow the right polarity. The 3rd channel (-25V) might be tricky (or not). The Input High (red color) of the DMM must be connected to the -25V (so you should measure the negative voltage). Basically, the colors of the connections should always match. It is a good idea to measure the shunt resistor with a higher precision DMM (3458).With the automated calibration, the shunt resistor will not heat up, so the tempco of the resistor will not have too much influence. But if you do the calibration manually, I observed the influence of heating up the resistor.

I can be reached by email at gyorgy.albert@gmail.com (personal) or gyorgy.albert@tehnologistic.ro (work), or on mobile +40-722-304534 (also during the weekend, but please consider the time zone (I am living in Romania)).

Good luck, and if you need help, don't hesitate to ask.

Best regards, Gyorgy ALBERT

Cluj, ROMANIA