

QA350 Quick Start



Before you start...

- The CAT rating indicates a measuring device's ability to withstand voltage transients
- A higher rating means the meter is better able to safely withstand voltage transients
- The QA350 is rated as "CAT I", which is the weakest designation available.
- This means the QA350 should NOT be used to make measurements on circuits that are connected to the mains supply or other high-energy circuits.
- Do not use the QA350 for measuring voltages that could be or are potentially life threatening.
- The QA350 is designed for measuring low-voltage sensors and transducers.

If you purchased the QA350 expecting to measure voltages that could be or are potentially dangerous, please contact us for an easy, no-cost return!



CAT I

Download & Install the QA350 App

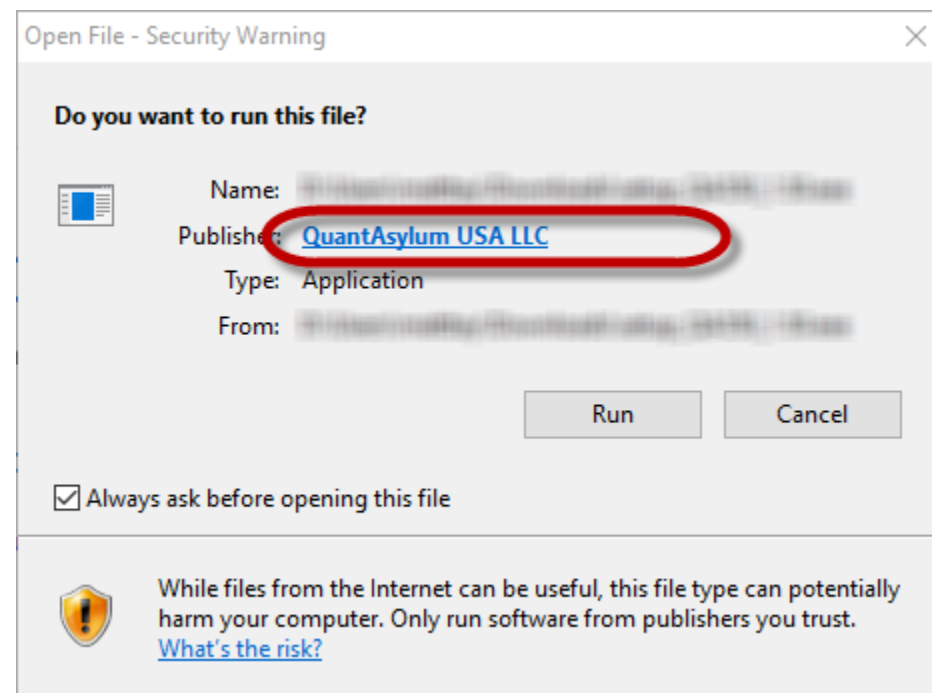
- The app is available on GitHub
- You can also download the source for both the PC and also the QA350 firmware.

Source code: <https://github.com/QuantAsylum/QA350>

Application Installer: <https://github.com/QuantAsylum/QA350/releases>

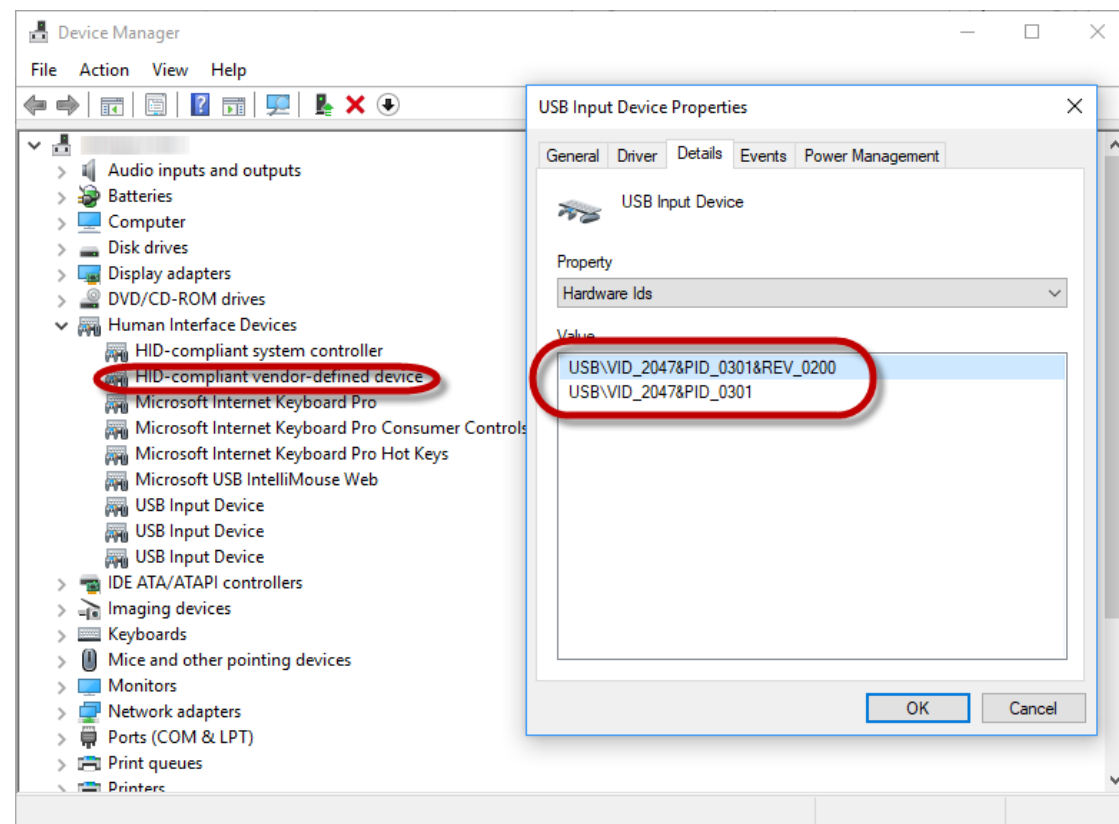
Download the app

- From the Github location on the previous page, you can download the latest version of the application
- Make sure the application is signed as shown.
- Select 'Run' and install the application



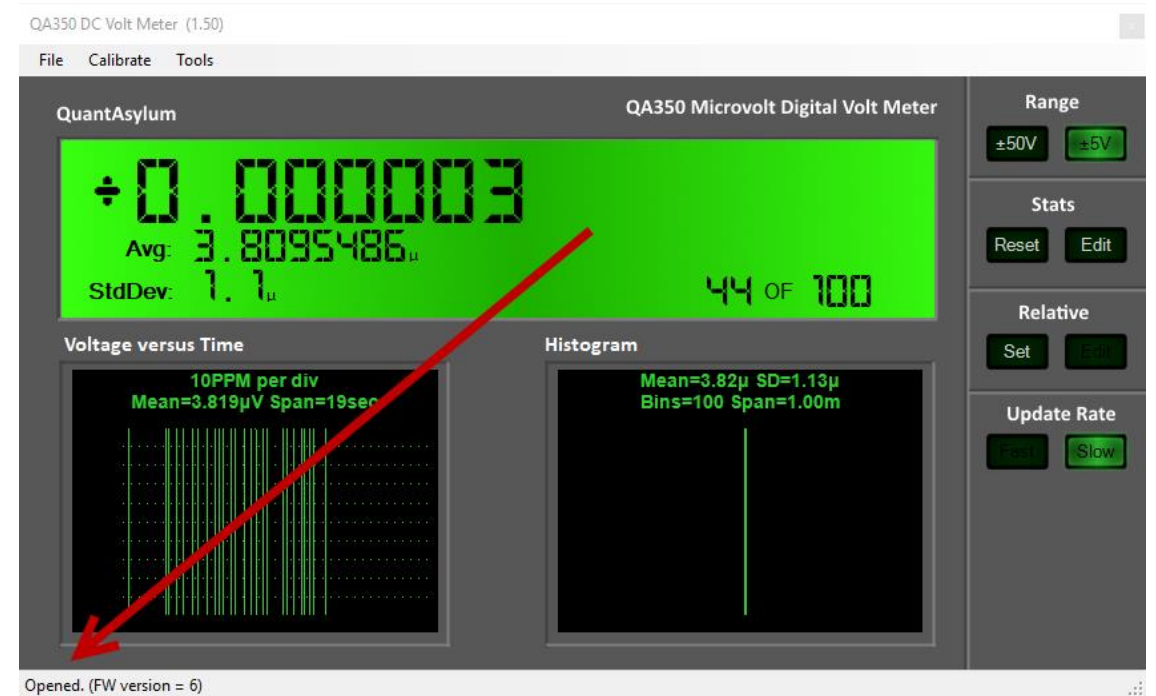
Plug in the hardware

- The device should install automatically.
- It is a HID device, no drivers are needed
- If you want to double check in Device Manager, it will be in the HID section with a Vendor ID of 0x2047 and a PID of 0301

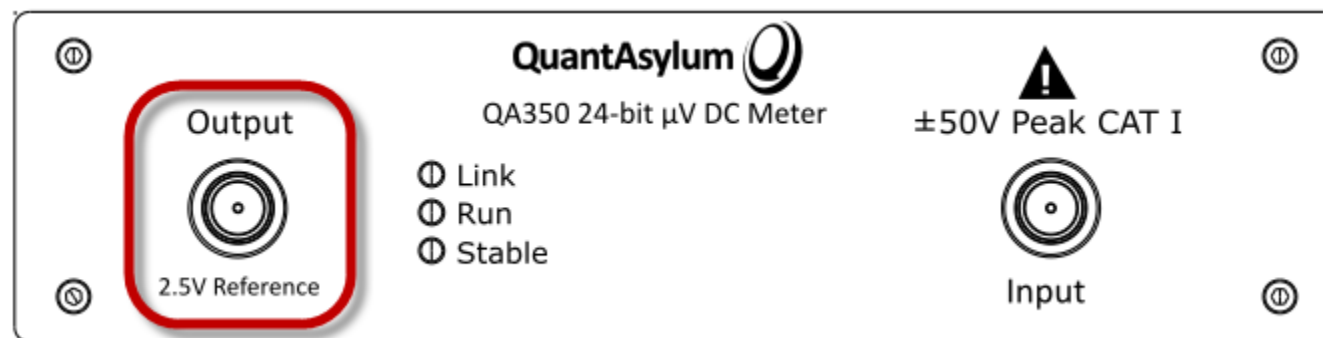


Start the application

- The app is called "QA350" and it should be in your Start Menu in the "QuantAsylum" folder
- The "Opened" message in the lower left indicates the application connected to the hardware

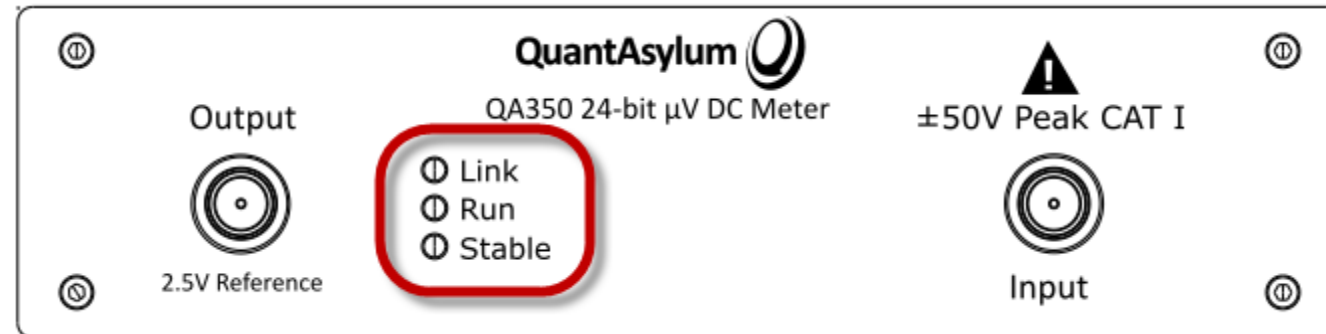


Front Panel: Reference Output



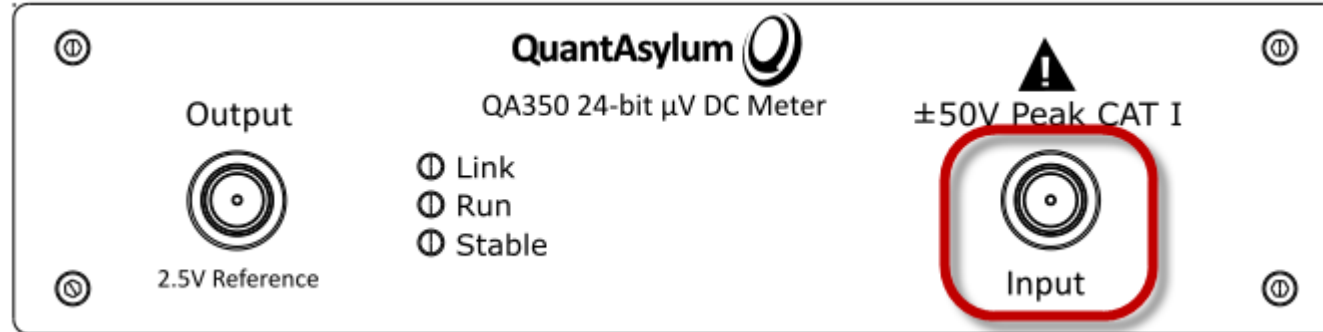
- The front panel has a 2.5V reference output. This is a general purpose reference you can use to test the QA350 and other DVMs.
- This voltage is provided by a premium MAX6126A voltage reference

Front Panel: LED



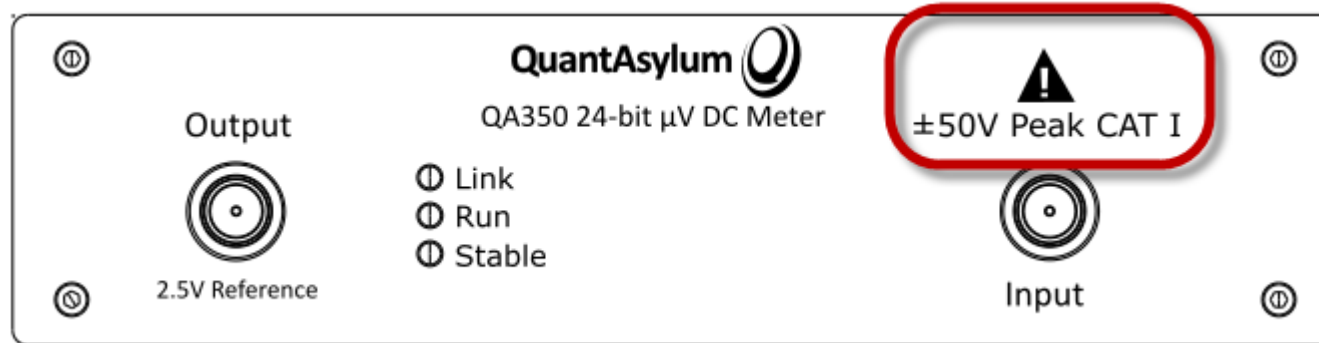
- **LINK** means the QA350 hardware and PC are communicating
- **RUN** means the QA350 is making measurements. This LED will flash off momentarily when a command is received from the PC
- **STABLE** means the QA350 has reached normal operating temperature. It can be used prior to this time, but the measurements might be drifting as the references warm up. It takes about 10 minutes for the STABLE LED to illuminate. One lit, the STABLE LED will not turn off, even if the QA350 has experienced a temperature shock or other event that may compromise its stability

Front Panel: Input



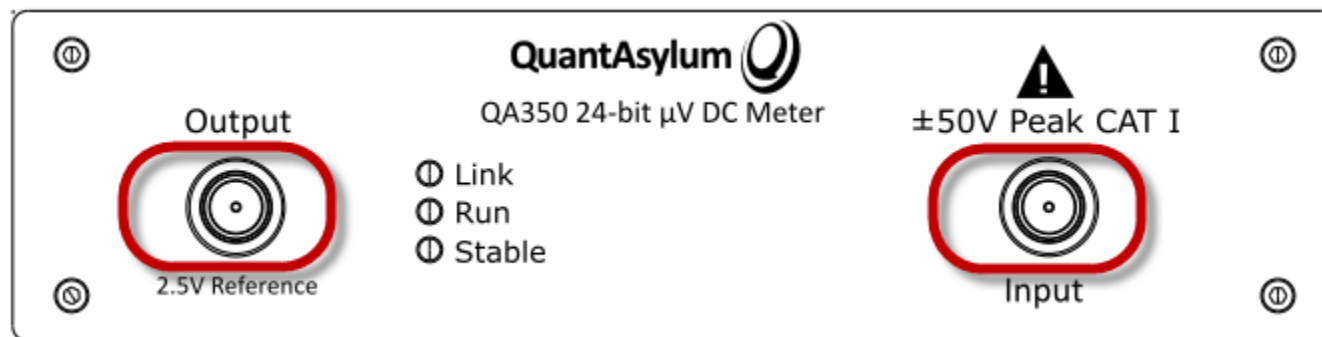
- Connect a scope probe (not included) or other probe type to the input to make a voltage measurement

Front Panel: Caution!



- Do not exceed the specified voltages.
- Do not use the QA350 to measure mains connected circuits or other high-energy circuits
- The concern about mains voltage is that an external event (such as lightning strike outside your office) could travel through the mains wiring and into the QA350, overwhelming the safety circuits.
- For this reason, don't measure circuits connected to the mains.
- Failure to observe this caution can cause you and/or your computer harm

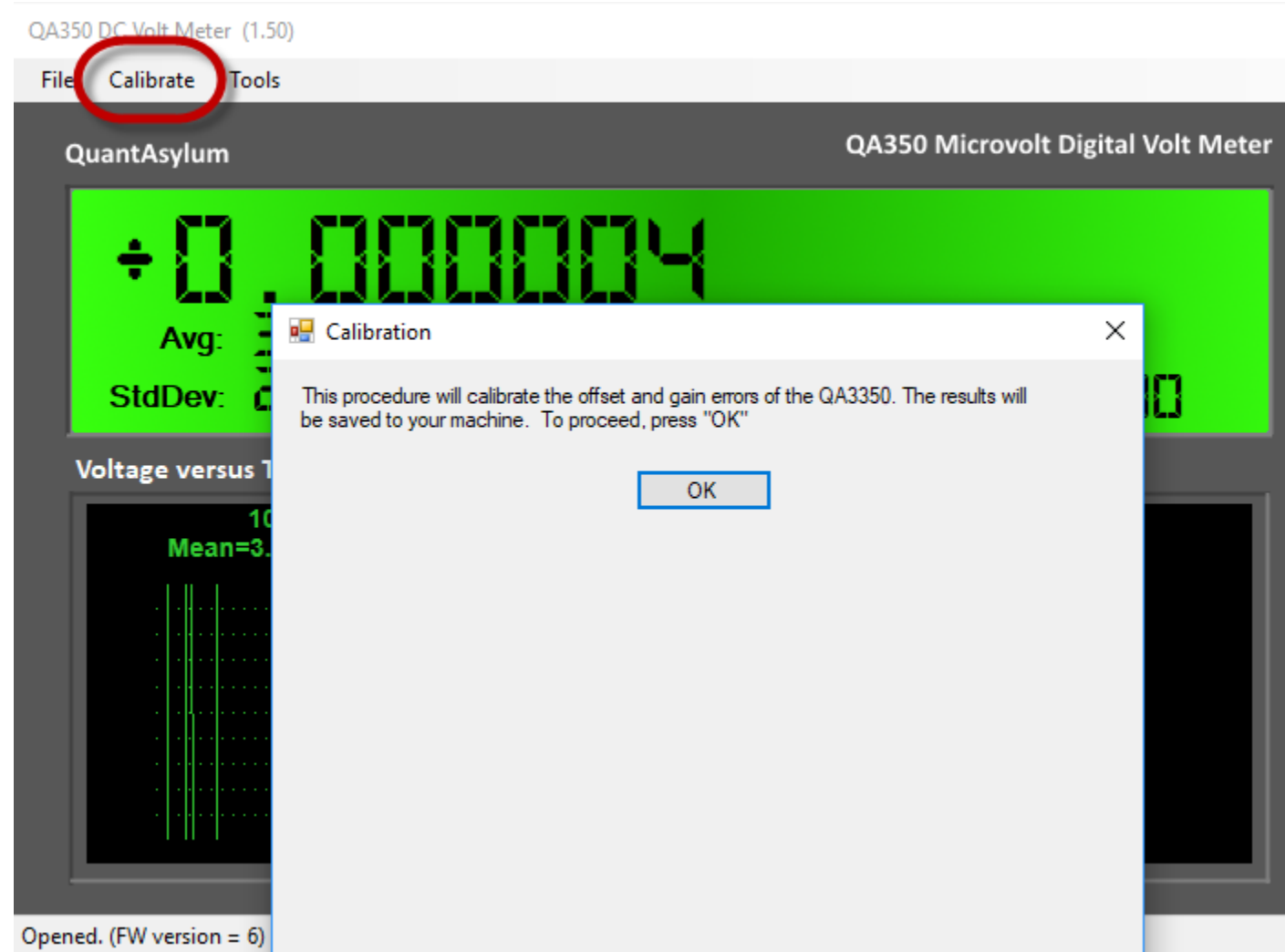
Isolation and Grounds



- The output BNC outer contact (the outer metallic sleeve) shares ground with your PC.
- The input BNC outer contact is the negative reference for your measurement.
- The input BNC is isolated from the reference BNC.
- If you connect a ohm meter from either contact on the output BNC to either contact on the input BNC, you will measure an open.
- An insulation tester should verify $>10\text{G}\Omega$ on 1000V setting between input and output outer BNC sleeves

Calibration

- You need to calibrate the QA350 against the internal reference to set its accuracy
- Select "Calibrate" from the main menu and follow the instructions



Calibration Tools

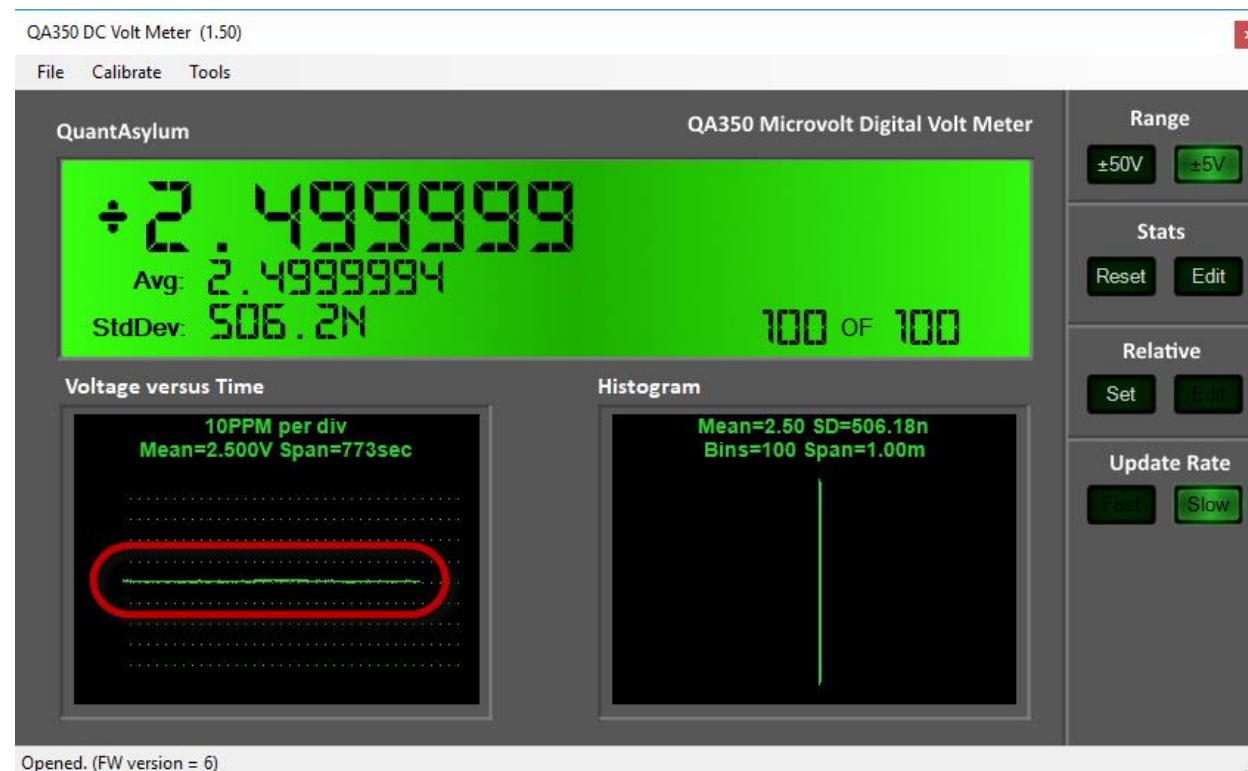
- For calibration, it is helpful to have:
 - BNC Shorting Cap (0, 50 or 75 ohms)
 - BNC to BNC Cable
- If you don't have the above, you can complete the task with a scope probe



BNC Shorting Cap

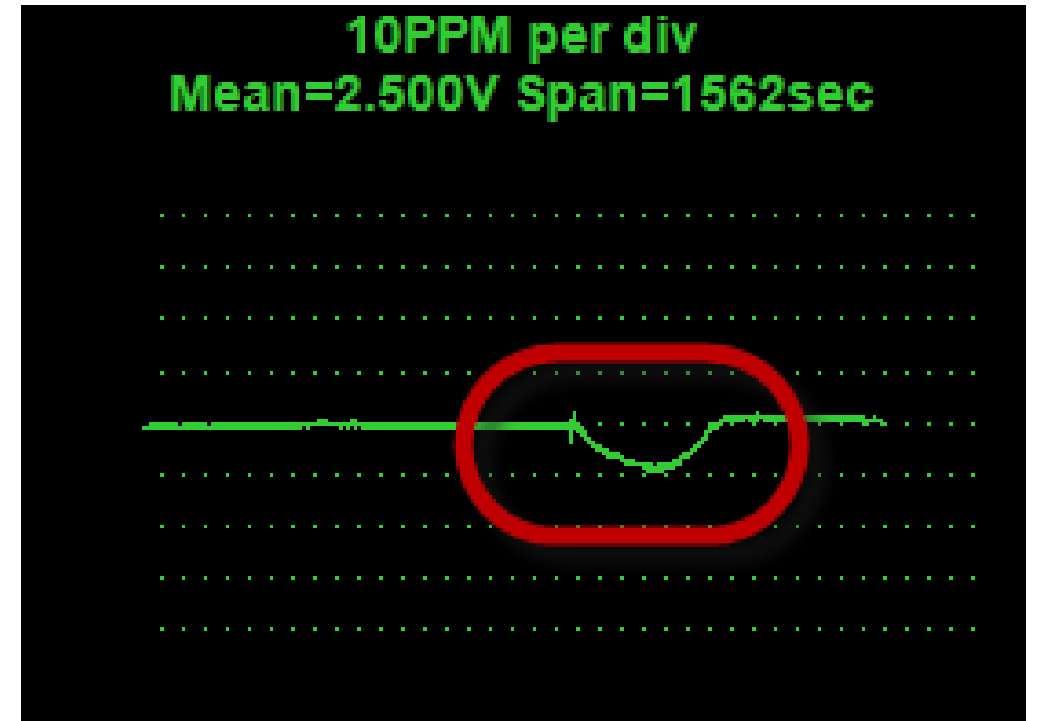
After Calibration

- The QA350 should exhibit rock-solid readings for extended periods when measuring the 2.5V reference.
- Here, we see that the voltage reading was within +/- 1 PPM for 10 minutes when connected to the 2.5V reference



Temperature Influence

- Changes in room temperature can have an impact on readings.
- Here you see perturbation resulting from blowing in the side vents on the QA350



Need more help?

Contact: Support@QuantAsylum.com