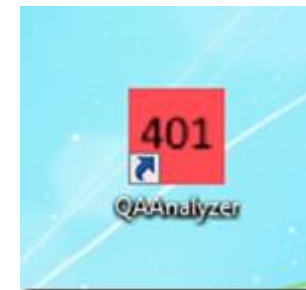
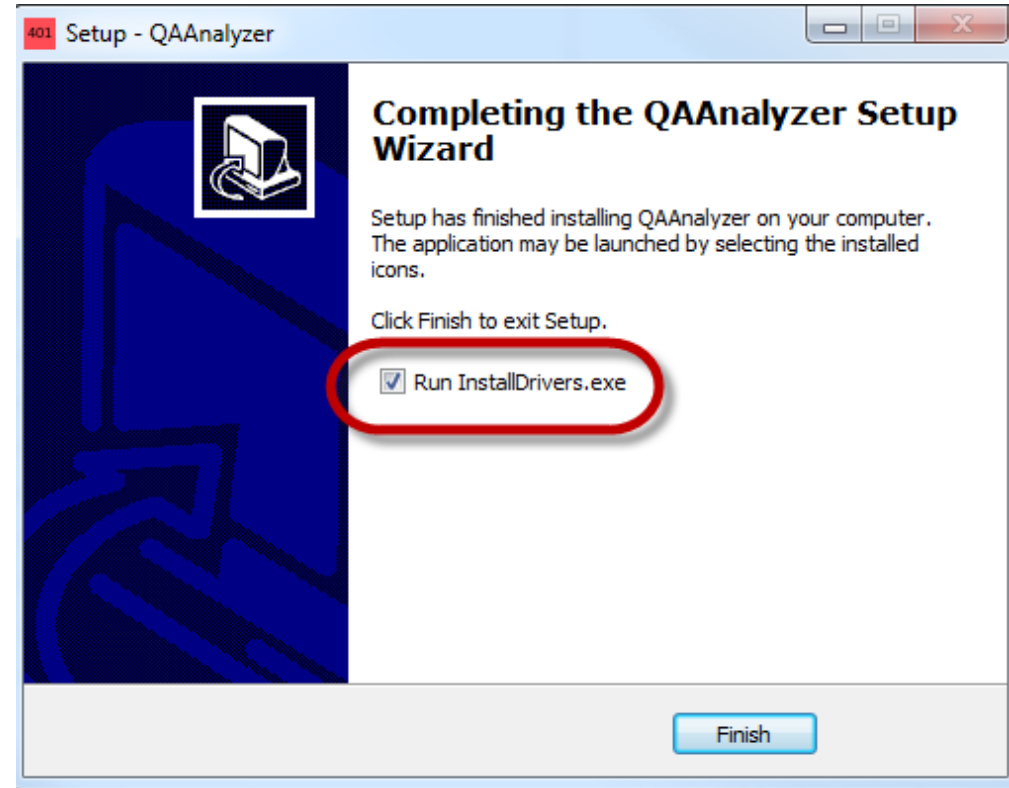


QA401 Quick Start

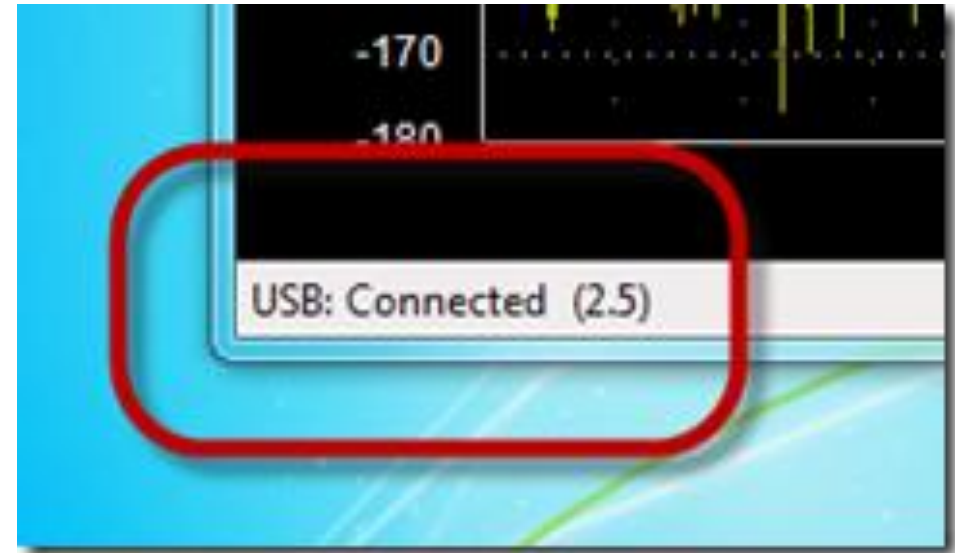
Download & Install the QA401 App

1. [Download](#) the QA401 Application
2. Make sure you opt to install drivers
3. After installation is complete, click the icon on your desktop



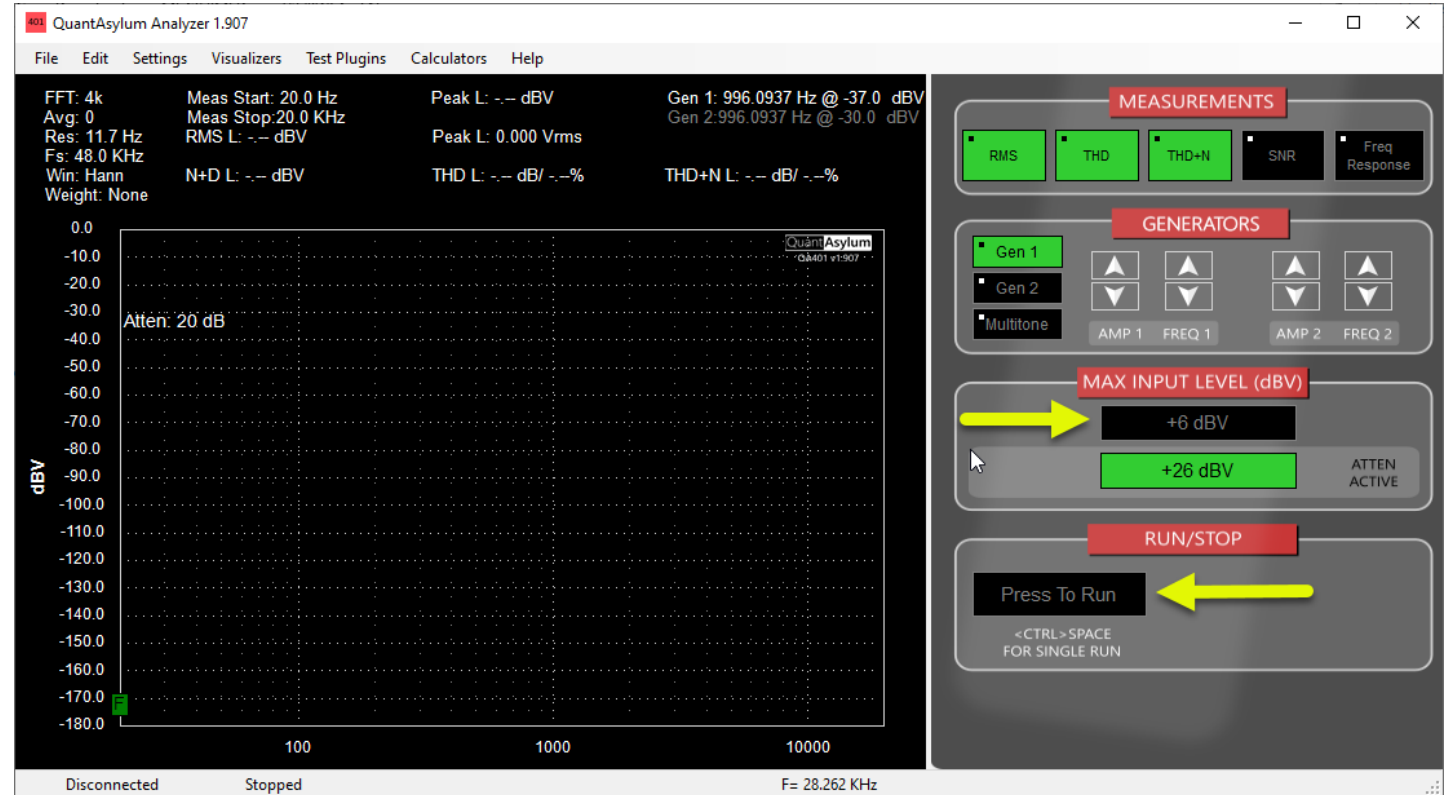
Connecting the Hardware

1. Plug in the QA401 hardware with a USB cable (not supplied). The OS should recognize the hardware, finish installing and then you should see the application configure and connect.
2. Once connected, you'll see an indication in the lower left corner of the application.



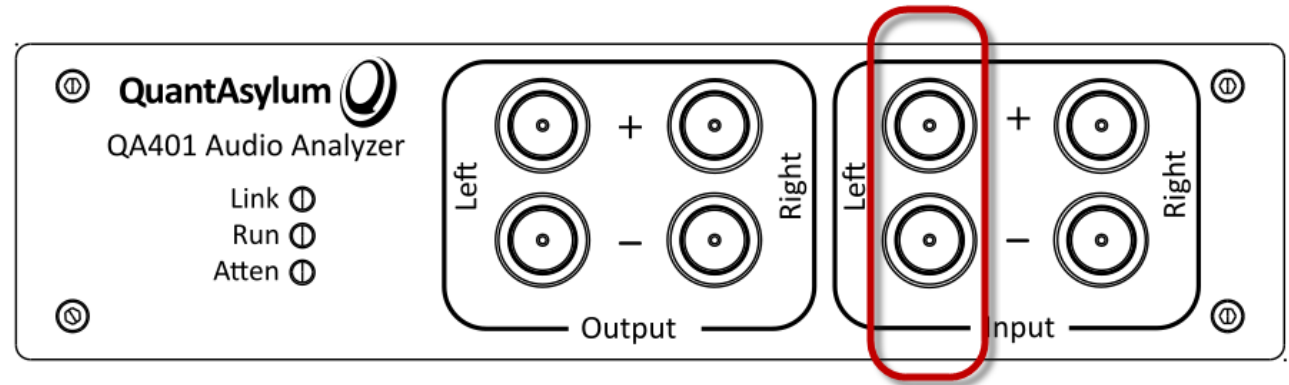
Starting Acquisition

1. Go to the File menu and select Reset Startup Defaults. This a quick way to put the hardware and software in a known state anytime.
2. Scroll the control panel so that you can see the Run/Stop button. The panel can be scrolled by clicking and dragging in an empty area of the panel itself OR by moving your mouse into the control area and using the mouse wheel.
3. Press the Run/Stop button. When it is illuminated, you are running. You should see yellow spectrum data appear and update.
4. There are two ranges on the QA401: +6 dBV and +26 dBV. When the +26 dBV range is selected, the attenuator is enabled and you will here a relay "click" as you switch between the two. The +6 dBV range is more sensitive for measuring noise.
5. Select the +6 dBV range.



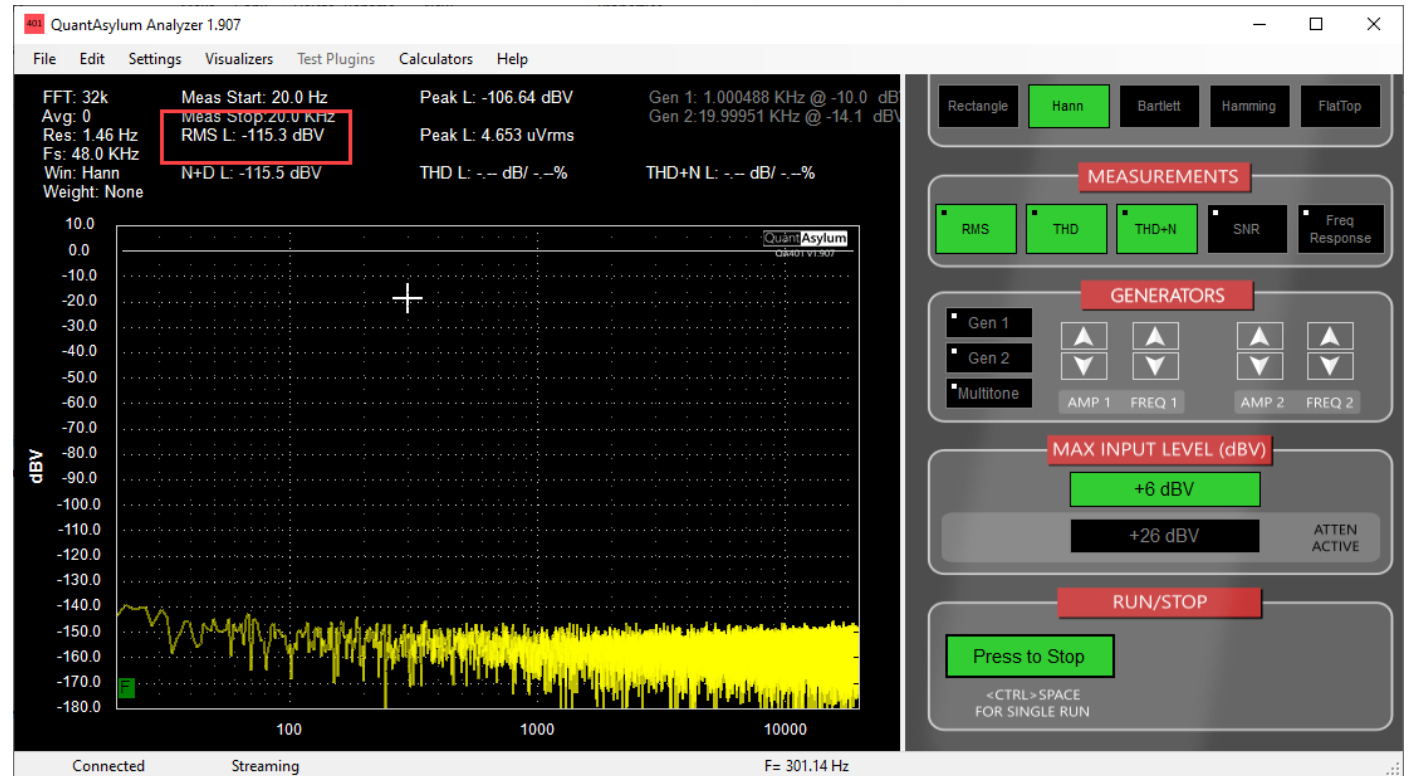
Shorting the inputs

1. To measure the noise floor of the device, you need to short the inputs with a low impedance shorting block (not included). These are often called “BNC shorting blocks” or “terminators”. You can find these for sale on Amazon or your favorite component supplier. Search on “bnc 75 ohm terminator”. The precise impedance isn’t important, it just needs to be less than a few hundred ohms.
2. If you do not short the inputs, then you’ll measure the noise of the internal input resistors—and the noise contribution from the inputs 100K resistors can be quite high.
3. You can short just the left or just the right inputs, or both.
4. Never short the outputs, it can degrade the output opamp performance.



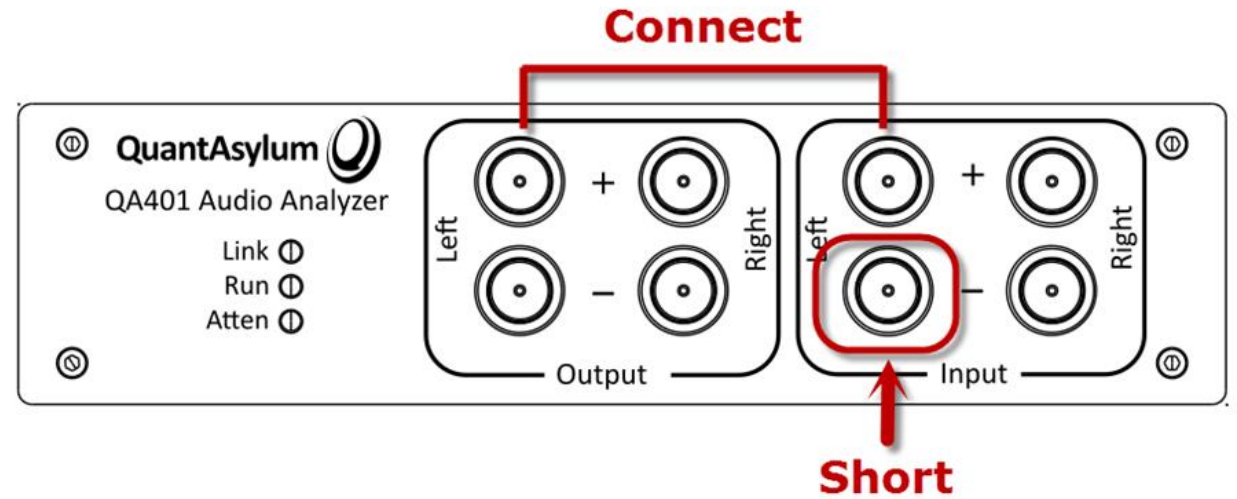
Making a noise measurement

With the QA401 running, the inputs shorted and the +6 dBV input range selected, you should see a spectrum similar to that shown in the picture. Note the absence of spurs. You can also read the noise is -115.3 dBV. Your unit should measure within a dB of this. This is the noise measured within a 20 to 20 kHz bandwidth, and it works out to roughly 1.8uVrms.



Loopback Connection

Leave the L- shorting block applied and using a BNC cable (not included) connect the left + output to the Left + input



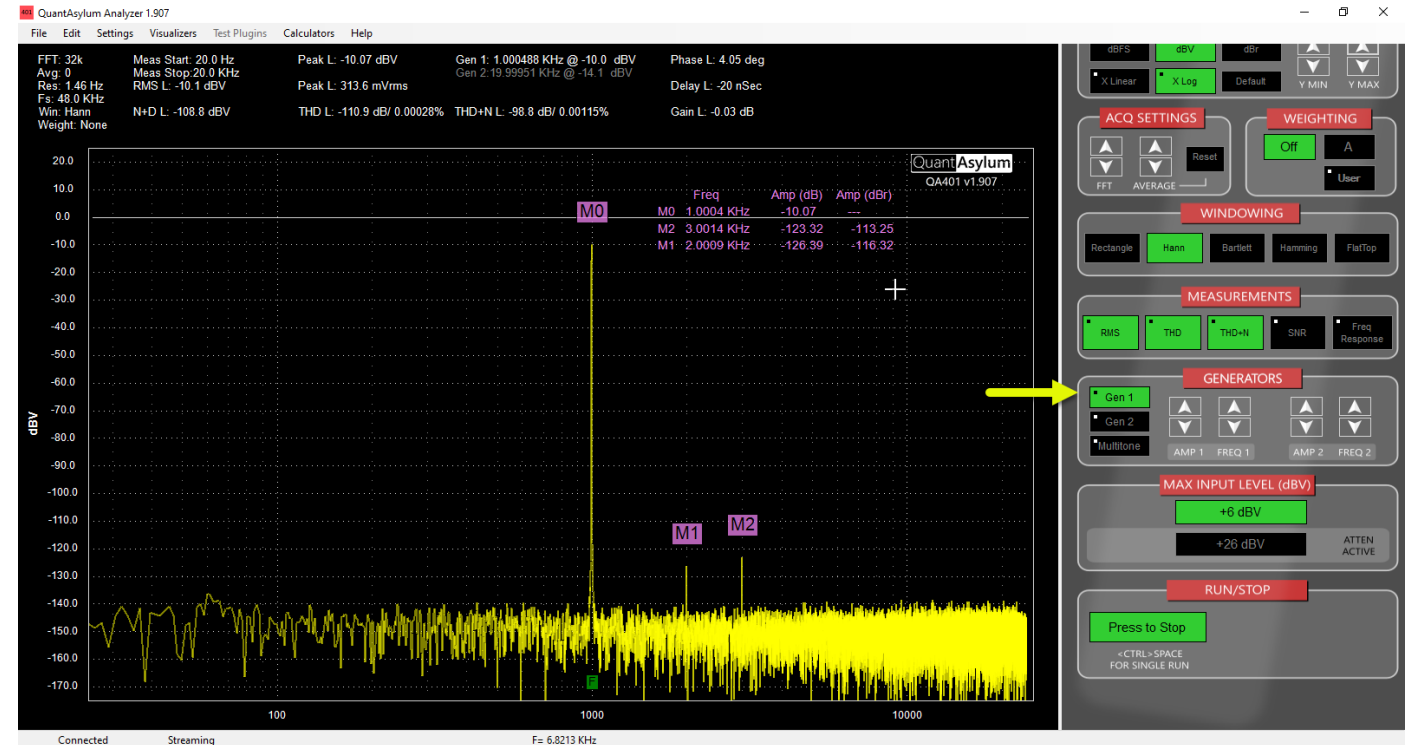
Loopback THD Measurement

Press the Gen1 button. This enables the internal oscillator.

You can change the amplitude or frequency of the oscillator by clicking and holding (long press) on the Gen1 button OR by holding the CTRL key and clicking on the button. Any button with a dot in the upper left has a menu that can be activated this way.

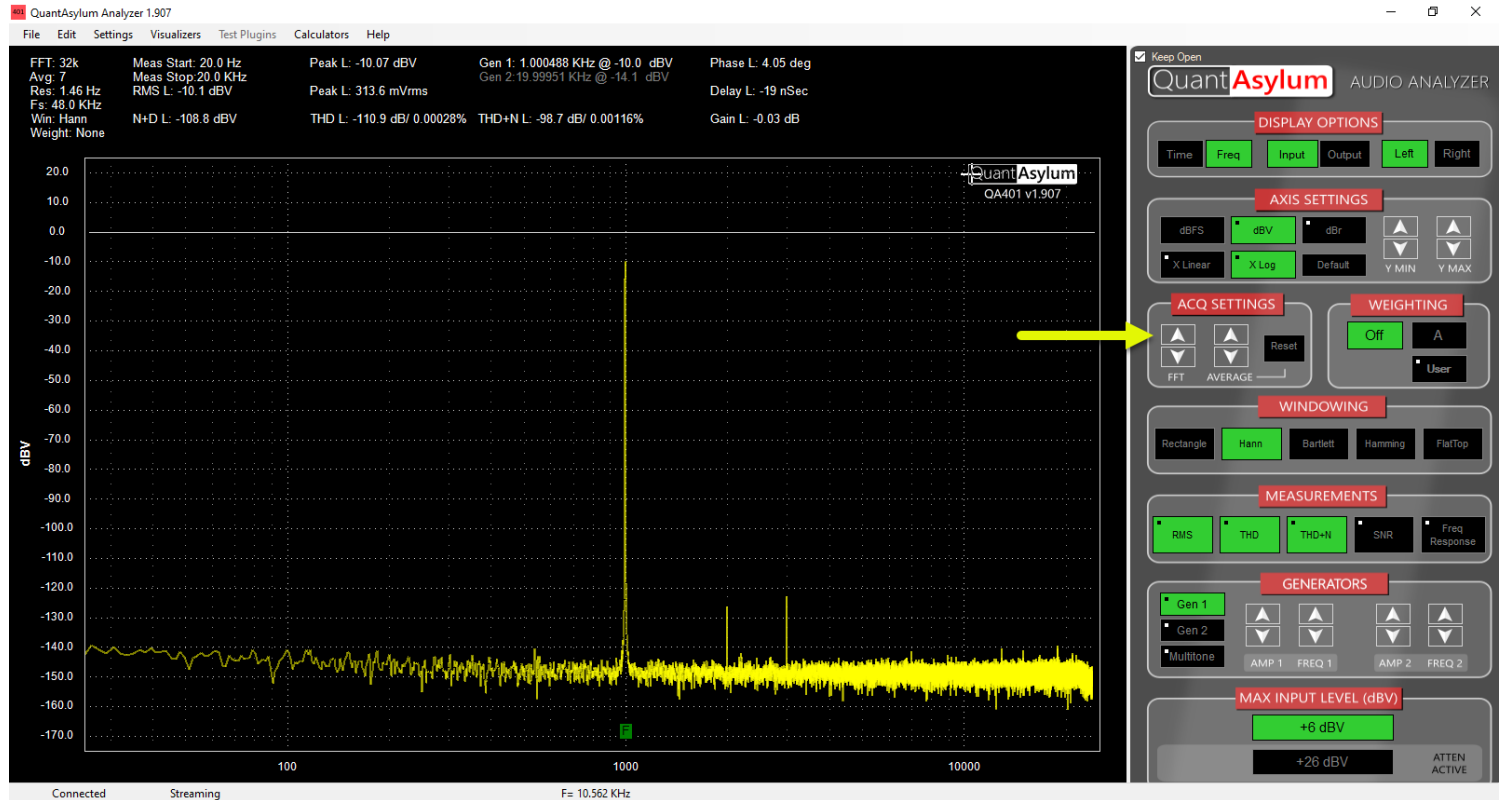
Verify your THD measurement is around -109 dB.

You can click on the peaks to add markers. Pressing "D" will remove those markers.



Other Controls

You can change the depth of the FFT using the "Roller" buttons. This control can be changed by clicking on the up/down arrow, or by hovering over the arrows and rolling your mouse wheel.



Need more help?

Forum: <http://Forum.QuantAsylum.com>
Contact: Support@QuantAsylum.com

The PDF manual is available from the application

Select "Help -> Launch Help"

Or, check in the installation directory

`C:\Program Files (x86)\QuantAsylum\QA401\Documentation`