



**Adding Noise to a Waveform in UltraWave**

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*Solution:* UltraWave is a free program that enables users to create, edit, and download waveforms to Rigol DG1000, 2000, and 3000 series of Arbitrary Waveform Generators.

Here is a brief example of how to add noise to a waveform using the UltraWave Window math functions.

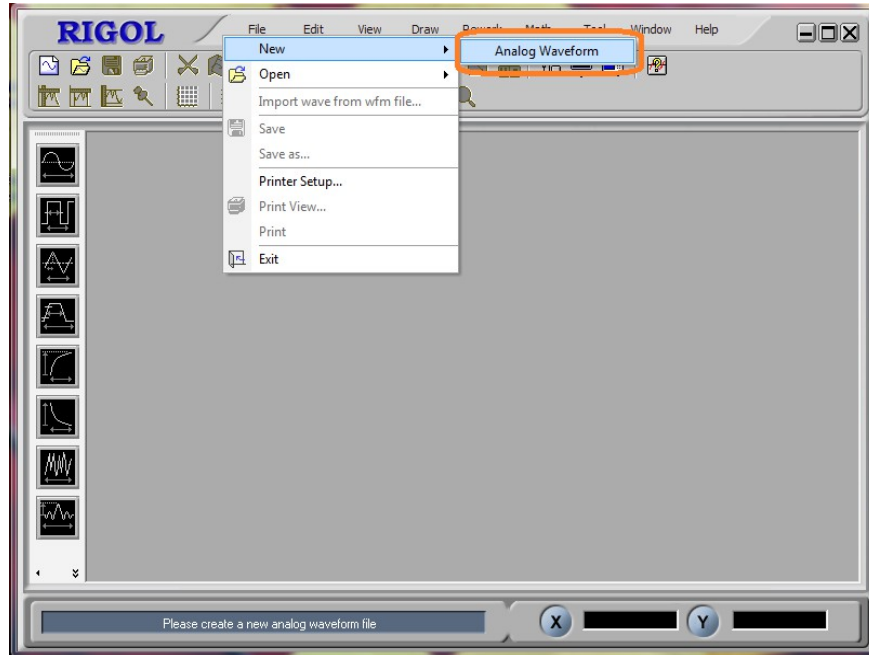
1. Install UltraWave from the instrument CD or download from the software tab on any DG series product page:  
<http://www.rigolna.com/products/waveform-generators/dg1000/>
2. Download and install the latest version of the NI-VISA Runtime that is compatible with your OS: <http://www.ni.com/visa/>
3. Run UltraWave. You can perform this action on by double-clicking the icon on your desktop



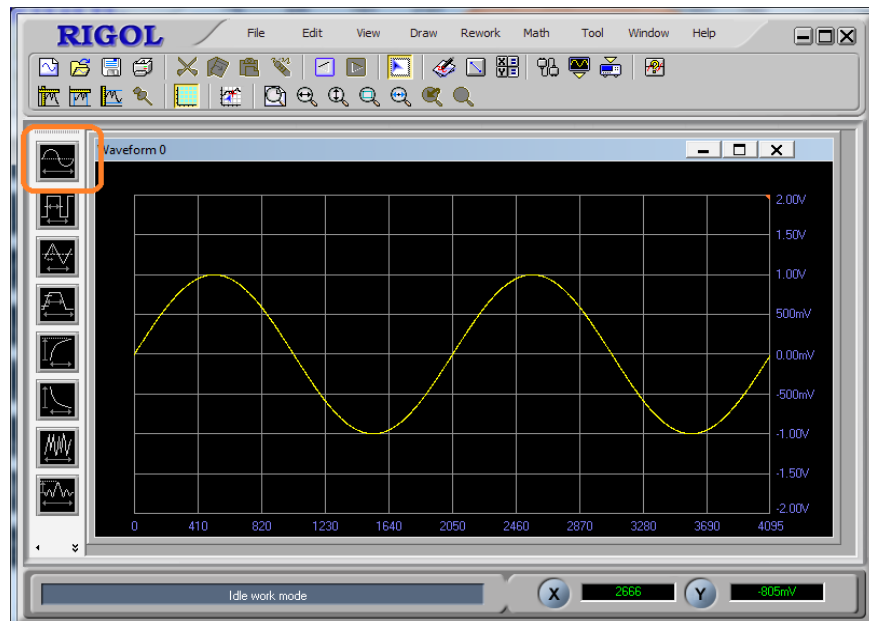
4.



5. Create a new Analog Waveform (File > New > Analog Waveform)

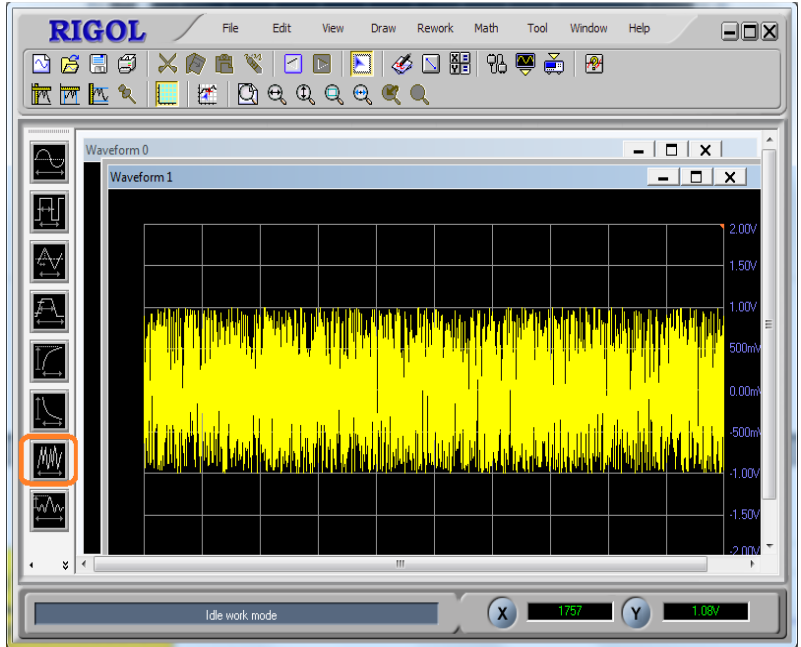


Here, we have created a Sine Wave (Waveform 0).



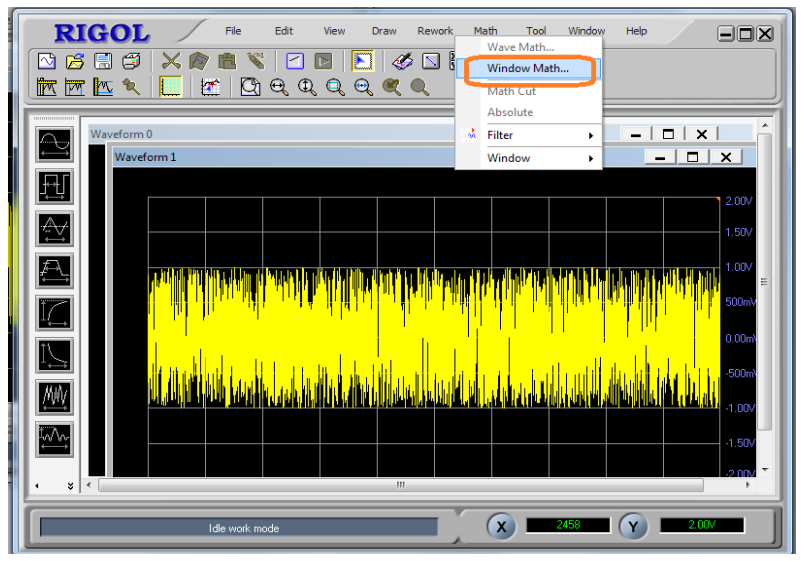


6. Create a noise waveform (File > New > Analog Waveform) and select Noise



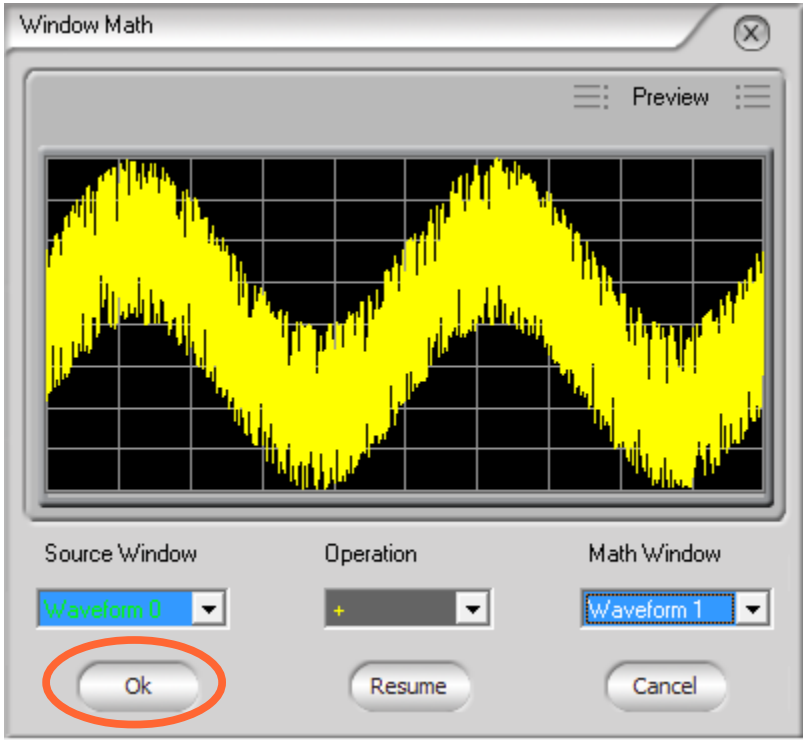
7. Now, add the two waveforms together

- Math > Window Math





- Now, select the waveforms and math function. In this case, we want to add the noise (waveform 1) to the sine wave (waveform 2) and click OK.



8. Now, Waveform 0 has been replaced by the new math waveform.
9. You can download this waveform to a connected DG1000, 2000, or 3000 instrument or you can save it to an External USB drive and transfer it to the instrument.



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