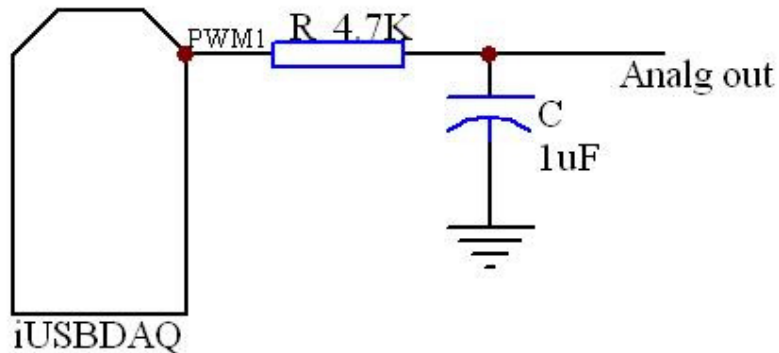




HYTEK Automation, Inc.
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iUSBDAQ Can Be Used As Low Frequency Signal Generator

iUSBDAQ USB data acquisition module can be used as low frequency signal generator when we make some changes on the PWM ports, as showed in picture 001 below.



Picture 001

Inside the iUSBDAQ – U120816, there is a 470Ω resistor in serial and a $1M\Omega$ grounding resistor for each PWM outputs. The positions are:

PWM1: R37 - 470Ω , R36 - $1M\Omega$.

PWM2: R35 - 470Ω , R34 - $1M\Omega$.

If we change the 470Ω to $4.7K\Omega$ and replace the $1M\Omega$ to $1\mu F$ capacitor, then we will get picture 001 circuit above. And now the PWM will become analog output.

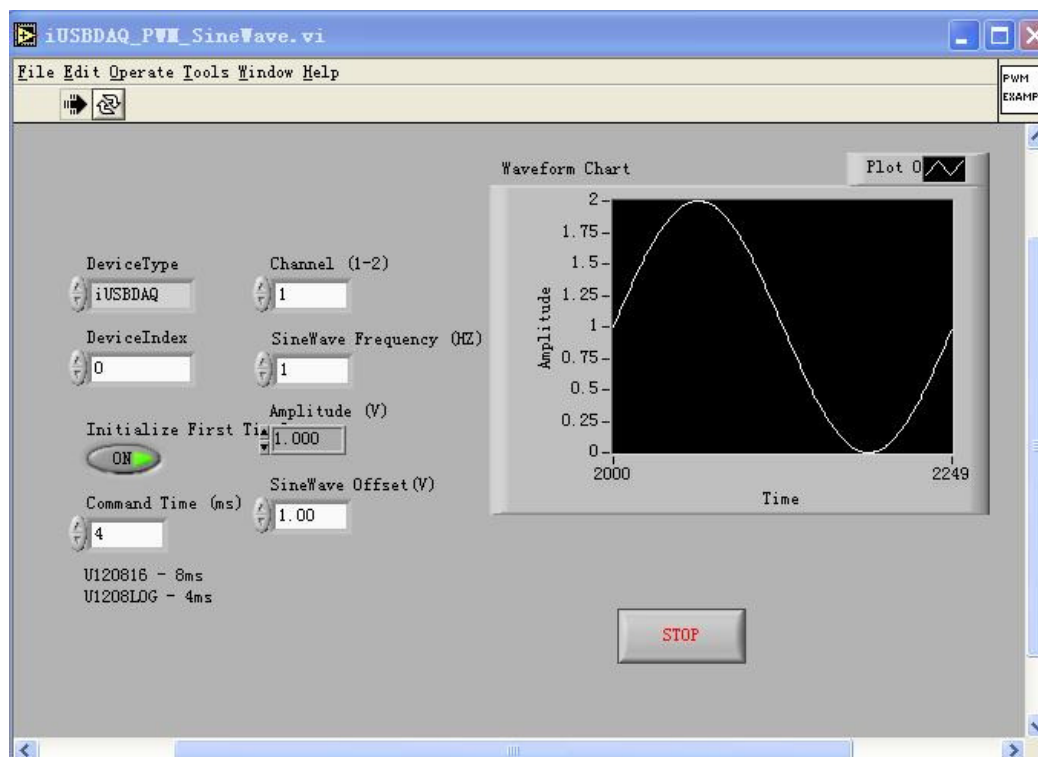
Using the formula: $RC=1/(2 \cdot \pi \cdot f)$

with $R=4.7k\Omega$, $C = 1\mu F$

We will get a low pass filter with 33HZ bandwidth.

Note: If you buy the iUSBDAQ – U1208AO module, it has been modified based on picture 001 for the PWM ports out of factory.

We have made a little utility to generate a sine wave on the modified PWM ports using LabVIEW as showed below in picture 002.



Picture 002

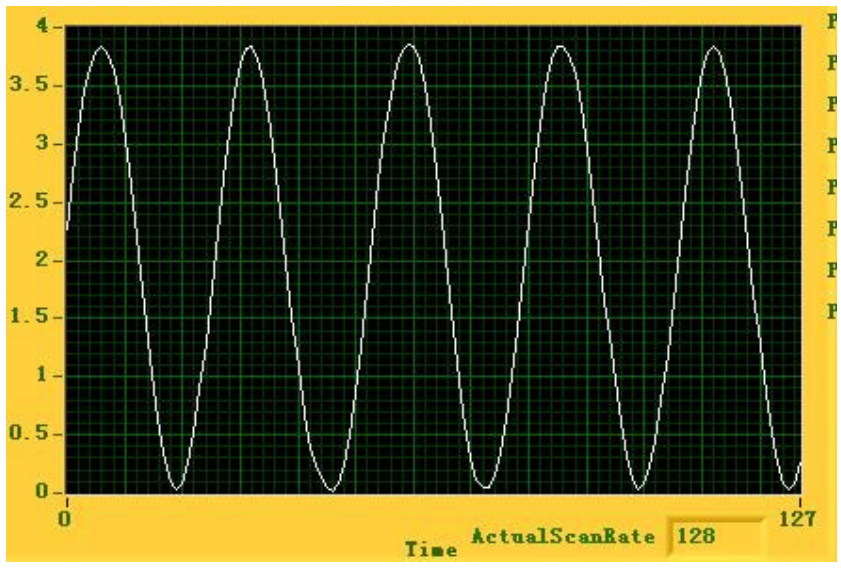
Using this utility we can select output channel , sine wave

frequency (with U120816, frequency should be within 25Hz, with U1208LOG should be within 50Hz). Here you can adjust the

amplitude of the sine wave , sine wave offset .

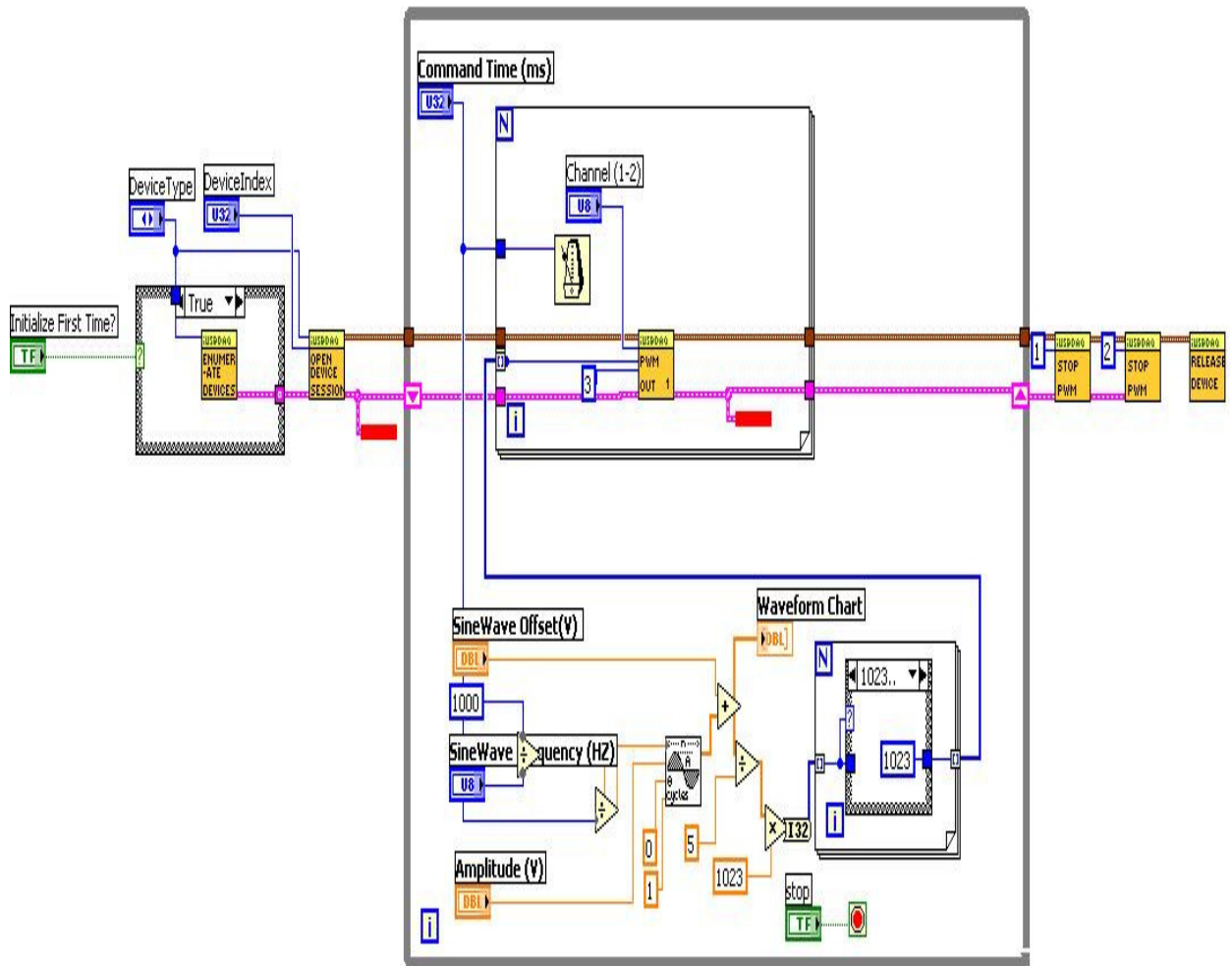
This control is: if your iUSBDAQ model is U120816, we use 8ms, for U1208LOG we use 4ms.

If we output a 10Hz sine wave with the above utility, and connect this output to another iUSBDAQ's analog input, we will see the oscilloscope graph in iDAQTest&Log software as showed in picture 003 below:



Picture 003

Below is the LabVIEW block diagram for this vi:



This vi can be downloaded at:
http://www.hytekautomation.ca/USBDAQ_API.aspx?productId=7