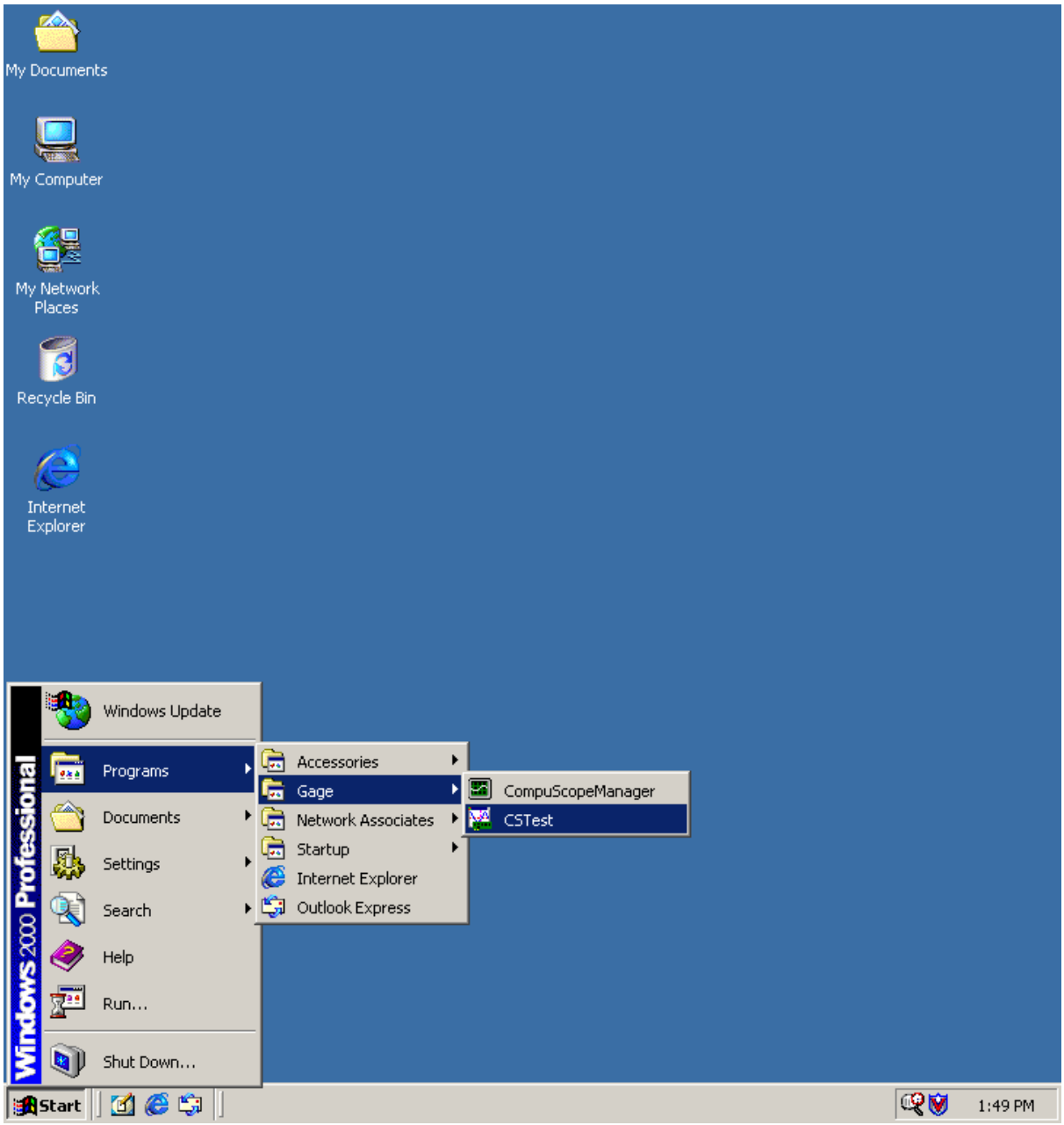
Verifying signal acquisition with CSTest+

CSTest+ is a utility program that allows acquisition and display of data from a CompuScope card using CompuScope 4.xx drivers. It acts as a test to ensure that your CompuScope card(s) is fully functional.

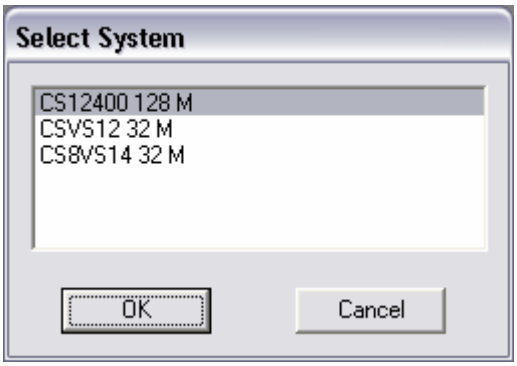
Now that you have successfully installed the CompuScope drivers and have tested driver installation with the CompuScope Manager utility, you can run CSTest+ to verify that these drivers are properly communicating with your CompuScope card(s).

Setting-up your Hardware
Using a function (signal) generator, generate a 1 MHz sine wave signal and connect it to the CH1 input of your CompuScope card.

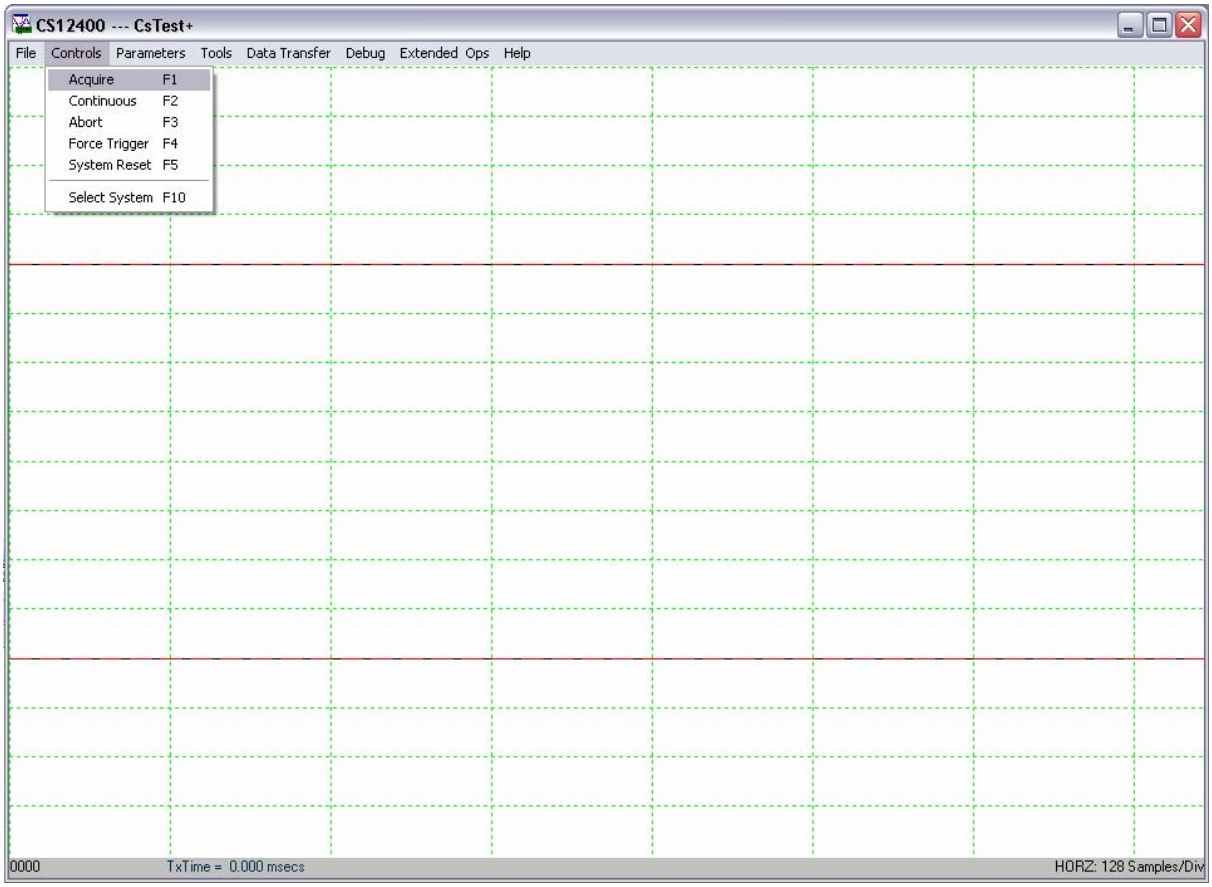
Running CSTest+
You can run CSTest+ from the Windows Start Menu:



If there is more than one acquisition system, be it a single CompuScope card, a Master/Slave multi-card system, or a Multiple/Independent multi-card system, installed on the same computer, you should see the **Select System** dialog pop-up. Select the acquisition system you want to test then click OK. You will not see this dialog if there is only one acquisition system installed in the computer.



You should now see a window labeled **CsTest+**. You can view the sine wave that you have generated using the function generator that you have previously connected by selecting **Acquire** from the **Controls** menu:



To view the sine wave continuously in time, go to the **Controls** menu and click on **Continuous**. Note that the sine wave on the screen starts from the positive slope. As you change the frequency of the sine wave on your function generator, you will see a corresponding change in the sine wave displayed in CSTest+.

Note: You may have noticed the four-digit number in the bottom left corner of the CSTest+ window. This is a counter. Every time CSTest+ acquires data, the counter is incremented by 1.

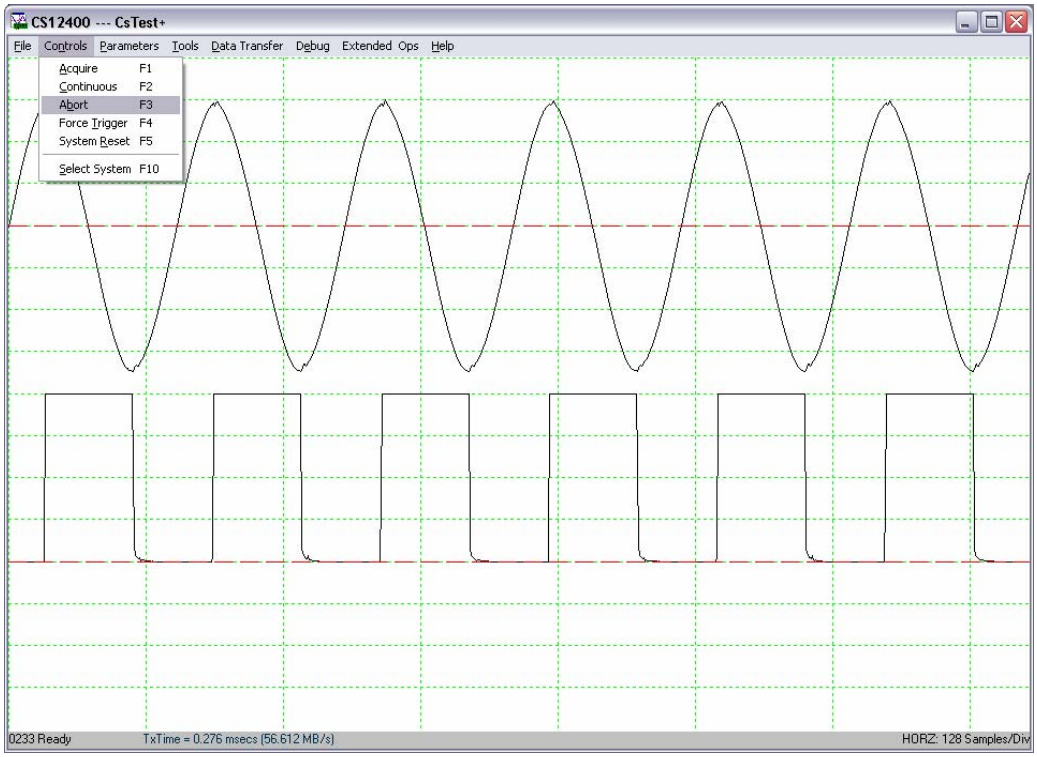
On the right of the counter is the acquisition status. The acquisition status can be one of the following:

Ready	Ready for another data acquisition.
Waiting For Trigger	Data acquisition is in progress, the trigger condition has not been met.

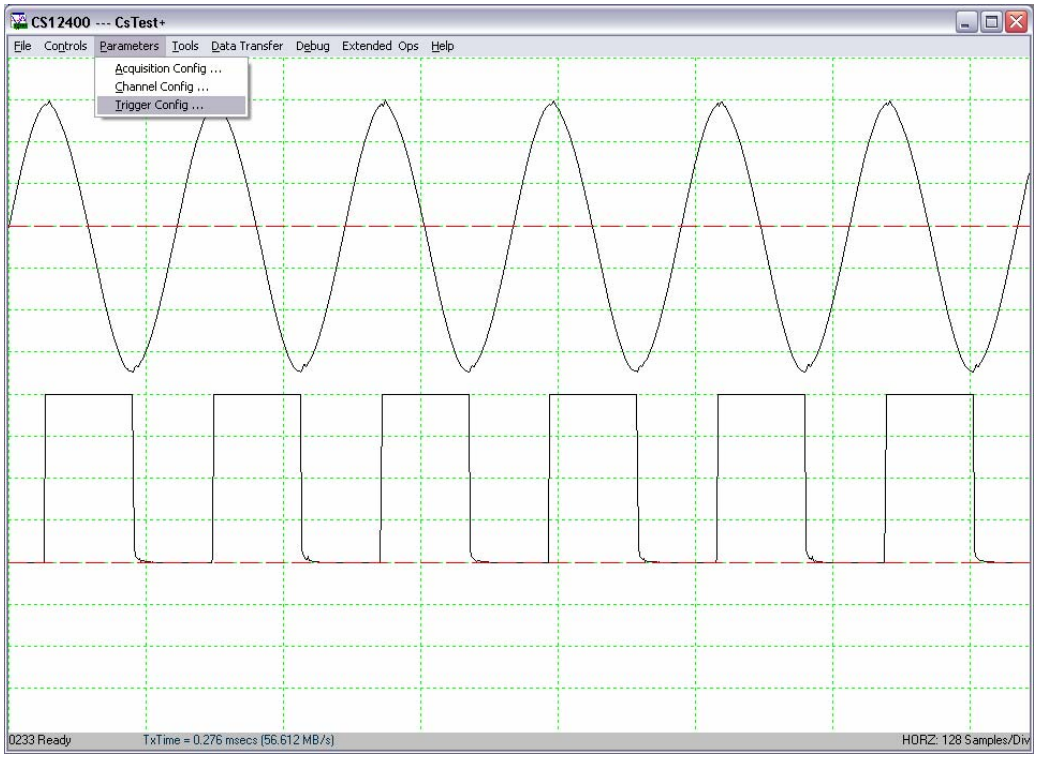
Triggered… Data acquisition is in progress.

Data Transfer… Data transfer from on-board memory to PC memory is in progress.

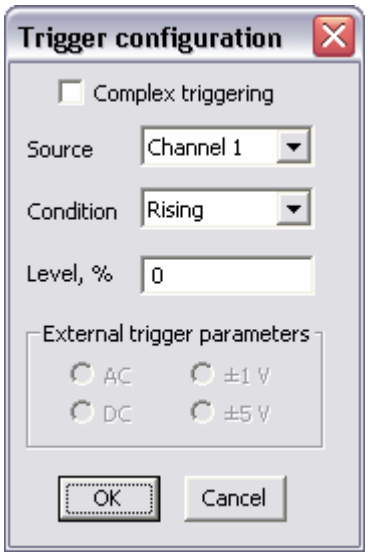
Now, go back to the **Controls** menu and click on **Abort**. This will stop any further acquisition.



We will now change a trigger parameter such as **Trigger Slope** to verify that all controls for the card are working as they should. Go to the **Parameters** menu and select **Trigger Config**.



You should see a new dialog box: (Depending on the version of drivers that you have installed, the dialog may look slightly different)

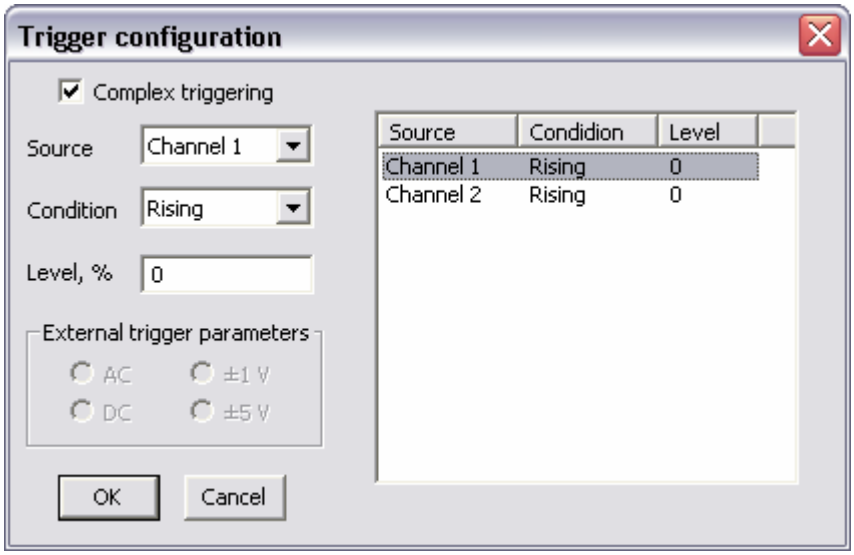


Change the trigger condition from **Rising** to **Falling**. Click on **OK** for this change to be registered and to close the dialog box.

When you go back to the **Controls** menu and click on **Continuous**, you should see the same sine wave, but starting from a negative slope.

This short experiment proves that communication between a utility program (CSTest+), the CompuScope drivers, and a CompuScope card has been successfully established. The following screens describe the other functionalities available with CSTest+:

Note: The menu above only allows implementation of simple triggering. For complex triggering, select the complex triggering checkbox, this will expand the menu:



The newly-revealed box on the right lists all available logical trigger engines, in order. To change settings for a specific logical trigger engine, highlight the corresponding line and adjust the Source, Condition, and Level.

Refer to the Complex Triggering section in this hardware manual for more information on complex triggering.

File – Save Channels

Save Channels saves data captured from different channels into different files in GaGe's SIG file format. The GaGe SIG file can be read from applications that support GaGe's SIG file, such as GageScope.

To exit CSTest+, select **Exit** from the **Controls** menu.

Controls – Force Trigger

Force Trigger causes the acquisition system to be triggered immediately, no matter what the trigger configuration parameters are.

Controls – System Reset

System Reset resets the acquisition system to the default state. The current data acquisition will be aborted and all configuration parameters (Acquisition, Channels and Triggers configurations) will be reset to the default settings.

Controls - Select System

If there is more than one acquisition system installed in the same computer, **Select System** allows the user to select another acquisition system and make it the active acquisition system in CsTest+.

Parameters – Acquisition Config

(Depending on the acquisition system and version of drivers you have installed, the dialog may look slightly different)

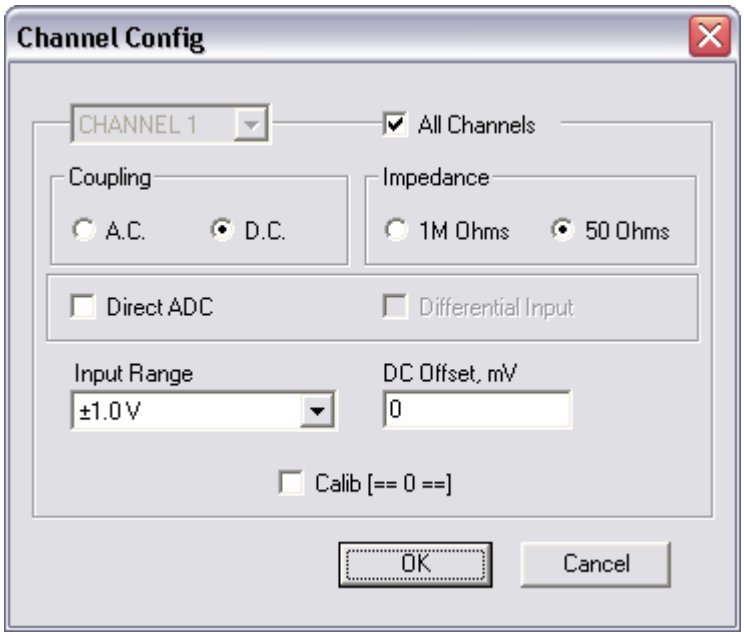
Acquisition Config allows users to modify different acquisition configuration parameters such as Pre-Trigger and Post-Trigger depth, Multiple Recording, Sample Rate, Trigger Timeout…

Parameters – Channel Config

(Depending on the acquisition system and version of drivers that you have installed, the dialog may look slightly different)

Channel Config allows users to modify signal conditioning parameters such as Coupling, Impedance and Gain….

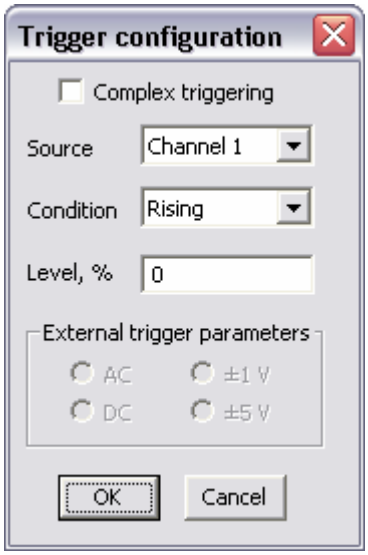
Calib [==0==] is Null Channel Input, which will force the recalibration of the hardware, taking the average value of the current input as a new reference for the zero level.



Parameters – Trigger Config

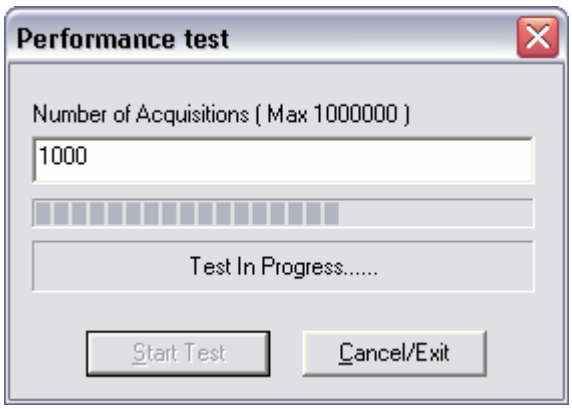
(Depending on the acquisition system and version of drivers you have installed, the dialog may look slightly different)

Trigger Config allows users to modify different trigger configuration parameters such as trigger source, level and slope…

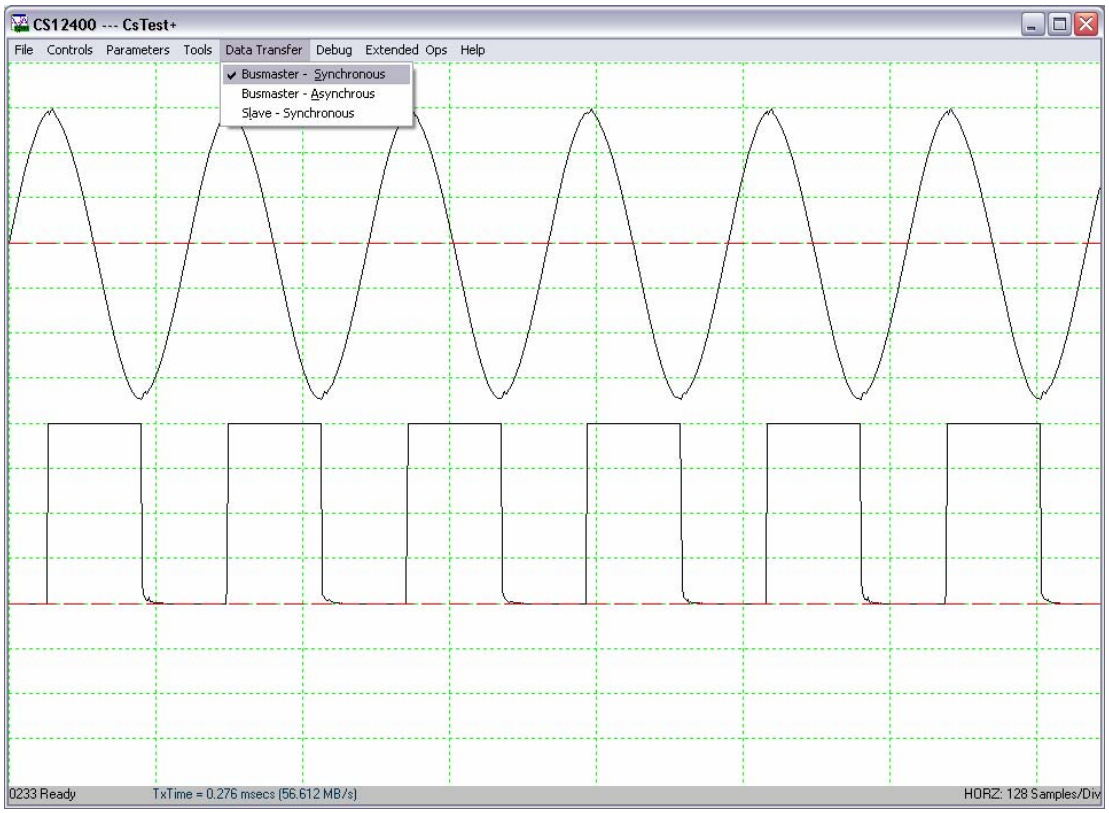


Tools – Performance

Performance allows you to verify the Pulse Repeat Frequency (PRF) performance of the CompuScope system using the current configuration parameters.



Data Transfer – Busmaster Synchronous



The Data Transfer menu allows the user to select the PCI data transfer mode:
Busmaster - Synchronous (default), Busmaster - Asynchronous, and Slave - Synchronous.
Usage of default mode is recommended unless other modes are specifically required.

Help – Display Controls

Display Controls shows different shortcuts to control the display of the captured data.