Using CustomDSO Plugins

Creating Custom Users Interface Elements In Your Scope

CustomDSO is a unique feature of LeCroy X-Stream™ oscilloscopes which allows the user to customize the user interface. In its Basic mode, allows you to create a system of DSO setups that can be called by a single, user defined, button press. The called setups can themselves include calls to further setups, enabling you to create setup groups of any degree of complexity. A very simple example would be a toggle between two setups. Rings of three or more setups are possible, as are trees, and indeed any topology that you need.

A more powerful feature, is the CustomDSO PlugIn, which allows you to add your own ActiveX controls to a setup. These controls are powered by routines written in Visual Basic, Visual C++, or other ActiveX compatible programming languages. This rather simple statement does not convey any sense of the immense power that is available from the Microsoft system. With ActiveX controls you can create your own user interfaces to suit your own preferences. A large number of interactive devices are available, including button, check box, radio button, list box, picture box, and common dialogue box. Figure 1 shows the CustomDSO setup dialog box which is accessed via the Analyze pulldown menu. Selecting the PlugIn mode allows the user to enter the name of the

Figure 1 The CustomDSO setup dialog box showing the PlugIn selection of an ActiveX component created in VisualBasic.

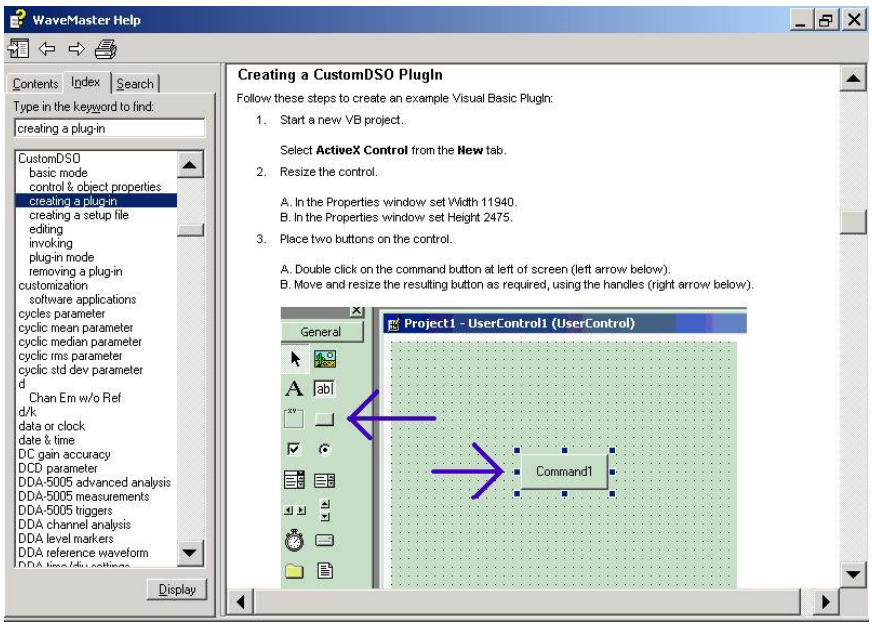

Figure 2 The X-Stream oscilloscope help screen illustrating the creation of a CustomDSO PlugIn

plugin component. The component "LeCroy.CustomDSODemo.1" is an example of an ActiveX control that is supplied with all X-Stream oscilloscopes. This plugIn is a custom ActiveX Control designed in an environment like Visual Studio in Visual Basic and used to create and merge this graphical user interface (GUI) with the scope user interface.

This feature opens up the door to a huge variety of applications previously not possible or only via remote control from an external PC. All that is required is an Xstream oscilloscope including a WaveMaster, WavePro 7000 and the SDA or DDA series . The system requirements for creating a CustomDSO PlugIn is the installation of the XDEV Software Option. In addition, the user must have a programming environment such as Visual Studio. Programming in the scope, rather than in an external computer, has the advantage of allowing the ActiveX controls registered in the scope during the compilation process.

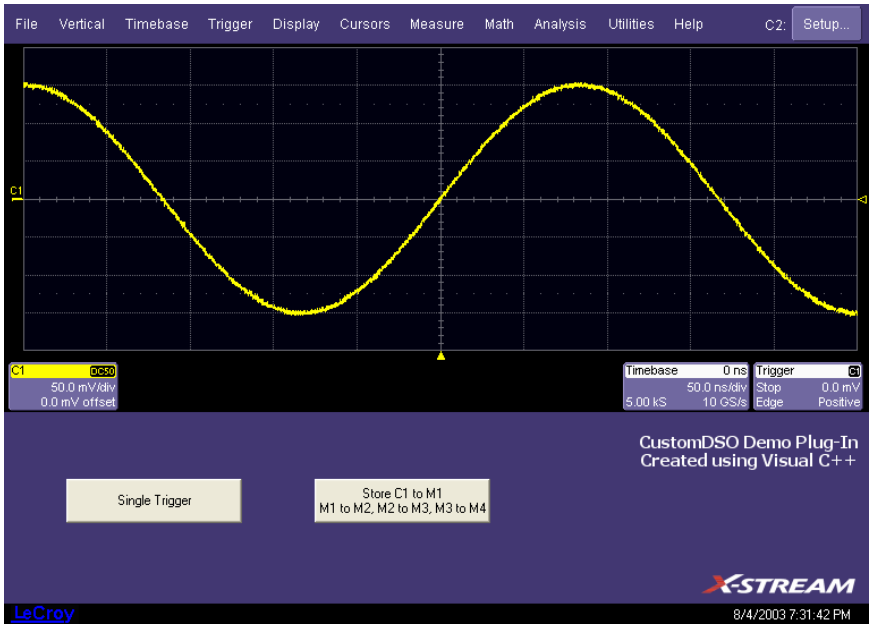

Figure 3 An example of a CustomDSO PlugIn

If the ActiveX component is created outside of the scope it must be registered with the operating system before it can be used.

More details on the creation of CusotmDSO PlugIns are available in the X-Stream oscilloscope's help files as shown in figure 2. There is also a detailed white paper, " Create a CustomDSO PlugIn with Visual Studio" which provides step by step instructions for creating a PlugIn.

Figure 3 shows the result of running the PlugIn included in all Xstream oscilloscopes. A custom dialog box is displayed which contains two selection buttons one which places the oscilloscope in single trigger mode and the other which simultaneously transfers the waveforms from channels 1 through 4 into memories M1 through M4.