

A P E

Windows Control Software

Introduction

The Windows Control Software enables you to control the function of the autocorrelator via a PC under the operating system Windows 95/98/ME/NT/2000/XP. Besides, it lets you acquire, store, display, evaluate and print correlation and spectral data (only PulseScope) with the PC. This software is suitable for all PulseCheck and PulseScope autocorrelators with RS232 (standard) or GPIB interface. The control software was designed with the programming language LabView and comes as an executable Windows application (LabView is not necessary).

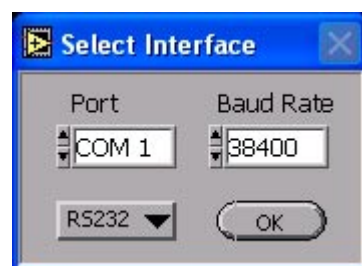
Installation

1. Insert the supplied PulseCheck/PulseScope CD into your CD-ROM drive
If Autorun is enabled the CD will start up automatically. In this case go on to 5.)
2. Press the "Start" button and select Run...
3. Type d:\setup (if "d:" is your CD-ROM drive)
4. Press the "Enter" key
5. The program will guide you through the installation
6. If LabView 6.1 or newer version is not installed on your PC installation of visa runtime engine is necessary. For this you have to manually start the setup file „visa260runtime.exe on CD main path.

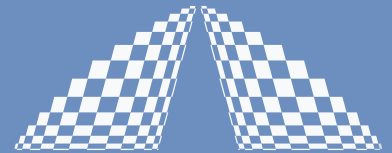
A new program group „APE Instrumentation Control“ will be created in the Windows Start Menu. After successful installation you can start the Control Software from there.

Getting Started

Connect the autocorrelator with the computer, switch on the autocorrelator and start the program "PulseCheck/Scope" from the program group "APE Instrumentation Control" in the Windows Start Menu. A dialog box "Select Interface" appears.



Choose the appropriate interface type (RS232 or GPIB). If a serial port (RS232) is used, you have to specify the used COM port (COM1... COM8) and the Baud Rate. This value must correspond to the setting of the



A P E

autocorrelator control electronics in the menu “Corr -> Display -> RS232 Baud rate”.

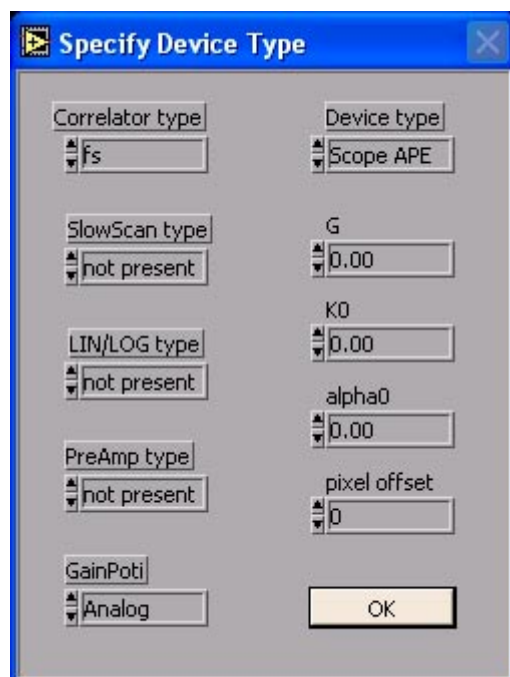
If a GPIB interface is used, you must enter the correct GPIB address. This address must correspond to the setting of the autocorrelator control electronics in the menu “Corr -> Display -> IEEE Address”). Confirm the selected interface parameters by pressing the „OK“ button.

Now, the program searches for an APE device at the selected interface. If found, a dialog box will appear with the serial number of the connected device. In case you run the Program for the first time, you will be informed, that you have to unlock the software for your device.

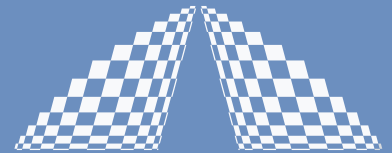
Type in the device code, which has been delivered with your device, into the entry field. The program saves the device code, so this dialog box will not appear for again, unless the program detects a different device. In this case, you will have to type in the respective device code in order to unlock the software for this new device, too.

If no device is found or the device key is wrong, a dialog box appears which lets you decide whether to start in offline mode, change the interface parameters or retype the device code.

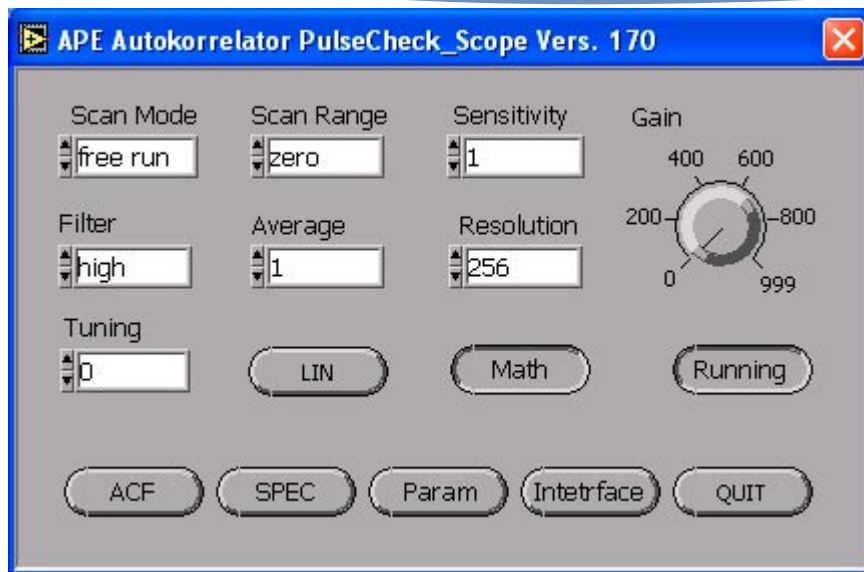
In offline mode, no communication with an APE device is possible, but stored data files can be loaded and displayed. Before running the offline mode, a virtual device must be specified with the following dialog.



This dialog also appears, when a device is detected, which doesn't support the automatic device type scanning.

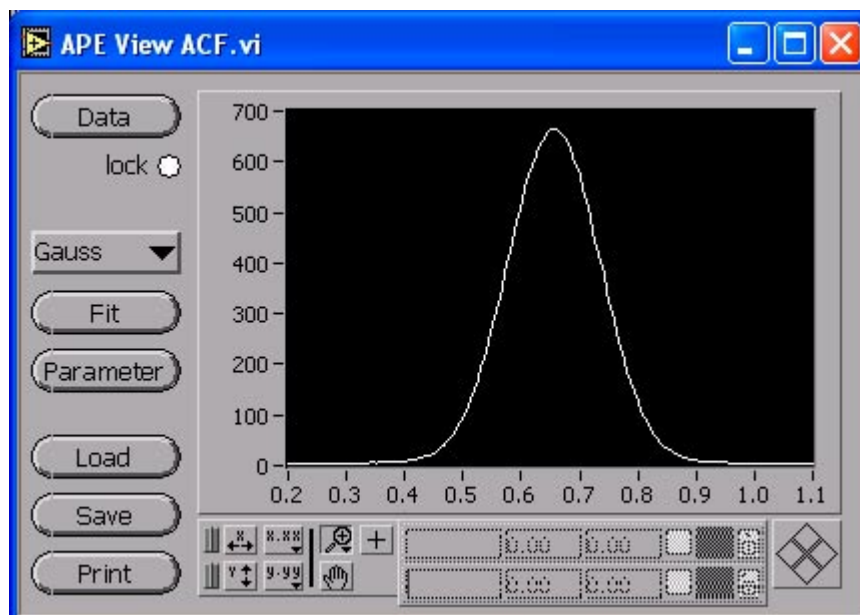


A P E

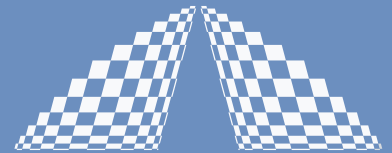


In the upper field the program front panel shows the control elements and the parameter settings for the detected device. To understand the meaning of the different parameters, please check the autocorrelator manual. The buttons for program control are located in the bottom line.

If more than one device is connected to different interfaces or the used interface is changed, the interface dialog box can be opened again by pressing the "Interface" button. After selecting and confirming new interface parameters by pressing the "Ok"-button, the device detecting routine will start again as described.



The „APE View ACF“ window opens when you press the „ACF“ button on the program front panel. If the „Data“ button in the „APE View ACF“ window is pressed, the ACF data will be transferred and displayed as a graph. When the „lock“ box is selected, the ACF data transfer will be continuously displayed, until the

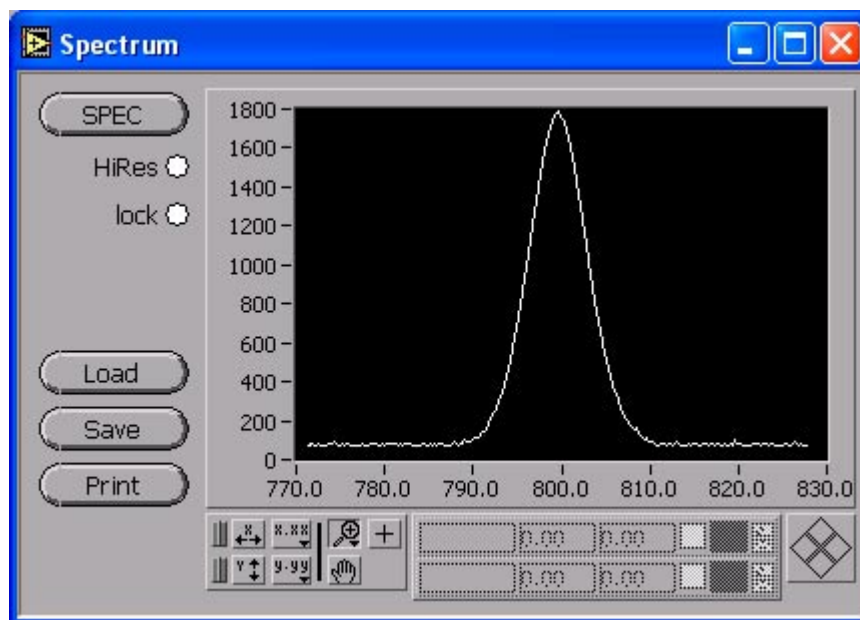


A P E

transfer is stopped again by the user. The data transfer function is not active in offline mode. The displayed ACF data can be stored as ASCII file by pressing the “Save” button. This ASCII file starts with a header, which contains the autocorrelator settings, followed by two columns of 256 data values. The first column contains the time values, the second column contains the corresponding ACF signal values. When at the time of data transfer the autocorrelator is set to „Fringe“- mode, there are three columns with the last two columns representing the upper and lower envelope functions of the ACF signal. With the „Load“ button, ACF data files can be reloaded.

Pressing the „Fit“ button, the displayed data are fitted with the selected fit-function. The original ACF data are shown as a white trace, the fit function as a yellow trace. When the „Parameter“ button is pressed, the ACF - half width, the calculated Pulse - half width and the mean square error (MSE) are displayed in the upper left corner of the graph display.

Below the graph window you will find control elements for zooming, scaling and cursor setting.



When a spectrometer is connected (PulseScope), the corresponding „APE View Spec“ window is activated by pressing the „Spec“ button on the front panel. The meaning of the control buttons in this window are identical to the described functions of the “APE View ACF” window. When the “HiRes” check box is marked, the whole data range of the spectrometer will be transferred. Depending on the spectrometer type, this can take several seconds (up to 32000 data points). If “HiRes” is unmarked, only the displayed data on the controller screen will be transferred (256 data points). The spectrum data can be saved in an ASCII file with the first row containing the wavelength values and the second row the corresponding spectrum values.

First the current parameter settings of the autocorrelator will be transmitted which will take a few seconds. As soon as the serial number is shown, the initialisation is completed and the software is ready for use. Now the parameters displayed by the control software should be identical with the corresponding parameter settings of the autocorrelator. To understand the meaning of the various parameters, please refer to the Pulse-Check manual. If you change the parameter settings of the software, the changes will be transferred to the



A P E

PulseCheck immediately.

The parameter settings can also be changed directly at the autocorrelator electronics at every time. These changes, however, will not automatically transferred to the PC control software. For refreshing the parameter settings on the PC you have to transmit an autocorrelation function by clicking the “Get ACF” button. In the graphical display several display options and zoom functions as well as cursors are available. Use the tools palette below the graph to choose these options.

The program can be closed by pressing the “QUIT” button.