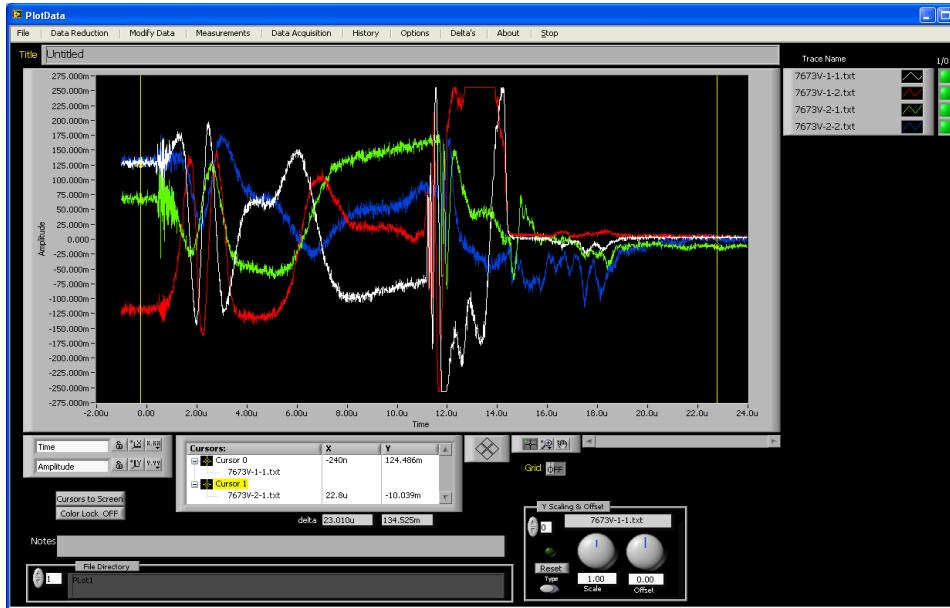


PlotData software

Data Acquisition and Waveform Manipulation System



David Wackerbarth (505) 844-6198 dewacke@Sandia.gov

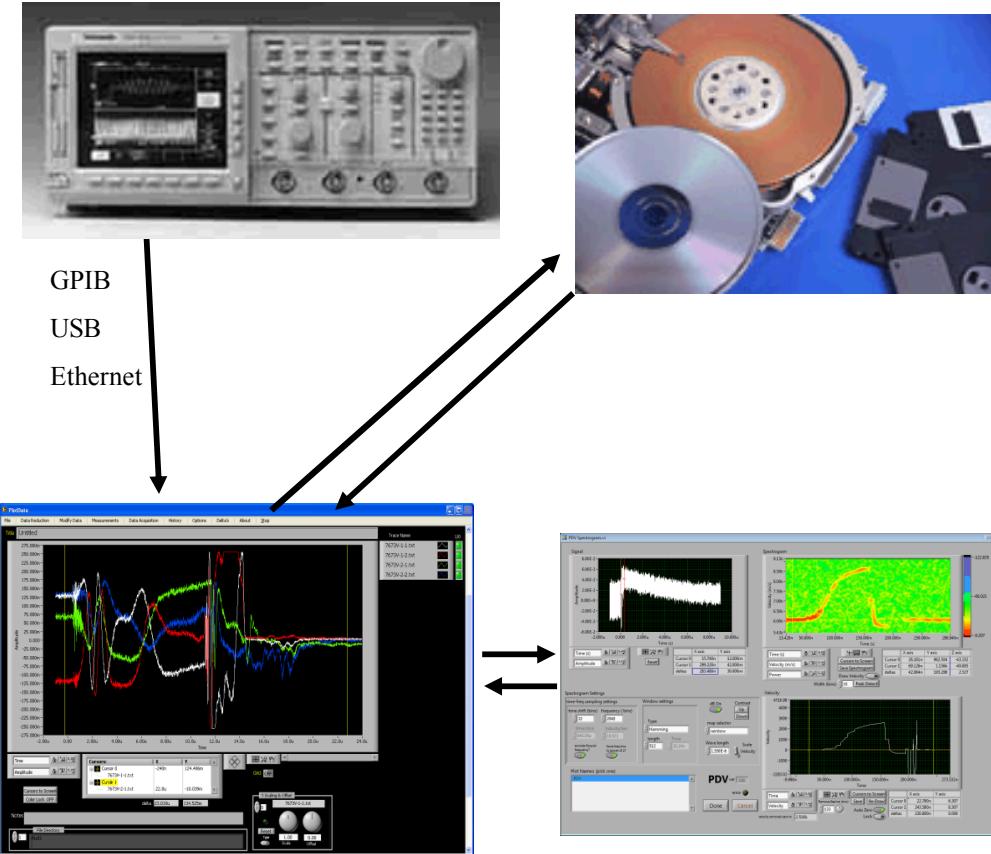
Weapon Controls Department

Sandia National Labs

P.O. Box 5800

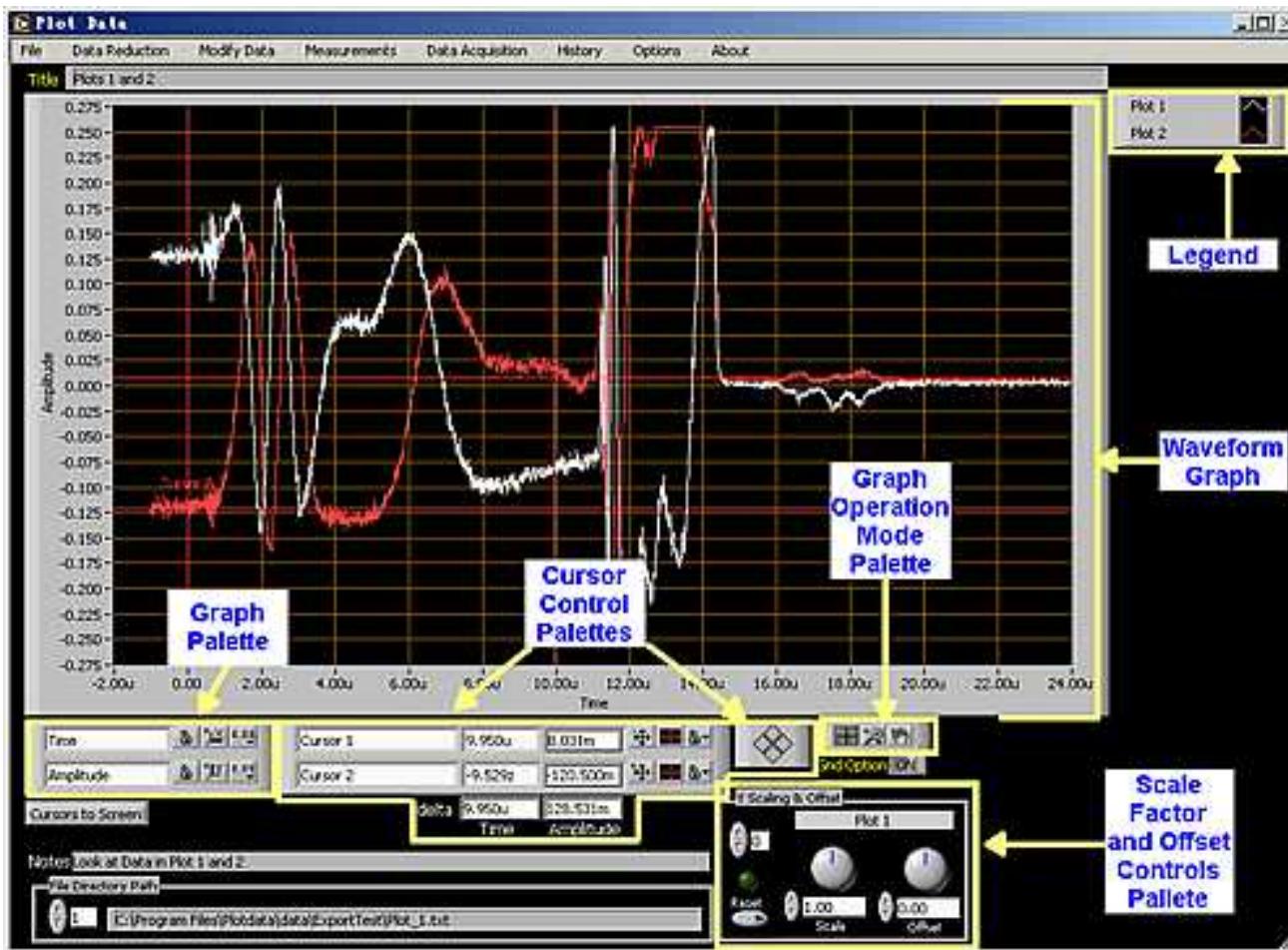
Albuquerque New Mexico 87185-0348

PlotData Overview



PlotData is designed for post-acquisition waveform data analysis. PlotData is both a post-acquisition and an advanced interactive data analysis environment. PlotData operates on a National Instruments' LabVIEW™ software platform. Using PlotData, the user can capture waveform data over a GPIB, USB and Ethernet interface. PlotData can both import and export several types of binary waveform files including, but not limited to, Tektronix .wfm, LeCroy .trc and xy pair ASCII files. Waveform manipulation includes numerous math functions, integration, differentiation, smoothing, truncation, and other specialized data reduction routines such as VISAR, PDV, PVDF (Bauer) piezoelectric gauges, and piezoresistive gauges such as carbon manganin pressure gauges.

PlotData Main Screen





File Types

- **Import File Types**

Auto Detect

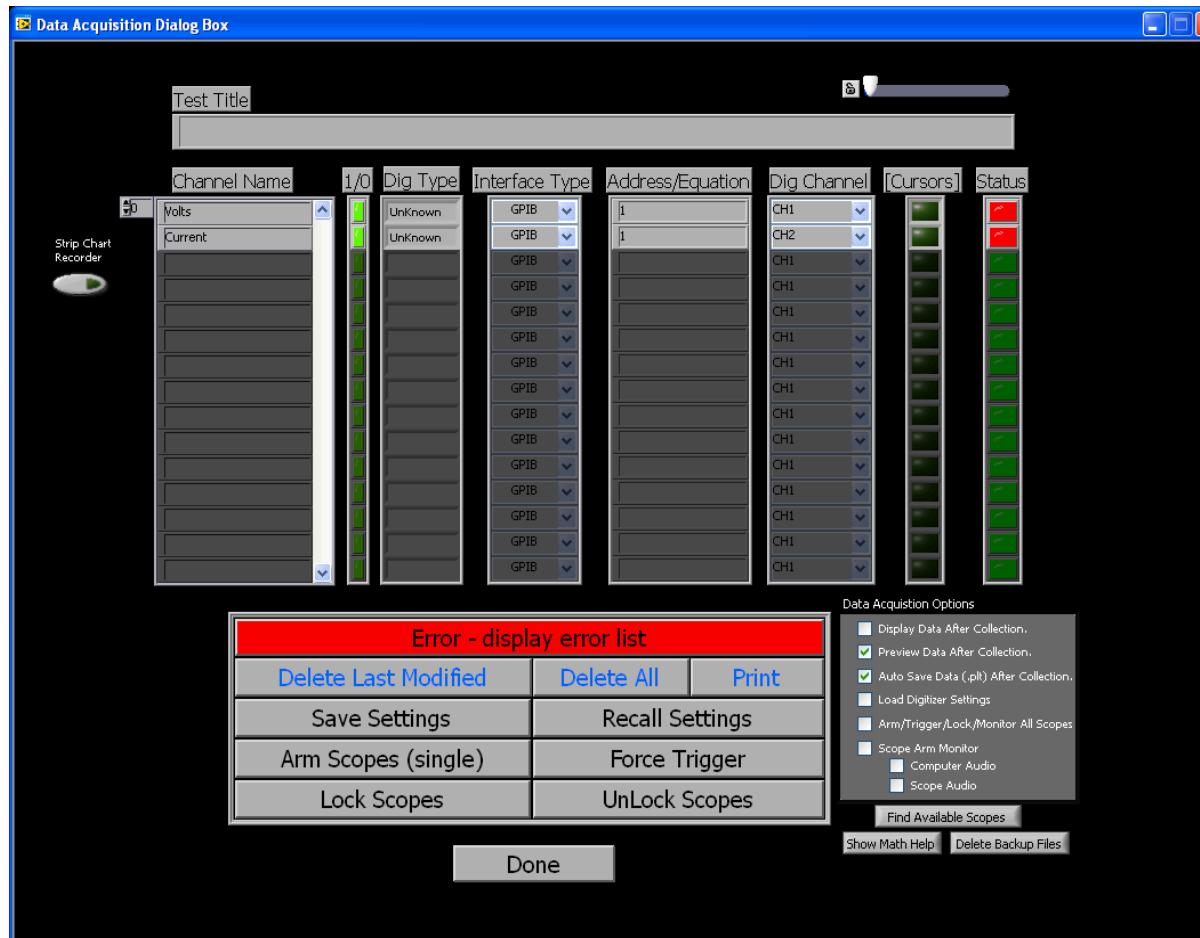
PlotData (.plt)
ASCII (.csv)

Tektronix (.wfm, .csv, .isf and .wfa)
LeCroy (.trc)
Sound (.wav)

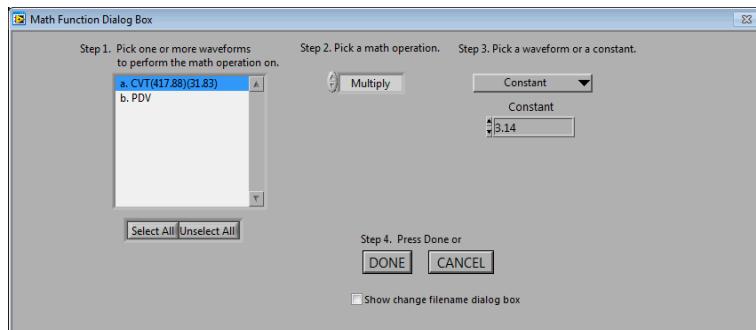
- **Export File Types**

PlotData (.plt)
PlotData (.spn) Snap Shot
ASCII XY Pair (.csv)
ASCII multi XY Pair (.csv)
Sound (.wav)

Data Acquisition



PlotData's Math Function Dialog Box



PlotData's Math Help Dialog Box

List of Operators

Operator	Function	Comments
+	Adds	Computes the sum of the inputs.
-	Subtract, also Minus Sign, -1.0	Computes the difference of the inputs.
*	Multiply	Returns the product of the inputs.
/	Divide	Computes the quotient of the inputs
^x	Power of	Computes x raised to the y power.
int	Integrate	Computes a definite integral of the waveform. Due to integrating a single value Integrate will always return a value of 0.666667 to 6 decimal places.
dif	Differentiation	Computes a discrete differentiation of the waveform. Due to differentiating a single value Differentiation will always return a value of 0.0 to 6 decimal places.
sqrt	Square Root	Computes the square root of the input value.

Examples

2. Add Trace "a" to Trace "b" then Divide by two $(a+b)/2$

3. Negate Trace "a" then times by 2 $neg(a)*2$

4. Absolute value of Trace "a" then calculate square root $sqrt(abs(a))$

Trace names below have been assigned a unique lower case letter to simplify the equations. Use these lower case letters in place of trace names in the equations. Upper case "E" is reserved for the Exponent of (1E-3). Assign each Trace Name a numeric value in the table below to represent the Y axis values in that trace data. This value will be used in the practice equation that you type in below. Type your equation in the control below. Use parentheses to control the order of calculation as in example 2 above. This routine is case sensitive. Spaces are not necessary but recommended.

Step 1. Assign a numeric value to each trace name.

Trace Name and Values

Trace Name	Value
a. CVT(417.88)(31.83)	3
b. PDV	1.0

Step 2. Type in practice equation using the assigned letters.

Practice Equation: $(a^2)+b$

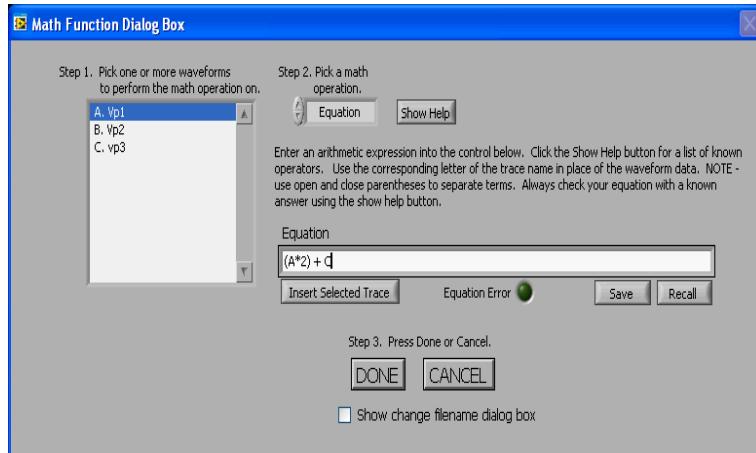
Answer: = 7.0000

Error

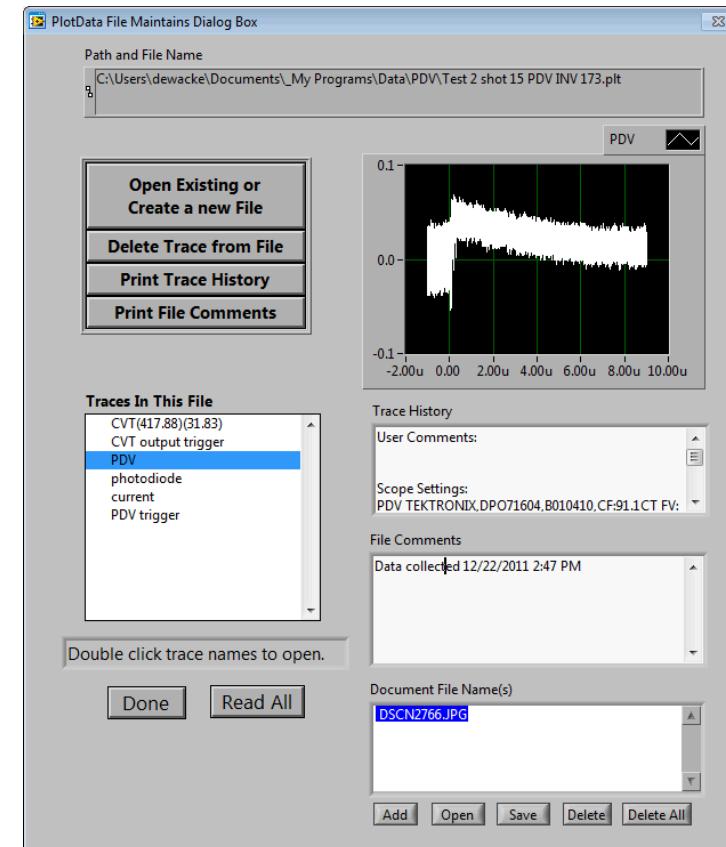
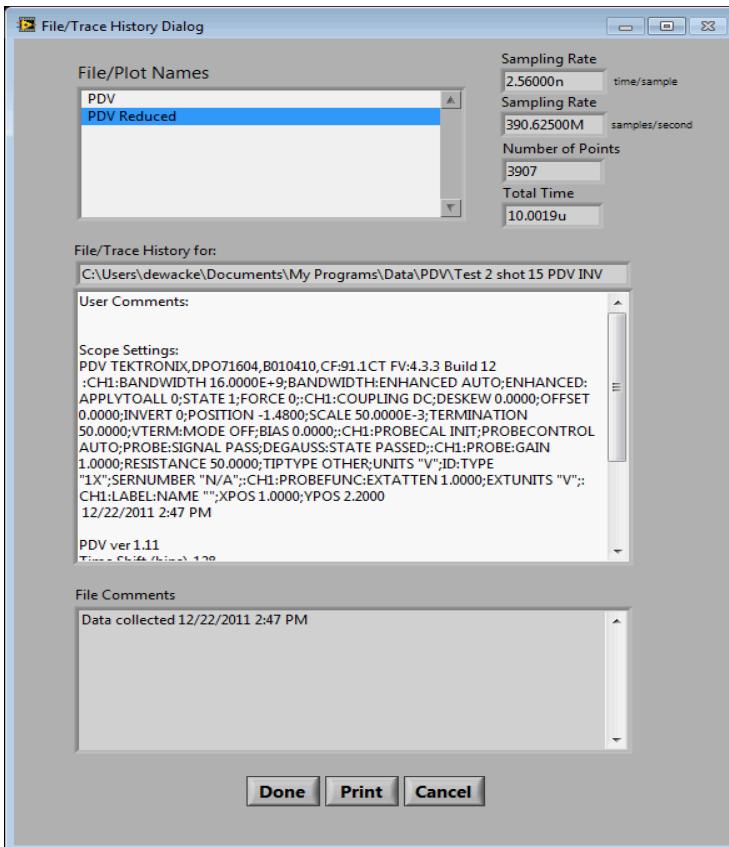
Step 3. Check Answer.

There is something wrong with the equation if the error light is on.

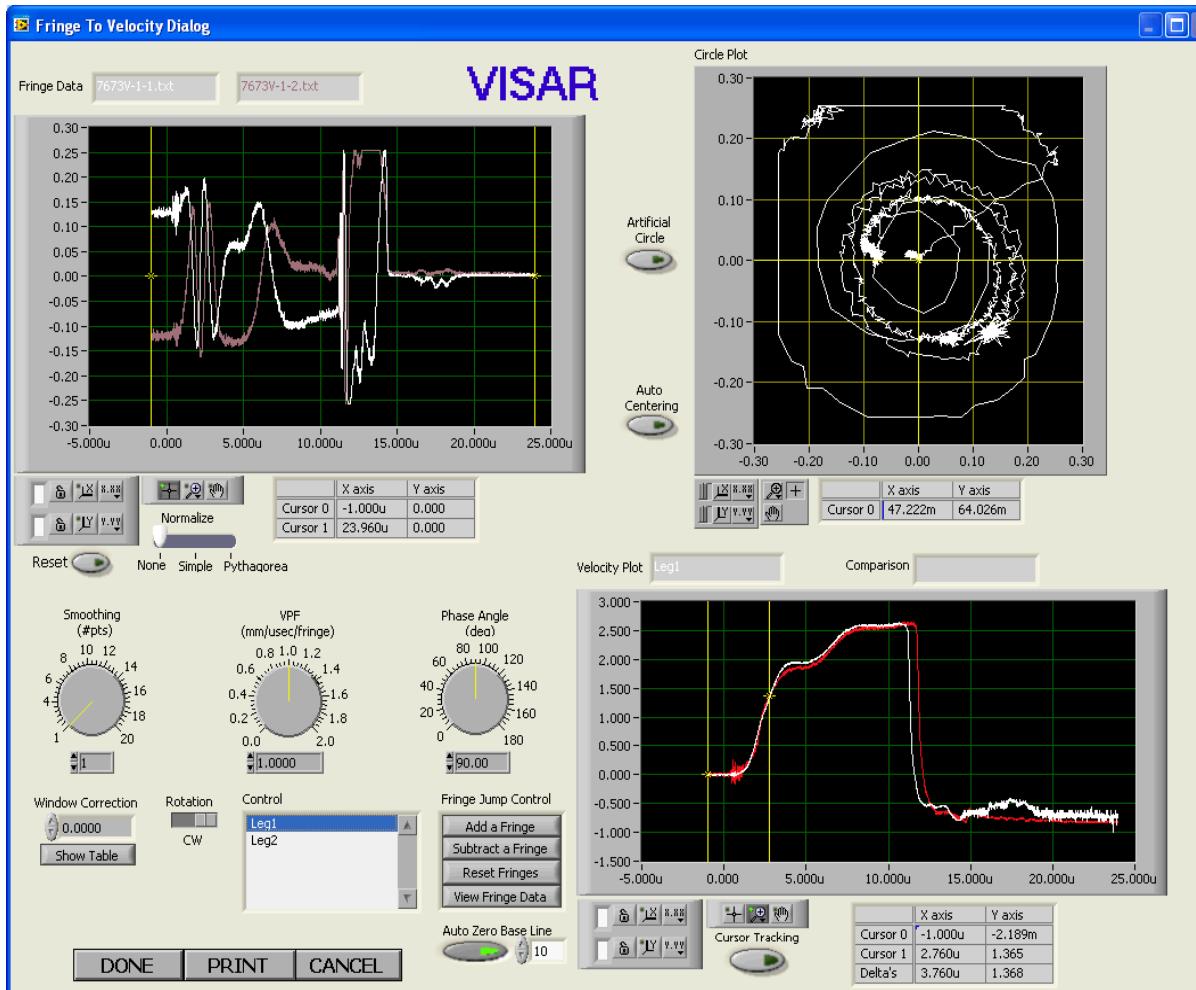
DONE CANCEL



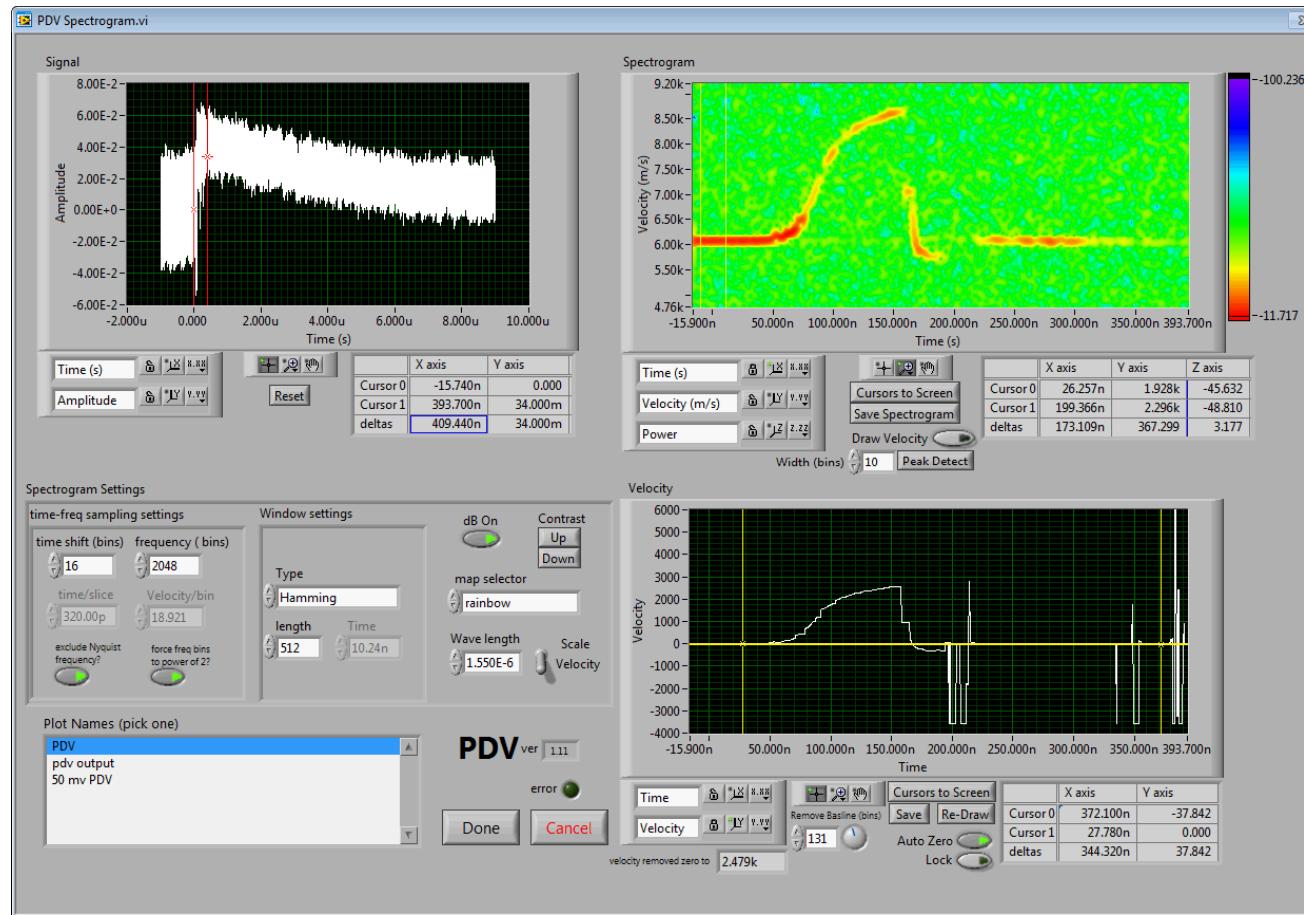
PlotData's History and File Dialog Box



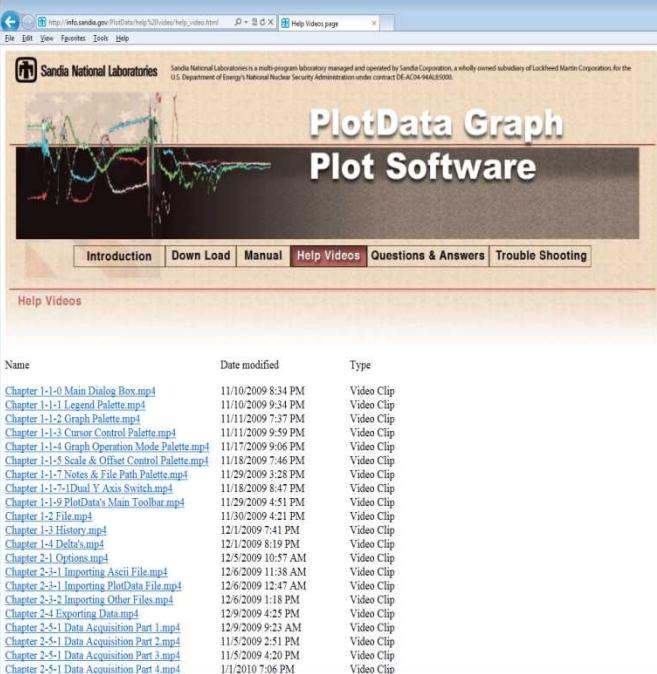
VISAR Data Reduction



PDV Data Reduction



Help Video files and Manual



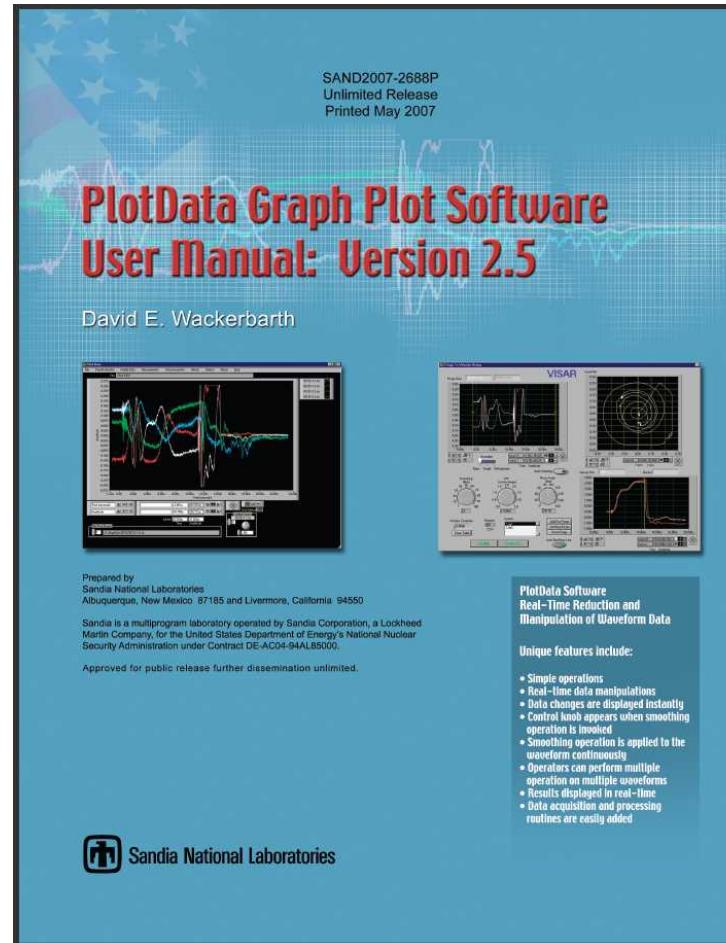
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PlotData Graph Plot Software

Introduction Down Load Manual Help Videos Questions & Answers Trouble Shooting

Help Videos

Name	Date modified	Type
Chapter 1-1-0 Main Dialog Box.mp4	11/10/2009 8:34 PM	Video Clip
Chapter 1-1-1 Legend Palette.mp4	11/10/2009 9:34 PM	Video Clip
Chapter 1-1-2 Graph Palette.mp4	11/11/2009 7:37 PM	Video Clip
Chapter 1-1-3 Cursor Control Palette.mp4	11/11/2009 9:59 PM	Video Clip
Chapter 1-1-4 Graph Operation Mode Palette.mp4	11/17/2009 9:06 PM	Video Clip
Chapter 1-1-5 Scale & Offset Control Palette.mp4	11/18/2009 7:46 PM	Video Clip
Chapter 1-1-7 Notes & File Path Palette.mp4	11/29/2009 3:28 PM	Video Clip
Chapter 1-1-7-Dual Y Axis Switch.mp4	11/18/2009 8:47 PM	Video Clip
Chapter 1-1-9 PlotData's Main Toolbar.mp4	11/29/2009 4:51 PM	Video Clip
Chapter 1-2 File.mp4	11/30/2009 4:21 PM	Video Clip
Chapter 1-3 History.mp4	12/1/2009 7:41 PM	Video Clip
Chapter 1-4 Delta's.mp4	12/1/2009 8:19 PM	Video Clip
Chapter 2-1 Options.mp4	12/2/2009 10:57 AM	Video Clip
Chapter 2-2-1 Importing Ascii File.mp4	12/6/2009 11:34 AM	Video Clip
Chapter 2-2-1 Importing PlotData File.mp4	12/6/2009 12:47 AM	Video Clip
Chapter 2-2-2 Importing Other Files.mp4	12/6/2009 1:16 PM	Video Clip
Chapter 2-2-2 Exporting Data.mp4	12/9/2009 4:25 PM	Video Clip
Chapter 2-5-1 Data Acquisition Part 1.mp4	12/9/2009 9:21 AM	Video Clip
Chapter 2-5-1 Data Acquisition Part 2.mp4	11/5/2009 2:51 PM	Video Clip
Chapter 2-5-1 Data Acquisition Part 3.mp4	11/5/2009 4:20 PM	Video Clip
Chapter 2-5-1 Data Acquisition Part 4.mp4	1/1/2010 7:06 PM	Video Clip



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PlotData Software
Real-Time Reduction and Manipulation of Waveform Data

Unique features include:

- Simple operations
- Real-time data manipulations
- Data changes are displayed instantly
- Control knob appears when smoothing operation is invoked
- Smoothing operation is applied to the waveform continuously
- Operators can perform multiple operation on multiple waveforms
- Results displayed in real-time
- Data acquisition and processing routines are easily added

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