

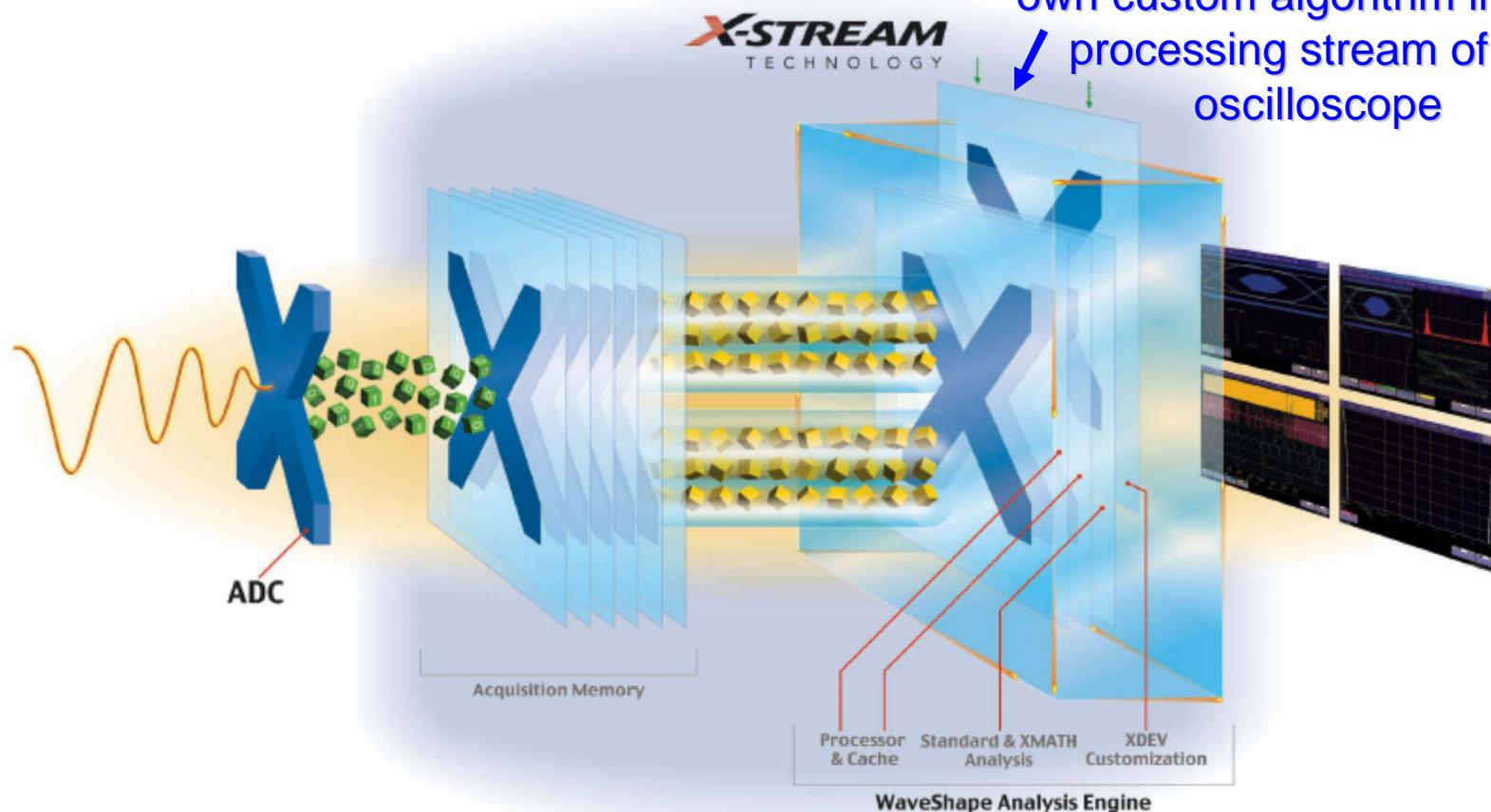


WaveMaster™ DSO Customization

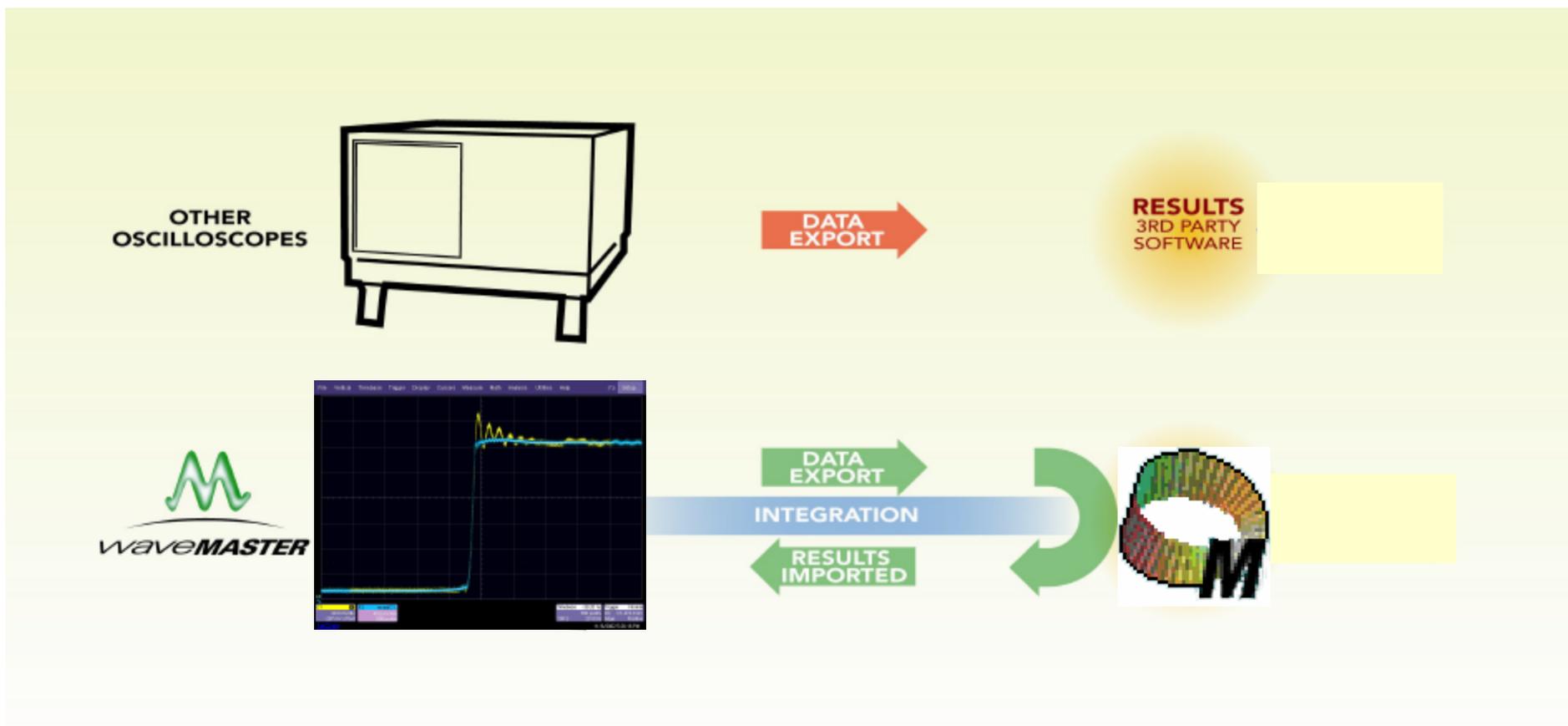
Using XDEV Advanced
Customization (available from LeCroy) and
Mathcad (available from Mathsoft Engineering
and Education, Inc.)

X-STREAM Technology Makes XDEV Customization Possible

X-Stream's WaveShape Analysis Engine allows you to insert your own custom algorithm into the processing stream of the oscilloscope



WaveMaster with LeCroy's XDEV Completely Integrates Mathcad



Step 1 – Select a Math Trace

The screenshot displays the LeCroy oscilloscope software interface. The main window shows a yellow trace on a grid. A menu is open over the trace, with the 'Math' menu selected. The 'Math' menu options are:

- f(x) Math Setup...
- M Memory Setup...
- F1 setup...
- F2 setup...
- F3 setup... (highlighted)
- F4 setup...
- Math Status...

Below the main window, the 'Measure' section shows:

P1:rise(F3)	123 ps	P2:ovsh+(F3)	2.5 %
value			
status	✓	✓	

The 'C1' trace is highlighted in yellow. Its settings are:

- 40.0 mV/div
- 219 mV offset

At the bottom, the 'Math' section shows:

- Trace On:
- single dual
- f(x) f(g(x))
- graph web e...
- Source1: C1
- Source2: None
- Operator1: MathcadMath
- Summary: mcad(C1, None)
- Actions for trace F3: Measure, Store, Label, Next Grid
- Help Markers: Simple

The 'Zoom' section shows:

- Horizontal Center: 63.155 ns
- Vertical Center: 95 mV
- Scale / div: 500 ps
- Scale / div: 220 mV
- x 1.00
- x 1.14
- Reset Zoom

The bottom right corner shows the date and time: 11/8/2002 10:57:17 AM.

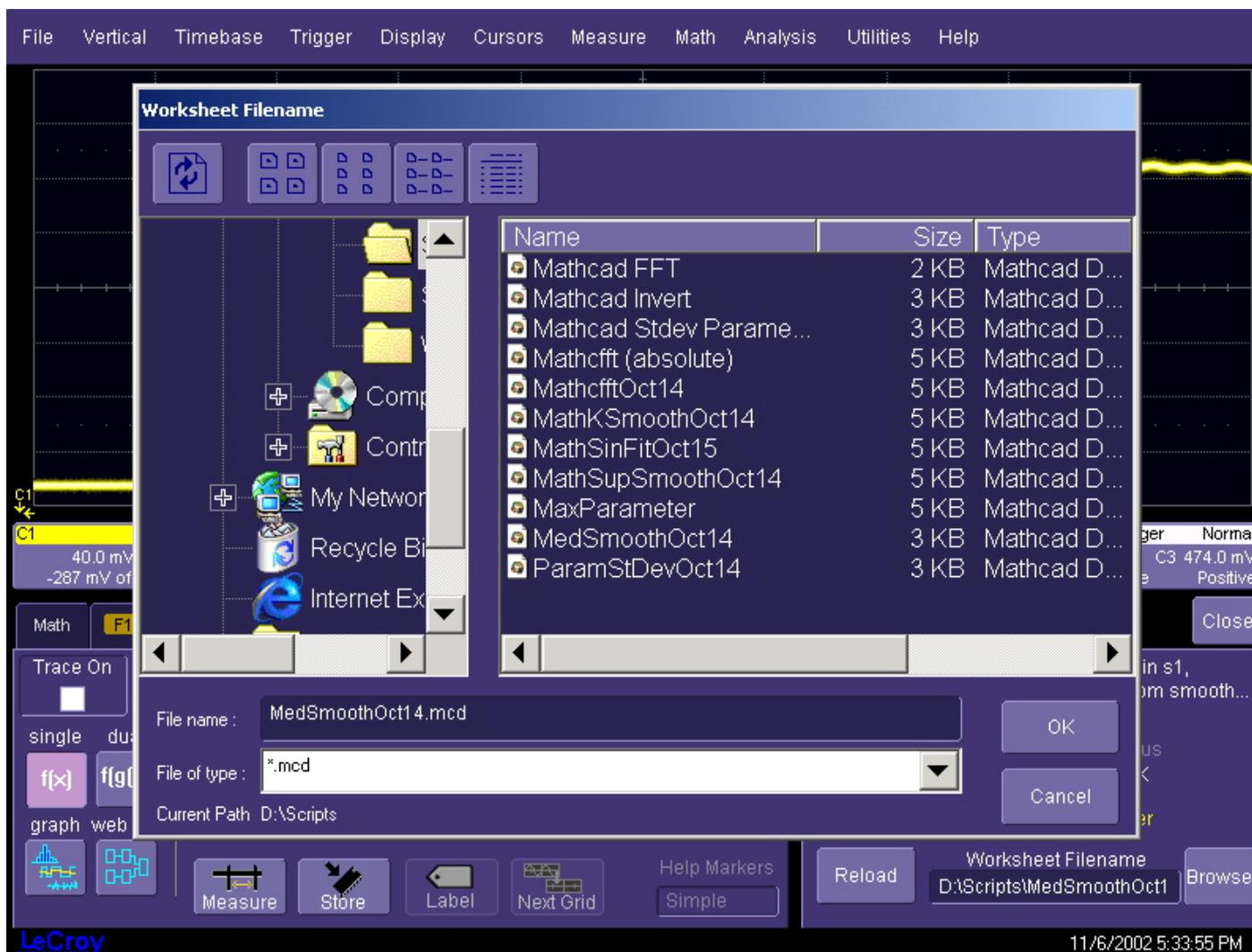
Step 2 – Select the Mathcad custom function

The screenshot displays the 'Select Math Operator' dialog box in a LeCroy oscilloscope software interface. The dialog box is titled 'Select Math Operator' and contains a list of math functions categorized by type. The 'MathcadMath' function is highlighted, indicating it is the selected option.

Category	Choices	Name	Description
All Functions		Filter	Processes waveform using specified digital filter
Basic Math		Floor	Lowest Y value at each X in N sweeps
Custom		Histogram	Histogram of the values of a parameter
Filter		Integral	Integral of the linearly rescaled (multiplier and adder) input
Frequency Analysis		Invert	Inversion (negation) of input waveform
Functions		Ln	Natural log of input waveform values
Graphing		Log10	Log base 10 of waveform
Jitter Functions		MathcadMath	Produces a waveform using a user specified Mathcad function

The background interface shows a menu bar with options: File, Vertical, Timebase, Trigger, Display, Cursors, Measure, Math, Analysis, Utilities, Help. A 'C1: Setup...' button is visible in the top right. The main display area shows a yellow waveform on a grid. On the left, there are controls for 'Measure' (value, status) and 'Math' (F1). On the right, there are trigger settings (Normal, C3 474.0 mV, Edge Positive) and a 'Close' button. The bottom of the screen features a toolbar with icons for Measure, Store, Label, Next Grid, Help Markers (Simple), and zoom controls (in, out, Reset Zoom). The LeCroy logo is in the bottom left, and the date/time '11/8/2002 11:18:43 AM' is in the bottom right.

Step 3 – Load the Mathcad File in WaveMaster

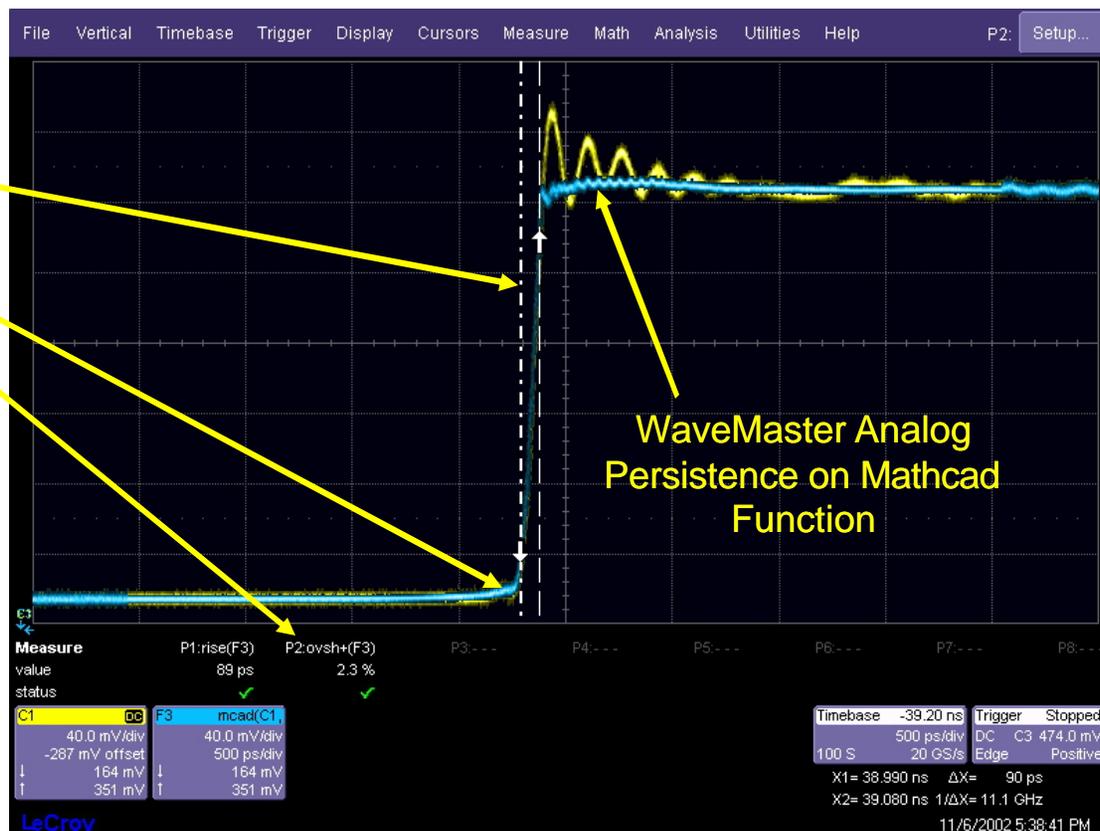


Step 4 – Turn on the F3 Trace, Result is Displayed in WaveMaster Program

The screenshot displays the LeCroy WaveMaster software interface. At the top, a menu bar includes options like File, Vertical, Timebase, Trigger, Display, Cursors, Measure, Math, Analysis, Utilities, and Help. The main display area shows two traces: a yellow trace labeled 'C1' and a blue trace labeled 'F3'. A yellow arrow points to the blue trace with the text 'Mathcad calculated "smoothed" trace'. Below the traces, a control panel for the F3 trace is visible, showing 'Source1' as 'C1' and 'Source2' as 'None'. The F3 trace is configured with a scale of 40.0 mV/div and 500 ps/div. A 'Mathcad' panel is also open, showing 'Advanced' settings and a 'Worksheet Filename' of 'D:\Scripts\MedSmoothOct1'. The bottom right corner of the interface shows the date and time: '11/6/2002 5:35:03 PM'.

The *Ultimate* in Flexibility!

- Mathcad processed trace can be measured with WaveMaster
 - Cursors
 - Functions
 - Parameters
- Implement your solution *immediately!*
- Shorten product time to market
- Fast Setup – no difficult remote communication setup
- Real-time trace display and update



Try This Example on Your WaveMaster

■ You will need:

- A WaveMaster with the XDEV or XMAP software options
- A copy of Mathcad (Version 2001i or later) installed on your WaveMaster
- The *MedSmoothOct14* file (available on this web page)
- Additional demonstration files may also be downloaded and used (www.lecroy.com/mathcad)