



# LogicStudio™ USB Logic Analyzer

**Faster, Smarter Debug**



# ADVANCED FEATURES, SIMPLE DEBUG

## Key Features

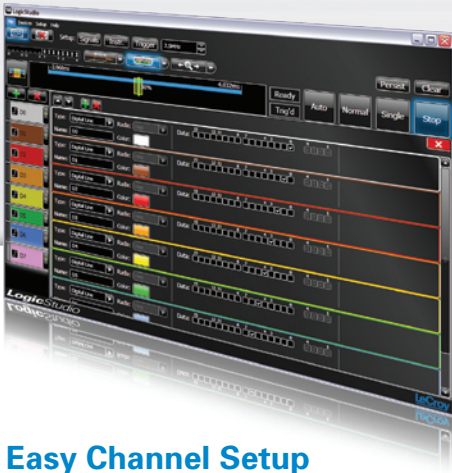
- 100 MHz, 1 GS/s, 16 channels
- I<sup>2</sup>C, SPI, UART protocol analysis
- History mode
- Timing cursors
- Oscilloscope connectivity
- Waveform magnifier
- Powerful trigger environment
- Communicate with colleagues

Logic analyzers are known to be slow, complicated and expensive but LogicStudio™ changes all this by delivering a powerful feature set, high-performance hardware and an intuitive point and click user-interface. With timing cursors, history mode, I<sup>2</sup>C, SPI and UART decoding, powerful triggering and simple navigation the PC is transformed in to an all-in-one debug machine.

The intuitive user-interface works with basic mouse operations. To pan the waveforms simply click and drag, use the mouse wheel to zoom in or scan the waveforms with the magnification tool to get a great view of the details. With all the debug tools accessible from the main screen, debugging is simple, efficient and just one mouse click away.

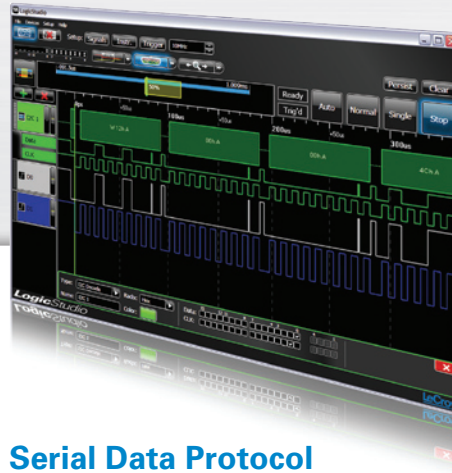
LogicStudio provides even more functionality when a WaveJet™ 300A oscilloscope is connected to the PC. Analog waveforms from the oscilloscope are displayed alongside the digital and serial waveforms captured by LogicStudio turning the PC in to a mixed signal oscilloscope. This combination of waveforms provides insight that a traditional logic analyzer cannot.





### Easy Channel Setup

Quickly configure the inputs, signal type, name and the color on the fly for all 16 channels from the signals screen or change a single line on the fly from the main screen. Double-click a channel to create a unique name that applies to your device.



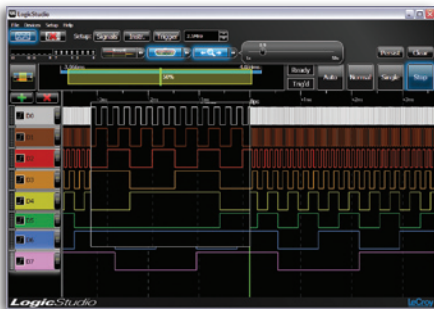
### Serial Data Protocol Decode and Trigger

Decode I<sup>2</sup>C, SPI and UART serial data busses and view the appropriate clock and data signals directly below the protocol message. Isolate specific data patterns or addresses by triggering directly on that data.



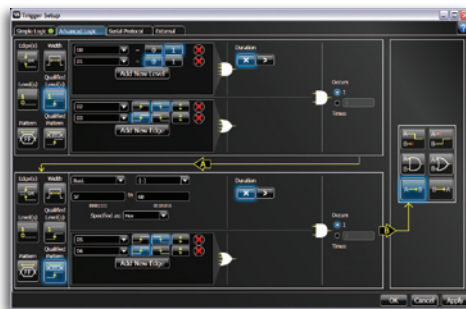
### Digital, Serial, Analog

Connect a WaveJet 300A to the same PC as the LogicStudio 16 and turn the PC into a Mixed Signal Oscilloscope displaying digital, serial and analog signals simultaneously. LogicStudio will display all digital, serial and analog signals on the PC display and allow you to get a full picture of your embedded system.



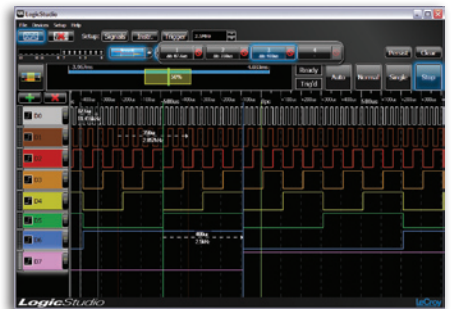
### Waveform Magnifier

Get a better view of the waveforms by passing over them with the magnifier, scroll the mouse wheel to zoom in for an even closer look. The magnifier shows waveform details in a long capture without having to change the horizontal scale.



### Powerful Triggering

For difficult problems a simple edge or logic level trigger is not enough. LogicStudio advanced triggering provides an environment for creating powerful combinations of edge, logic level, parallel bus and serial bus triggers to isolate difficult problems.



### Timing Cursors

Quickly measure the time between transitions on a single line, across digital lines or from a digital line to an analog waveform. Snap the cursors directly to the waveform edge for precise measurements.

# POINT, CLICK, DEBUG

**LogicStudio is fast! Waveforms update quickly and panning or zooming is extremely responsive. Download the software and experience it yourself. The software interface is modern and intuitive creating a new logic analyzer experience. LogicStudio is intuitive and easy to operate with friendly left-click and right-click controls plus all buttons are on the main screen, no complicated menus to navigate.**

## 1. History

Did something interesting or surprising just flash across the screen, stop the trigger and flip through a history of the previous 100 acquisitions.

## 2. Persistence

View variations in the signals over time to find problems faster. Use with History mode to see what happened when and isolate the problem.

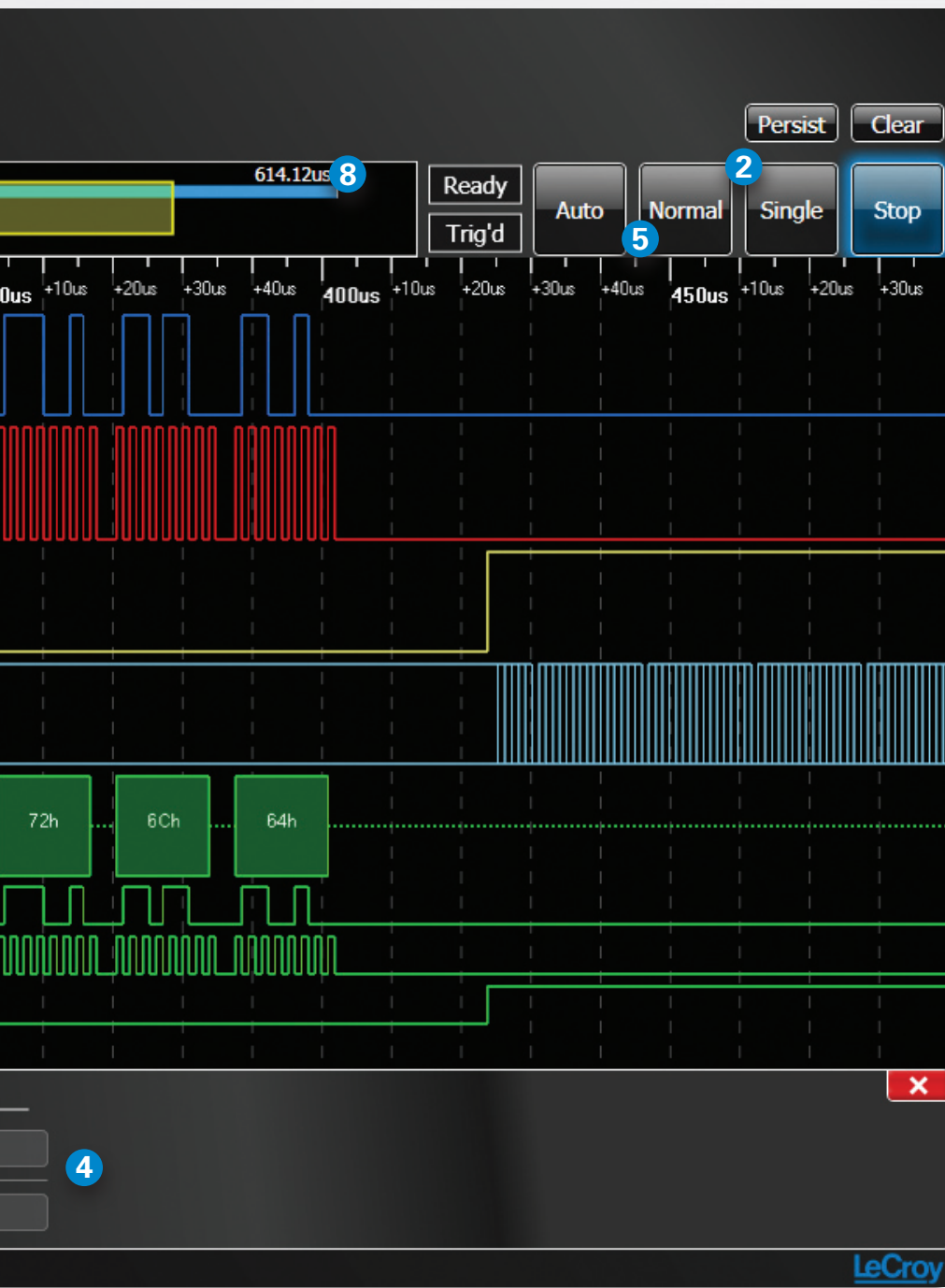
## 3. Interleaving for Higher Performance

Use all 16 channels at 500 MS/s or 8 channels at 1 GS/s for more timing resolution.

## 4. Logic Thresholds

Choose from standard TTL and CMOS levels or create a custom level from 0–7 V.





## 5. Trigger Modes

Oscilloscope trigger modes of Auto, Normal and Single help ensure what you need to see is always on the display.

## 6. Save and Recall

Save screenshots to share with others or save waveforms and setups for recalling later.

## 7. Add/Remove/Hide Waveforms

One click to add a new waveform, one click to remove it, right-click to hide it for later viewing.

## 8. Waveform Display and Scaling

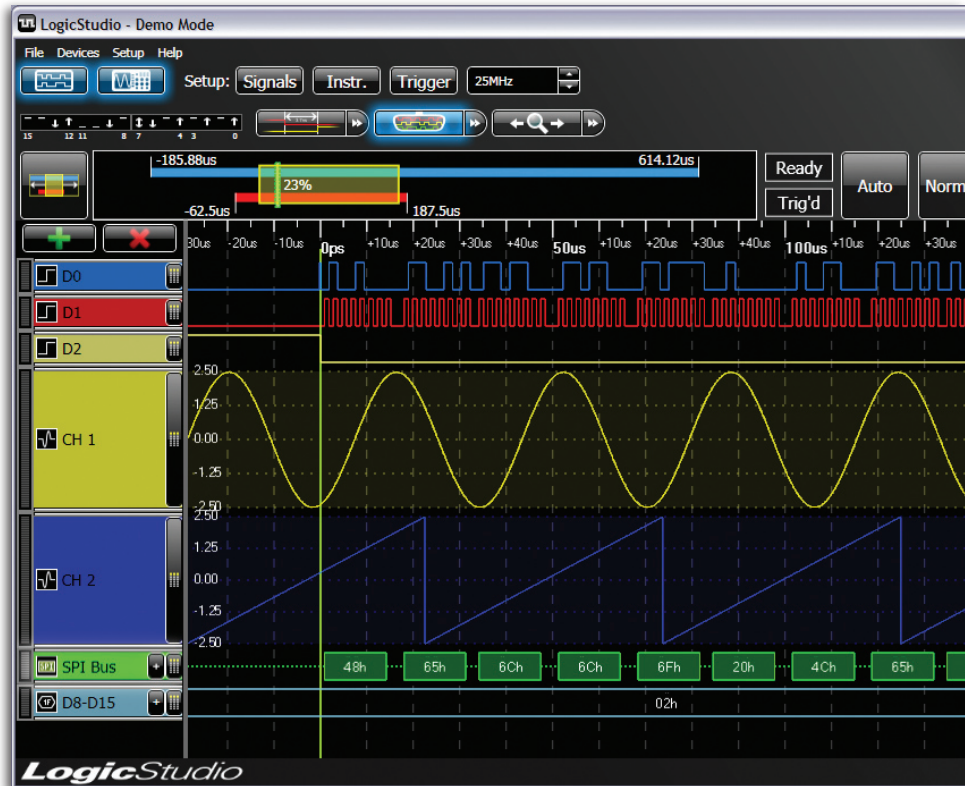
View waveforms stacked on top of each other or overlay one waveform on top of another. Change the vertical scale by dragging the bottom edge.

## 9. Built-in Help and Support

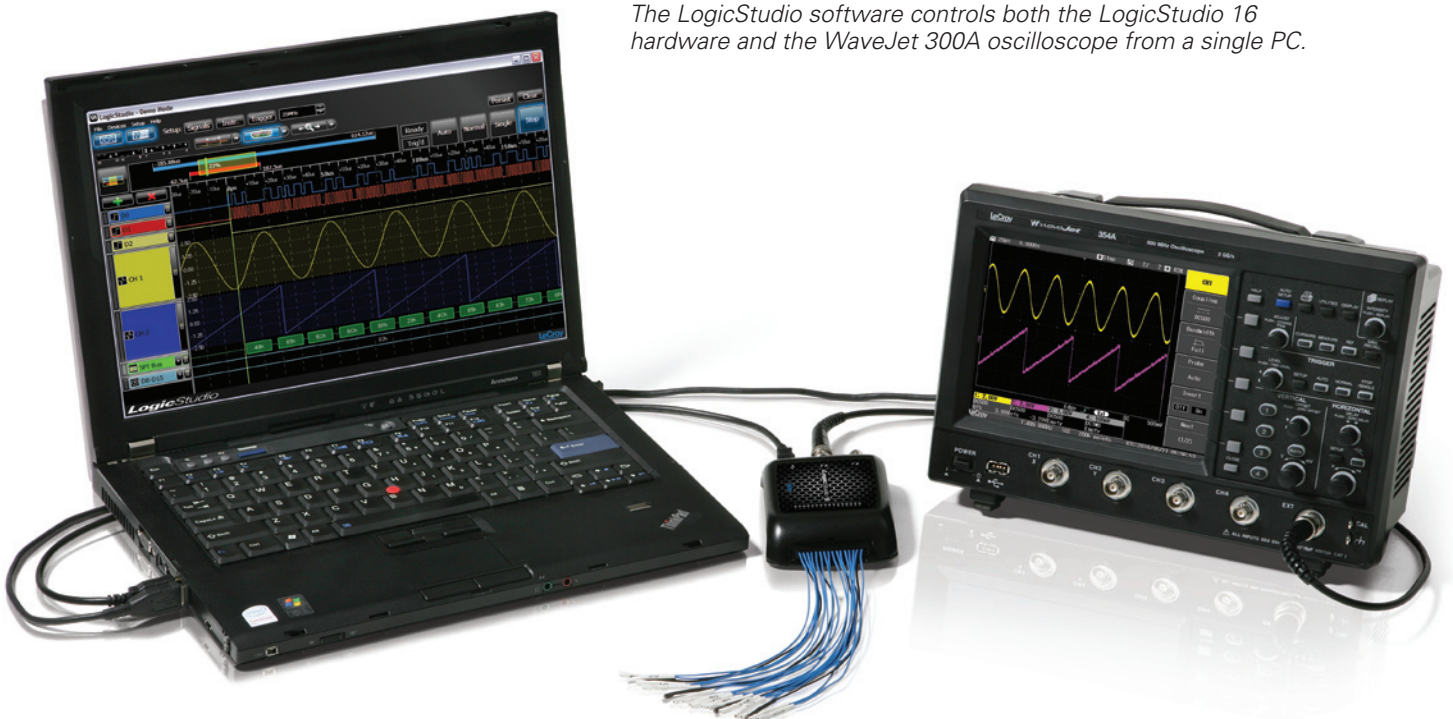
Not sure how to use a certain tool, mouse over for tool tips or access the manual from the Help menu. Have a question or suggestion? Click on Tell LeCroy in the Help menu and send an email directly to LeCroy with the waveforms, screen capture and setup file attached to the message.

# DIGITAL, SERIAL, ANALOG IN ONE PLACE

In many situations looking at only digital lines does not give the whole picture and more tools are necessary. The LogicStudio software solves this problem by supporting the LeCroy WaveJet 300A oscilloscope turning the PC into a mixed signal solution. Once the WaveJet is connected, digital, serial and analog waveforms can be viewed simultaneously in one place saving a lot of time and enabling faster debug.



*The LogicStudio software controls both the LogicStudio 16 hardware and the WaveJet 300A oscilloscope from a single PC.*



# SPECIFICATIONS AND ORDERING INFORMATION

## Specifications

Input Channels	16
Sample Rate	1 GS/s on 8 Ch, 500 MS/s on 16 Ch
Minimum Detectable Pulse Width	3.75 ns
Memory	40 kpts on 8 Ch, 20 kpts on 16 Ch
Trigger Types	Edge, pattern, pulse width, pattern width. I <sup>2</sup> C, SPI, UART
Threshold Selections	TTL, CMOS (1.8 V, 2.5 V, 3.3 V, 5 V), user defined
User-defined Threshold Range	0–7 V
Maximum Survivable Input Voltage	±40 VDC
Threshold Accuracy	±150 mV + 5% of threshold
Maximum Input Dynamic Range	40 V <sub>p-p</sub>
Minimum Voltage Swing	500 mV <sub>p-p</sub>
Input Impedance	150 k $\Omega$ parallel 12 pF
Channel-to-Channel Skew	1 ns typical
Trigger Resolution	500 MS/s
Host Port	USB 2.0, bus-powered peripheral
Size	3.2" x 4.9" x 1.1" (81.3 mm x 124.5 mm x 28.0 mm)

## Ordering Information

Product Description	Product Code
16 Channel, 1 GS/s, 100 MHz USB Logic Analyzer	LogicStudio 16

### Included with Standard Configuration

LogicStudio 16
Digital Leadset (16 channels, 4 ground)
Micro Hooks (Set of 20 grippers)
USB Cable
BNC Cable
Welcome Card

## Customer Service

LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge



1-800-5-LeCroy  
[www.lecroy.com](http://www.lecroy.com)

**Local sales offices are located throughout the world.  
Visit our website to find the most convenient location.**

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