

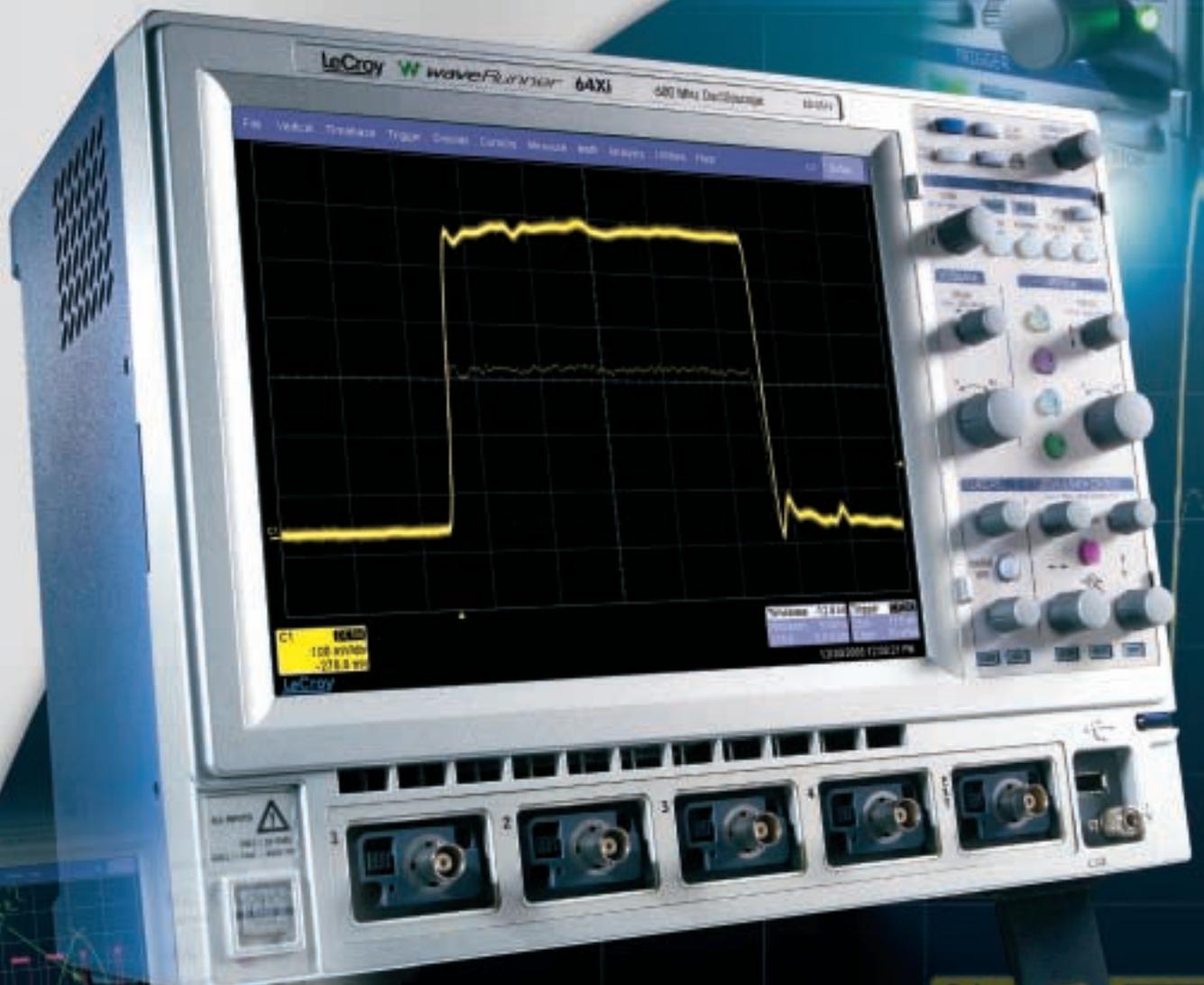


**Advanced Test Equipment Rentals**  
[www.atecorp.com](http://www.atecorp.com) 800-404-ATEC (2832)

**LeCroy**

**WAVERUNNER® Xi SERIES**

**Performance Reimagined**



Timebase	-5.8 ns	Trigger	<input checked="" type="checkbox"/> 100	138 mV/div
WaveStream	5 ns	Stop	230 mV	-270.0 mV
500 S	10 GS/s	Edge	Positive	

C1 DC50



**WaveRunner Xi Series gives you everything with no compromises — great performance, big display, and small footprint along with WaveStream fast viewing mode, enhanced standard trigger capability, and much more. WaveRunner Xi is the perfect solution whether your signals are fast or slow. No matter what your need, you can put the precision, performance, and capability of WaveRunner Xi to work for you.**

### **Great Performance**

With 5 GS/s and 2 Mpts on every channel (up to 10 GS/s interleaved with WaveRunner 64Xi), you can be assured of precise measurements of fast signals, and long captures of slow speed events.

### **Big Display/Small Footprint**

LeCroy believes that the display is your window to insight about your circuit's behavior. That's why we use a big, bright 10.4" color display to make your signals really come alive. You'll love the impressive display viewing angle, and the very small instrument footprint makes it easy to work anywhere. The combination of big display and small footprint is so compelling it won LeCroy "Test Product of the Year" as selected by Test and Measurement World's readers.\*

### **LeCroy WaveStream™ Fast Viewing Mode**

LeCroy introduces WaveStream™ fast viewing mode on WaveRunner Xi. WaveStream has a rich, lively analog oscilloscope feel with 256 intensity levels mapped to the display. In addition, it works at sample rates up to 10 GS/s. Sound good? Wait till you see it.

\* In 2005 based on big display and small footprint form factor in WaveSurfer oscilloscopes.

# The WaveRunner Xi Experience

## LeCroy WaveStream™ Fast Viewing Mode

WaveStream provides a vibrant, intensity graded (256 levels) display with a fast update to closely simulate the look and feel of an analog oscilloscope.

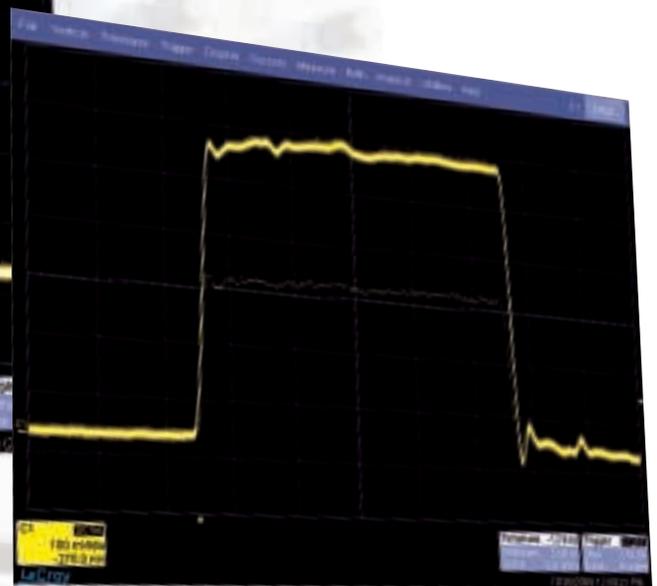
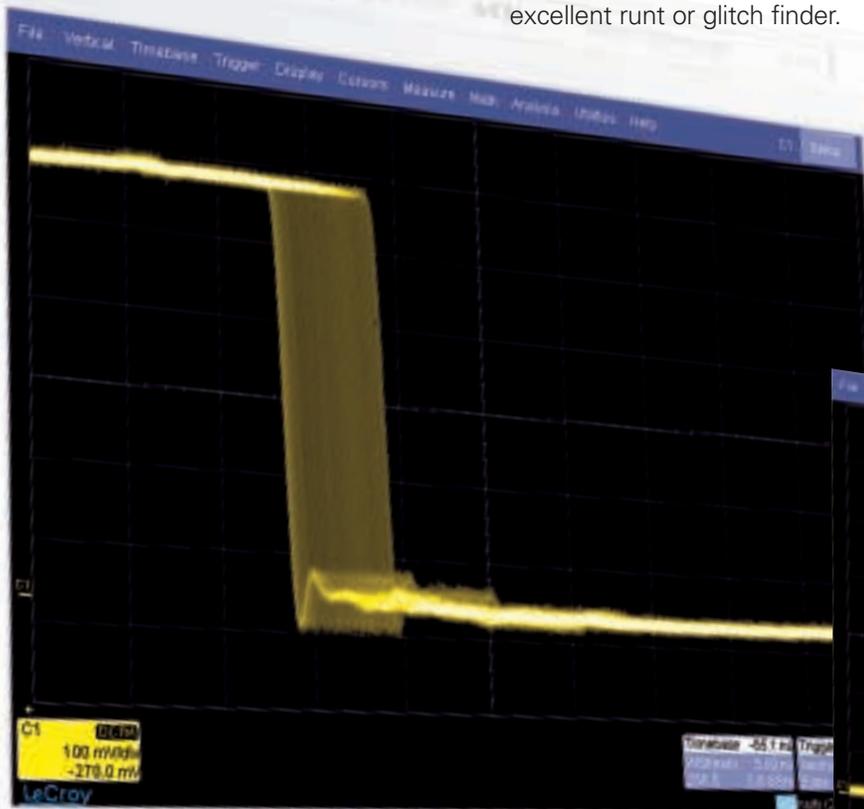
WaveStream is most helpful in viewing signals that have signal jitter or signal anomalies.

Since the sample rate in WaveStream mode can be as high as 10 GS/s (up to 5X that of other oscilloscopes), it is an excellent runt or glitch finder.

Timing jitter is often visually assessed to understand approximate behavior. WaveStream makes it easy to understand jitter on edges or in eye diagrams.

WaveStream also excels in allowing you to relate composite (WaveStream) to single-event (real-time sampled) behaviors. Just capture in WaveStream mode, toggle to view or zoom a

single trace, then toggle back to WaveStream mode.



● 1999

The first WaveRunner oscilloscope introduced. Small, powerful, and an immediate front-runner in the mid-range category.

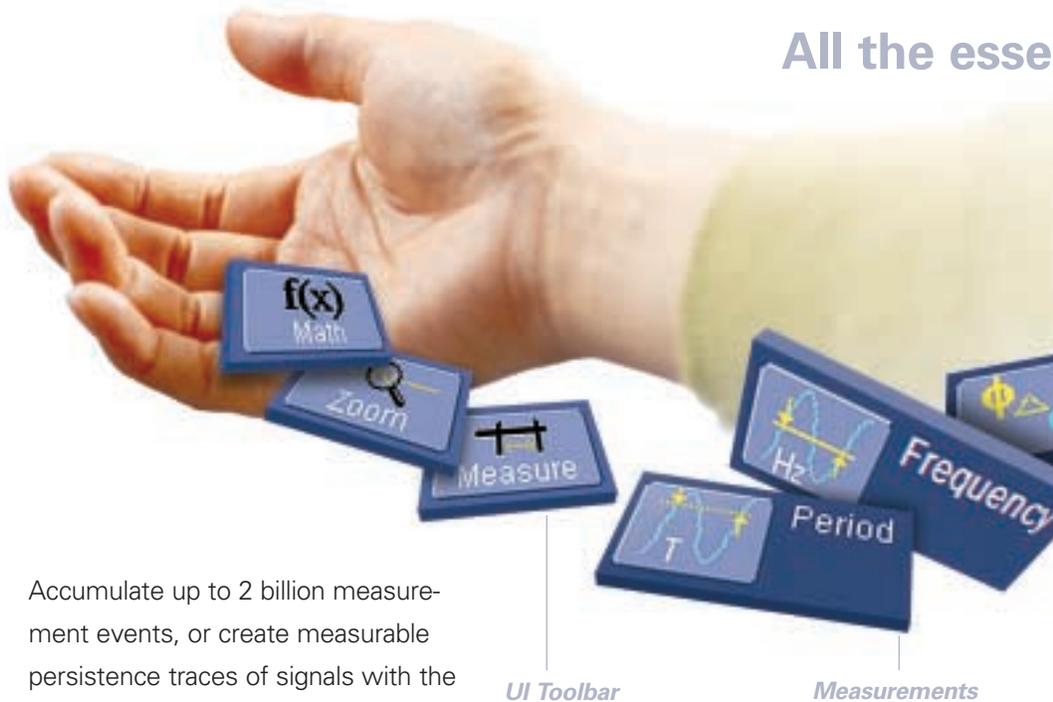


● 2001

WaveRunner2 raised the bar with higher sample rate, bandwidth, and memory.

## Unmatched Measurement Capability

Oftentimes, viewing signals only on screen does not provide the level of precision that is required for validating designs. At those times, the ability of WaveRunner Xi to provide precise statistical data becomes vital. With WaveRunner Xi, you can quickly accumulate data on thousands of measurements, often in a single shot. Touch a button and display statistical information. Touch another button to display a Histogram graphical view of the measurement distribution. Expand this view into a larger histogram of measurement data.



All the esse

Accumulate up to 2 billion measurement events, or create measurable persistence traces of signals with the optional WRXi-STAT.

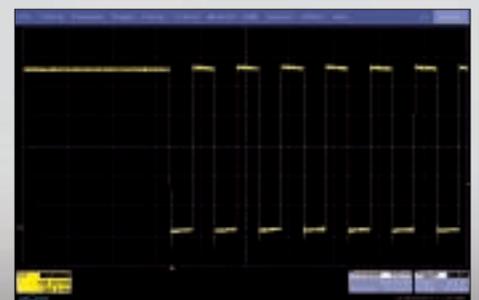
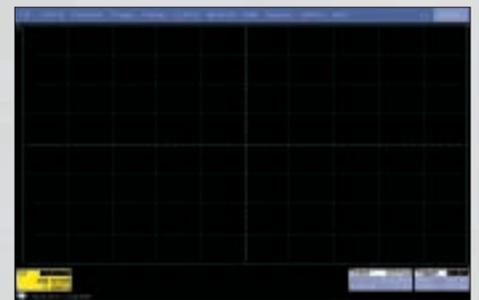
UI Toolbar

Measurements

## Elegantly Designed Easy to Use

Every aspect of the WaveRunner Xi user interface is carefully thought out for maximum efficiency. Common operations are easily accessed. Press the DELAY knob, and the timebase delay setting zeroes. Press the OFFSET knob, and the vertical offset setting zeroes. Select acquisition mode and adjust trace intensity with the Intensity knob. Cursor types can be quickly

selected and adjusted with the dedicated cursor knobs. The integrated stylus for the touch screen is cleverly stored within the front panel. The graphical user interface is intuitive and pleasing to the eye, and makes most common operations just a touch away. Ten different languages are supported in the Graphical User Interface (GUI) and front panel. Everything is designed in a thoughtful, efficient way with only the user in mind.



2003

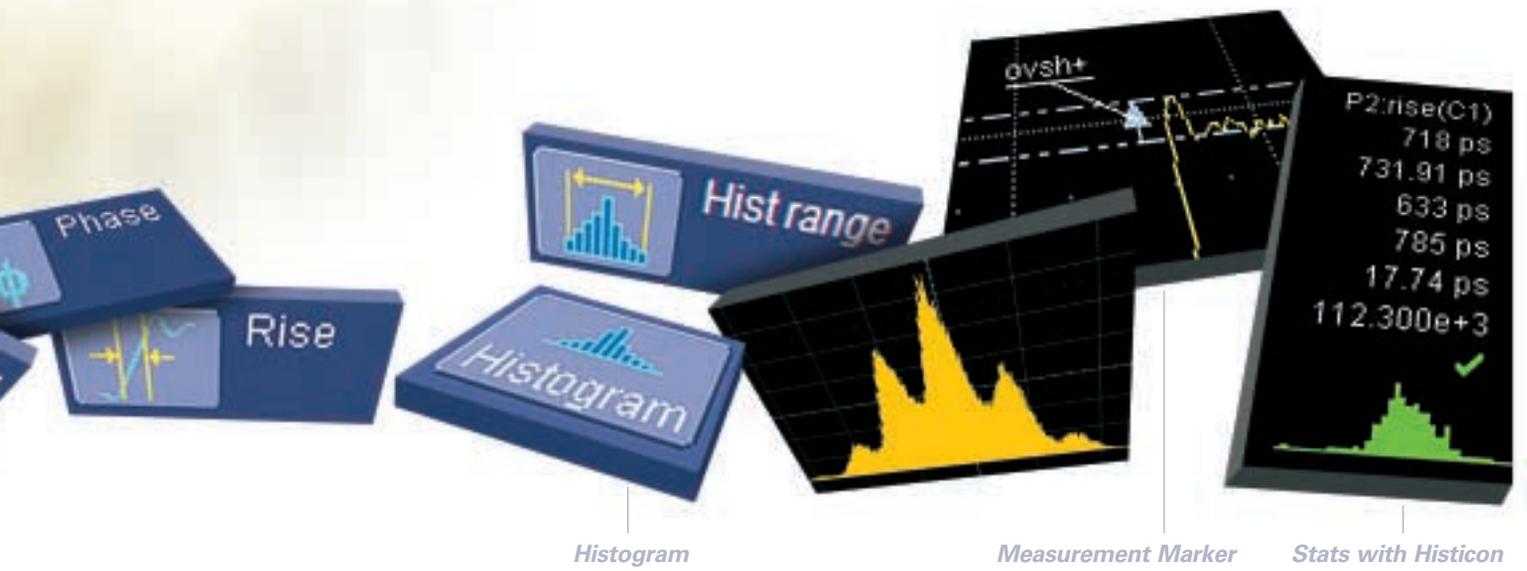
Performance boosted again with WaveRunner 6000 —10:1 oversampling and 2 Mpt/Ch for 500 MHz oscilloscopes with versions up to 2 GHz.



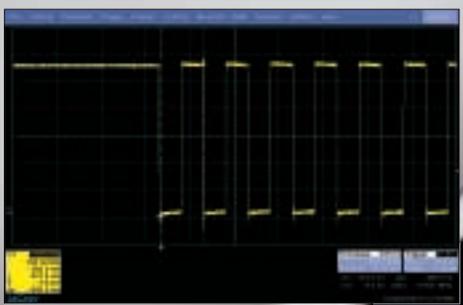
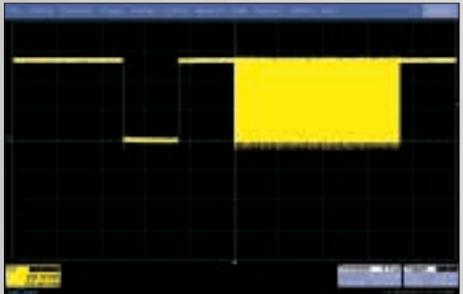
2005

Engineers vote Big Display/Small Footprint form factor "Best in Test" in *Test & Measurement* magazine (for the WaveSurfer).

# Essential tools needed for circuit validation



P2:rise(C1)  
 718 ps  
 731.91 ps  
 633 ps  
 785 ps  
 17.74 ps  
 112.300e+3



2006

WaveRunner Xi combines improved performance with the award-winning form factor of big display and small footprint.

# Outstanding Capabilities for Everyday Testing

LeCroy's "out-of-the-box" thinking about form factor provides a big display and small footprint with great performance—no compromises.

Plus, it's loaded with features that will make your testing day easier.

## 1. Bright, 10.4" Display

The largest and brightest in this class of oscilloscope. You'll love the fantastic viewing angle and the touch screen.

## 2. Only 15 cm (6") Deep

The most space-efficient oscilloscope for your bench, and it doesn't require you to sacrifice performance.

## 3. Dedicated Cursor Knobs

WaveRunner Xi cursors just got better—select type of cursor, position them on your signal, and read values without ever opening a menu.

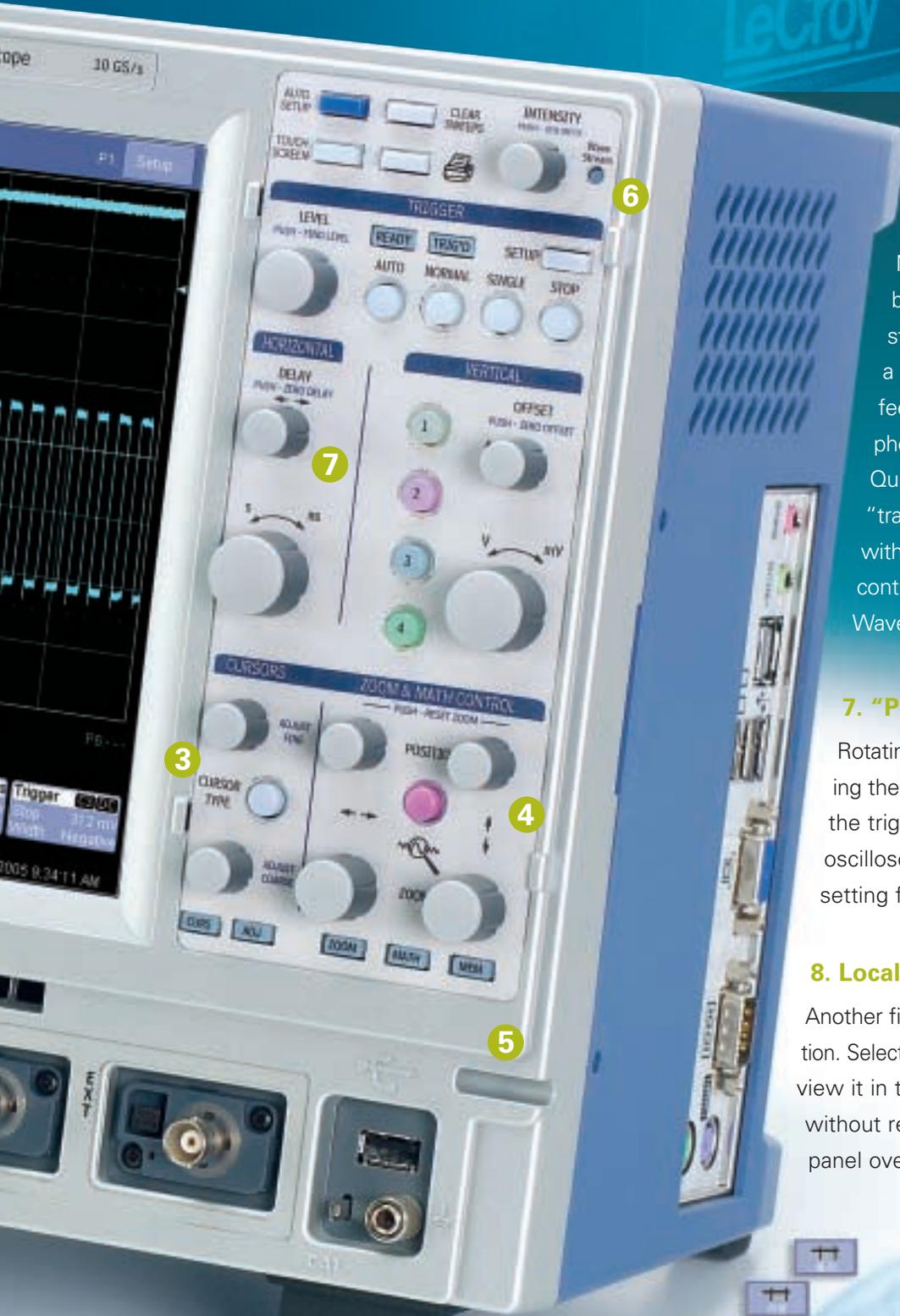
## 4. Zoom Control Knobs

Need a closer look at your signal? Four dedicated knobs (zoom and position in horizontal and vertical directions) make it easy to navigate any zoom or math trace without opening menus.

## 5. Touch Screen with Built-in Stylus

The most time-efficient user interface just got a lot nicer with a built-in stylus. Many common operations are just one touch away.





## 6. LeCroy WaveStream™ Fast Viewing Mode

Nicely complements the bright 10.4" bright display and LeCroy's traditionally strong long memory capabilities. Provides a lively, analog-like feel similar to a phosphor trace. Quickly adjust "trace" intensity with the front panel control, or toggle between LeCroy WaveStream fast viewing or real-time mode.

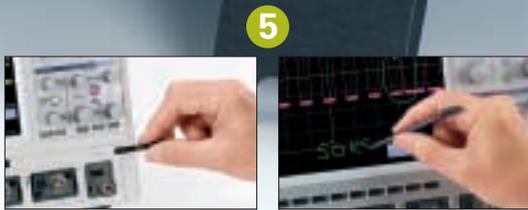


## 7. "Push" Knobs

Rotating knobs provide adjustment, but pushing them invokes further functionality. Push the trigger level knob, and the oscilloscope selects the correct level setting for stable display.

## 8. Local Language User Interface

Another first for this class—local language selection. Select one of 10 language preferences and view it in the software user interface without rebooting the oscilloscope. Add a front panel overlay with your local language.

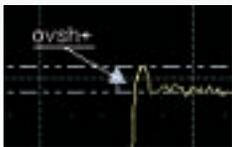


# Everyday Testing to Advanced Analysis

**WaveRunner Xi provides the highest value for everyday characterization, validation, and debug. Whether you are debugging circuits with a mix of slow and high-speed signals, or performing signal integrity checks on high-speed clock and data signals, WaveRunner Xi has the right toolset that is easily applied.**

## Signal Integrity Testing

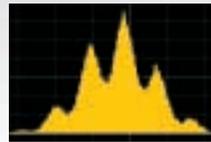
Use the high sample rate to characterize signal shape, rise time, overshoot, etc. and verify the presence or absence



of high-speed transients.

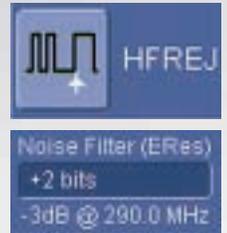
## Timing Characterization

Extensive triggers allow fast event isolation. Measure timing statistically and view behavior graphically using histograms. Gain real understanding of root cause.



## Slow/High-speed Signal Mix

Long memory, HFrej trigger coupling, built-in noise filtering, etc. enable fast understanding of signal behavior in circuits with a mix of slow-speed (sensor, actuator, power supply, mechanical) and high-speed signals.



## Power/Amplifier Measurements

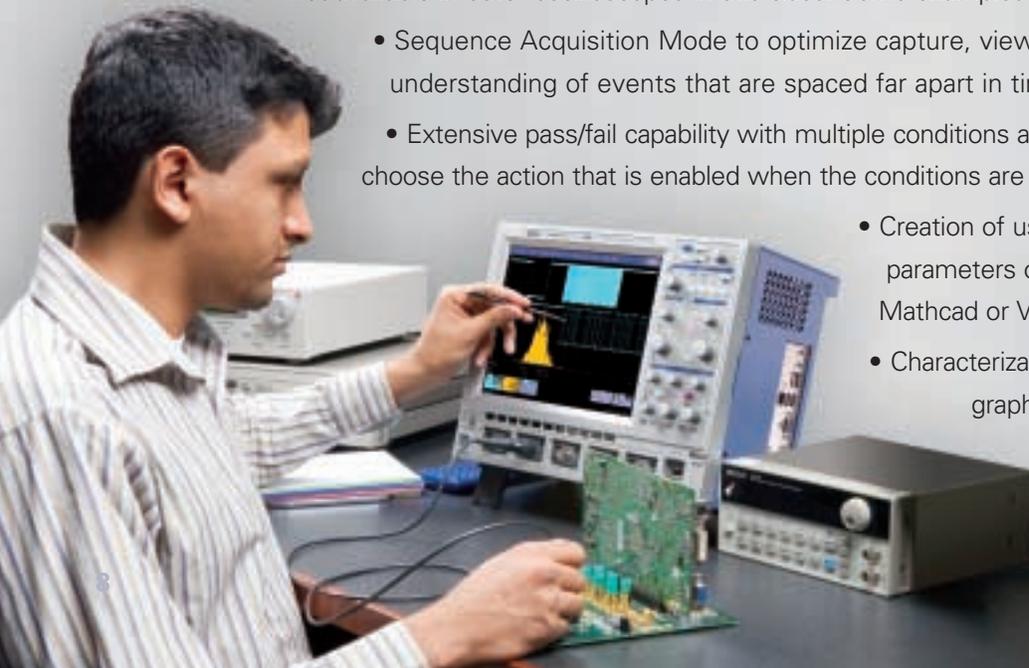
Excellent overdrive recovery and signal integrity make WaveRunner Xi ideal for high-voltage switching loss, ripple, and other amplifier measurements.



## Advanced Features

WaveRunner Xi also contains many debugging and analysis features that are not available in other oscilloscopes in this class. Some examples are:

- Sequence Acquisition Mode to optimize capture, viewing, and understanding of events that are spaced far apart in time
- Extensive pass/fail capability with multiple conditions and limits, and flexibility to choose the action that is enabled when the conditions are satisfied
- Creation of user-customized measurement parameters or math functions using Excel, MATLAB, Mathcad or VBScripts
- Characterization of PWM signals and other data in a graphical mode (Track) to enable fast understanding of signal modulation or behavior (optional)

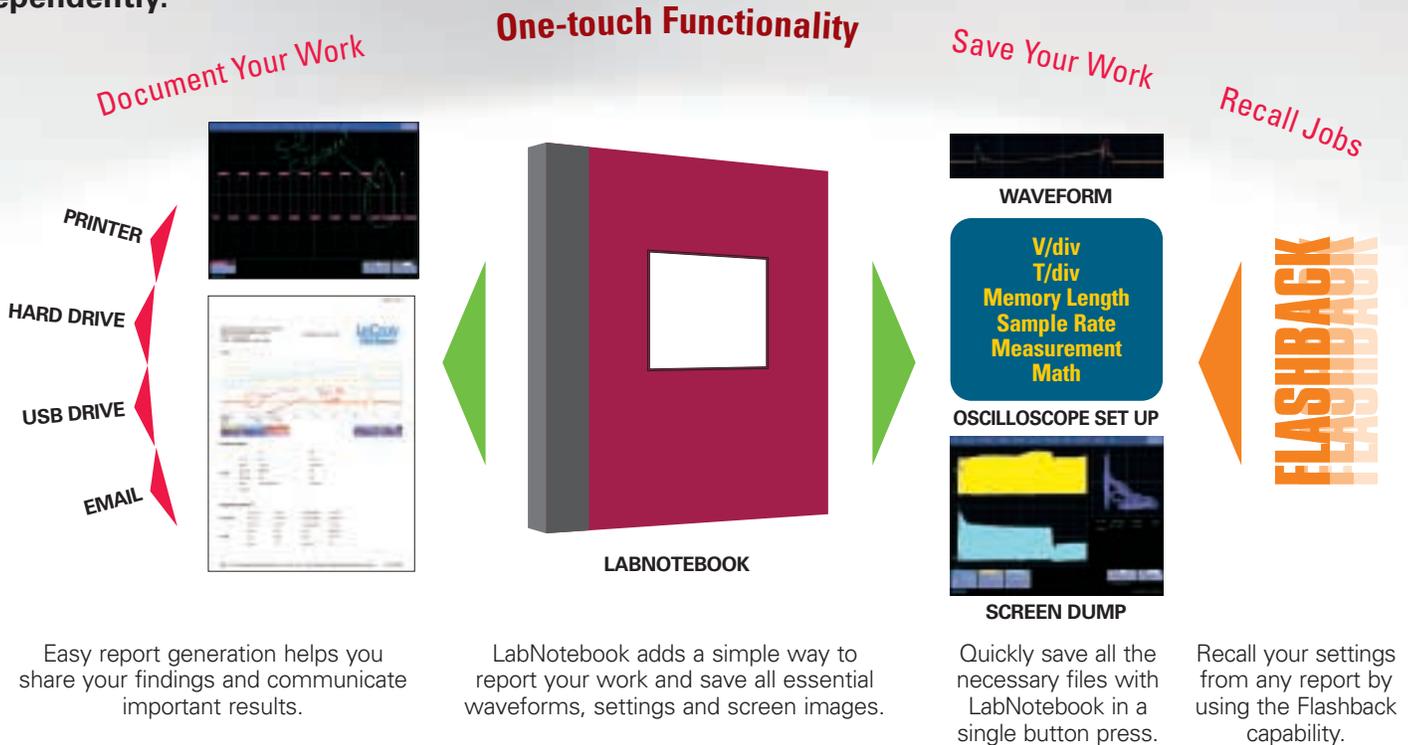


# LabNotebook™

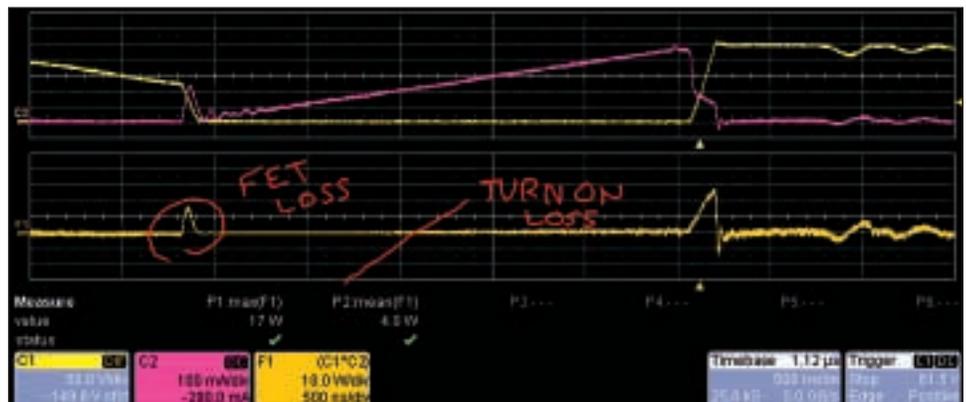
A Unique Tool for Documentation and Report Generation

The LabNotebook feature of WaveRunner Xi provides a report generation tool to save and document all your work. Saving all displayed waveforms, relevant WaveRunner Xi settings and screen images is all done through LabNotebook, eliminating the need to navigate multiple menus to save all these files independently.

The screen images saved can be annotated with freehand notes using the stylus and touch screen, and then included in your report.



The WaveRunner Xi touch screen and stylus allow for easy annotation of the screen. LabNotebook allows you to add freehand text and graphics in multiple colors along with printed text and arrows to help identify important parts of your waveforms and measurements.



# Expandability Ensures an Excellent Return on Investment

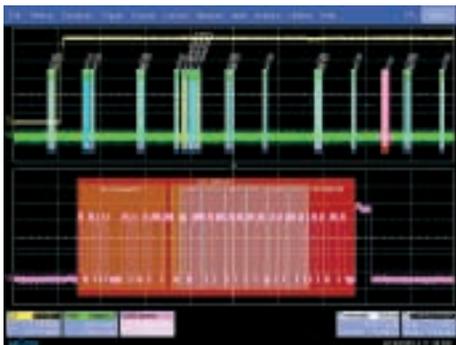
## Mixed Signal Testing Oscilloscope Option (MS-32)\*

Add 32 digital channels to a 4-channel WaveRunner Xi oscilloscope for 4 analog + 32 digital testing capability, with a simple oscilloscope setup and user interface. Each digital channel has 1 Mpts/Ch (32 Mpts total!) to capture all of your signal information for efficient debug and analysis. Thirty-two digital channels is ideal for the most efficient testing of 16-bit embedded controllers where all 16 ADDR and DATA lines can be viewed simultaneously.

\*MS-32 is compatible with WRXi 4-channel model oscilloscopes only.

## CANbus Trigger, Decode, and Measure/Graph Testing Options (CANbus TDM, CANbus TD)

Flexibly trigger on CAN bus messages. Decode and display hexadecimal data values next to the CAN signal on the screen. Measure and statistically analyze timing and other data. Graph system performance. Easily correlate electrical problems to CAN bus messages or error frame data.



## PowerMeasure Analysis Software Package (PMA2)

The PMA2 software package automates and enhances your ability to analyze power conversion devices and circuits. Optional accessories, such as differential amplifiers, differential probes, current probes, and deskew fixtures complete the solution.

## Electromagnetic Compatibility Software Package (EMC)

The EMC software package adds flexibility to the rise time, fall time, and width parameters that are necessary to accurately measure ESD pulses, EFT bursts, surges, and transients that are common in EMC testing. Includes histogramming of up to 2 billion events, parameter math, and measurement filtering.

## Jitter and Timing Analysis Software Package (JTA2)

Find modulation effects and intermittent signal jitter to track timing changes, and to debug in the time, frequency, and statistical domains. Views like Jitter Track and Jitter Histogram let you see system variability in ways that you have never imagined.

## Digital Filter Software Package (DFP2)

DFP2 lets you implement standard or custom Finite or Infinite Impulse Response filters to eliminate undesired spectral components, such as noise, and enhances your ability to examine important signal components.



## Serial Data Mask Software Package (SDM)

The SDM toolset harnesses the WaveRunner Xi oscilloscope's long memory and low jitter to deliver outstanding serial bus characterization. Choose from a comprehensive list of standard eye pattern masks, or create a user-defined mask. Mask violations are clearly marked on the display, so you don't have to guess.

## Disk Drive Measurement Software Package (DDM2)

The Disk Drive Measurement software package adds dozens of new disk drive measurements. DDM2, combined with WaveRunner Xi's sequence triggering and SMART Triggers®, offers the perfect solution for failure analysis when testing disk drives.

# Specifications



## Standard

### Math Tools

Display up to four math function traces (F1–F4). The easy-to-use graphical interface simplifies setup of up to two operations on each function trace; and function traces can be chained together to perform math-on-math.

absolute value	integral
average (summed)	invert (negate)
average (continuous)	log (base e)
custom (MATLAB, Mathcad, VBScript) – limited points	log (base 10)
derivative	product (x)
deskew (resample)	ratio (l)
difference (–)	reciprocal
enhanced resolution (to 11 bits vertical)	rescale (with units)
envelope	roof
exp (base e)	(sinx)/x
exp (base 10)	square
fft (power spectrum, magnitude, phase,	square root
	sum (+)
	up to 50 kpts)
trend (datalog) of 1000 events	
floor	zoom (identity)
histogram of 1000 events	

### Measure Tools

Display any 6 parameters together with statistics, including their average, high, low, and standard deviations. Histicons provide a fast, dynamic view

amplitude	frequency	risetime (10–90%, 20–80%, @ level)
area	last	rms
base	level @ x	std. deviation
cycles	maximum	time @ level
custom (MATLAB, Mathcad, VBScript) – limited points	mean	top
delay	median	$\Delta$ time @ level
$\Delta$ delay	minimum	$\Delta$ time @ level from trigger
duration	number of points	width (positive + negative)
duty cycle	+overshoot	x@ max.
falltime (90–10%, 80–20%, @ level)	–overshoot	x@ min.
first	peak-to-peak	
	period	
	phase	

of parameters and wave shape characteristics.

### Pass/Fail Testing

Simultaneously test multiple parameters against selectable parameter limits or pre-defined masks. Pass or fail conditions can initiate actions including document to local or networked files, e-mail the image of the failure, save waveforms, send a pulse out at the rear panel auxiliary BNC output, or (with the GPIB option) send a GPIB SRQ.

## Software Options/Advanced Math and WaveShape Analysis

### Statistics Package (WRXi-STAT)

This package provides additional capability to statistically display measurement information and analyze results:

- Histograms expanded with 19 histogram parameters/up to 2 billion events
- Persistence Histogram
- Persistence Trace (mean, range, sigma)

### Master Analysis Software Package (WRXi-XMAP)

This package provides maximum capability and flexibility, and includes all the functionality present in XMATH, XDEV, and JTA2

### Advanced Math Software Package (WRXi-XMATH)

This package provides a comprehensive set of WaveShape Analysis tools providing insight into the wave shape of complex signals. Includes:

- Parameter math – add, subtract, multiply, or divide two different parameters. Invert a parameter and rescale parameter values.
- Histograms expanded with 19 histogram parameters/up to 2 billion events
- Trend (datalog) of up to 1 million events
- Track graphs of any measurement parameter
- FFT capability includes: power averaging, power density, real and imaginary components, frequency domain parameters, and FFT on up to 24 Mpts.
- Narrow-band power measurements
- Auto-correlation function
- Sparse function
- Cubic interpolation function

### Advanced Customization Software Package (WRXi-XDEV)

This package provides a set of tools to modify the scope and customize it to meet your unique needs. Additional capability provided by XDEV includes:

- Creation of your own measurement parameter or math function, using third-party software packages, and display the result in the scope. Supported third-party software packages include:
  - VBScript – MATLAB – Excel – Mathcad
- CustomDSO – create your own user interface in a scope dialog box.
- Addition of macro keys to run VBScript files
- Support for plug-ins

### Value Analysis Software Package (WRXi-XVAP)

#### Measurements:

- Jitter and Timing parameters (period@level, width@level, edge@level, duty@level, time interval error@level, frequency@level, half period, setup, skew,  $\Delta$  period@level,  $\Delta$  width@level).

#### Math:

- Persistence histogram
- Persistence trace (mean, sigma, range)
- 1 Mpts FFTs with power spectrum density, power averaging, real, imaginary, and real+imaginary settings)

#### Statistical and Graphical Analysis

- 1 Mpts Trends and Histograms
- 19 histogram parameters
- Track graphs of any measurement parameter

### Intermediate Math Software Package (WRXi-XWAV)

#### Math:

- 1 Mpts FFTs with power spectrum density, power averaging, real, and imaginary components

#### Statistical and Graphical Analysis

- 1 Mpts Trends and Histograms
- 19 histogram parameters
- Track graphs of any measurement parameter

# Ordering Information



Product Description	Product Code
<b>WaveRunner Xi Series Oscilloscopes</b>	
600 MHz, 4 Ch, 5 GS/s, 2 Mpts/Ch (10 GS/s, 4 Mpts/Ch in interleaved mode) with 10.4" Color Touch Screen Display	WaveRunner 64Xi
600 MHz, 2 Ch, 5 GS/s, 2 Mpts/Ch (10 GS/s, 4 Mpts/Ch in interleaved mode) with 10.4" Color Touch Screen Display	WaveRunner 62Xi
400 MHz, 4 Ch, 5 GS/s, 2 Mpts/Ch (4 Mpts/Ch in interleaved mode) with 10.4" Color Touch Screen Display	WaveRunner 44Xi

Included with Standard Configuration
÷10 HiZ 500 MHz Passive Probe (Total of 1 Per Channel)
Getting Started Manual and Quick Reference Guide
CD-ROMs containing Utility Software
Optical 3-button Wheel Mouse – USB
Standard Ports; 10/100Base-T Ethernet, USB 2.0 (5), SVGA Video out, Audio in/out, RS-232
Protective Front Cover
Standard Commercial Calibration and Performance Certificate
3-Year Warranty

Memory Options	
4 Mpts/Ch (8 Mpts/Ch Interleaved) (for use with 4 Ch WaveRunner Xi)	WRXi-M
4 Mpts/Ch (8 Mpts/Ch Interleaved) (for use with 2 Ch WaveRunner Xi)	WRXi-M2
8 Mpts/Ch (16 Mpts/Ch Interleaved) (for use with 4 Ch WaveRunner Xi)	WRXi-L
8 Mpts/Ch (16 Mpts/Ch Interleaved) (for use with 2 Ch WaveRunner Xi)	WRXi-L2
12 Mpts/Ch (24 Mpts/Ch Interleaved) (for use with 4 Ch WaveRunner Xi)	WRXi-VL
12 Mpts/Ch (24 Mpts/Ch Interleaved) (for use with 2 Ch WaveRunner Xi)	WRXi-VL2

General Purpose Software Options	
Statistics Software Package	WRXi-STAT
Master Analysis Software Package	WRXi-XMAP
Advanced Math Software Package	WRXi-XMATH
Intermediate Math Software Package	WRXi-XWAV
Value Analysis Software Package (Includes XWAV and JTA2)	WRXi-XVAP
Advanced Customization Software Package	WRXi-XDEV
Processing Web Editor Software Package for Functions and Parameter	WRXi-XWEB

Application Specific Software Options	
Jitter and Timing Analysis Software Package	WRXi-JTA2
Digital Filter Software Package	WRXi-DFP2
Disk Drive Measurement Software Package	WRXi-DDM2
PowerMeasure Analysis Software Package	WRXi-PMA2
Serial Data Mask Software Package	WRXi-SDM
Advanced Optical Recording Measurement Software Package	WRXi-AORM
EMC Pulse Parameter Software Package	WRXi-EMC

Product Description	Product Code
<b>Hardware and Software Application Options</b>	
32 Digital Channel Oscilloscope Mixed Signal Option	MS-32*
CANbus TDM Trigger, Decode and Measure/Graph Testing Option	CANbus TDM
CANbus TD Trigger and Decode Testing Option	CANbus TD

\*MS-32 is compatible with WRXi 4-channel model oscilloscopes only.

Probes and Probe Accessories Options	
1 GHz, 0.7 pF Active Probe (±10), Small Form Factor	HFP1000
1 GHz Active Differential Probe (±1, ±10, ±20)	AP034
500 MHz Active Differential Probe (x10, ±1, ±10, ±100)	AP033
30 A; 100 MHz Current Probe – AC/DC; 30 A rms; 50 A Peak Pulse	CP031
30 A; 50 MHz Current Probe – AC/DC; 30 A rms; 50 A Peak Pulse	CP030
30 A; 50 MHz Current Probe – AC/DC; 30 A rms Peak; 50 A Peak Pulse	AP015
150 A; 10 MHz Current Probe – AC/DC; 150 A rms; 500 A Peak Pulse	CP150
500 A; 2 MHz Current Probe – AC/DC; 500 A rms; 700 A Peak Pulse	CP500
1,400 V, 100 MHz High-Voltage Differential Probe	ADP305
1,400 V, 20 MHz High-Voltage Differential Probe	ADP300
1 Ch, 100 MHz Differential Amplifier with Precision Voltage Source	DA1855A

Hardware and Accessories Options	
External GPIB Interface	WS-GPIB
Soft Carrying Case	WRXi-SOFTCASE
Hard Transit Case	WRXi-HARDCASE
Mounting Stand - Desktop Clamp Style	WRXi-MS-CLAMP
Rackmount Kit	WRXi-RACK
Mini Keyboard	WRXi-KYBD
German Front Panel Overlay	WRXi-FP-GERMAN
French Front Panel Overlay	WRXi-FP-FRENCH
Italian Front Panel Overlay	WRXi-FP-ITALIAN
Spanish Front Panel Overlay	WRXi-FP-SPANISH
Japanese Front Panel Overlay	WRXi-FP-JAPANESE
Korean Front Panel Overlay	WRXi-FP-KOREAN
Chinese (Tr) Front Panel Overlay	WRXi-FP-CHINESE-TR
Chinese (Simp) Front Panel Overlay	WRXi-FP-CHINESE-SI
Russian Front Panel Overlay	WRXi-FP-RUSSIAN

**Customer Service**  
LeCroy oscilloscopes 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.

This warranty includes: • No charge for return shipping • Long-term 7-year support • Upgrade to latest software at no charge

# Specifications

Vertical System	WaveRunner 44Xi	WaveRunner 64Xi	WaveRunner 62Xi
Nominal Analog Bandwidth @ 50 $\Omega$ , 10 mV–1 V/div	400 MHz	600 MHz	600 MHz
Rise Time (Typical)	875 ps	625 ps	625 ps
Input Channels	4	4	2
Bandwidth Limiters	20 MHz; 200 MHz		
Input Impedance	1 M $\Omega$    16 pF		
Input Coupling	50 $\Omega$ : DC, 1 M $\Omega$ : AC, DC, GND		
Maximum Input Voltage	50 $\Omega$ : 5 V <sub>rms</sub> , 1 M $\Omega$ : 400 V max (DC + Peak AC: $\leq$ 5 kHz)		
Vertical Resolution	8 bits; up to 11 with enhanced resolution (ERES)		
Sensitivity	50 $\Omega$ : 2 mV/div – 1 V/div fully variable; 1 M $\Omega$ : 2 mV – 10 V/div fully variable		
DC Accuracy	$\pm$ 1.0% of full scale (typical); $\pm$ 1.5% of full scale, $\geq$ 10 mV/div (warranted)		
Offset Range	50 $\Omega$ : $\pm$ 1 V @ 2-98 mV/div, $\pm$ 10 V @ 100 mV/div - 1 V/div; 1 M $\Omega$ : $\pm$ 1 V @ 2-98 mV/div, $\pm$ 10 V @ 100 mV/div - 1 V/div, $\pm$ 100 V @ 1.02 V/div - 10 V/div		
Offset Accuracy	$\pm$ (1.5% of offset value + 0.5% of full scale +1 mV)		
Input Connector	ProBus®/BNC		

## Timebase System

Timebases	Internal timebase common to all input channels; an external clock may be applied at the auxiliary input
Time/Division Range	Real time: 200 ps/div – 10 s/div, RIS mode: 20 ps/div to 100 ns/div, Roll mode: up to 1,000 s/div
Clock Accuracy	$\leq$ 5 ppm @ 25 °C (typical) ( $\leq$ 10 ppm @ 5–40 °C)
Sample Rate and Delay Time Accuracy	Equal to Clock Accuracy
Channel to Channel Deskew Range	$\pm$ 9 x time/div setting, 100 ms max., each channel
External Sample Clock	DC to 600 MHz; 50 $\Omega$ , (limited BW in 1 M $\Omega$ ), BNC input, limited to 2 Ch operation (1 Ch in 62Xi), (minimum rise time and amplitude requirements apply at low frequencies)
Roll Mode	User selectable at $\geq$ 500 ms/div and $\leq$ 100 kS/s

## Acquisition System

	44Xi	64Xi	62Xi
Single-Shot Sample Rate/Ch	5 GS/s	5 GS/s	5 GS/s
Interleaved Sample Rate (2 Ch)	5 GS/s	10 GS/s	10 GS/s
Random Interleaved Sampling (RIS)	200 GS/s		
RIS Mode	User selectable from 20 ps/div to 100 ns/div		
Trigger Rate (Maximum)	1,250,000 waveforms/second		
Sequence Time Stamp Resolution	1 ns		
Minimum Time Between Sequential Segments	800 ns		

Acquisition Memory Options	Max. Acquisition Points (4 Ch/2 Ch, 2 Ch/1 Ch in 62Xi)	Segments (Sequence Mode)
Standard	2M/4M	500
Option M	4M/8M	1000
Option L	8M/16M	5000
Option VL	12M/24M	10,000

## Acquisition Processing

	44Xi	64Xi	62Xi
Time Resolution (min, Single-shot)	200 ps (5 GS/s)	100 ps (10 GS/s)	100 ps (10 GS/s)
Averaging	Summed and continuous averaging to 1 million sweeps		
ERES	From 8.5 to 11 bits vertical resolution		
Envelope (Extrema)	Envelope, floor, or roof for up to 1 million sweeps		
Interpolation	Linear or Sin x/x		

## Trigger System

Trigger Modes	Normal, Auto, Single, Stop
Sources	Any input channel, External, Ext/10, or Line; slope and level unique to each source, except Line
Trigger Coupling	DC, AC (typically 7.5 Hz), HF Reject, LF Reject
Pre-trigger Delay	0–100% of memory size (adjustable in 1% increments, or 100 ns)
Post-trigger Delay	Up to 10,000 divisions in real time mode, limited at slower time/div settings in roll mode
Hold-off	1 ns to 20 s or 1 to 1,000,000,000 events
Internal Trigger Level Range	$\pm$ 4.1 div from center (typical)
Trigger and Interpolator Jitter:	$\leq$ 3 ps <sub>rms</sub> (typical)

<b>Trigger System</b> continued	<b>44Xi</b>	<b>64Xi</b>	<b>62Xi</b>
Trigger Sensitivity with Edge Trigger (Ch 1-4 + external, DC, AC, and LFrej coupling)	2 div @ < 400 MHz 1 div @ < 200 MHz	2 div @ < 600 MHz 1 div @ < 200 MHz	2 div @ < 600 MHz 1 div @ < 200 MHz
Max. Trigger Frequency with SMART Trigger (Ch 1-4 + external)	400 MHz @ ≥ 10 mV	600 MHz @ ≥ 10 mV	600 MHz @ ≥ 10 mV
External trigger range	EXT/10 ±4 V; EXT ±400 mV		

## Basic Triggers

Edge	Triggers when signal meets slope (positive, negative, or Window) and level condition.
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## SMART Triggers

State or Edge Qualified	Triggers on any input source only if a defined state or edge occurred on another input source. Delay between sources is selectable by time or events.
Dropout	Triggers if signal drops out for longer than selected time between 1 ns and 20 s.
Pattern	Logic combination (AND, NAND, OR, NOR) of 5 inputs (4 channels and external trigger input – 2 Ch+EXT on WaveRunner 62Xi). Each source can be high, low, or don't care. The High and Low level can be selected independently. Triggers at start or end of the pattern.
TV-Composite Video	Triggers selectable fields (1, 2, 4, or 8), Positive or Negative slope, or Line (up to 1500), for NTSC, PAL, SECAM, or non-standard video (up to 1500 lines).

## SMART Triggers with Exclusion Technology

Glitch and Pulse Width	Triggers on positive or negative glitches with widths selectable from 500 ps to 20 s or on intermittent faults (subject to bandwidth limit of oscilloscope).
Signal or Pattern Interval	Triggers on intervals selectable between 1 ns and 20 s.
Timeout (State/Edge Qualified)	Triggers on any source if a given state (or transition edge) has occurred on another source. Delay between sources is 1 ns to 20 s, or 1 to 99,999,999 events.
Runt	Trigger on positive or negative runts defined by two voltage limits and two time limits. Select between 1 ns and 20 ns.
Slew Rate	Trigger on edge rates. Select limits for dV, dt, and slope. Select edge limits between 1 ns and 20 ns.
Exclusion Triggering	Trigger on intermittent faults by specifying the normal width or period.

## LeCroy WaveStream Fast Viewing Mode

Intensity	256 Intensity Levels, 1-100% adjustable via front panel control
Number of Channels	up to 4 simultaneously
Max Sampling Rate	5 GS/s (10 GS/s for WaveRunner 64Xi and 62Xi in interleaved mode)
Waveforms/second (continuous)	up to 8000 waveforms/second
Operation	Front panel toggle between normal Real-Time mode and LeCroy WaveStream Fast Viewing mode

## Automatic Setup

Auto Setup	Automatically sets timebase, trigger, and sensitivity to display a wide range of repetitive signals.
Vertical Find Scale	Automatically sets the vertical sensitivity and offset for the selected channels to display a waveform with maximum dynamic range.

## Probes

Probes	One PP008 per channel standard; Optional passive and active probes available.
Probe System; ProBus	Automatically detects and supports a variety of compatible probes.
Scale Factors	Automatically or manually selected, depending on probe used

## Color Waveform Display

Type	Color 10.4" flat-panel TFT-LCD with high resolution touch screen
Resolution	SVGA; 800 x 600 pixels
Number of Traces	Display a maximum of 8 traces. Simultaneously display channel, zoom, memory, and math traces.
Grid Styles	Auto, Single, Dual, Quad, Octal, XY, Single + XY, Dual + XY
Waveform Styles	Sample dots joined or dots only in real-time mode

## Zoom Expansion Traces

	Display up to 4 Zoom/Math traces with 16 bits/data point)
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### Internal Waveform Memory

M1, M2, M3, M4 Internal Waveform Memory (store full-length waveform with 16 bits/data point) or store to any number of files limited only by data storage media.

### Setup Storage

Front Panel and Instrument Status Store to the internal hard drive, over the network, or to a USB-connected peripheral device.

### Interface

Remote Control	Via Windows Automation, or via LeCroy Remote Command Set
GPIB Port (Optional)	Supports IEEE – 488.2
Ethernet Port	10/100Base-T Ethernet interface (RJ-45 connector)
USB Ports	5 USB 2.0 ports (one on front of instrument) supports Windows-compatible devices.
External Monitor Port	Standard 15-pin D-Type SVGA-compatible DB-15; connect a second monitor to use dual-monitor display mode.
Serial Port	DB-9 RS-232 port (not for remote oscilloscope control)

### Auxiliary Input

Signal Types	Selected from External Trigger or External Clock input on front panel
Coupling	50 Ω: DC, 1 MΩ: AC, DC, GND
Maximum Input Voltage	50 Ω: 5 V <sub>rms</sub> , 1 MΩ: 400 V max. (Peak AC: ≤ 5 kHz + DC)

### Auxiliary Output

Signal Type	Trigger Enabled, Trigger Output, Pass/Fail, or Off
Output Level	TTL, ≈3.3 V
Connector Type	BNC, located on rear panel

### General

Auto Calibration	Ensures specified DC and timing accuracy is maintained for 1 year minimum.
Calibrator	Output available on front panel connector provides a variety of signals for probe calibration and compensation.
Power Requirements	90–264 V <sub>rms</sub> at 50/60 Hz; 115 V <sub>rms</sub> (±10%) at 400 Hz, Automatic AC Voltage Selection Installation Category: 300V CAT II; Max. Power Consumption: 300 VA/300 W; 250 VA/250 W for WaveRunner 62Xi

### Environmental

Temperature: Operating	+5 °C to +40 °C
Temperature: Non-Operating	-20 °C to +60 °C
Humidity: Operating	5% to 80% RH (non-condensing) up to 30 °C, Upper limit derates linearly to 50% RH (non-condensing) at 40 °C
Humidity: Non-Operating	5% to 95% RH (non-condensing) as tested per MIL-PRF-28800F
Altitude: Operating	3,048 m (10,000 ft.) max at ≤ 25 °C
Altitude: Non-Operating	12,190 m (40,000 ft.)

### Physical

Dimensions (HWD)	260 mm x 340 mm x 152 mm Excluding accessories and projections (10.25" x 13.4" x 6")
Net Weight	6.95 kg. (15.5 lbs.)

### Certifications

CE Compliant, UL and cUL listed; Conforms to EN 61326, EN 61010-1, UL 61010-1 2<sup>nd</sup> Edition, and CSA C22.2 No. 61010-1-04.

### Warranty and Service

3-year warranty; calibration recommended annually. Optional service programs include extended warranty, upgrades, calibration, and customization services.



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

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