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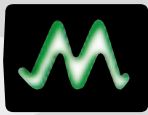
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*Waverunner*

# LeCroy Digital Oscilloscopes

*Get the Complete Picture*



LeCroy



## Why Walk When You Can Run?

CATCH THE FRESH WAVE OF THINKING IN OSCILLOSCOPE DESIGN - THE NEW TECROY *WAVERUNNER*. UNLIKE ANY OTHER SCOPE IN ITS CLASS, IT PUTS COMPLETE FUNCTIONALITY WITH MAXIMUM POWER ON YOUR DESK OR WORKBENCH. AND ALL OF THIS CAPABILITY IS AVAILABLE IN ONE REMARKABLY EASY-TO-USE PACKAGE. FROM TROUBLESHOOTING TO TIMING ANALYSIS TO PRODUCTION TESTING, THE TECROY *WAVERUNNER* SERIES IS UNIQUELY QUALIFIED TO MEET YOUR REQUIREMENTS.

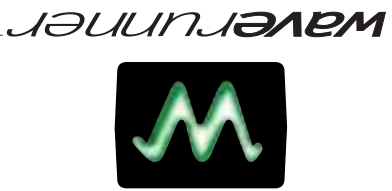
## Because There's No Such Thing as a Perfect Wave.

NO MATTER WHAT YOUR CHALLENGE, THE *WAVERUNNER* SCOPE WILL HELP YOU SOLVE IT FASTER. THIS NEW SCOPE IS DESIGNED FOR TECHNICIANS AND ENGINEERS WORKING IN TEST, DESIGN, AND SERVICE, INCLUDING:

- POWER CONVERSION
- ELECTRO-MECHANICAL
- GENERAL ELECTRONICS
- AUTOMOTIVE

...AND MANY MORE

FOR SIGNAL CAPTURE AND VIEWING, THE *WAVERUNNER* SCOPE IS SIMPLY BRILLIANT. ITS EXCEPTIONALLY STRONG FEATURE SET AND COMPLETE RANGE OF ADD-ONS, INCLUDING MATH TOOLS AND PROBES, BRING YOU TO SOLUTIONS FASTER AND EASIER.



EASY AS 1-2-3  
for high productivity

FULLY LOADED  
for outstanding performance

ANALOG PERSISTENCE™  
standard with each model

UNCOMMON VALUE  
in a mid-range scope

# The Waverunner Series

**Document your work** using Strip Chart mode on the graphics printer (optional) or print to the standard Centronics™ interface.



**The color, 8.4" TFT display** is large, bright, and crisp, so it's easy to recognize signal features. Connect an external VGA monitor for remote viewing.

**Icons** show trigger conditions.

**Intelligent ProBus® interface** automatically configures the scope for compatible current, voltage, and differential probes.

**Compact footprint** provides more space on your bench to do your work.



**Autosetup** adjusts the scope automatically display the signal.

**SMART Trigger®** lets you see hard-to-catch glitches, dropouts, and timing errors.

**Easy to navigate** with an optimized set of knobs, buttons, and simple menus.

**Math Tools** include FFTs, average, high resolution, and more...so you can

- see the signal
- see the spectrum
- measure the result

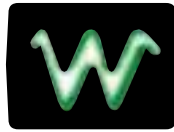
with the most complete set of waveform analysis tools available.

**Analog Persistence™** lets you hold your signal using the best of both analog and digital scope methods.

**Measure Tools** – one press button gives you control of all measurements and cursors.

## ALSO AVAILABLE ON THE REAR PANEL

- GPIB, RS-232-C
- Logic signal output, so you can trigger another test instrument or use Pass/Fail for test system control.
- PC Card Slot option



*waverunner*

# Unusually Capable, Remarkably Effortless

## CATCH THESE SPECS

The *Waverunner* oscilloscopes provide all you need to quickly view, measure, and evaluate your signals – accurately and reliably:

- 500 MHz bandwidth
- 500 MS/s single-shot sample rate and 25 GS/s for repetitive signals
- Up to one million data points to view signals with high resolution over longer time intervals

Its powerful, integrated processors provide rapid response. Turn a knob or press a button – *Waverunner* scopes respond instantly.

## ANALOG PERSISTENCE FOR A FRESH VIEW

This affordable new class of scopes brings you the power of LeCroy Analog Persistence. All it takes is one touch of the green button to get an analog-like view of your waveforms and explore the full depth of signal information. Then the 8.4" color display lets you clearly see the information you might have missed.

## EASY TO USE

The *Waverunner* series is designed to quickly get you up and running. Its color-coded front panel and simple menu system are quick to understand, so your focus is on the work not

the tool. Common tasks are automatic. Navigation is logical and intuitive. You'll quickly master its powerful operations.

## THE RIGHT PRICE

The *Waverunner* scope raises the bar when it comes to value – you get more for your money than with any other scope in this class. And because *Waverunner* can be upgraded, you can extend its life to meet future needs.

## INCREASE YOUR PRODUCTIVITY

Expand the vertical resolution, view the spectrum of a signal with an FFT, average to reduce noise, and more. Two optional measurement packages give you additional capabilities to datalog, integrate, and more. LeCroy's signal diagnostic and troubleshooting tools provide a complete solution for jitter and timing analysis and power measurement.

## GETTING STARTED

*Waverunner* scopes give you three quick ways to find the information you need:

- Quick Reference Guide
- In-depth Operator's Manual organized both for first-time and experienced users
- HTML Manual on CD-ROM

### **Waverunner COLOR DIGITAL OSCILLOSCOPE SPECIFICATIONS**

Model	Bandwidth	Channels	Sample Rate	Acquisition Memory	Analog Persistence
LT342	500 MHz	Two	500 MS/s	250 kpts/Ch	Yes
LT342L	500 MHz	Two	500 MS/s	1 Mpts/Ch	Yes
LT344	500 MHz	Four	500 MS/s	250 kpts/Ch	Yes
LT344L	500 MHz	Four	500 MS/s	1 Mpts/Ch	Yes

## See the Third Dimension

Scopes are great tools that help technicians and engineers understand the operation of electrical and electronic systems. With Analog Persistence, you see a third dimension. Are you concerned with intermittent runs or timing problems? Just press the green button and see infrequent signal anomalies such

Press the green button  
for direct access to  
Analog Persistence™.



as slow edges, pulse width variations, runs, and glitches. The intensity and color variation indicate the relative rate, such as a clock's period varying once every 100 cycles. Analog Persistence gives you insight into what is happening in your system.

### SMART TRIGGER

Another touch of a button expands your ability to lock onto a problem signal. The SMART Trigger function uses an icon display

and menu control, so you can set trigger conditions like timing intervals, edges, and TV formats. *Waverunner* oscilloscopes can trigger on hard-to-find glitches down to 2 ns, catch signal dropouts, or trigger when the signal falls within a window. You can even set up an exclusion trigger to find events that differ from the nominal signal.

### MEASURE ON THE SCREEN

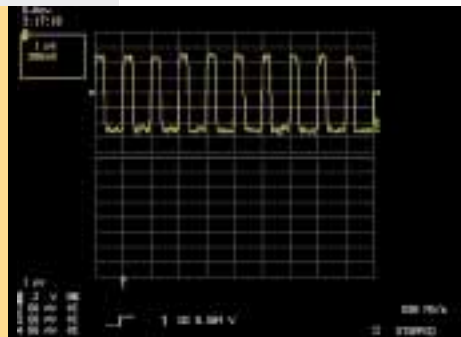
Cursor measurements let you dial into a specific section of your waveform to measure the peak voltage or the time between signal features, such as glitches on two different channels. The user interface and large display let you quickly perform basic measurements. Cursors work in XY display mode so you can read the angle in degrees and the radius in volts for CDMA signals.

### MANY WAYS TO ACQUIRE YOUR SIGNAL

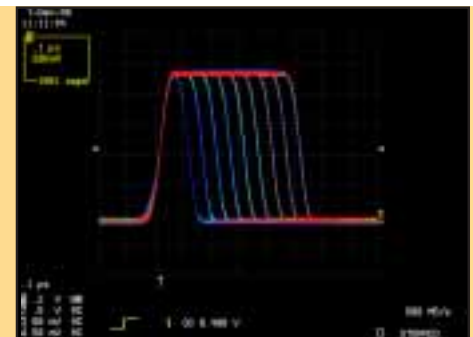
*Waverunner* scopes capture and display waveforms in several ways. Capturing and viewing the signal is as easy as 1-2-3. The scope can also record signals in a segmented memory to take snapshots of a fast-changing event. For slower signals, Roll Mode uses the high-resolution display to give a strip chart view of up to four channels. These capabilities make this scope unique for a wide variety of applications, from electronic devices and sensors to electro-mechanical systems.

## EASY STEPS

Using your  
Waverunner scope  
is as easy as 1-2-3!



*Waverunner* has a powerful interface. Simply connect your signal, press **AUTO SETUP**, and view. LeCroy SMARTMemory ensures the highest time resolution for the time window displayed.



Press the green button and you have the power of Analog Persistence. This three-dimensional view shows variations in pulse width.

## The Scope with Solutions

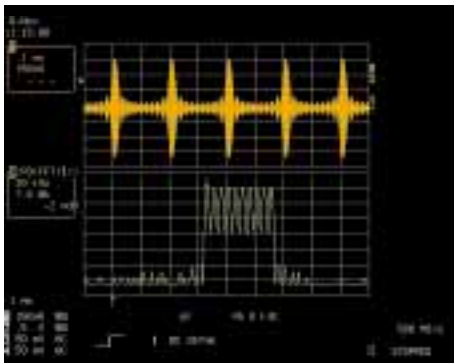
The *Waverunner* series provides the best set of troubleshooting and analysis tools available. It gives you maximum power to measure and analyze in the time domain and in the frequency domain with FFTs.

### MEASURE & MATH TOOLS

Choose from 25 automatic measurements that update with your waveform – live, on-screen. Turn on statistics for the parameters average and standard deviation to fully characterize or troubleshoot your circuit. Math Tools let you average (1000 sweeps) to reduce random noise or increase vertical resolution (to 11 bits). Select an optional analysis package for even more power using the same, easy-to-navigate menu system.

### SPECTRUM ANALYSIS WITH FFTS

View the FFT of a 50 kpoint waveform while the signal trace updates on the screen. Simultaneously see both the time and frequency domains, even on transient signals. Use cursors to measure the frequency of peaks in the FFT. Perform Pass/Fail testing of the spectra to a tolerance mask.

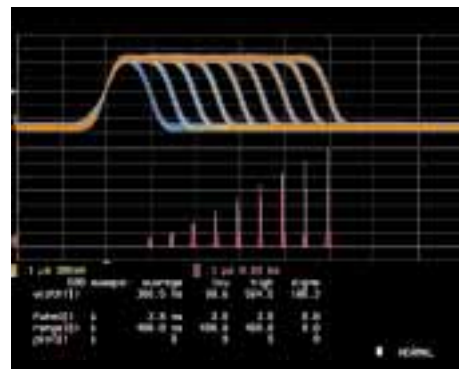


Use cursors to measure the frequency of peaks in the FFT. Perform Pass/Fail testing of the spectra to a tolerance mask.

*See transient signals with the time waveform and the frequency spectrum in different colors.*

### EXTENDED MATH & MEASUREMENTS

This option gives you over 40 measurement parameters and additional math tools to increase your productivity (integrate, differentiate, square, log). You can even datalog measurements with the trend function.

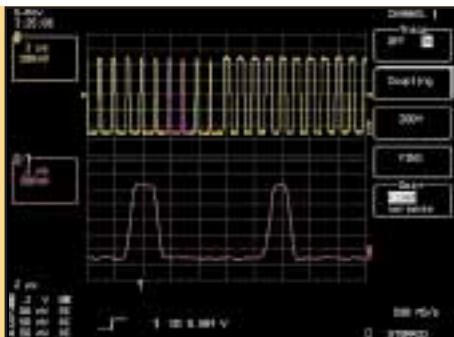


*Automatic measurements and histograms help characterize circuits.*

Only *Waverunner* lets you perform math-on-math. Deskew the channels, measure current and voltage, multiply for power, then integrate for energy.

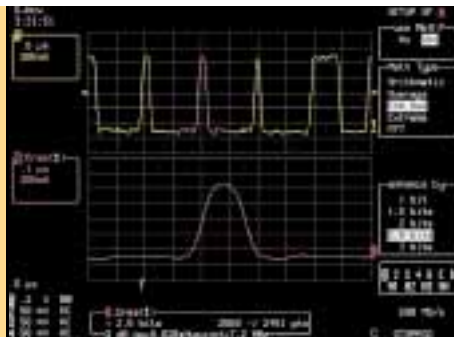
### THE COMPREHENSIVE WAVE ANALYZER

The WaveAnalyzer™ option is the ultimate tool for characterization and troubleshooting in time, frequency, and statistical domains for design and research applications. Waveform averaging increases to one million sweeps and FFT spectrum analysis to one million points. Histogram analysis lets you view and measure statistical variations.



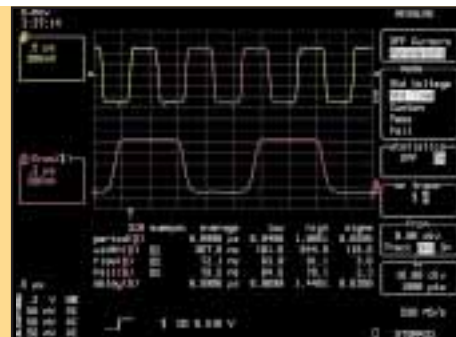
To zoom in on the signal, select **CHANNEL 1**, press **ZOOM**, and view.

Use the zoom controls to magnify and inspect. Press Auto Scroll to search and scan.



Press **MATH TOOLS** to choose from a wide variety of waveform math and analysis tools.

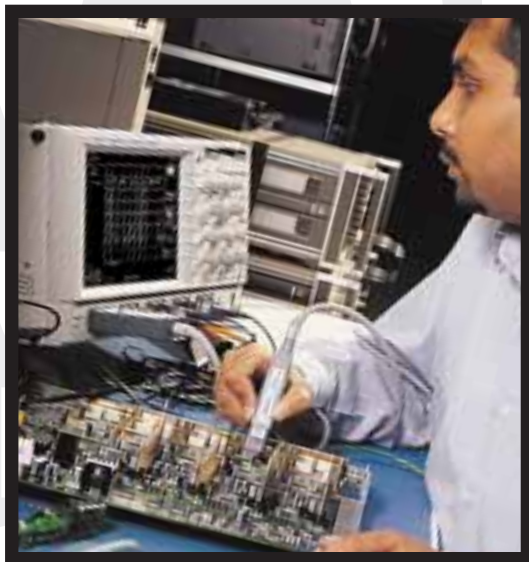
Use enhanced resolution (ERES) to filter noise and increase vertical resolution.



Press **MEASURE TOOLS** to choose from a wide range of time and voltage measurements to characterize your signal.

## Powerful Applications

The *Waverunner* oscilloscope acquires signals with high fidelity and integrity. A variety of measurement and analysis tools, as well as probes and accessories, are available. And it's easy to upgrade.



Whether you are troubleshooting, debugging, characterizing circuits and systems, or testing in production, *Waverunner* scopes get the job done. Standard features include Analog Persistence, SMART Trigger, FFTs, automatic measurements, waveform math, and Pass/Fail test.

Use the standard passive probes for 500 MHz bandwidth at the probe tip. Choose an active FET probe to minimize loading on your circuit, or for differential measurements, select the active 500 MHz differential probe. ProBus automatically controls and configures your LeCroy probes.

### WORLD-CLASS POWER MEASUREMENT TOOLS

*Waverunner* and PowerMeasure™ tools provide a complete solution for easily and accurately performing difficult power-related measurements. You can measure instantaneous power, characterize devices and circuits, and perform loop stability measurements, as well as harmonic analysis (FFT). Or deskew timing of current and voltage waveforms, integrate, rescale, and assign electrical units such as amps, watts, and coulombs.

PowerMeasure and precision differential voltage and current measurement probes give the power conversion engineer unprecedented measurement capability.

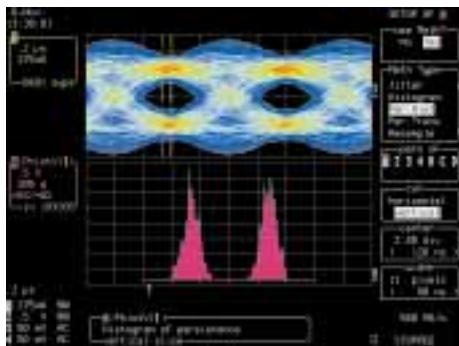




### A TIME ANALYZER IN A SCOPE

Jitter and Timing Analysis (JTA) with second-generation persistence technology (patent pending) enables precise measurements with enhanced timing resolution.

JTA lets you display the jitter function as well as its source signal. Both are perfectly time-correlated, so anomalies can be directly observed on the source trace. Use the Jitter-Track™ feature to plot cycle-to-cycle jitter, interval error, period, pulse width, or duty cycle versus time. Use persistence trace histograms to measure jitter and noise on eye diagrams.



*The JTA persistence histogram shows the variation of the waveform within amplitude or time slices.*

### SOFTWARE TO ENHANCE PRODUCTIVITY

ScopeExplorer™ and ActiveDSO™ are Microsoft Windows (95, 98, or NT) PC-based connectivity tools that make it easy to interface your *Waverunner* scope with a PC via RS-232-C or GPIB. It's easy to integrate scope data with Windows applications as well as to control the scope from your PC. Both tools and the interfaces are standard.

*All it takes is a PC with Windows 95, 98, or NT and a GPIB or RS-232-C connection.*

*So small, but it's a standout!*



# LT342/LT344 Technical Specifications

## Acquisition System

**BANDWIDTH (-3DB):** 500 MHz @ 50  $\Omega$  and at probe tip with PP006; select bandwidth limit (25 or 200 MHz) independently by channel.

**INPUT IMPEDANCE:** 50  $\Omega$   $\pm$ 1.0%; 1 M $\Omega$  // 12 pF typical (using PP006 probe)

**INPUT COUPLING:** 1 M $\Omega$ : AC, DC, GND;  
50  $\Omega$ : DC, GND

**MAX INPUT:** 50  $\Omega$ : 5 Vrms;  
1 M $\Omega$ : 400 Vmax (peak AC <5kHz + DC)

**SINGLE-SHOT SAMPLING RATE:** 500 MS/s max

**ACQUISITION MEMORY:** 250 kpts/Ch,  
1 Mpoint/Ch on L models

**VERTICAL RESOLUTION:** 8 bits

**SENSITIVITY:** 2 mV–5 V/div fully variable;  
10 V/div

**DC ACCURACY:**  $\pm$ 1.5% (0.5% of full scale)

**OFFSET RANGE:**  
2 mV–50 mV/div:  $\pm$ 1 V

100 mV–500 mV/div:  $\pm$ 10 V

1 V–10 V/div:  $\pm$ 100 V

## Timebase System

**TIMEBASES:** Main and up to four zoom traces simultaneously

**TIME/DIV RANGE:** 1 ns/div to 1000 s/div

**CLOCK ACCURACY:**  $\leq$ 10 ppm

**INTERPOLATOR RESOLUTION:** 5 ps

**EXTERNAL CLOCK:**  $\leq$ 500 MHz, 50  $\Omega$ , or 1 M $\Omega$  impedance

## Triggering System

**MODES:** Normal, Auto, Single, and Stop

**SOURCES:** Any input channel, external, Ext/10 or line; slope, level, and coupling are unique to each source (except line trigger).

**COUPLING MODES:** DC, AC, HF, HFREJ, LFREJ (reject frequency 50 kHz typ)

**PRE-TRIGGER RECORDING:** 0–100% of horizontal time scale

**POST-TRIGGER DELAY:** 0–10,000 divisions

**HOLDOFF BY TIME OR EVENTS:** Up to 20 s or from 1 to 99,999,999 events

**INTERNAL TRIGGER RANGE:**  $\pm$ 5 div

**MAXIMUM TRIGGER FREQUENCY:** Up to 500 MHz with HF coupling

**EXTERNAL TRIGGER INPUT:**  $\pm$ .5 V,  $\pm$ 5 V with Ext/10; max input same as input channels

## Autosetup

Automatically sets timebase, trigger, and sensitivity to display a wide range of repetitive signals; vertical find automatically sets sensitivity for the selected input signal.

## ACQUISITION MODES

Mode	Time Base Setting	Maximum Rate	Description
Single Shot	10 ns/div to 1000 s/div	500 MS/s	One ADC each channel
Repetitive	1 ns/div to 5 $\mu$ sec/div	25 GS/s	Random Interleaved Sampling (RIS)
Roll Mode	$\leq$ 500 kpts: 500 ms–1000 s/div	100 ks/s	Waveform slowly rolls across display
	$\geq$ 500 kpts: 1 s–1000 s/div	100 ks/s	Slow timebases
Sequence Mode: 2–1000 segments (4000 with L models)		500 MS/s	Stores multiple events with time stamp in segmented acquisition memories

## WAVERUNNER TRIGGERS

Name	Description	Edge or SMART Trigger <sup>®</sup>
Edge/Slope/Window/Line	Triggers when signal meets slope and level condition.	Edge
Signal pulse width	Triggers on glitches down to 2 ns. Width selectable from <2.5 ns to 20 s or on intermittent faults.	SMART
Signal interval	Triggers on intervals selectable between 10 ns and 20 s.	SMART
State or edge qualified	Triggers on input only after a defined state or edge occurred on another channel. Delay between sources is selectable by time or events.	SMART
Dropout	Triggers if the input signal drops out for longer than selected time between 25 ns and 20 s.	SMART
TV	Triggers on line (up to 1500) in odd or even fields for PAL, NTSC, or nonstandard video.	SMART

# Technical Specifications

## Probes

**MODEL PP006:** 10:1, 10 MΩ with autodetect (one per channel)

**PROBE SYSTEM:** ProBus Intelligent Probe System supports differential amplifiers and active, high-voltage, current, and differential probes.

## Color Waveform Display

**TYPE:** Color 8.4" flat panel TFT-LCD with VGA

**SCREEN SAVER:** Display blanks after 10 minutes.

**REAL TIME CLOCK:** Date, hours, minutes, and seconds displayed with waveform

**NUMBER OF TRACES:** Maximum eight on LT344, six on LT342; simultaneously display channel, zoom, memory, and math traces

**GRID STYLES:** Single, Dual, Quad, Octal, XY, Single+XY, Dual+XY; Full Screen gives enlarged view of each style.

**WAVEFORM STYLES:** Sample dots joined or dots only - regular or bold

## Analog Persistence Display

**ANALOG AND COLOR-GRADED PERSISTENCE:** Variable saturation levels; stores each trace's persistence data in memory

**TRACE DISPLAY:** Opaque or transparent overlap

## Zoom Expansion Traces

**STYLE:** Display up to four zoom traces

**VERTICAL ZOOM:** Up to 5x expansion, 50x with averaging

**HORIZONTAL ZOOM:** Expand to 2 pts/div, magnify to 50,000x

**AUTO SCROLL:** Automatically scan and display a captured signal

## Rapid Signal Processing

**PROCESSOR:** 96 MHz PowerPC

IT342	IT344	IT342L	IT344L
16 Mbytes	16 Mbytes	32 Mbytes	32 Mbytes
64 Mbyte system memory optional for all models.			

## Internal Waveform Memory

**WAVEFORM:** M1, M2, M3, M4\*

**ZOOM AND MATH:** A, B, C, D\*

\*Store full-length waveforms with 16 bits/data point.

## Setup Storage

**FOR FRONT PANEL AND INSTRUMENT STATUS:** Four non-volatile memories and floppy drive are standard. Hard drive and memory card are optional.

## Math Tools

Simultaneously perform up to four math processing functions; traces can be chained together to perform math on math.

**STANDARD MATH TOOLS:**

<i>average (summed to 1000 sweeps)</i>	<i>identity</i>
<i>difference</i>	<i>product</i>
<i>enhanced resolution (to 11 bits vertical)</i>	<i>resample (deskew)</i>
<i>FFT of 50 kpoint waveforms</i>	<i>rescale (with units)</i>
	<i>sin x/x</i>
	<i>sum</i>

## CURSOR MEASUREMENTS

Type	Symbol	From	To
Relative time	↓ ↑	first point on waveform	any other point on waveform
Relative voltage	==::==	select voltage level	any other voltage level
Absolute time		time and voltage relative to	ground and trigger
Absolute voltage	---::---	voltage	ground

## Measure Tools

**AUTOMATED MEASUREMENTS:** Display any five parameters together with their average, high, low, and standard deviations.

**STANDARD MEASURE TOOLS:**

<i>amplitude</i>	<i>fall</i>	<i>peak-to-peak</i>
<i>area</i>	<i>fall 80-20</i>	<i>period</i>
<i>base</i>	<i>frequency</i>	<i>phase</i>
<i>cycle mean</i>	<i>maximum</i>	<i>rise</i>
<i>cycle rms</i>	<i>mean</i>	<i>rise 20-80</i>
<i>cycles</i>	<i>minimum</i>	<i>top</i>
<i>delay</i>	<i>rms</i>	<i>width</i>
<i>Δ delay</i>	<i>+overshoot</i>	
<i>duty cycle</i>	<i>-overshoot</i>	

**PASS/FAIL:** Test any five parameters against selectable thresholds. Limit testing is performed using masks created on the scope or on a PC. Setup a pass or fail condition to initiate actions such as hardcopy output, save waveform to

# Technical Specifications

memory, GPIB SRQ, or pulse out.

## Extended Math and Measurements Option

Adds math and advanced measurements for general purpose applications. Includes all standard math and measurement tools, plus:

### EXTENDED MATH TOOLS:

<i>absolute value</i>	<i>integrate</i>
<i>differentiate</i>	<i>reciprocal (invert)</i>
<i>exp (base e)</i>	<i>square</i>
<i>exp (base 10)</i>	<i>square root</i>
<i>log (base e)</i>	<i>trend (datalog)</i>
<i>log (base 10)</i>	

### EXTENDED MEASURE TOOLS:

<i>cycles median</i>	<i>fall @ level; % and</i>
<i>cycles std. deviation</i>	<i>volts</i>
<i>Δ time @ level %</i>	<i>first point</i>
<i>and volts</i>	<i>last point</i>
<i>Δ time @ level from</i>	<i>median</i>
<i>trigger</i>	<i>number of points</i>
<i>Δ time from clock to</i>	<i>rise @ level; % and</i>
<i>data + and -</i>	<i>volts</i>
<i>duration</i>	<i>std. deviation</i>

## WaveAnalyzer

Includes the Extended Math and Measure Tools as well as expanded capabilities for performing FFTs, averaging, histograms, and histogram parameters.

### WAVE ANALYZER TOOLS

*Histograms with 18 Histogram Parameters*  
*Summed Averaging to 1 Million Sweeps*  
*Continuous Weighted Averaging*  
*FFT (up to 1 Mpoint Waveforms)*  
*FFT Power Averaging*  
*FFT Power Density, Real, and Imaginary*

## Other Application Solutions

### JITTER AND TIMING ANALYSIS (JTA)

### POWERMEASURE TOOLS

## Interface

**REMOTE CONTROL:** Full control via GPIB and RS-232-C

**FLOPPY DRIVE:** Internal, DOS-format, 3.5" high-density

**PCMCIA TYPE III SLOT (OPTIONAL):** Supports memory and hard drive cards.

**EXTERNAL MONITOR PORT:** 15-pin D-Type VGA-compatible

**CENTRONICS PORT:** Parallel printer interface

**INTERNAL GRAPHICS PRINTER (OPTIONAL):** Provides hardcopy output in <10 seconds.

## Outputs

**CALIBRATOR SIGNAL:** 500 Hz–1 MHz square wave, -1.0 to +1.0, test point and ground lug on front panel

**CONTROL SIGNALS:** Choice of trigger ready, trigger out, or pass/fail status; TTL levels into 1 MΩ at rear panel BNC (output resistance 300 Ω ±10%)

## General

**OPERATING CONDITIONS:** Temperature 5–40°C; humidity 80% non-condensing at 40°C; altitude ≤2,000 meters

**SHOCK AND VIBRATION:** Conforms to MIL-PRF-28800P; Class C

**POWER REQUIREMENTS:** 90–132 V AC and 180–250 V AC; 45–66 Hz; maximum power dissipation: 150 VA–230 VA, depending on model

**CERTIFICATIONS:** CE, UL and cUL

**DIMENSIONS (HWD):** 210 mm x 350 mm x 300 mm; 8.3" x 13.8" x 11.8" (height excludes feet)

**WEIGHT:** 8 kg; 18 lbs

**WARRANTY AND CALIBRATION:** Three years; calibration recommended yearly

## Ordering Information

PRODUCT CODE	WAVERUNNER DIGITAL OSCILLOSCOPES:
LT342	Two-Channel Color, 500 MHz, 500 MS/s, 250 kpts/ch
LT342L	Two-Channel Color, 500 MHz, 500 MS/s, 1 Mpts/ch
LT344	Four-Channel Color, 500 MHz, 500 MS/s, 250 kpts/ch
LT344L	Four-Channel Color, 500 MHz, 500 MS/s, 1 Mpts/ch

### INCLUDED WITH STANDARD CONFIGURATION:

PP06	10:1 10 M $\Omega$ Passive Probe (1 per channel)
LTXXX-OM	Operator's Manual and HTML Manual on CD-ROM
LTXXX-RCM	Remote Control Manual
LTXXX-QRC	Quick Reference Guide
	Math Analysis with FFT
	Floppy Disk Drive
	GPB, RS-232-C, Centronics Interfaces and VGA Output Port
	Performance Certificate
	Three-Year Warranty

### SELECTED PROBES & ACCESSORIES:

AP015	50 MHz/30 amp (50 amp peak) Current Probe
AP011	120 kHz/150 amp Current Probe
DA1820/DA1822	10 MHz Differential Amplifiers
DA1850/DA1855	100 MHz Differential Amplifiers
DXC100	250 MHz, 100:1 or 10:1 Selectable, Passive Differential Probe Pair
AP020	1 GHz 10:1 FFT Probe with SMD Kit
AP033	DC-500 MHz Active Differential Probe
PP090	Probus 75 to 50 $\Omega$ Adapter
GPR10	Graphics Printer Paper/10 rolls

### SOFTWARE OPTIONS:

LTXXX-EMM	Extended Math and Measurement Package
LTXXX-WAVA	WaveAnalyzer Package including Histograms
LTXXX-JTA	Jitter and Timing Analysis Package
LTXXX-PMT1	Power Measurement Tools
<b>HARDWARE OPTIONS:</b>	
LTXXX-GP02	Internal Graphics Printer
LTXXX-PCSL0T	PC Card Slot
LTXXX-HD02	PC Card Hard Disk (520 Mbytes)
LTXXX-PCMEDIA	PC Card Slot with HD02 and MC04
MC04	512 kbytes SRAM Memory Card
LTXXX-64MBSM	64 Mbytes System Memory

### MANUALS:

LT34X-SM	Service Manual for LT34X Series
<b>WARRANTY &amp; CALIBRATION:</b>	
CCOFMET	Swiss OMFET Standard
CCNIST	US NIST Standard
CCMIL	US Military Standard

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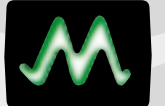
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