Digital Phosphor Oscilloscopes

▶ **TDS3012B • TDS3014B • TDS3024B • TDS3032B • TDS3034B • TDS3044B • TDS3052B • TDS3054B • TDS3064B**

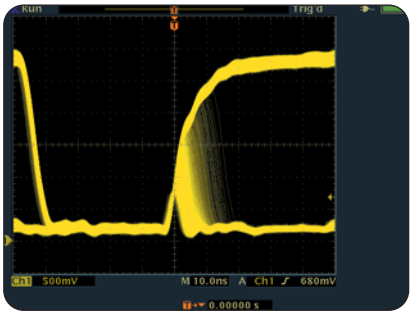
The TDS3000B Series of Digital Phosphor Oscilloscopes Provides Unmatched Performance and Portability at an Affordable Price

The TDS3000B packs the power of a DPO, digital real-time (DRT) sampling technology, WaveAlert waveform anomaly detection, OpenChoice documentation and analysis solutions and five application-specific modules into a lightweight, battery-capable design.

A DPO Provides a Greater Level of Insight into Complex Signals

The TDS3000B Series DPO delivers 3,600 wfms/s continuous waveform capture rate to capture glitches and infrequent events three times faster than comparable oscilloscopes. Some oscilloscope vendors claim high waveform capture rates for short bursts of time, but only DPOs can deliver these fast waveform capture rates on a continuous basis – saving minutes, hours or even days by quickly revealing the nature of faults so advanced triggers can be applied to isolate them.

In addition, the TDS3000B DPO's real-time intensity grading highlights the details about the "history" of a signal's activity, making it easier to understand the characteristics of the waveforms you've captured.



▶ The TDS3000B DPO provides unmatched insight into complex signal behavior, such as metastable events.

▶ Features & Benefits

100 to 600 MHz Bandwidths

5 GS/s Maximum Real-time Sample Rate, with Sin(x)/x Interpolation

3,600 wfms/s Continuous Waveform Capture Rate

2 or 4 Channels

Full VGA Color LCD

25 Automatic Measurements

FFT Standard

Multi-language User Interface

QuickMenu Graphical User Interface for Easy Operation

WaveAlert® Automatic Waveform Anomaly Detection

OpenChoice® Solutions Simplify Instrument Control, Documentation and Analysis
- e*Scope® Web-based Remote Control
- Built-in Ethernet Port
- GPIB, RS232, VGA
- TDSPCS1 OpenChoice Software
- WaveStar™ Software
- Integration with Third-party Software

Application Modules for Specialized Analysis
- Advanced Analysis Module
- Limit Testing Module
- Telecommunications Mask Testing Module
- Extended Video Module
- 601 Serial Digital Video Module

Optional Internal Battery Operation up to 3 Hours

Plug-in Printer for Portable Documentation of Results

TekProbe™ Interface Supports Active, Differential and Current Probes for Automatic Scaling and Units

▶ Applications

Digital Design, Debug and Test

Video Installation and Service

Power Supply Design

Education and Training

Telecommunications Mask Testing

Manufacturing Test

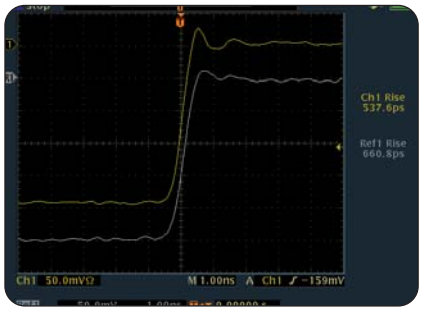
Tektronix
Enabling Innovation

Higher Speeds Demand Greater Bandwidth

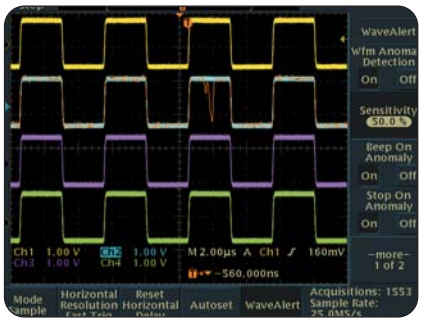
You face faster clock rates and edge speeds, increasingly complex signals and mounting time-to-market pressures. The higher the bandwidth of your oscilloscope, the more accurate the reproduction of your signal. The TDS3000B Series offers a wide range of bandwidths from 100 MHz to 600 MHz to best suit the needs of your most demanding projects, so that you can complete your tasks on time and with confidence.

Quickly Debug and Characterize Signals with DRT Sampling Technology and Sin(x)/x Interpolation

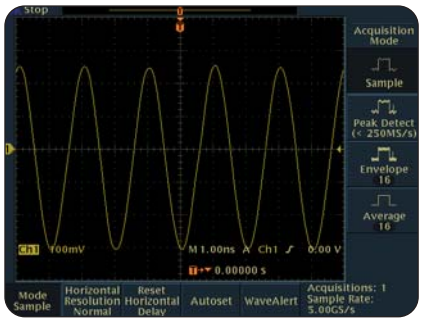
The TDS3000B Series combines unique digital real-time (DRT) sampling technology with sin(x)/x interpolation to allow you to accurately characterize a wide range of signal types on all channels simultaneously. This sampling technology makes it possible to capture high-frequency information, such as glitches and edge anomalies, that eludes other oscilloscopes in its class, while sin(x)/x interpolation ensures precise reconstruction of each waveform. The result – a complete view of your signal to speed debug and characterization.



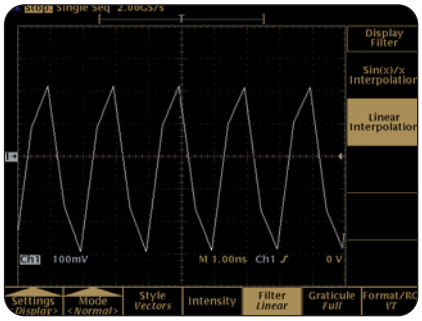
▶ An increase in performance from 500 to 600 MHz bandwidth offers a 20% improvement in rise-time measurement accuracy, as illustrated with these measurements of a 20 ps rising edge. The lower trace is a reference waveform, showing the rise-time performance of a 500 MHz oscilloscope. The upper trace shows the improved performance of a 600 MHz oscilloscope.



▶ WaveAlert® waveform anomaly detection alerts you to any waveform that deviates from the "normal" input, such as the glitch on channel 2.



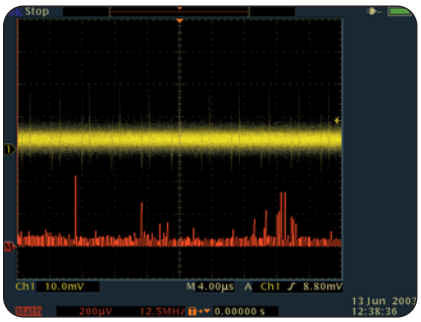
▶ The TDS3054B's 5 GS/s real-time sample rate and sin(x)/x interpolation ensure accurate reconstruction of a 500 MHz sine wave.



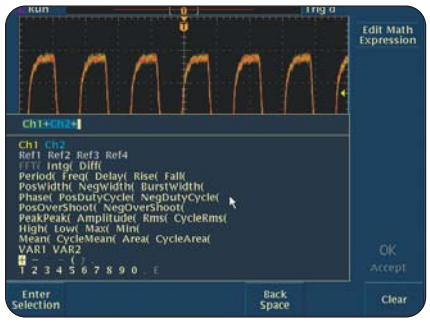
▶ Even with 2 GS/s sample rate, which exceeds the Nyquist requirement of 2X oversampling, this 500 MHz oscilloscope with linear interpolation does not provide accurate reconstruction of the same 500 MHz sine wave.

Enhanced Troubleshooting Ability

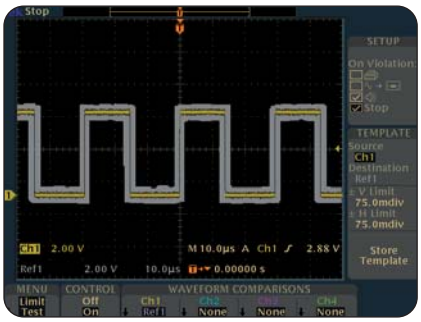
WaveAlert® waveform anomaly detection speeds your troubleshooting tasks by helping you find those elusive problems faster. WaveAlert detection monitors the incoming signals on all channels and will detect and highlight any waveform that deviates from the normal waveform being acquired. Because the TDS3000B oscilloscope can stop acquisition, sound a beep, make a hard copy or save the waveform when it detects an anomaly, you can run tests over long time periods – even unattended – to find those challenging, very infrequent failures.



▶ Look for unintentional circuit noise with the TDS3000B Series' FFT capability.



▶ TDS3AAM Advanced Analysis Module delivers advanced waveform math.



▶ The TDS3000B DPO with the TDS3LIM Limit Testing Module is ideal for manufacturing test applications where fast Go/No-Go decisions are required.

Simple, Speedy Documentation and Analysis

OpenChoice® solutions deliver simple, seamless integration between the oscilloscope and the PC. Using a standard built-in Ethernet port, e*Scope® web-based remote control allows you to control your TDS3000B oscilloscope from anywhere, using the Internet and your PC. With the optional TDS3GV Communication Module, floppy disk, TDSPCS1 OpenChoice Software and integration with third-party software, the TDS3000B Series provides you with multiple choices to easily capture, transfer, document and analyze your measurement results. This seamless integration extends the power and value of these brilliantly engineered, affordable oscilloscopes.

Flexible Features for Every Application

Optional application modules enable you to transform your oscilloscope into a specialized tool for limit testing, telecommunications mask testing, and video troubleshooting.

And, with its lightweight, compact size and battery pack, the TDS3000B Series oscilloscope can go wherever it is needed. It weighs only 4.5 kilograms (9.8 lbs), with battery installed. Use the optional plug-in thermal printer to instantly document your work, even in the field.

TDS3AAM Advanced Analysis Module – Adds extended math capability, arbitrary math expressions, measurement statistics and additional automated measurements.

TDS3LIM Limit Testing Module – Offers fast, accurate Go/No-Go verification that tested circuits are operating within intended parameters.

TDS3TMT Telecommunications Mask Testing Module – Pass/Fail compliance of ITU-T G.703 and ANSI T1.102 standards, custom mask testing and more.

TDS3VID Extended Video Editing Module – Adds Video QuickMenu, autoset, holdoff, line count trigger, video picture mode, vectorscope mode[*1], HDTV format triggering graticules and more.

TDS3SDI 601 Serial Digital Video Module – Identify and analyze ITU-R BT.601 video signals, video picture mode with bright line select, vectorscope mode[*1], HDTV format triggering and more.

[*1] Vectorscope does not support composite video.

▸ Characteristics

▸ TDS3000B Series Electrical Characteristics

	TDS3012B	TDS3014B	TDS3024B	TDS3032B	TDS3034B	TDS3044B	TDS3052B	TDS3054B	TDS3064B
Bandwidth	100 MHz	100 MHz	200 MHz	300 MHz	300 MHz	400 MHz	500 MHz	500 MHz	600 MHz
Channels	2	4	4	2	4	4	2	4	4
Sample Rate on Each Channel	1.25 GS/s	1.25 GS/s	2.5 GS/s	2.5 GS/s	2.5 GS/s	5 GS/s	5 GS/s	5 GS/s	5GS/s
Maximum Record Length	10 K points on all models								
Vertical Resolution	9 Bits on all models								
Vertical Sensitivity (/div)	1 mV to 10 V on all models								
Vertical Accuracy	±2% on all models								
Max Input Voltage (1 MΩ)	150 V_{RMS} CAT I on all models (300 V CAT II with standard 10X probe)								
Position Range	±5 div on all models								
BW Limit	20 MHz	20 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz
Input Coupling	AC, DC, GND on all models								
Input Impedance Selections	1 MΩ in parallel with 13 pF or 50 Ω on all models								
Time Base Range	4 ns to 10 s/div	4 ns to 10 s/div	2 ns to 10 s/div	2 ns to 10 s/div	2 ns to 10 s/div	1 ns to 10 s/div	1 ns to 10 s/div	1 ns to 10 s/div	1 ns to 10 s/div
Time Base Accuracy	20 ppm on all models								
Display Monitor (VGA)	Color active matrix LCD on all models								