

## TEKTRONIX

# TDS3054B

The Tektronix TDS3054B is a 500 MHz, 4-channel Digital Phosphor Oscilloscope (DPO) from the highly popular TDS3000B series. Known for its portability and responsive 3,600 wfms/s waveform capture rate, it features an independent 5 GS/s digitizer for each channel and provides 9-bit vertical resolution. Notable standard inclusions on the 'B' model are built-in Ethernet, 25 automatic measurements, FFT, and WaveAlert anomaly detection.

## SPECIFICATIONS

### General

|            |                                                                                                                        |
|------------|------------------------------------------------------------------------------------------------------------------------|
| Interfaces | Ethernet (10Base-T) RJ-45, Centronics Parallel Port (GPIB, RS-232, and VGA video available via optional TDS3GV module) |
| Display    | 6.4-inch (163 mm) Active TFT Color LCD (Full VGA 640 × 480)                                                            |

### Physical

|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Power Supply          | 100 to 240 VAC (±10%) at 50/60 Hz; 115 VAC at 400 Hz; 75 W maximum |
| Operating Temperature | +5 to +50 °C                                                       |
| Dimensions (W×H×D)    | 375 × 176 × 149 mm                                                 |
| Weight                | 3.2 kg                                                             |

### Vertical System

|                                |                                        |
|--------------------------------|----------------------------------------|
| Bandwidth                      | 500 MHz                                |
| Input Channels                 | 4                                      |
| Calculated Rise Time           | 700 ps                                 |
| Hardware Bandwidth Limits      | 20 MHz, 150 MHz                        |
| Vertical Resolution            | 9 bits                                 |
| Input Coupling                 | AC, DC, GND                            |
| Input Impedance                | 1 MΩ ± 1% with 13 pF ± 2 pF, 50 Ω ± 1% |
| Input Sensitivity Range (1 MΩ) | 1 mV/div to 10 V/div                   |
| Input Sensitivity Range (50 Ω) | 1 mV/div to 1 V/div                    |
| DC Gain Accuracy               | ±2%                                    |
| Maximum Input Voltage (50 Ω)   | 5 VRMS with peaks < 30 V               |
| Channel-to-Channel Isolation   | >100:1 at ≤100 MHz; >30:1 at >100 MHz  |

### Acquisition System

|                       |                                                            |
|-----------------------|------------------------------------------------------------|
| Maximum Sample Rate   | 5 GS/s per channel                                         |
| Waveform Capture Rate | 3,600 wfms/s                                               |
| Anomaly Detection     | WaveAlert™ Automatic Waveform Anomaly Detection (Standard) |

## Horizontal System

|                    |                                     |
|--------------------|-------------------------------------|
| Record Length      | 10,000 points per channel (10k pts) |
| Time Base Range    | 1 ns/div to 10 s/div                |
| Time Base Accuracy | 20 ppm                              |

## Trigger System

|                |                                                                                    |
|----------------|------------------------------------------------------------------------------------|
| Trigger Source | CH1, CH2, CH3, CH4, Ext, Ext/10, AC Line                                           |
| Trigger Types  | Edge, Video (Standard); Logic, Pulse, Telecom, Video options available via modules |

## Waveform Measurements and Math

|               |                                 |
|---------------|---------------------------------|
| Waveform Math | Add, Subtract, Multiply, Divide |
| FFT           | Standard                        |

## Input and Output Interfaces

|                   |                                             |
|-------------------|---------------------------------------------|
| Removable Storage | Built-in 3.5-inch 1.44 MB floppy disk drive |
|-------------------|---------------------------------------------|

## Display Characteristics

|                    |                                      |
|--------------------|--------------------------------------|
| Display Type       | 6.4 in (163 mm) Active TFT Color LCD |
| Display Resolution | 640 × 480 pixels (Full VGA)          |

## Environmental and Safety

|                               |                                                                           |
|-------------------------------|---------------------------------------------------------------------------|
| Operating Humidity            | 20% to 90% RH at or below +30 °C; 20% to 45% RH above +30 °C up to +50 °C |
| Operating Altitude            | Up to 3,000 m (10,000 ft)                                                 |
| Electromagnetic Compatibility | Meets or exceeds EN61326 Class A, FCC Part 15 Subpart B, AS/NZS 2064      |
| Safety Certifications         | UL61010B-1, CSA1010.1, EN61010-1                                          |

## Ordering Information and Accessories

|                 |                                                    |
|-----------------|----------------------------------------------------|
| Standard Probes | P5050 500 MHz 10X passive probes (one per channel) |
|-----------------|----------------------------------------------------|

## Power Source

|                      |                                                                        |
|----------------------|------------------------------------------------------------------------|
| Battery Power Option | Optional TDS3BATB Li-Ion battery pack (provides ~3 hours of operation) |
|----------------------|------------------------------------------------------------------------|

## Physical Characteristics

|                     |        |
|---------------------|--------|
| Weight with Battery | 4.1 kg |
|---------------------|--------|

## Acquisition

|                        |          |
|------------------------|----------|
| Waveform Interpolation | Sin(x)/x |
|------------------------|----------|

## Triggering

|                                |                                            |
|--------------------------------|--------------------------------------------|
| Trigger Coupling               | DC, AC, HF Reject, LF Reject, Noise Reject |
| Trigger Level Range (Internal) | ±8 divisions from center of screen         |

## Measurements & Analysis

|         |                                          |
|---------|------------------------------------------|
| Cursors | Amplitude, Time (H Bars, V Bars, Paired) |
|---------|------------------------------------------|

## Display

|                    |                               |
|--------------------|-------------------------------|
| Display Graticules | Full, Grid, Cross-hair, Frame |
|--------------------|-------------------------------|

## Power

|                        |                                                  |
|------------------------|--------------------------------------------------|
| Power Consumption      | 75 W maximum                                     |
| Battery Operating Time | Approx. 3 hours (with optional TDS3BATB battery) |

## Options & Upgrades

|                                |                                             |
|--------------------------------|---------------------------------------------|
| Supported Application Modules  | TDS3AAM, TDS3LIM, TDS3TMT, TDS3VID, TDS3SDI |
| Supported Communication Module | TDS3GV (GPIB, VGA, RS-232)                  |

## Inputs & Coupling

|                 |                         |
|-----------------|-------------------------|
| Probe Interface | TekProbe BNC (Level II) |
|-----------------|-------------------------|

## Connectivity

|                       |                               |
|-----------------------|-------------------------------|
| Built-in Network Port | 10/100Base-T Ethernet (RJ-45) |
| Parallel Printer Port | Centronics standard           |

## Connectivity & Control

|               |                                  |
|---------------|----------------------------------|
| Web Interface | e*Scope web-based remote control |
|---------------|----------------------------------|

## Trigger

|                       |                  |
|-----------------------|------------------|
| Video Trigger Formats | NTSC, PAL, SECAM |
|-----------------------|------------------|

## Storage & Memory

|                           |                       |
|---------------------------|-----------------------|
| Internal Setup Storage    | 10 front-panel setups |
| Internal Waveform Storage | 4 reference waveforms |

## TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

## APPLICATIONS

Electronic circuit design, troubleshooting, manufacturing test, and field service

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