

TEKTRONIX

TDS7154

The Tektronix TDS7154 is a 4-channel Digital Phosphor Oscilloscope (DPO) from the legacy TDS7000 Series, providing a 1.5 GHz bandwidth and up to 20 GS/s real-time sample rate. Utilizing Tektronix's proprietary DPX acquisition technology, this platform offers a maximum waveform capture rate of over 400,000 waveforms per second. Operating on an open Microsoft Windows platform, it features classical direct controls, a touch-sensitive color display, and optional serial triggering and clock recovery functions, making it a powerful tool for analyzing high-speed digital designs.

SPECIFICATIONS

General

Interfaces	LAN (10/100Base-T), GPIB (IEEE 488.2), RS-232, Centronics Printer Port, VGA Out, PS/2 Mouse/Keyboard Ports
Display	10.4-inch (264 mm) active-matrix color TFT LCD with touch screen, 640 × 480 pixels resolution

Physical

Power Supply	100 to 240 V RMS (±10%), 47 to 63 Hz; 115 V RMS (±10%), 360 to 440 Hz; CAT II; power consumption <300 W
Operating Temperature	+5 °C to +45 °C °C
Dimensions (W×H×D)	455 mm × 277 mm × 425 mm (excluding feet and accessories) mm
Weight	19.1 kg

Vertical System

Analog Bandwidth (-3 dB)	1.5 GHz
Calculated Rise Time (10% to 90%)	240 ps
Number of Input Channels	4
Input Impedance	50 Ω (TekConnect interface)
Input Coupling	DC, GND
Vertical Resolution	8 bits (>11 bits with averaging)
Vertical Sensitivity Range	2 mV/div to 1 V/div
Hardware Bandwidth Limits	250 MHz, 20 MHz
DC Gain Accuracy	±1.5% for 10 mV/div to 1 V/div; ±2.5% for 2 mV/div to 9.98 mV/div
Offset Range	±1 V at 2 to 100 mV/div; ±10 V at 101 mV to 1 V/div
Maximum Input Voltage	5 V RMS, with peaks ≤ ±30 V
Channel-to-Channel Isolation	≥100:1 at ≤1.5 GHz
Input Connector Type	TekConnect
Vertical Position Range	±5 divisions

Horizontal System

Timebase Range	50 ps/div to 10 s/div
Channel-to-Channel Deskew Range	±75 ns
Timebase Accuracy	±15 ppm
Equivalent-Time Sample Rate	Up to 250 GS/s
Waveform Interpolation	Sin(x)/x, Linear

Acquisition System

Maximum Real-Time Sample Rate	20 GS/s (1 Ch), 10 GS/s (2 Ch), 5 GS/s (3 or 4 Ch)
Maximum Record Length (Memory Depth)	4 Mpoints (1 Ch), 2 Mpoints (2 Ch), 1 Mpoints (4 Ch); optional up to 32 Mpoints
Waveform Capture Rate	>400,000 wfms/s
Acquisition Modes	Sample, Peak Detect, Averaging, High Resolution, Envelope, Waveform Database

Trigger System

Trigger Sources	CH1, CH2, CH3, CH4, Line
Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Rej, LF Rej, Noise Rej
Trigger Holdoff Range	250 ns to 12 s
Trigger Sensitivity	Internal: 0.35 div from DC to 50 MHz, increasing to 1 div at 1.5 GHz
Standard Trigger Types	Edge, Glitch, Width, Runt, Timeout, Transition, Pattern, State, Window, Setup/Hold
Optional Serial Triggering	Optional 32-bit Serial Trigger for Isolation of Pattern-dependent Effects
Optional Clock Recovery	Optional Clock Recovery from Serial Data Streams
Trigger Level Range (Internal)	±12 divisions from screen center

Waveform Measurements and Analysis

Automatic Measurements	Up to 53 measurements (Amplitude, Timing, Area, Duty Cycle, etc.)
Waveform Math Operators	Add, Subtract, Multiply, Divide, Integrate, Differentiate, FFT
FFT Window Types	Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop2

Display and User Interface

Waveform Display Formats	YT, XY
Display Graticules	Full, Grid, Crosshair, Frame
Operating System	Open Microsoft Windows platform

Connectivity and Interfaces

Reference Clock Input	10 MHz Timebase Reference Input
External Trigger Input	Front-panel auxiliary trigger input
Storage Devices	Built-in CD-ROM, 3.5-inch 1.44 MB floppy drive, removable hard disk drive

Environmental and Compliance

Storage Temperature Range	-22 °C to +60 °C
Operating Humidity	Up to 90% RH at or below +30 °C, up to 60% RH at +30 °C to +45 °C
Operating Altitude	Up to 3,000 m (10,000 ft.)
Non-operating Altitude	Up to 12,190 m (40,000 ft.)

Physical Characteristics

Form Factor	Benchtop with optional rackmount kit
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Environmental

Operating Vibration	0.22 g RMS (5 Hz to 500 Hz)
Non-operating Vibration	2.28 g RMS (5 Hz to 500 Hz)
Operating Shock	15 g, 11 ms half-sine
Non-operating Shock	50 g, 11 ms half-sine
Cooling Clearance	76 mm (3 in) left, right, and rear; 0 mm (0 in) top and bottom

Compliance & Safety

Electromagnetic Compatibility	EN 61326-1:1997, 89/336/EEC
Safety Standards	UL 3111-1, CSA 1010.1, EN 61010-1

Performance

Rise Time (20% to 80%, typical)	170 ps
Trigger Jitter (typical)	8 ps RMS

PC System

Processor	Intel Celeron, 850 MHz
Standard System Memory	512 MB
Floppy Drive	3.5-inch, 1.44 MB

Interfaces & Ports

USB Ports	2x USB 1.1
Serial Port	1x RS-232 (DB-9)
Parallel Port	1x Centronics (DB-25)
PS/2 Ports	2x PS/2 (Keyboard, Mouse)
External Monitor Output	1x SVGA (D-Sub 15-pin)
Audio Connectors	Microphone in, Line in, Line out (3.5 mm jacks)

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

High-speed digital design, serial data analysis, and general-purpose debugging

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.