

TEKTRONIX

DPO3014

The Tektronix DPO3014 is a 100 MHz, 4-channel digital phosphor oscilloscope from the DPO3000 Series. Featuring a standard 5 Mpoint record length and up to 2.5 GS/s sampling rate across all channels, it delivers exceptional signal fidelity and capture depth. The integrated Wave Inspector® controls provide efficient search and navigation through long records, while the 9-inch WVGA widescreen display and TekVPI® probe interface make it highly versatile for debug and analysis tasks.

SPECIFICATIONS

General

Interfaces	USB 2.0 Host (x2), USB 2.0 Device, LAN (10/100 Base-T), SVGA Video Out
Display	9.0-inch (229 mm) WVGA widescreen TFT color LCD, 800 x 480 pixels
Calibration Interval	1 year

Physical

Power Supply	100 V to 240 V $\pm 10\%$ (50 Hz to 60 Hz), 115 V $\pm 10\%$ (400 Hz), 120 W max
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	416.6 mm x 203.2 mm x 137.2 mm mm
Weight	4.2 kg kg

Vertical System

Analog Bandwidth (-3 dB)	100 MHz
Calculated Rise Time (10% to 90%)	3.5 ns
Number of Channels	4
Input Impedance	1 M Ω $\pm$ 1% in parallel with 13 pF $\pm$ 2 pF, 50 Ω $\pm$ 1%
Input Coupling	AC, DC
Vertical Resolution	8 bits
Maximum Input Voltage (1 M Ω)	300 Vrms CAT II with peaks $\leq$ ± 425 V
Maximum Input Voltage (50 Ω)	5 Vrms with peaks $\leq$ ± 20 V
Vertical Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div
Vertical Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Hardware Bandwidth Limits	20 MHz
Channel-to-Channel Isolation	$\geq 100:1$ at ≤ 100 MHz
Vertical Offset Range	± 1 V to ± 100 V (scale and impedance dependent)

Horizontal System

Maximum Real-Time Sampling Rate	2.5 GS/s on all channels
Maximum Record Length	5 Mpoints on all channels
Time Base Range	4 ns/div to 1000 s/div
Time Base Accuracy	±10 ppm
Channel-to-Channel Deskew Range	±75 ns
Timebase Delay Time Range	-10 divisions to 5000 s

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject
Trigger Holdoff Range	20 ns to 8 s
Trigger Types	Edge, Sequence, Pulse Width, Runt, Logic, Setup/Hold, Rise/Fall Time, Video, I2C/SPI/CAN/LIN/RS-232/422/485/UART (optional)
Trigger Sensitivity (Internal, DC Coupled)	0.4 div from DC to 50 MHz, 1 div at 100 MHz
Trigger Level Range	Any channel: ±8 divisions from center of screen
Internal Trigger Level Range	±8 divisions from screen center
Trigger Level Accuracy	±0.2 div (typical, for signals with rise/fall times ≥ 20 ns)

Acquisition System

Maximum Waveform Capture Rate	50,000 wfm/s
Acquisition Modes	Sample, Peak Detect, Averaging, Envelope, Hi-Res, Roll
Averaging Factor Range	2 to 512
Minimum Peak Detect Pulse Width	4.0 ns
Hi-Res Mode Vertical Resolution	Up to 11 bits

Waveform Measurements and Analysis

Automatic Measurements	29 automatic measurements
Waveform Math	Arithmetic (Add, Subtract, Multiply), FFT
FFT Window Types	Rectangular, Hamming, Hanning, Blackman-Harris

Display and User Interface

Display Size	9.0 in. (229 mm)
Display Resolution	800 x 480 pixels (WVGA)

Connectivity and Ports

Probe Interface	TekVPI Probe Interface
USB Host Ports	2 (1 front, 1 rear)
USB Device Ports	1 (rear, USBTMC)
LAN Port (Ethernet)	1 (RJ-45, 10/100 Base-T)
Video Output Port	1 (DB-15 female, SVGA)
Auxiliary Output	BNC (Trigger Out)

Environmental Specifications

Storage Temperature Range	-40 °C to +71 °C
Operating Humidity Range	Up to 60% RH at +40 °C to +50 °C, Up to 90% RH at or below +40 °C
Operating Altitude	Up to 3,000 m

Physical Characteristics

Form Factor	Benchtop
Security Lock Slot	Kensington-style lock slot
Rackmount Option	RMD3000

Wave Inspector® Navigation and Search

Wave Inspector® Navigation	Dedicated front-panel controls for zoom/pan, play/pause, search, and user marks
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Serial Bus Triggering and Analysis

Supported Protocols (with Optional Modules)	I2C, SPI, CAN, LIN, RS-232/422/485/UART, I2S/LJ/RJ/TDM
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Interfaces & Connectivity

GPIO Port	Optional via TEK-USB-488 adapter
LXI Compliance	LXI Class C

Power Specifications

Power Consumption (Max)	120 W
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Standards & Compliance

Safety Standards	UL61010-1, CAN/CSA-C22.2 No. 61010-1, EN 61010-1
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Storage

Reference Waveform Storage	4 internal waveforms
Saved Setups Storage	10 internal setups

Interfaces

Ethernet Port Speed	10/100 Mbps (10/100Base-T)
GPIO Interface	Optional via TEK-USB-488 Adapter
Video Output Connection	DB-15 female (SVGA)

Auxiliary Outputs

Probe Compensator Output	1 kHz, 0 to 2.5 V
Auxiliary Output Signal	Trigger Out (TTL-compatible)

Physical Specifications

Security Lock	Rear-panel Kensington-style security slot
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Compliance & Safety

Electromagnetic Compatibility (EMC)	EC Council Directive 2004/108/EC, EN61326-1:2006 Class A; AS/NZS 2064
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Software & Connectivity

Included Software	OpenChoice® Desktop, NI LabVIEW SignalExpress™ Tektronix Edition
Driver Support	IVI-COM, IVI-C, and LabVIEW drivers

Wave Inspector® Navigation

Automated Search Criteria	Edge, pulse width, runt, logic, setup/hold, rise/fall time, packet content
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TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic Design and Debug, Education and Training, Manufacturing Test and Quality Control

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