

TEKTRONIX

TDS724A

The Tektronix TDS724A is a high-performance 500 MHz digital digitizing oscilloscope featuring 2 analog channels and Tektronix's proprietary InstaVu acquisition technology, delivering up to 400,000 waveforms per second for capturing transient anomalies. Designed for electronic design, debugging, and testing, it includes a high-resolution NuColor liquid crystal shutter color display and standard GPIB connectivity.

SPECIFICATIONS

General

Interfaces	GPIB (standard); RS-232, Centronics (with Option 13)
Display	7-inch NuColor Liquid Crystal Shutter Color CRT, 640 × 480 pixels
Warm-up Time	20 minutes

Physical

Power Supply	90 to 250 V AC, 45 to 440 Hz, 300 W max
Dimensions (W×H×D)	445 mm × 193 mm × 471 mm mm
Weight	14.1 kg kg
Cooling Clearance	51 mm (2 in) minimum on sides and rear

Vertical System

Analog Bandwidth (-3 dB)	500 MHz
Calculated Rise Time (10% to 90%)	700 ps
Number of Analog Channels	2
Auxiliary Channels	2
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω in parallel with 10 pF, or 50 Ω
Vertical Resolution	8 bits (up to 12 bits with High Resolution mode)
Input Sensitivity Range	1 mV/div to 10 V/div
Maximum Input Voltage (1 M Ω)	400 V (DC + peak AC)
Maximum Input Voltage (50 Ω)	5 V RMS
DC Gain Accuracy	±1%
Hardware Bandwidth Limits	20 MHz, 250 MHz
Channel Isolation	≥ 100:1 at 100 MHz, ≥ 30:1 at 500 MHz
Vertical Position Range	±5 divisions
Vertical Offset Range	±1 V (1 mV/div to 100 mV/div), ±10 V (101 mV/div to 1 V/div), ±100 V (1.01 V/div to 10 V/div at 1 M Ω)

Horizontal System

Timebase Range	500 ps/div to 10 s/div
Timebase Accuracy	±25 ppm

Acquisition System

Maximum Real-Time Sample Rate (1 Channel)	1 GS/s
Maximum Real-Time Sample Rate (2 Channels)	500 MS/s
Maximum Equivalent-Time Sample Rate	25 GS/s
Standard Record Length	50,000 points per channel
Maximum Record Length (with Option 1M)	500,000 points
Waveform Capture Rate	Up to 400,000 waveforms/s (InstaVu mode)
Acquisition Modes	Sample, Envelope, Average, Peak Detect, High Resolution, InstaVu

Trigger System

Trigger Sources	CH1, CH2, AUX1, AUX2, Line
Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject
Trigger Types	Edge, Pulse (Glitch, Runt, Width, Slew Rate, Setup/Hold), Logic (Pattern, State), Video
Trigger Holdoff Range	250 ns to 12 s
Internal Trigger Sensitivity	0.35 div (DC to 50 MHz), 1.0 div (at 500 MHz)

Waveform Measurements and Analysis

Automatic Measurements	25 measurements
Waveform Math Operators	Add, Subtract, Multiply, Divide, Integrate, Differentiate, FFT
FFT Window Types	Rectangular, Hamming, Hanning, Blackman-Harris

Display and User Interface

Display Type	NuColor Liquid Crystal Shutter Color CRT
Display Size	7 in (178 mm) diagonal
Display Resolution	640 × 480 pixels
Waveform Display Formats	YT, XY

Connectivity and Interfaces

GPIB Interface	Standard (IEEE-488.2)
External Video Output	VGA, 15-pin D-sub
Auxiliary Output	Trigger Out

Power Specifications

Power Consumption	300 W maximum
Power Supply Voltage	90 to 250 V AC
Power Supply Frequency	45 Hz to 440 Hz

Environmental and Compliance

Operating Temperature Range	+4 °C to +50 °C
Operating Altitude	Up to 4,500 m (15,000 ft)
Non-Operating Altitude	Up to 15,000 m (50,000 ft)
Operating Humidity	Up to 95% RH (at or below +30 °C)

Physical Characteristics

Form Factor	Benchtop
Width	445 mm
Height	193 mm
Depth	471 mm

Inputs & Outputs

Probe Interface	TekProbe Level II (provides power and communication for active probes)
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Storage & Connectivity

Floppy Disk Drive	3.5 in, 1.44 MB DOS-compatible
Optional Interfaces	RS-232 and Centronics parallel (via Option 13)

Standards & Compliance

Safety Certifications	UL 3111-1, CSA C22.2 No. 1010.1, EN 61010-1
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Storage

Floppy Disk Format	3.5 in, 1.44 MB or 720 KB (MS-DOS compatible)
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Interfaces & Software

Waveform Export Formats	BMP, PCX, TIFF, EPS, CSV
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Trigger

Internal Trigger Level Range	±12 divisions from screen center
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Performance

Limit Testing	Compares active waveforms to template limits with visual and auditory notification
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TECHNOLOGY

Digitizing Phosphor / InstaVu Acquisition

APPLICATIONS

Electronic Design, Debugging, and Testing

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