

TEKTRONIX

TDS6124C

The Tektronix TDS6124C is a high-performance 12 GHz digital storage oscilloscope featuring 4 channels, up to 40 GS/s real-time sample rate, and deep memory capacity. Equipped with Pinpoint triggering and built on an open Windows XP platform, it delivers unparalleled performance for next-generation digital design validation, serial data analysis, and high-speed communication testing.

SPECIFICATIONS

General

Interfaces	GPIB, LAN (1000Base-T), USB 2.0, RS-232, Centronics, External VGA, Auxiliary I/O
Display	10.4-inch active-matrix color TFT LCD, 1024 x 768 pixels (XGA)
Safety Certifications	UL 3111-1, CSA 1010.1, EN 61010-1
EMC Compliance	EN 61326-1, FCC Class A
Warm-Up Time	20 minutes
Vertical Sensitivity Resolution (Coarse)	1-2-5 sequence

Physical

Power Supply	100 to 240 V AC $\pm 10\%$, 47 to 63 Hz, <950 W
Operating Temperature	5 to 40 °C °C
Dimensions (W×H×D)	457 mm × 282 mm × 540 mm mm
Weight	21 kg kg
Cooling Clearance (Left and Right)	3 in (76 mm)
Cooling Clearance (Rear)	3 in (76 mm)
Cooling Clearance (Top)	0 in (0 mm)

Vertical System

Number of Channels	4
Analog Bandwidth (-3 dB)	12 GHz
Hardware Bandwidth Limits	8 GHz, 3 GHz
Rise Time (10% to 90%)	35 ps
Rise Time (20% to 80%)	24 ps
Input Impedance	50 Ω
Input Impedance Tolerance	$\pm 2.5\%$
Input Coupling	DC
Input Sensitivity Range	10 mV/div to 1 V/div
Vertical Resolution	8 bits (>11 bits with averaging)
DC Gain Accuracy	$\pm 2\%$
Position Range	± 5 divisions
Offset Range (10 to 99.5 mV/div)	± 0.5 V
Offset Range (100 mV/div to 1 V/div)	± 5.0 V
Maximum Input Voltage	5 V RMS (with peaks $\leq \pm 30$ V)
Channel-to-Channel Isolation	$\geq 120:1$ at ≤ 10 GHz, $\geq 80:1$ at > 10 GHz to 12 GHz
Input Connector Type	TekConnect

Horizontal System

Time Base Range	10 ps/div to 40 s/div
Channel-to-Channel Deskew Range	± 75 ns
Maximum Real-Time Sample Rate (2 Channels)	40 GS/s
Maximum Real-Time Sample Rate (4 Channels)	20 GS/s
Standard Record Length (4 Channels)	2 Mpoints
Standard Record Length (2 Channels)	4 Mpoints
Standard Record Length (1 Channel)	8 Mpoints
Maximum Record Length	Up to 32 Mpoints per channel (option-dependent)
Jitter Noise Floor	< 420 fs RMS (typical)

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, Low Frequency Reject, High Frequency Reject, Noise Reject
Trigger Holdoff Range	250 ns to 12 s
Edge Triggering	Positive or negative slope on any channel or auxiliary input
Glitch Triggering	Trigger on glitches down to 225 ps
Width Triggering	Trigger on width of positive or negative pulses from 225 ps to 10 s
Runt Triggering	Trigger on a pulse that crosses one threshold but fails to cross a second threshold
Timeout Triggering	Trigger on an event which remains high, low, or either, for a specified time period (300 ps to 1 s)
Pattern/State Triggering	Trigger when pattern goes false, true, or is clocked on transition
Setup/Hold Triggering	Trigger on setup time and hold time violations (300 ps to 100 ns)
Transition (Slew Rate) Triggering	Trigger on pulse edge rates that are faster or slower than specified
Window Triggering	Trigger on an event entering or exiting a window defined by two thresholds
Comm Triggering	Standard AMI, NRZ, and Pulse patterns
Serial Pattern Triggering	Up to 3.125 Gb/s with 8b/10b protocol (option-dependent)
Trigger Jitter	1.5 ps RMS (typical)

Acquisition System

Acquisition Modes	Sample, Envelope, Average, Waveform Database, FastAcq
Average Mode	Averages selectable from 2 to 10,000 waveforms
Envelope Mode	Min/Max values acquired over 1 to 2,000 acquisitions or infinitely
FastAcq Waveform Capture Rate	> 250,000 waveforms per second

Waveform Measurements & Analysis

Automatic Measurements	38 automatic measurements
Measurement Statistics	Mean, Minimum, Maximum, Standard Deviation, Population
Waveform Math Functions	Add, Subtract, Multiply, Divide waveforms
Advanced Math	Algebraic expressions including calculus and user-defined filters
FFT Window Types	Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop2
FFT Vertical Scales	dB, dBm, Linear RMS

Computer System & Storage

Operating System	Windows XP Professional
Optical Drive	Front panel CD-R/W

Connectivity & Interfaces

Network Interface	1000Base-T Ethernet RJ-45 connection
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Power & Environmental Specifications

Power Source Voltage Range	100 to 240 V AC $\pm 10\%$
Power Source Frequency	47 to 63 Hz
Power Consumption	950 W maximum
Non-Operating Temperature Range	-22 °C to +60 °C
Operating Humidity Range	20% to 80% relative humidity (non-condensing)
Operating Altitude	Up to 3,000 m (9,843 ft.)
Non-Operating Altitude	Up to 12,192 m (40,000 ft.)

Storage & System

Internal Storage	≥ 40 GB removable Hard Disk Drive
System Memory (RAM)	1 GB

Triggering

Trigger Level Range (Internal)	± 8 divisions from center of screen
Trigger Level Range (Auxiliary)	± 5 V
Trigger Sensitivity (DC to 2 GHz)	≤ 0.5 div
Trigger Sensitivity (2 GHz to 12 GHz)	≤ 1.5 div (2 GHz to 10 GHz)
Auxiliary Trigger Input	TekConnect, 50 Ω

Interfaces & Ports

Reference Input	10 MHz ± 10 kHz, 50 Ω
Reference Output	10 MHz, >1.2 V p-p into 50 Ω
USB Ports	5x USB 2.0 (1 front, 4 rear)
Video Output	DVI-I and 15-pin D-sub VGA
GPIB Port	IEEE-488.2 compliant
Serial Port	DB-9 RS-232
Parallel Port	DB-25 Centronics
Keyboard/Mouse Ports	2x PS/2
Audio Connections	3.5 mm Mic, Line-in, Line-out

Performance

Equivalent Time Sampling Rate	Up to 10 TS/s
Optional Record Length (Option 1D)	8 MS/ch (4 ch), 16 MS/ch (2 ch), 32 MS/ch (1 ch)
Optional Record Length (Option 2D)	16 MS/ch (4 ch), 32 MS/ch (2 ch), 64 MS/ch (1 ch)
Optional Record Length (Option 3D)	32 MS/ch (4 ch), 64 MS/ch (2 ch), 128 MS/ch (1 ch)
Optional Record Length (Option 4D)	64 MS/ch (4 ch), 128 MS/ch (2 ch), 256 MS/ch (1 ch)

Inputs & Outputs

Probe Interface	TekConnect
External Trigger Input Impedance	50 Ω
Calibrator Output Amplitude	440 mV into 50 Ω (typical)
Calibrator Output Frequency	1 kHz
Calibrator Output Rise Time (20% to 80%)	90 ps (typical)
External Reference Input Frequency	10 MHz ±10 kHz
External Reference Input Amplitude	0.2 V to 5 V p-p
External Reference Input Impedance	50 Ω
Internal Clock Output Frequency	10 MHz

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

High-speed digital design validation, serial data analysis, and communication compliance testing

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