

TEKTRONIX

TDS784C

The Tektronix TDS784C is a high-performance 1 GHz, 4-channel digital oscilloscope featuring InstaVu acquisition technology, designed for advanced electronic design, debugging, and telecom/datacomm analysis.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2) standard; RS-232 and Centronics parallel available via Option 13
Display	7-inch NuColor liquid-crystal shutter color display, 640 × 480 resolution
Warm-up Time	20 minutes

Vertical System

Number of Channels	4
Analog Bandwidth	1 GHz
Calculated Rise Time	350 ps
Vertical Resolution	8-bit (over 11-bits with averaging, over 13-bits with Hi-res)
Input Sensitivity Range (1 MOhm)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ohm)	1 mV/div to 1 V/div
Input Impedance	1 MOhm in parallel with 10 pF, or 50 Ohm (selectable)
Input Coupling	AC, DC, GND
Hardware Bandwidth Limits	20 MHz and 250 MHz
Maximum Input Voltage (1 MOhm)	400 V (DC + peak AC)
Maximum Input Voltage (50 Ohm)	5 V RMS (with peaks less than ±30 V)
Channel-to-Channel Isolation	≥ 100:1 at 100 MHz, ≥ 30:1 at 1 GHz
Vertical Position Range	±5 divisions

Acquisition System

Max Real-Time Sample Rate (1 Channel)	4 GS/s
Max Real-Time Sample Rate (2 Channels)	2 GS/s
Max Real-Time Sample Rate (4 Channels)	1 GS/s
Maximum Record Length	Up to 8,000,000 points (with Option 2M)
Waveform Capture Rate	Up to 400,000 waveforms/sec (InstaVu mode)
Acquisition Modes	Sample, Envelope, Average, Peak Detect, High Resolution (Hi-Res)

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, Low Frequency Reject (LF Rej), High Frequency Reject (HF Rej), Noise Reject
Trigger Holdoff Range	250 ns to 12 s
Edge Triggering	Positive or negative slope on any channel or auxiliary input
Runt Triggering	Triggers on a pulse that crosses one threshold but fails to cross a second before crossing the first again
Setup/Hold Triggering	Triggers on violations of setup or hold times
Pattern/State Logic Triggering	Triggers on AND, OR, NAND, NOR logic combinations of channels

Waveform Measurements & Analysis

Measurement Statistics	Displays mean, minimum, maximum, and standard deviation
Cursor Types	Vertical bar, horizontal bar, paired
Waveform Math Operations	Addition, subtraction, multiplication, division
FFT Window Types	Rectangular, Hamming, Hanning, Blackman-Harris
Waveform Histograms	Vertical and horizontal histograms with statistical measurements
Limit Testing	Compares acquired waveforms to a predefined template with pass/fail actions

Display & User Interface

Display Formats	YT, XY
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Connectivity & I/O

VGA Output	Rear-panel 15-pin D-sub connector for external display
Probe Compensator Output	Front panel terminals (approx 0.5 V into > 1 MOhm, 1 kHz)

Storage & File System

Removable Media Type	3.5-inch 1.44 MB floppy disk drive
Internal Setup Storage Capacity	10 front-panel setups
Internal Waveform Storage Capacity	4 active reference waveforms

Environmental & Reliability

Cooling Method	Forced air cooling
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Factory Options

Option HD	Adds internal hard disk drive
Option 13	Adds RS-232 and Centronics parallel ports
Option 2C	Adds Communication Signal Analysis (mask testing)

Triggering

Trigger Level Range (Internal)	±12 divisions from center of screen
Delay by Events Range	1 to 9,999,999 events
Delay by Time Range	16 ns to 250 s

Options

Option 1R	Chassis conversion for 19-inch rack mounting
Option 2F	Advanced DSP Math (adds integration, differentiation, and FFT)
Option 05	Video Trigger (adds NTSC, PAL, SECAM, and custom/FlexFormat video triggering)

Inputs & Outputs

Probe Interface	TekProbe Level 2 BNC interface (provides power and sensing for compatible active, differential, and optical probes)
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TECHNOLOGY

Digital Real-Time Oscilloscope

APPLICATIONS

Electronic design, debugging, communications signal analysis, and scientific research

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