

TEKTRONIX

2430A

The Tektronix 2430A is a rugged, portable 150 MHz digital storage oscilloscope (DSO) designed for a wide range of demanding applications. Featuring a real-time sampling rate of 100 MS/s simultaneously on two channels and an 8-bit vertical resolution, it incorporates advanced acquisition modes such as 2 ns glitch capture (peak detect) and envelope mode, backed by standard GPIB programmability and a military-grade environmental design.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.1) standard
Display	Monochrome vector CRT, 8 x 10 divisions, internal illuminated graticule
Self-Calibration	Yes (internal semi-automatic calibration of vertical and horizontal channels)
Self-Diagnostics	Yes (power-on self-test)
Built-in Real-time Clock	No

Physical

Power Supply	90 V to 250 V AC, 48 Hz to 440 Hz, 150 W maximum
Operating Temperature	-15 to +55 °C
Weight	11.1 kg

Vertical System

Analog Bandwidth	150 MHz
Number of Channels	2
Calculated Rise Time	2.33 ns
Vertical Resolution	8 bits
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω in parallel with 15 pF, or 50 Ω (switchable)
Input Sensitivity Range	2 mV/div to 5 V/div
Maximum Input Voltage	400 V (DC + peak AC) into 1 M Ω , 5 V RMS into 50 Ω
DC Gain Accuracy	$\pm 2\%$
Channel-to-Channel Isolation	100:1 at 150 MHz
Common Mode Rejection Ratio (CMRR)	At least 100:1 at 50 MHz

Horizontal System

Maximum Real-Time Sample Rate	100 MS/s
Maximum Record Length	1024 points per channel
Time Base Range (A Sweep)	2 ns/div to 5 s/div
Time Base Range (B Sweep)	2 ns/div to 50 ms/div

Trigger System

Trigger Modes	Auto, Normal, Single Sequence
Trigger Sources	CH 1, CH 2, Line, External 1, External 2
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Trigger Sensitivity	0.35 div at 50 MHz, 1.0 div at 150 MHz
External Trigger Input Impedance	1 M Ω in parallel with 15 pF, or 50 Ω (switchable)
External Trigger Maximum Input Voltage	400 V (DC + peak AC) into 1 M Ω , 5 V RMS into 50 Ω
Optional Video Trigger	Option 05 (TV Trigger)

Acquisition Modes

Sample Mode	Yes
Peak Detect / Glitch Capture	Minimum width 2 ns
Envelope Mode	Yes (accumulates min/max over 1 to 256 acquisitions or continuously)
Average Mode	Yes (exponential average, 2 to 256 acquisitions)
Roll Mode	Yes (for sweep speeds 100 ms/div to 5 s/div)
Save on Delta Mode	Yes (saves waveform when it exceeds a predefined limit template)

Waveform Measurements and Math

Automatic Measurements	Yes (period, frequency, width, rise/fall time, duty cycle, peak-to-peak, overshoot, RMS, mean)
Cursor Measurements	Volts, Time, 1/Time (Frequency)
Waveform Math Operations	CH 1 + CH 2, CH 1 - CH 2, CH 2 - CH 1
Waveform Storage Capacity	Four reference waveforms (non-volatile memory)
Front Panel Setup Storage	Saves up to 20 front-panel setups in non-volatile memory

Display and User Interface

Display Type	Monochrome electrostatic CRT
Graticule Type	Internal, illuminated, 8 x 10 divisions
Waveform Display Formats	YT and XY
Auto-Setup Feature	Yes
Interactive Help Screen	Yes
Vector CRT Addressable Points	1024 x 1024

Connectivity and I/O Interfaces

GPIB Interface	Standard (IEEE-488.1 compliant, full programmability and talker/listener support)
Plotter Output Port	HPGL plotter format supported via GPIB
Probe Compensator Output	0.5 V, 1 kHz

Power Requirements

Line Voltage Range	90 V to 250 V AC
Line Frequency Range	48 Hz to 440 Hz
Power Consumption	150 W maximum

Environmental Specifications

Storage Temperature Range	-62 °C to +85 °C
Operating Altitude	Up to 4,600 m (15,000 ft)
Storage Altitude	Up to 15,240 m (50,000 ft)

Physical Characteristics

Cooling System Type	Forced-air (rear exhaust fan)
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Accessories and Ordering Options

Standard Probes Included	Two P6133 10X passive probes (150 MHz)
Rackmount Option	Option 1R

Display Specifications

CRT Acceleration Voltage	16 kV
CRT Phosphor Type	P31 (GH)
Active Display Area	8 x 10 cm

Performance & Accuracy

Single-Shot Bandwidth	40 MHz (with sine interpolation)
Warm-up Time	20 minutes
Minimum Glitch Width	2 ns (Peak Detect mode)
Time Base Accuracy	±0.0015%
Horizontal Expansion Magnification	Up to 100x

Connectivity & Interface Options

Option 10 Word Recognizer	17-bit word recognition (TTL level, up to 20 MHz)
Option 11 Probe Power Output	Provides power for active probes (+5 V, -5 V, +15 V, -15 V)
GPIB Subset Compliance	SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, E2

General & Maintenance

Memory Retention Battery Life	Minimum 3 years (lithium cell)
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Environmental & Standards

Safety Standards	UL 1244, CSA C22.2
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Triggering

Trigger Holdoff Range	2 μ s to 15 s
External Trigger Scale Factors	0.1 V/div and 1.0 V/div
External Trigger Dynamic Range	± 0.9 V (at 0.1 V/div) / ± 9.0 V (at 1.0 V/div)
Delay by Events Range	1 to 65,535 events

Z-Axis Input

Z-Axis Input Sensitivity	+2 V blanks the display
Z-Axis Input Bandwidth	DC to 5 MHz
Z-Axis Input Resistance	9.0 k Ω

Environmental

Environmental Compliance Class	MIL-T-28800C, Class 3, Style D
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TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic design, industrial debugging, manufacturing test, and rugged field service

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