



TEKLAB Make Digital Storage Oscilloscope converts the analogue signal into a digital format and stores it in its digital memory, allowing for easy recall and analysis. Digital storage oscilloscopes are used in a variety of applications. It provides a continuous display of the voltage waveform over time, allowing you to observe changes and trends in the signal.

TEKLAB Digital oscilloscopes usually **have better display resolutions and clarity** compared to CROs. This makes it easier to read waveforms of electronic signals in the electronics and electrical circuits

APPLICATIONS

Education and Industrial Training
Manufacturing Test and Quality Control
Electronic Circuit Designing and Testing

FEATURES

- Bandwidths 70 / 100MHz
- 1GSa/s Real Time Sample Rate
- Trigger Mode: Edge, Pulse Width, Video, Slop, Overtime, Alternative Trigger etc
- Provides Software for PC Real-time Analysis
- Five Math Functions, +, -, *, /, and FFT functions
- 32 Automatic Measurements and Track Measurement via Cursor Automatically
- Large (7") Colour Display, WVGA (800 x 480)
- Support U Disk and Local Files Storage
- Pass / Fail Function Enables to Output Testing Results

TECHNICAL SPECIFICATIONS

ACQUISITION	
Sample Rate	Real-Time Sample: 1GS/s; Equivalent Sample: 50GS/s.
ACQUISITION MODES	
Normal	Normal data only.
Peak Detect	High-frequency and random glitch capture.
Average	Waveform Average, selectable 4, 8,16,32,64,128.
INPUTS	
Input Coupling	AC, DC, GND
Input Impedance	1MW ±2%, 20pF ±3pF
Probe Attenuation	1X, 10X.
Supported Probe Attenuation Factor	1X, 10X, 100X, 1000X.
Max. Input Voltage	CAT I and CAT II: 300V RMS (10X); Installation Category III: 150V RMS (1X); Installation Category II: derate at 20dB/decade above 100kHz to 13V peak AC at 3MHz and above. For non-sinusoidal waveforms, peak value must be less than 450V. Excursion above 300V should be of less than 100ms duration. RMS signal level including all DC components removed through AC coupling must be limited to 300V. If these values are exceeded, damage to the oscilloscope may occur
HORIZONTAL	
Waveform Interpolation	(sin x)/ x.
Record Length	64K.
Sample Rate and Delay Time Accuracy	±50ppm (at over any =1ms time interval).
Delta Time Measurement Accuracy (Full Bandwidth)	Single-shot, Normal mode: ± (1 sample interval +100ppm x reading + 0.6ns); >16 averages: ± (1 sample interval + 100ppm x reading + 0.4ns); Sample Interval = s/div ÷ 200.
VERTICAL	
Vertical Resolution	8-bit resolution, all channels amp led simultaneously.
Volts/Div Range	1 mV/Div. ~20V/Div.
Bandwidth	TL6070A :70MHz TL6070A:100MHz
Rise Time at BNC (Typical)	TL6070A:5ns TL6100A: 3.5ns
Analog Bandwidth in Normal and Average Modes at BNC or with probe, DC Coupled	2mV/div to 20mV/div, ±400mV; 50mV/div to 200mV/div, ±2V; 500mV/div to 2V/div, ±40V; 5V/div, ±50V.
Math	+, -, *, ÷, FFT.
FFT	Windows: Hanning, Flat top, Rectangular, Bartlett, Blackman; 1024 sample point.
Bandwidth Limit	20MHz.
Low Frequency Response (-3dB)	≤10Hz at BNC.
DC Gain Accuracy	±3% for Normal or Average acquisition mode, 5V/div to 10mV/div; ±4% for Normal or Average acquisition mode, 5mV/div to 2mV/d
DC Measurement Accuracy, Average Acquisition Mode	When vertical displacement is zero, and N ≥ 16: ± (3% x reading + 0.1 div + 1mV) only. 10mV/div or greater is selected; When vertical displacement is not zero, and N ≥ 16: ± [3% x (reading + vertical position) + 1% of vertical position + 0.2div]; Add 2mV for settings from 2mV/div to 200mV/div add 50mV for settings from 200mV/div to 5V/div.
Volts Measurement Repeatability, Average Acquisition Mode	Delta volts between any two averages of ≥ 16 waveforms are acquired under same setup and ambient conditions.
TRIGGER	
Trigger Types	Edge, Video, Pulse, Slope, Overtime, Alternative
Trigger Source	CH1, CH2, EXT, EXT/5, AC Line
Trigger Modes	Auto, Normal
Coupling Type	DC, AC, Noise Reject, HF Reject, LF Reject

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Trigger Sensitivity (Edge Trigger Type)	DC (CH1, CH2) :1divfrom DC to 10MHz; 1.5div from 10MHz to 100MHz; 2div from 100MHz to 200MHz. DC(EXT) :200mVfrom DC to 100MHz; 350mV from 100MHz to 200MHz. DC(EXT/5) :1Vfrom DC to 100MHz; 1.75V from 100MHz to 200MHz. AC: Attenuates signals below 10Hz. HF Reject: Attenuates signals above 80kHz. LF Reject: Sameas the DC-coupled limits for frequencies above 150KHz; Attenuates signals below 150KHz.
Trigger Level Range	CH1/CH2: ± 8 divisions from centre of screen; EXT: $\pm 1.2V$; EXT/5: $\pm 6V$.
Trigger Level Accuracy (typical)Accuracy is for signals having risen and fall times $\geq 20ns$	CH1/CH2: 0.2 div x volts/div within ± 4 divisions from centre of screen. EXT: $\pm (6\% \text{ of setting} + 40mV)$. EXT/5: $\pm (6\% \text{ of setting} + 200mV)$.
Set Level to 50% (typical)	Operates with input signals $\geq 50Hz$.
Trigger Hold off range	100ns- 10s.
VIDEO TRIGGER	
Video Trigger Type	CH1, CH2: Peak-to-peak amplitude of 2 divisions; EXT: 400mV; EXT/5:2V.
Hold off Range	100ns~ 10s.
PULSE WIDTH TRIGGER	
Pulse Width Trigger Mode	Trigger when (<, >, =, or=); Positive pulse or Negative pulse.
Pulse Width Trigger Point	Equal: The oscilloscope triggers when the waveform slope is equal to the set slope. Not Equal: The oscilloscope triggers when the waveform slope is not equal to the set slope. Less than: The oscilloscope triggers when the waveform slope is less than the set slope. Greater than: The oscilloscope triggers when the waveform slope is greater than the set slope
Pulse Width Range	20ns~ 10s.
OVERTIME TRIGGER	
Over Time Mode	Rising edge or Falling edge.
Time Range	20ns~ 10s.
SLOPE TRIGGER	
Slope Trigger Mode	Trigger when (<, >, =, or=); Positive slope or Negative slope.
Slope Trigger Point	Equal: The oscilloscope triggers when the waveform slope is equal to the set slope. Not Equal: The oscilloscope triggers when the waveform slope is not equal to the set slope. Less than: The oscilloscope triggers when the waveform slope is less than the set slope. Greaterthan: The oscilloscope triggers when the waveform slope is greater than the set slope.
Time Range	20ns~ 10s.
ALTERNATIVE TRIGGER	
Trigger on CH1	Internal Trigger: Edge, Pulse Width, Video, Slope.
Trigger on CH2	Internal Trigger: Edge, Pulse Width, Video, Slope.
TRIGGER FREQUENCY COUNTER	
Readout Resolution	6 digits.
Accuracy (Typical)	$\pm 30ppm$ (including all frequency reference errors and ± 1 count errors).
Frequency Range	AC coupled, from 4Hz minimum to rated bandwidth.
Signal Source	Pulse Width or Edge Trigger modes: all available trigger sources. The Frequency Counter always measures trigger source, including when the oscilloscope acquisition pauses due to changes in the run status, or acquisition of a single shot event has completed. Pulse Width Trigger mode: The oscilloscope counts pulses of significant magnitude inside the 1s measurement window that qualify as trigger able events, such as narrow pulses in a PWM pulse train if set to < mode and the width is set to a relatively small time. Edge Trigger Mode: The oscilloscope counts all edges of sufficient magnitude and correct polarity. Video Trigger Mode: The Frequency Counter does not work.
MEASUREMENT	
Cursor Measurement	Manual: Voltage difference between cursors: DV; Time difference between cursors: DT. Reciprocal of DT in Hertz (1/DT). Tracing: The voltage and time at a waveform point.
Auto Measurement	Frequency, Period, Mean, Pk-Pk, Cyclic RMS, Minimum, Maximum, Risetime, Fall Time, +Pulse Width, -Pulse Width. Delay 1-2 Rise, Delay 1-2 Fall, +Duty, -Duty, V base, V top, V mid, Vamp, Overshoot, Pre shoot, Pre iod Mean ,Pre iod RMS, FOV Shoot, RPRE Shoot, BWIDTH, FRF, FFR, LRR, LRF, LFR, LFF

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DISPLAY	
Display Type	7"64K High Resolution color TFT Display
PROBE COMPENSATOR OUTPUT	
Output Voltage (Typical)	About 5Vpp into > 1MW load.
Frequency (Typical)	1KHz.
POWER SUPPLY	
Supply Voltage	100-120VACRMS ($\pm 10\%$), 45Hzto440Hz, CATII. 120-240VACRMS ($\pm 10\%$), 45Hzto66Hz, CATII.
Power Consumption	<30W.
Fuse	2A, Trading, 250V.
Dimension (mm)	306 L \times 138 W \times 124 H (mm)
Net Weight	2.5Kg.
Accessories	User's Manual (Printed or C.D.), Mains Cord, USB Cable & Ratio Probes

PC CONNECTIVITY

Easily capture, save, and analyze measurement results by connecting to your PC to the USB device port on the rear of the instrument and using the Open Choice PC Communications Software available on the TEKLAB DSO. Simply pull screen images and waveform data into the stand-alone desktop application or directly into Microsoft Word and Excel.

