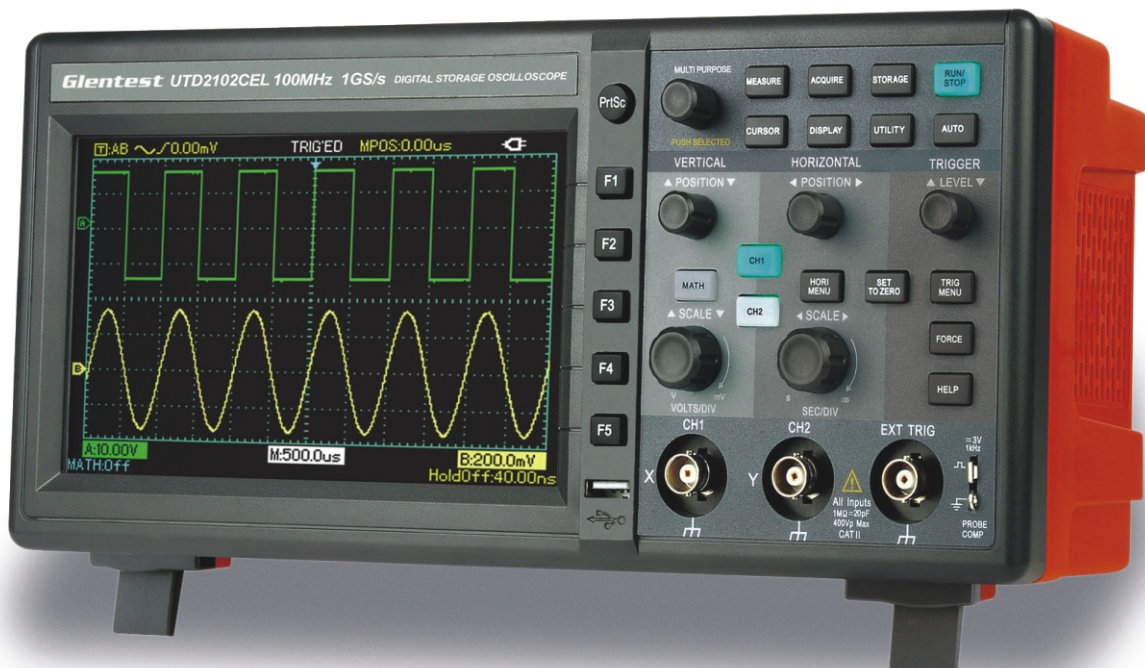


UTD2000L SERIES DUAL CHANNEL DIGITAL STORAGE OSCILLOSCOPE



UTD2000L series

UTD2000L series low cost/high performance digital storage oscilloscopes offer user-friendly front panel control with access to all functions. The layout of controls and settings are based on traditional analog oscilloscopes, users can operate without spending additional time to familiarize with the new units. In addition, UTD2000L series are equipped with 7" large wide-screen LCD display providing more comfortable and detailed view. Improved screen-copy function(WYSIWYG) saves more information than just waveform. With up to 1GS/s real-time sampling rate(UTD2052CEL and UTD2102CEL only), powerful triggering and mathematical functions, users can capture and analyze the signals in a quick and easy way.

Features:

- 64K full color LCD display
LCD size: 7" wide-screen 800x480 pixels
- Bandwidth: 50MHz(UTD2052CL and UTD2052CEL)
100MHz(UTD2102CEL)
- Max sampling rate:
1GS/s(real-time) / 50GS/s(equivalent) (for UTD2052CEL and UTD2102CEL)
500MS/s(real-time) / 25GS/s(equivalent) (for UTD2052CL)
- Auto measurement of waveform parameters
- Cursor measurement functions
- Screen-copy function(what you see on the LCD display is what you get)
- FFT and 4 math functions
- High waveform capture rate up to 2000wfms/s
- Internal storage/recall of 20 waveforms and 20 settings
- Advanced triggering including edge(rise, fall, rise and fall), pulse width, etc.
- USB OTG, supplied with Windows software
- Built-in independent 6 digit frequency counter
- On-screen help system
- Multi-language screen display
- Waveform recording/playback function, max. 1000 frames
- Automatic self-calibration
- Compact and slim, saving your desk top space

Specifications (UTD2000L series)

	UTD2052CL	UTD2052CEL	UTD2102CEL
Bandwidth	50MHz	50MHz	100MHz
Rise Time	≤7ns	≤7ns	≤3.5ns
Sampling Rate	500MS/s (real-time) 25GS/s (equivalent)	1GS/s (real-time) 50GS/s (equivalent)	1GS/s (real-time) 50GS/s (equivalent)
Vertical Sensitivity	1mV~20V/div	1mV~20V/div	1mV~20V/div
Time Base Range	5ns~50s/div (1-2-5 sequence)	2ns~50s/div (1-2-5 sequence)	2ns~50s/div (1-2-5 sequence)
Display	color	color	color

General Technical Data (UTD2000L series)

ACQUISITION MODE	Normal, peak detect, average(average numbers selectable: 2,4,8,16,32,64,128,256)		
SAMPLING MODE	Real-time / equivalent		
INPUT	Input Coupling	DC, AC, GND	
	Input Impedance	1M Ω +/-2% in parallel with 20pF +/-3pF	
	Probe Attenuation	1X, 10X, 100X, 1000X	
	Max. Input Voltage	400V(DC+ACpeak, 1M Ω input impedance)	
	Time delay between channels	150ps (typical)	
HORIZONTAL SYSTEM	Waveform Interpolation	Sin(x)/x	
	Memory Depth	2 X 600k	
	Time Base Accuracy	+/- 50ppm	
VERTICAL SYSTEM	Vertical Resolution	8 bit, two channels sampled simultaneously	
	Vertical Sensitivity	1mV/div ~ 20V/div at input BNC	
	Position Range	≥ 10 div	
	Bandwidth limit filter	20MHz	
	Low Frequency Response	≤ 10 Hz at BNC (AC coupling, -3dB)	
	DC Gain Accuracy	1mV/div~2mV/div: +/-5% (normal or average acquisition mode)	
		5mV/div: +/-4% (normal or average acquisition mode)	
		10mV/div~50V/div: +/-3% (normal or average acquisition mode)	
	DC Measurement Accuracy (average acquisition mode)	When vertical position is zero and average number ≥ 16 : 1mV/div~2mV/div: +/-5% x reading + 0.1div + 1mV), 5mV/div: +/-4% x reading + 0.1div + 1mV)	
		10mV/div~50V/div: +/-3% x reading + 0.1div + 1mV)	
When vertical position is not zero and average number ≥ 16 : +/-3% x (reading + vertical shift reading) + (1% x vertical shift reading) + 0.2div), setting from 5mV/div to 200mV/div plus 2mV, setting > 200mV/div to 50V/div plus 50mV			
Voltage Difference (ΔV) Measurement Accuracy (average acquisition mode)	Under identical setup and environmental conditions, the voltage difference (ΔV) between two points of the waveform after average number ≥ 16 waveforms are acquired: +/-3% x reading + 0.05div)		
TRIGGER SYSTEM	Trigger Mode	Auto, normal, single, edge, pulse width	
	Trigger Sensitivity	+/-1div	
	Trigger Level Range	Internal: +/-8div from the center of the screen	
	Trigger Level Accuracy (typical)	Internal: +/-0.3div x V/div) (within +/-4div from the center of the screen)	
	Applied on signals of ≥ 20 ns rise or fall time		
	Trigger Capability	Normal mode/scanning mode, pre-trigger/delayed trigger, pre-trigger depth adjustable	
	Hold off range	100ns ~ 1.5s	
	Set level to 50%(typical)	Input signal frequency ≥ 50 Hz	
	Edge Trigger	Edge type: Rise, Fall, Rise and Fall	
	Pulse Width Trigger	Trigger mode: (less than, greater than or equal to)positive pulse; (less than, greater than or equal to)negative pulse Pulse width: 20ns~10s	
Alternate Trigger	CH1 trigger: edge, pulse		
	CH2 trigger: edge, pulse		
MEASUREMENT SYSTEM	Cursor	Manual mode: ΔV , ΔT , $1/\Delta T$	
		Tracking mode: Voltage or time value of waveform point	
		Auto measurement mode: Allows cursor display during auto measurement	
	Auto Measurement	Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vrms, Vavg, overshoot, preshoot, frequency, period, rise time, fall time, positive width, negative width, positive duty cycle, negative duty cycle, delay 1 \rightarrow 2 \overline{f} , delay 1 \rightarrow 2 \overline{t}	
	Math Functions	+, -, x, /, invert	
	Waveform Storage	20 waveforms and 20 front panel settings save/recall (USB: 200 groups of screen, 200 groups of waveforms)	
	FFT	Window: Hanning, Hamming, Blackman, Rectangle Sampling points: 1024 points	
FREQUENCY COUNTER	X-Y Operation	Phase difference: +/- 3 $^{\circ}$	
	Display	6 digit	
	Trigger Sensitivity	30Vrms	
DISPLAY	Accuracy (typical)	+/-51ppm (including all frequency reference errors and +/-1 digit)	
	Type	7" LCD	
	Resolution	800 x 480 pixels	
	Contrast	Adjustable	
INTERFACE	Display Language	Simplified Chinese, Traditional Chinese, English, Spanish, Portuguese, French	
	Standard	USB OTG	
POWER SOURCE	Mains Voltage	100~240Vac, 45~440Hz	
	Power Consumption	< 30W	
MECHANICAL SPECS	Dimension: 306 x 147 x 122mm; Weight: approx. 2.2Kgs		
STANDARD ACCESSORIES	1X/10X passive probe x 2, USB cable x 1, power cord x 1, Windows software, operation manual		