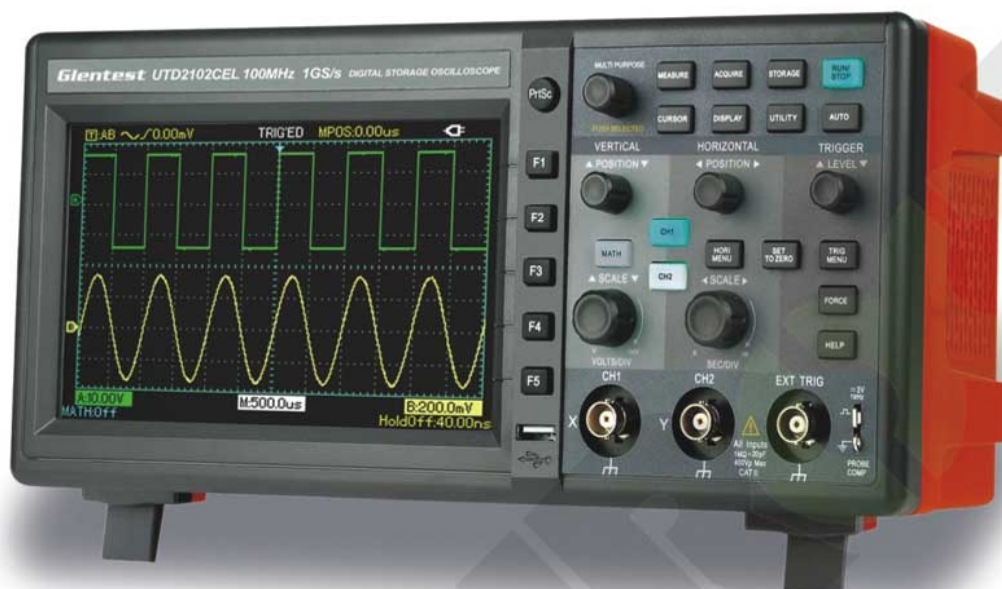


## UTD2000L SERIES DUAL CHANNEL DIGITAL STORAGE OSCILLOSCOPE



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(UTD2052CEL 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 UTD2052CEL)
- 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)

	UTD2052CEL	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: 1MΩm +/- 2% in parallel with 20pF +/- 3pF Probe Attenuation: 1X, 10X, 100X, 1000X Max. Input Voltage: 400V(DC+ACpeak, 1MΩm 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: ≤ 10Hz 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 ≥ 20ns 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 ≥ 50Hz 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/ΔT 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 → 2.5, delay 1 → 2.5 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 X-Y Operation: Phase difference: +/- 3°
FREQUENCY COUNTER	Display: 6 digit Trigger Sensitivity: 30Vrms Accuracy (typical): +/- 51ppm (including all frequency reference errors and +/- 1 digit)
DISPLAY	Type: 7" LCD Resolution: 800 x 480 pixels Contrast: Adjustable Display Language: Simplified Chinese, Traditional Chinese, English, Spanish, Portuguese, French
INTERFACE	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