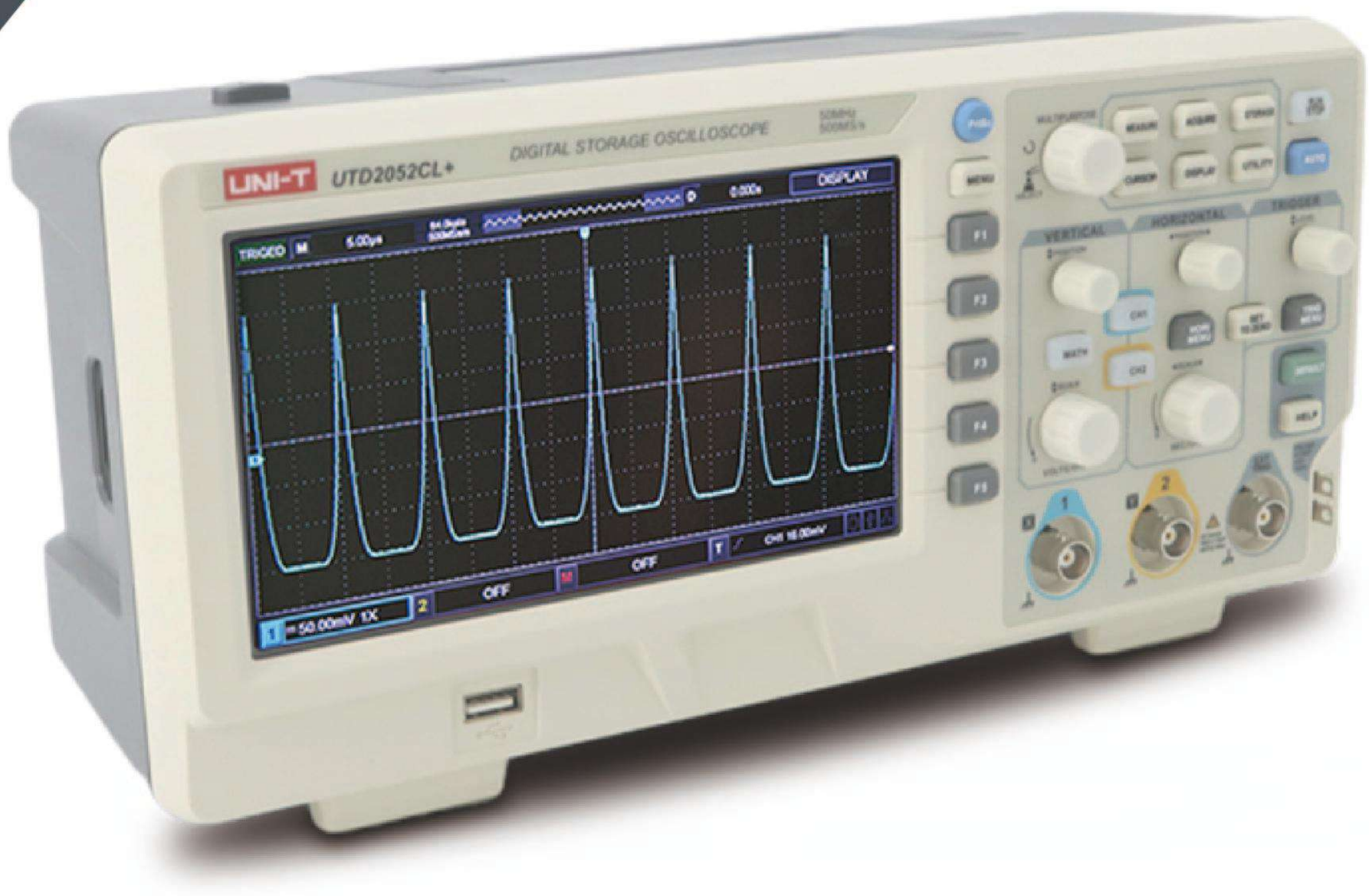

Data Sheet

UTD2000CL+ Series Digital Oscilloscope

Uni-Trend Technology (China) Co., Ltd.

Quick Model Selection

Model	UTD2052CL+	UTD2102CL+
Analog Bandwidth	50MHz	100MHz
Channels	2	2
Real-time	500MS/s	500MS/s
Equivalence	25GS/s	25GS/s
Storage depth	64 kpts	64 kpts
Capture rate	5000 wfms/s	5000 wfms/s
Rise Time (Typical)	≤7ns	≤3.5ns

Technical Specification

Horizontal System Specification	
Time-base scale	2ns/div-50s/div
Waveform interpolation	Sin(x)/x
Time-base accuracy	≤(50+2×Service life)ppm
Record length	2×512k sampling point
Storage depth	Single channel: 64k; Double channel: 32k
Sampling rate and delay time accuracy	±50ppm (any time interval ≥1ms)
Measurement accuracy of time interval (△T) (full bandwidth)	Single time: ± (1 sampling time interval+50ppm×reading+0.6ns) >16 average values: ± (sampling time interval+50ppm×reading+0.4ns)
Vertical	
Analog-to-digital converter (A/D)	8bit
Deflection factor range (V/div)	1mV/div~20 V/div (at 1-2-5 increment)
Position range	≥±8div
Selectable bandwidth limitation (Typical)	20MHz
Low frequency response (AC Coupling，-3dB)	≤5 Hz(above BNC)
DC gain accuracy (sampling or average sampling mode)	5mV ~20V/div：≤±3% 1mV ~2mV/div：≤±4%

DC measurement accuracy (average sampling mode)	When vertical position is 0 and N≥16: ± (4%×reading+0.1div+1mV) and selects 1mV ~2mV/div; ± (3%×reading+0.1div+1mV) and selects 10mV ~ 20V/div; When vertical position is not 0 and N≥16: ±(3%×(reading + vertical position reading) + (1%×vertical position reading)]+0.2div) The setting from 5mV/div to 200mV/div plus 2mV; the setting value from 200mV/div to 20V/div plus 50mV
Measurement accuracy of voltage difference (△V) (average sampling mode)	Under the same setting and environment conditions and after averaging the captured waveforms with a quantity of ≥16, the voltage difference (ΔV) between any two points on the waveform: ± (3%×reading+0.05div)
Trigger System Specifications	
Trigger sensitivity	≤1div
Range of trigger level	Interior: From the screen center ±10div EXT: ±3V
Trigger level accuracy (Typical) applicable for the signal with rising and falling time ≥20ns	Interior: ±(0.3div×V/div) (within±4 div from the screen center) EXT: ±(6% setting value+40mV)
Pre-trigger capacity	Normal mode/scan mode, pre-trigger/delay trigger, the pre-trigger depth is adjustable.
Hold-off range	80ns~1.5s
Set the level to 50% (Typical)	Operate under the condition of input signal frequency of ≥50Hz
Trigger mode	AUTO, normal, single
High-frequency holdoff	Hold off signals over 80kHz
Low-frequency holdoff	Hold off signals below 80kHz
Trigger mode	
Edge	Rise, fall, arbitrary edge
Pulse width	Pulse width term: > 、 < 、 =
	Polarity: positive pulse width, negative pulse width
	Pulse width range: 20ns~10s
Slope trigger	Slope condition: Positive slope (>, <, within the scope); Negative slope (>, <, within the scope)
	Time: 20ns~10s
Video trigger	Trigger sensitivity (Typical) : 2div Vpp
	Signal model and line/field frequency (video trigger type): Support standard NTSC and PAL, and the line number scope is respectively 1-525 (NTSC) and 1-625 (PAL)

Alternating trigger	Alter: Edge, Pulse, Slope
Measurements	
Cursor	Manual mode Voltage difference between cursors (△V), Time difference between cursors (△T), Reciprocal of △T (Hz) (1/△T))
	Track mode: Voltage value and time value of point of waveform.
	Auto measurement mode: Cursor display is allowed on auto measurement mode.
Automatic measurement	Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vmid, Average, Vrms, Overshoot, Preshoot, Frequency, Period, RiseTime, FallTime, +Width, Width, +Duty, Duty, Delay, FRFR, FRFF, FFFR, FFFF, FRLF, FRLR, FFLR, FFLF
Measurement quantity	Display 5 types of measurement at the same time.
Measurement scope	Screen or cursor
Measurement statistics	Average value, maximum value, minimum value and standard deviation.
Math	
Math operation	+,-, ×, ÷
Window	Rectangle、 Hanning 、Blackman 、 Hamming
Vertical scale	Vrms、 dBVrms
Digital filtering	Low pass, high pass, band pass, band reject
Storage	
Setting	Internal: 20 groups. USB: 200 groups
Reference waveform	Internal: 20 groups. USB: 200 groups
Data file	Internal: 20 groups. USB: 200 groups
Bitmap	USB: 200 groups, in BMP format.
Input Channel Specifications	
Input Coupling	DC, AC and GND
Input impedance	(1MΩ± 2%)//(18pF± 3 pF)
Probe attenuation coefficient	0.01×/0.02×/0.05×/0.1×/0.2×/0.5×/1×/2×/5×/10×/20×/50×/100×/200×/500×/1000×
Maximum input voltage	400Vpk, the transient over voltage is 1000 Vpk.
Display	
Displays types	LCD with Diagonal of 178mm (7-inch)
Display resolution	800 horizontal×RGB× 480 vertical pixels
Display color	Color
Waveform luminance	Adjustable
Backlight intensity (Typical)	300nit
Language	Multi-language
Interface function	

Standard configuration	Standard USB Host, USB Devic e, EXT Trig, Pass/Fail Option: Multimeter module (UT-M12), LAN
Trigger frequency meter	
Reading resolution	6bits
Trigger sensitivity	≤30Vrms
Accuracy (Typical)	±51ppm (+1 character)
Probe compensator output	
Output voltage (Typical)	About 3Vpp, when the load≥1MΩ
Frequency (Typical)	10Hz,100Hz,1kHz (Default), 10kHz
Power Source	
Power voltage	100V-240V~(Fluctuations 10%) ， 50/60Hz
Power consumption	100VA max
Fuse	F 1.6A 250V
Environment Specifications	
Intended use	Indoor use
Pollution degree	2
Operating temperature	Operating Temperature Range: 0℃~+40℃
Storage Temperature	Storage Temperature Range: -20℃~+60℃
Cooling	Build-in cooling fan
Operating Humidity Range	<35℃: ≤90%RH 35℃~40℃: ≤60%RH
Operating Altitude	Operating 2000 meters below Non-operating 15000 meters below
Mechanical specifications	
Size	306mm(W) ×138(H)×124 mm(D)
Weight	Excluding package:2.5kg Including package: 3kg
Recommended calibration Interval	
The recommended calibration interval is one year.	

*The UTD2000CL_ series have been certified by CE, cETLus.

Standard accessories

UT-P03(UTD2052CL+)	Passive probe x 2: 1x,10x switchable, 60MHz
UT-P04(UTD2102CL+)	Passive probe x 2: 1x,10x switchable, 100MHz
Power cable	Fits the standard of destination country
UT-D14 USB data cable	For UTD2052CL+,UTD2102CL+,UTD2072CL,UTD2152CL