

# GDS-1000-U Series

100MHz/70MHz/50MHz Digital Storage Oscilloscope

## FEATURES

- 100/70/50 MHz Bandwidth, 2 Input Channels
- 250MSa/s Real-Time & 25GSa/s Equivalent-Time Sampling Rate
- 4k Record Length per Channel
- Save/Recall of 15 Front Panel Settings & Waveforms
- 5.7" Color TFT LCD Display
- 19 Auto Measurements
- Math Function : Add, Subtract, FFT
- USB Host & Device Ports
- Go/NoGo Function
- Data Logger
- Limited Lifetime Warranty

**GWINSTEK**  
Simply Reliable

# A Capable Oscilloscope at Most Affordable Price

GDS-1000-U is a general purpose 2-channel oscilloscope designed to meet diversified educational demands and basic industrial requirements. This series provides bandwidths ranging from 50MHz to 100MHz. Together with intuitive human machine interface design and 5.7 inch color TFT LCD, GDS-1000-U allows users to enjoy better measurement experiences.

GDS-1000-U series offers dual sampling modes, 250MSa/s Real-Time and 25GSa/s Equivalent sampling rates, giving users a more flexible option to process incoming signals. With fast waveform process capability, more advanced triggering functions, and 2.5Kg light-weight design, GDS-1000-U is a very capable oscilloscope to enhance users' returns on their investments in terms of price versus performance. GDS-1000-U is also viewed as a replacement of analog oscilloscope. With its good functionality and capability, GDS-1000-U can satisfy diversified educational demands as well as fulfill industrial basic requirements in servicing, maintenance, or production.

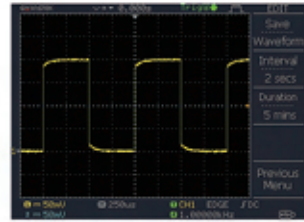
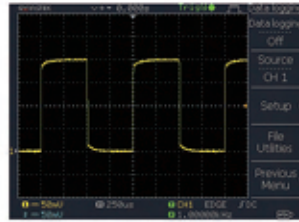
GDS-1000-U also provides great accessibility through its USB Host and Device ports. Via USB Device port, user can easily build a remote control program to manipulate the machine. Via USB Host port, user is capable of not only storing data directly into flash disk for further analysis but also activating data logging function to monitor waveform data in designated time sequence.

To sum up, GDS-1000-U, with intuitive UI design, easy accessibility, and versatile measurement functions at very competitive price, is definitely your best investment when it comes to selecting oscilloscopes.

SELECTION GUIDE			
MODEL	GDS-1102-U	GDS-1072-U	GDS-1052-U
BANDWIDTH	100MHz	70MHz	50MHz
CHANNELS	2		
DISPLAY DEVICE	5.7" TFT Color LCD		
SAMPLE RATE	250MSa/s (Real-time Sampling) & 25GSa/s (Equivalent-time Sampling)		
RECORD LENGTH	4k Points per channel		
USB HOST	Standard		
USB DEVICE			
CALIBRATION OUTPUT			



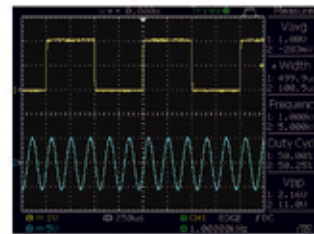
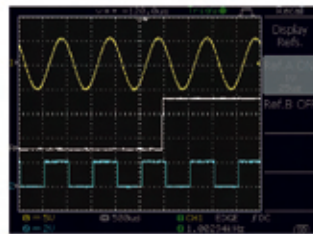
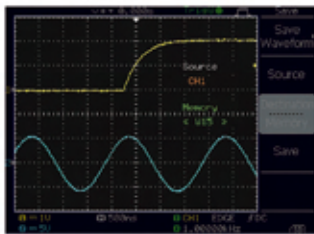
## A. USB INTERFACE & DATA LOGGER



USB Host port on the front significantly enhance the data storage capability of the product. The large amount of data, including screenshot, waveform and panel setup, could be easily stored into a popular flash disk. A USB device port on the rear of the product transfers the screen image and waveform raw data to PC and also allows PC to remote control GDS-1000-U Series.

Furthermore, data logger can continue monitoring input signals and storing their waveform data in USB flash disk when trigger conditions are met, saving users' efforts to tracking signals manually and allowing them to analyze and observe waveform data afterwards.

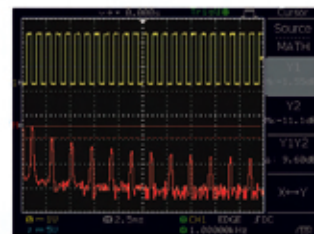
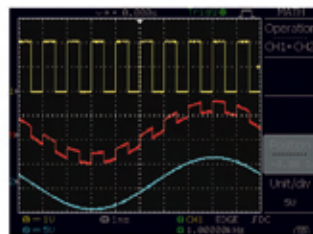
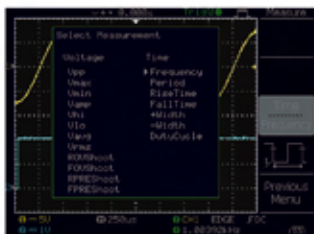
## B. WAVEFORM SAVING AND AUTOMATIC MEASUREMENT



A total of 15 waveforms could be saved into memory for later recall and display, and 2 saved reference waveforms together with 2 live waveforms could be shown on the screen at the same time for comparison. A snapshot of all time &

voltage related Auto Measurement readings of an input signal could be shown on the screen simultaneously.

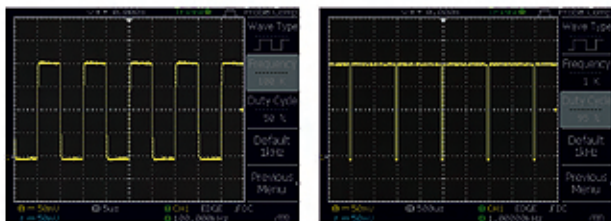
## C. SOPHISTICATED MEASUREMENT FUNCTIONS



Several acquisition mode and 19 auto measurement functions help user to measure the accurate property of waveforms. The advanced auto-set function makes GDS-1000-U Series catch waveform automatically and display waveform quickly.

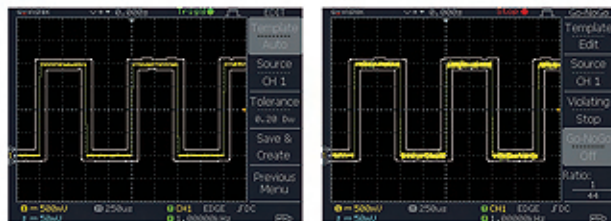
With arithmetic functions, FFT function keeps user being aware of the results by updating value immediately. Without almost extra-calculation GDS-1000-U Series can provide sufficient information of testing.

## D. ENHANCED CAL SIGNAL OUTPUT



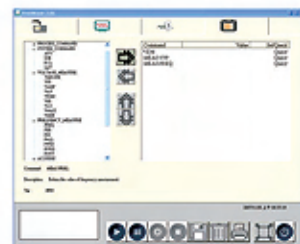
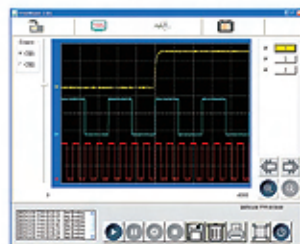
GDS-1000-U Series has an enhanced 1kHz calibration signal. Its output frequency is adjustable from 1 kHz to 100 kHz as well as the duty cycle adjustable from 5%–95%.

## E. GO/NOGO FUNCTION



Go/NoGo testing function check whether the incoming signal violates the user-defined template. Users can easily define this template by setting the tolerance ratio to determine violation conditions. Go/NoGo testing can either keep counting violation number or stop testing when violation conditions are met.

## F. FREEWAVE PC SOFTWARE



A PC Software, Freewave, supporting GDS-1000-U Series is available to all customers for free download from GW Instek Website. This software enables the full screen image transfer from GDS-1000-U Series to PC via USB port in a fast-updating manner, so the user is able to see a nearly-real-time display on the PC screen.

The screen image (.bmp or .jpg) and waveform raw data (.csv) could be saved into PC for further applications. The continuous waveform images (.avi) in a time period could be recorded for later playback. This video recorder function facilitates the repetitive observation of a saved waveform with continuous variation in a certain period of time.

## G. AUTOSSET DISABLE FUNCTION



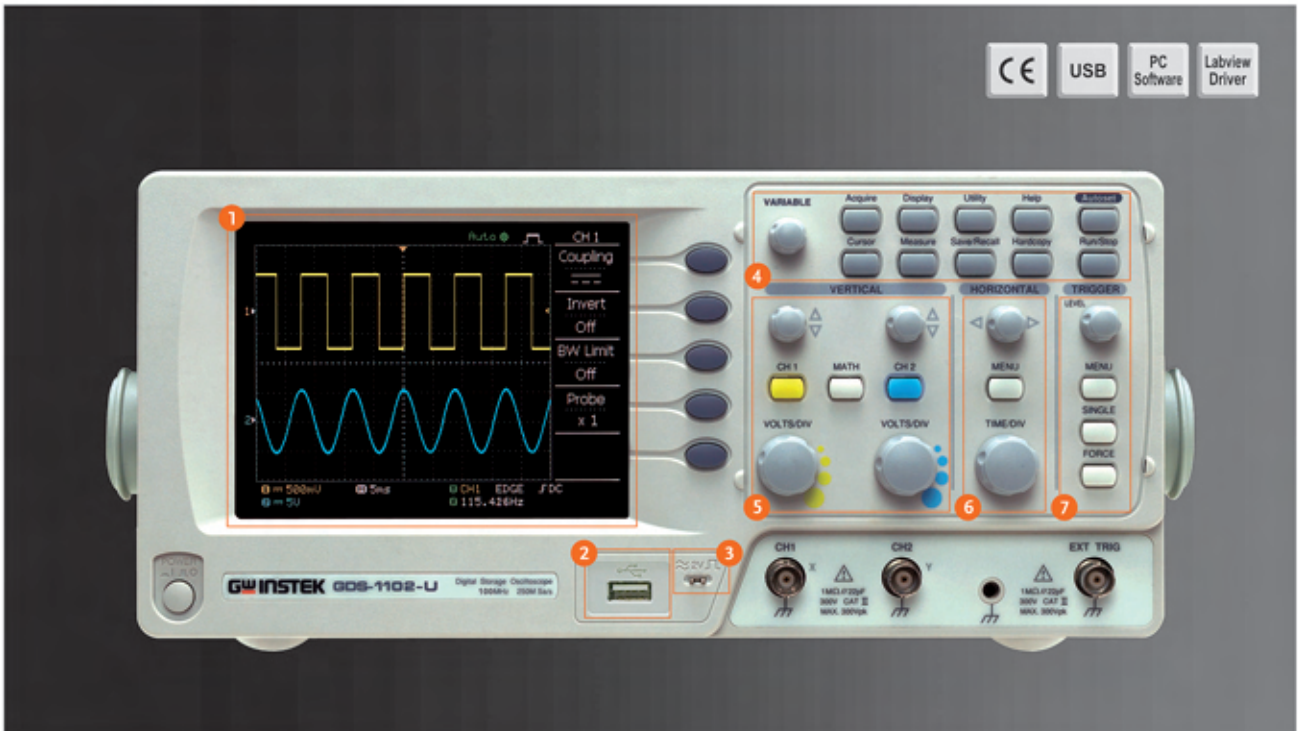
For the educational purpose, instructors might not want to use Autaset function on the DSO when they are teaching how to use oscilloscope for the measurement. The GDS-1000-U Series can disable the Autaset function, enabling students to manually operate oscilloscope functions to further enrich their learning experience.

## H. GUARANTEED PROTECTION



Providing Global Lifetime Warranty Program for GDS-1000-U Series, we believe you can have high confidence in the quality of this series. You are assured of a highly economical, low maintenance, and high quality DSO backed with the Lifetime Warranty program to guarantee the service during the product lifetime. For more details, please visit our website at [www.gwinstek.com/llw](http://www.gwinstek.com/llw) or consult your nearest distributor.





### 1. Stunning Display

The 5.7" TFT color LCD greatly enhances the GDS-1000-U display performance letting you see the waveform details clearly from a broad range of view-angle.

### 2. Memory and Interface



Up to 15 waveforms can be saved into the internal memory to be recalled later and compared. USB Host port provides a safe environment for data storage and transfer of measurement results, and the USB device port interface allows users to do remote control.

### 3. Enhanced CAL signal output

GDS-1000-U Series has an enhanced 1kHz calibration signal. Its output frequency is adjustable from 1 kHz to 100 kHz as well as the duty cycle adjustable by 5% ~ 95%.

### 4. Function Keys

Function Keys are used to set up some parameters in different functions, such as Acquire, Display, Cursor, Measure,...etc.

### 5. Vertical Controls

Separate vertical controls for each channel allows for simple and fast operation. There is no longer any need to share one set of vertical controls for both channels.

### 6. Horizontal System

Horizontal system can configure the horizontal view, move the waveform horizontally, and select the horizontal scale.

### 7. Advanced Triggers

Quick setting to capture any signal of interest with Normal, Single, Force, Pulse Width and Video line selectable triggers.

### 100 MHz Digital Storage Oscilloscope



GDS-1102-U

### 70 MHz Digital Storage Oscilloscope



GDS-1072-U

### 50 MHz Digital Storage Oscilloscope



GDS-1052-U

## SPECIFICATIONS

		GDS-1052-U	GDS-1072-U	GDS-1102-U
<b>VERTICAL</b>	Channels Bandwidth Rise Time Sensitivity Accuracy Input Coupling Input Impedance Polarity Maximum Input Waveform Signal Process Offset Range Bandwidth Limit	2 DC~50MHz(-3dB) <7ns Approx.	2 DC~70MHz(-3dB) <5ns Approx.	2 DC~100MHz(-3dB) <3.5ns Approx.
<b>TRIGGER</b>	Sources Modes Coupling Sensitivity	2mV/div ~ 10V/div (1-2.5 increments) ± (3% x  Readout  + 0.1 div + 1mV) AC, DC & Ground 1MΩ ± 2%, ~15pF Normal & Invert 300V (DC+AC peak), CATII +, -, FFT 2mV/div ~ 50mV/div : ±0.4V ; 10mV/div ~ 500mV/div : ±4V ; 1V/div ~ 5V/div : ±40V ; 10V/div : ±300V 20MHz (-3dB)		
<b>EXT TRIGGER</b>	Range Sensitivity Input Impedance Maximum Input	CH1, CH2, Line, EXT AUTO, NORMAL, SINGLE, TV, Edge, Pulse width AC, DC, LF rej., HF rej., Noise rej. DC ~ 25MHz: Approx. 0.5div or 5mV; 25MHz ~ 50/70/100MHz: Approx. 1.5div or 15mV		
<b>HORIZONTAL</b>	Range Modes Accuracy Pre-Trigger Post-Trigger	±15V DC ~ 25MHz : ~ 50mV ; 25M ~ 50/70/100MHz : ~15mV 1MΩ ±2% , ~ 16pF 300V (DC+AC peak) , CATII		
<b>X-Y MODE</b>	X-Axis Input Y-Axis Input Phase Shift	1ns/div ~ 50s/div (1-2.5-5 increments); ROLL : 50ms/div ~ 50s/div MAIN, WINDOW, WINDOW ZOOM, ROLL, X-Y ±0.01% 10 div maximum 1000 div		
<b>SIGNAL ACQUISITION</b>	Real-Time Sample Rate Equivalent Sample Rate Vertical Resolution Record Length Acquisition Mode Peak Detection Average	Channel 1 Channel 2 ±3° at 100kHz		
<b>CURSORS AND MEASUREMENT</b>	Voltage Measurement Time Measurement Cursors Measurement Auto Counter	250MSa/s maximum 2.5GSa/s maximum 8 Bits 4K Points maximum Normal, Peak Detect, Average 10ns(500ns/div ~ 50s/div) 2, 4, 8, 16, 32, 64, 128, 256		
<b>ADJUSTABLE PROBE COMPENSATION SIGNAL</b>	Frequency Range Duty Cycle Range	V <sub>pp</sub> , V <sub>amp</sub> , V <sub>avg</sub> , V <sub>rms</sub> , V <sub>hi</sub> , V <sub>lo</sub> , V <sub>max</sub> , V <sub>min</sub> , Rise Preshoot/ Overshoot, Fall Preshoot/Overshoot Freq, Period, Rise Time, Fall Time, Positive Width, Negative Width, Duty Cycle Voltage difference between cursors (ΔV) Time difference between cursors (ΔT) Resolution : 6 digits ; Accuracy : ±2% Signal Source: All available trigger source except the Video trigger mode		
<b>CONTROL PANEL FUNCTION</b>	Autoset Save Setup Save Waveform	1kHz ~ 100kHz, 1kHz/STEP 5% ~ 95%, 5%/STEP		
<b>DISPLAY</b>	TFT LCD Type Display Resolution Display Graticule Display Brightness	Adjust Vertical VOLT/DIV, Horizontal TIME/DIV, and Trigger level automatically Up to 15 sets of measurement conditions 15 sets of waveform		
<b>INTERFACE</b>	USB Device USB Host	5.7 inch 234 (Vertically) x 320 (Horizontally) Dots 8 x 10 divisions Adjustable		
<b>POWER SOURCE</b>	Line Voltage Range	USB1.1 & 2.0 full speed compatible Image (BMP) waveform data (CSV) and setup (SET)		
<b>MISCELLANEOUS</b>	Go/NoGo Function Data Logger Multi-Language Menu Online Help	AC 100V ~ 240V, 48Hz ~ 63Hz, Auto selection		
<b>DIMENSIONS &amp; WEIGHT</b>		Available Available Available Available		
		310(W) x 142 (H) x 140(D)mm, Approx. 2.5kg		

Specifications subject to change without notice. GD-1000-UGD18H

### ORDERING INFORMATION

GDS-1052-U 50MHz, 2-channel, Color LCD Display DSO  
GDS-1072-U 70MHz, 2-channel, Color LCD Display DSO  
GDS-1102-U 100MHz, 2-channel, Color LCD Display DSO

### ACCESSORIES

User Manual x 1, Power Cord x 1  
Probe-GTP-070A-4 : 70MHz(10:1/1:1)Switchable Passive Probe for GDS-1052-U(one per channel)  
Probe-GTP-070A-4 : 70MHz(10:1/1:1)Switchable Passive Probe for GDS-1072-U(one per channel)  
Probe-GTP-100A-4 : 100MHz(10:1/1:1)Switchable Passive Probe for GDS-1102-U(one per channel)

### OPTIONAL ACCESSORIES

GTL-242 USB Cable, USB 1.1 A-B TYPE CABLE, 4P  
GTL-110 Test Lead, BNC-BNC Heads  
GSC-006 Soft Carrying Case

### FREE DOWNLOAD

PC Software FreeWave software  
Driver USB driver  
LabView Driver

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