GDS-1000A Series

150MHz/100MHz/60MHz Digital Storage Oscilloscope

FEATURES

- 150/100/60 MHz Bandwidth, 2 Input Channels
- 1GSa/s Real-Time Sampling Rate Maximum, 25GSa/s Equivalent-Time
- 2Mega Points Record Length
- 2mV ~ 10V Vertical Scale
- 1ns ~ 50s Horizontal Range
- Up to 27 Auto Measurements
- Versatile Math Function + , – , x , FFT , FFTrms
- 5.6" Color TFT LCD Display
- USB Interface & SD/SDHC Memory Card Supported
- PictBridge Compatibility Printers Supported
- Multi-Language Support on Operation Menu and On-Screen Help
- Limited Lifetime Warranty

GW INSTEK

Made to Measure Since 1975

Discover Deep Memory Performance with the GDS-1000A Series

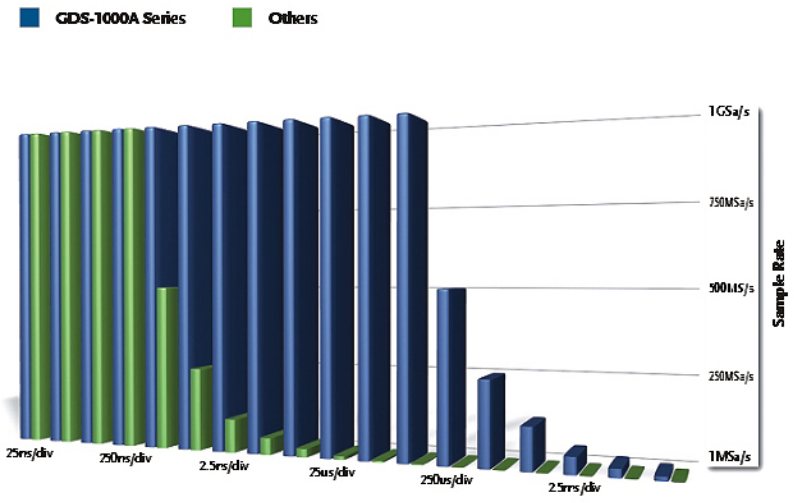
The GDS-1000A 150/100/60MHz dual-channel digital storage oscilloscope series inherits the passionate design and strong value to traditional GW Instek DSOs. The series features 1GS/s real-time sampling rate, 2M memory length, USB remote interface, high resolution color TFT display, SD flash drive support and GW Instek's user-friendly interface. Quality design and powerful features combine to create a powerful tool for waveform capture and analysis.

It's all about the memory

MemoryPrime 2MEGA MEMORY BUILT-IN With the increasing complexity of signals, traditional digital storage oscilloscopes don't have the capability of displaying an input signal completely or comparing the relative relationship between signals accurately due to memory constraints. After all, the waveform record length and the sample rate of a DSO are tied to memory depth, and only the combination of a high sample rate and a long record length can make detailed waveform analysis possible. Assuming a constant sample rate, the more memory a DSO has, the longer the signal can be displayed. Conversely, assuming a limited memory depth, a signal will be observed for a shorter time with a faster sample rate. In order to fully utilize the advantage of 2M points of memory without sacrificing the waveform update rate, the GDS-1000A adopts Memory Prime technology , Memory Prime uses a high speed signal processor in parallel with a CPU to increase the waveform reconstruction speed. Using a high Speed signal processor and 2M points of memory, the GDS-1000A is able to run at the maximum sampling speed of 1GSa/s under a wide range of time base selections (100us/div ~ 25ns/div). This unparalleled performance creates a significant differentiation compared to all other economic DSO products available in the market today.

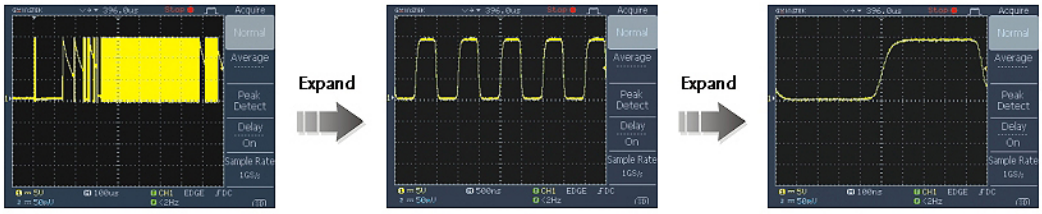
The sample rate of a DSO is closely related to memory size. Shallow memory digital storage oscilloscopes compromise the sample rate over a larger time base range as there is not enough memory to display the signal on the screen at the maximum sample rate. For example, a digital storage oscilloscope with a sample rate of 1GSa and a 2.5k point memory length can operate with a horizontal sweep speed below 20ns/div, but only by reducing the sampling rate accordingly. When the sample rate is reduced, there is a greater possibility that critical details get omitted. However with a larger memory depth, a high sampling rate can be maintained over a wider horizontal range.

As illustrated, the GDS-1000A series are able to maintain a sampling rate of 1Ga/S over 12 horizontal ranges, superior to that of other oscilloscopes with a 2.5k memory depth. Utilizing a greater memory depth, the GDS-1000A series allows you to design and debug your projects more effectively.

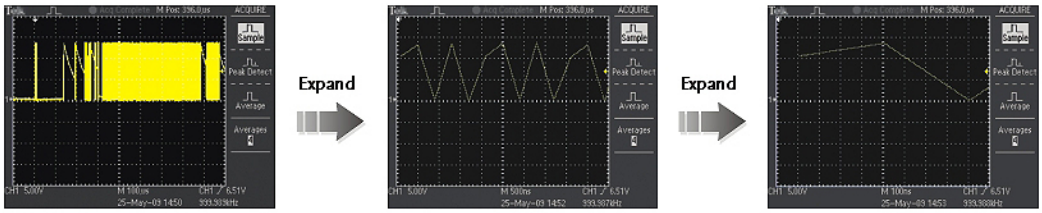


About MemoryPrime Technology

GDS-1000A
2Mega Memory
Waveform Display



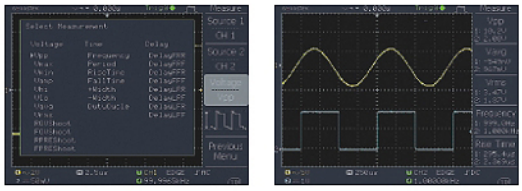
Traditional DSO
2.5k Memory
Waveform Display



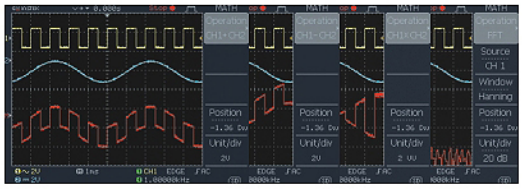
Single-Shot Waveform Capture

What is the single feature lacking from most digital storage oscilloscopes? Adequate memory depth. Is the memory depth of your DSO large enough? With 2M points of memory, the GDS-1000A has the capability to acquire far more waveform data compared to other DSOs in the same performance range. The 1GSa/s sampling rate and 2M point memory plays an extremely powerful role for single-shot waveform capture. When the single-shot waveform is triggered and captured, you are able to check and see the single-shot event without losing any detailed information. A DSO, with a high sampling rate but short memory, can't capture a single shot waveform as well as the GDS-1000A.

A. EASY TO USE



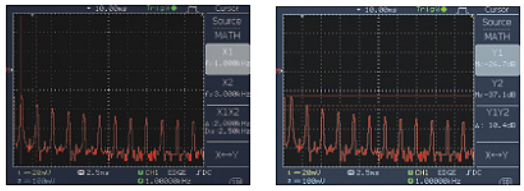
27 Automatic Measurement Functions



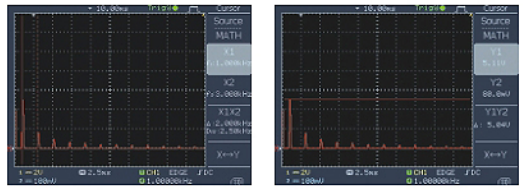
MATH Functions

The full-featured Acquisition mode and 27 auto measurement functions help users to measure captured waveform parameters accurately. The advanced Auto-Set function enables the GDS-1000A Series to capture waveforms automatically and display them quickly. With addition, subtraction, multiplication and FFT math functions, the GDS-1000A Series keeps users aware of measurement results by constantly updating data. With minimal calculation, the GDS-1000A Series can provide sufficient testing information.

B. FFT & FFTrms



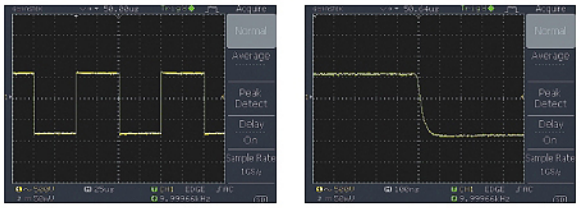
FFT Measurement



FFTrms Measurement

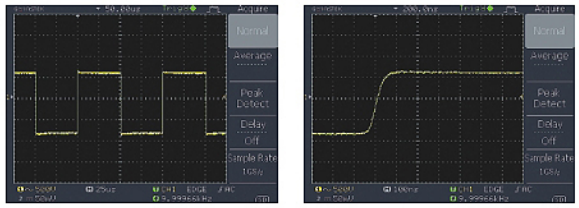
To observe the fundamental and harmonic components of a signal, the FFT math function on a digital storage oscilloscope is often used. Typically, the traditional unit of the FFT is the decibel (dB). However, when using dB it is sometimes difficult to identify the fundamental frequency of a signal from a noisy spectrum. With the FFTrms function, The he GDS-1000A series can clearly display the fundamental frequency of an acquired waveform.

C. CONVENIENT TOOLS FOR WAVEFORM OBSERVATION-DELAY ON/OFF



Delay On

With Delay On, the waveform scale is expanded from the center of the screen

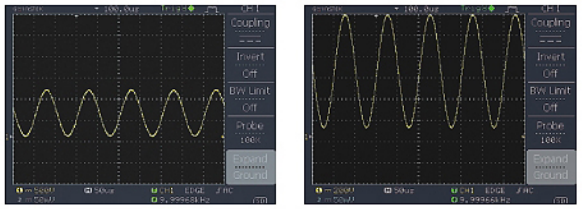


Delay Off

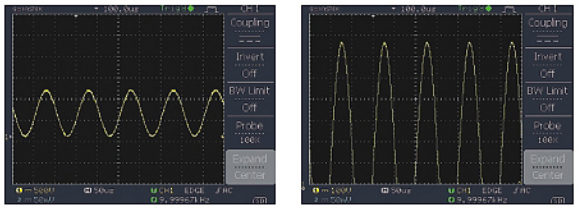
With Delay Off, the waveform scale is expanded from the trigger point.

For convenient waveform observation and analysis, the GDS-1000A Series includes Delay On/Off functions; usually seen only in higher end products. With Delay On, a signal can be observed from an offset of the trigger point. With this feature, the horizontal scale and thus waveform scale can be expanded and centered on the delay point, but not at the trigger point. This allows a signal to be observed in detail where needed.

D. CONVENIENT TOOLS FOR WAVEFORM OBSERVATION-EXPAND BY GROUND/CENTER



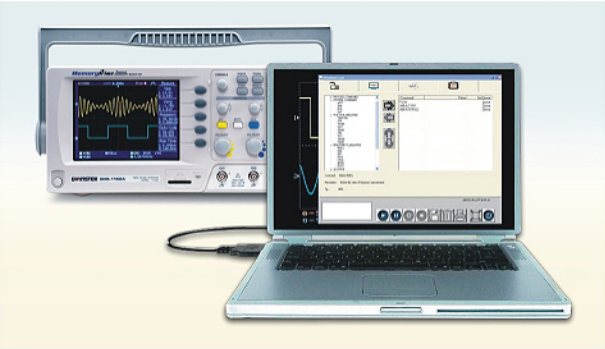
Expand by Ground



Expand by Center

In a DSO, "AC Coupling" is normally used to isolate the AC components of a signal by blocking the DC components. This is useful to see a signal with a small AC component that is offset with a large DC voltage. With AC coupling to block the DC voltage, small AC waveforms can be observed from the center of the screen for measurement or examination. However, capacitive loading under AC coupling mode may cause waveform distortion as low frequency components may become degraded, frequency critical applications. The Expand by Ground and Center functions are convenient tools to expand a waveform vertically. With this feature, the vertical scale of a waveform can be expanded either from the ground reference or from the center of the screen without causing capacitive loading.

E. PC REMOTE CONTROL SOFTWARE



Microsoft Excel & Word add-ins Supported.

Using a USB port coupled with FreeWave remote monitoring software is the easiest and most convenient way to capture data from the GDS-1000A. With FreeWave, a screenshot can be saved as an image file (.bmp/.jpg),waveform data(.csv)can be logged and movie files(.wmv) can be recorded in real-time. Not only can FreeWave monitor and record waveforms over a long period of time, but previously recorded waveforms can also be observed. Instrument settings can even be configured without the need to learn incomprehensible command line syntax. With the simple user interface and robust features, FreeWave allows you to get the most out of the GDS-1000A with little effort.

When a test report is needed you no longer have to copy and paste data into your documents. We have an easier way. With our Microsoft Excel or Word add-in, you only need to click the add-in icon to import your test data, saving you time and effort.

F. PRIME FEATURES

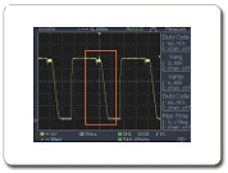
PictBridge

PictBridge Printer Supported

The GDS-1000A is one of the few DSOs currently on the market that can provide complete remote control or data capture over a USB interface. The GDS-1000A Series also supports PictBridge, allowing you to print directly to your printer without complex configuration. After connecting to a PictBridge compatible printer with a USB cable, printing is as easy as pressing a button.

Fast Horizontal Position Mark and Search

MemoryPrime technology allows a maximum of 2M points of waveform data. For engineers, analyzing a considerable amount of data can be an extremely challenging task. To assist engineers in analyzing waveforms quicker, we provide Horizontal Page Skip and Set Time Mark functionalities . This lets engineers take full advantage of the 2M memory depth.



Auto Measurement Gating

A built-in Autoset function on a digital oscilloscope gives engineers remarkable convenience. With the complexities of product features, traditional auto measurement information is inadequate for modern measurement needs. The new Cursor Gating feature allows you to mark an area with cursors for auto measurement.

0.1x
to
2000x

Flexible Probe Factor Setting

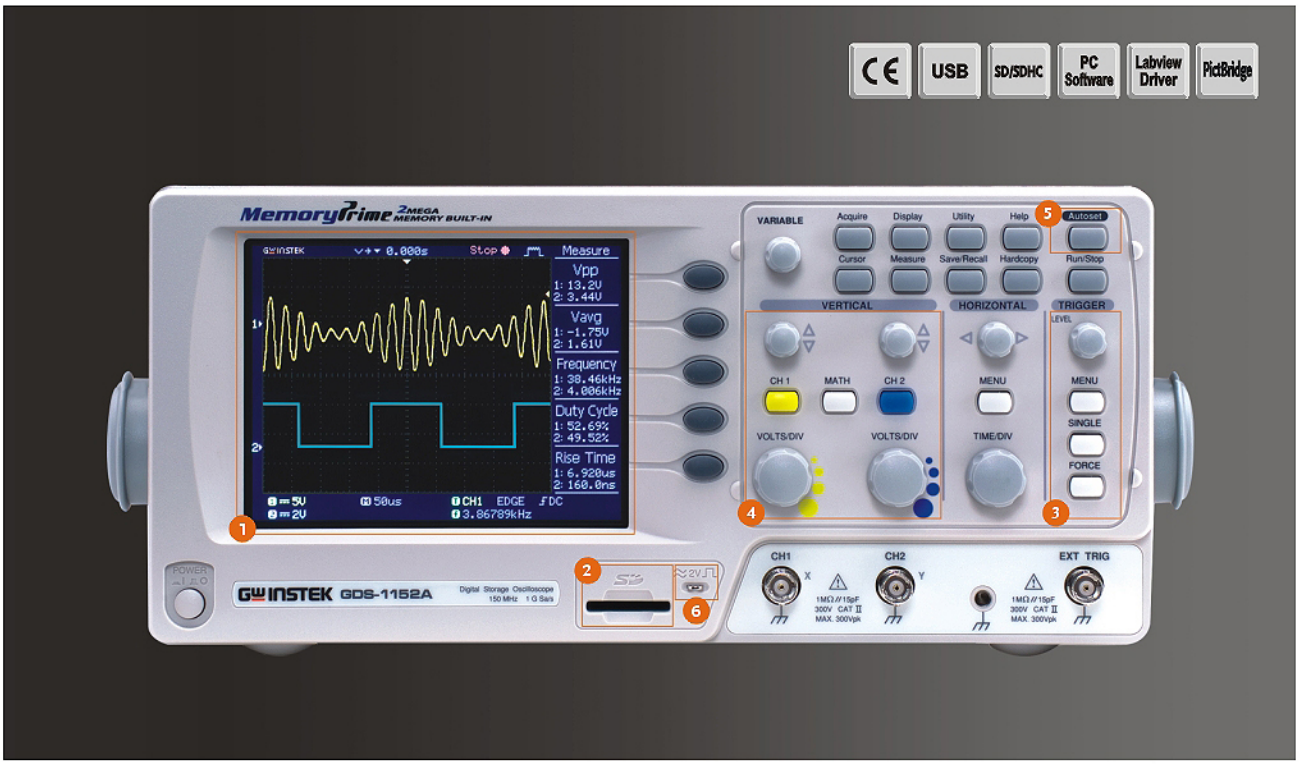
There is a diverse range of test probes currently on the market such as passive, differential, and electrical probes. The attenuation ratio of each probe type also differs greatly. To ensure compatibility, probe attenuation ratios of 0.1X to 2000X as well as voltage and current probes as supported with the GDS-1000A.

G. GUARANTEED PROTECTION

By providing the Global Lifetime Warranty Program for the GDS-1000A digital storage oscilloscope series, we believe you can have the same confidence we do in the quality of each GDS-1000A DSO. By purchasing a GDS-1000A you can be assured of a highly economical, low maintenance, quality DSO backed with the protection of the LifeTime Warranty program. The Lifetime Warranty Program guarantees customers will be supported regardless of their location. Customers will receive at least 5 years of full support even after production has ceased. For more details and applicable conditions regarding the LifeTime Service program, please visit the GW Instek website **www.gwinstek.com/llw** or consult your nearest distributor.

Buy a GDS-1000A Series DSO, get a Limited Lifetime Warranty

PANEL INTRODUCTION



1. Stunning Display

The 5.6" TFT color LCD greatly enhances the GDS-1000A display performance letting you see the waveform details clearly from a broad range of view-angle.

2. Memory and Interface

Up to 17 waveforms can be saved into the internal memory to be recalled later and compared. The SD memory card slot provides a safe environment for data storage and transfer of measurement results, and the USB device port interface allows remote control for direct printing to PictBridge compatible printers.

3. Advanced Triggers

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

4. 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.

5. Autoset Enable/ Disable

To help students learn how to use an oscilloscope manually, the Autoset function can be disabled on the GDS-1000A Series.

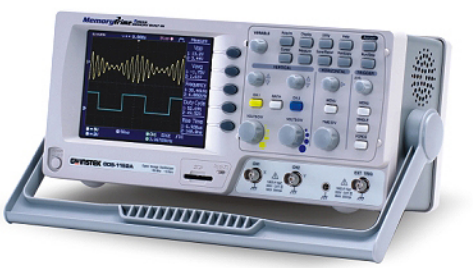
6. Enhanced CAL signal output

GDS-1000A 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%.

SELECTION GUIDE

MODEL	GDS-1062A	GDS-1102A	GDS-1152A
BANDWIDTH	60MHz	100MHz	150MHz
CHANNELS	2		
SAMPLE RATE	1GSa/s(Real-time) 25GSa/s(Equivaleut-time)		
RECORD LENGTH	2 Mega Points		
DISPLAY DEVICE	5.6" TFT Color LCD		
SD Card Slot USB Device Calibration Output	Standard		

150/100/60 MHz Digital Storage Oscilloscope



GDS-1000A Series

SPECIFICATIONS

		GDS-1062A	GDS-1102A	GDS-1152A
VERTICAL	**Channels**	2	2	2
	Bandwidth	DC~60MHz(-3dB)	DC~100MHz(-3dB)	DC~150MHz(-3dB)
	Rise Time	<5.8ns Approx.	<3.5ns Approx.	<2.3ns Approx.
	Sensitivity	2mV/div ~ 10V/div (1-2-5 increments)		
	Accuracy	±(3% x |Readout| + 0.1 div + 1mV)		
	Input Coupling	AC, DC & Ground		
	Input Impedance	1MΩ± 2%, ~15pF		
	Polarity	Normal & Invert		
	Maximum Input	300V (DC+AC peak), CATII		
	Waveform Signal Process	+, −, x, FFT, FFTrms		
	Offset Range	2mV/div ~ 50mV/div : ±0.4V ; 100mV/div ~ 500mV/div : ±4V ; 1V/div ~ 5V/div : ±40V ; 10V/div : ±300V		
	Bandwidth Limit	20MHz (-3dB)		
TRIGGER	**Source**	CH1, CH2, Line, EXT		
	Mode	AUTO, NORMAL, SINGLE, TV, Edge, Pulse width		
	Coupling	AC, DC, LF rej., HF rej., Noise rej.		
	Sensitivity	DC ~ 25MHz: Approx. 0.5div or 5mV; 25MHz ~ 60/100/150MHz: Approx. 1.5div or 15mV		
EXT TRIGGER	**Range**	±15V		
	Sensitivity	DC ~ 25MHz : ~ 50mV ; 25MHz ~ 60/100/150MHz : ~100mV		
	Input Impedance	1MΩ ±2% , ~ 15pF		
	Maximum Input	300V (DC+AC peak) , CATII		
HORIZONTAL	**Range**	1ns/div ~ 50s/div (1-2.5-5 increments); ROLL : 250ms/div ~ 50s/div		
	Modes	MAIN, WINDOW, WINDOW ZOOM, ROLL, X-Y		
	Accuracy	±0.01%		
	Pre-Trigger	10 div maximum		
	Post-Trigger	1000 div		
X-Y MODE	**X-Axis Input**	Channel 1		
	Y-Axis Input	Channel 2		
	Phase Shift	±3°at 100kHz		
SIGNAL ACQUISITION	**Real-Time Sample Rate**	1GSa/s maximum		
	Equivalent Sample Rate	25GSa/s maximum		
	Vertical Resolution	8 Bits		
	Record Length	2Mega Points maximum		
	Acquisition Mode	Normal, Peak Detect, Average		
	Peak Detection	10ns(500ns/div ~ 50s/div)		
	Average	2, 4, 8, 16, 32, 64, 128, 256		
CURSORS AND MEASUREMENT	**Voltage Measurement**	V_{pp}, V_{amp}, V_{avg}, V_{rms}, V_{hi}, V_{lo}, V_{max}, V_{min}, Rise Preshoot/Overshoot, Fall Preshoot/Overshoot		
	Time Measurement	Freq, Period, Rise Time, Fall Time, Positive Width, Negative Width, Duty Cycle		
	Delay Measurement	Eight different delay measurement		
	Cursors Measurement	Voltage difference between cursors (ΔV) Time difference between cursors (ΔT)		
	Auto Counter	Resolution : 6 digits Accuracy : ±2% Signal Source: All available trigger source except the Video trigger mode		
ADJUSTABLE PROBE COMPENSATION SIGNAL	**Frequency Range**	1kHz ~ 100kHz, 1kHz/STEP		
	Duty Cycle Range	5% ~ 95%, 5%/STEP		
CONTROL PANEL FUNCTION	**Autoset**	Adjust Vertical VOLT/DIV, Horizontal TIME/DIV, and Trigger level automatically		
	Save Setup	Up to15 sets of measurement conditions		
	Save Waveform	15 sets of waveform		
DISPLAY	**TFT LCD Type**	5.6 inch		
	Display Resolution	234(Vertically)x 320 (Horizontally) Dots		
	Display Graticule	8 x 10 divisions		
	Display Brightness	Adjustable		
INTERFACE	**USB Device**	USB1.1 & 2.0 full speed compatible (PictBridge Compatibility Printers Supported)		
	SD Card Slot	Image (BMP) waveform data (CSV) and setup (SET)		
POWER SOURCE	**Line Voltage Range**	AC 100V ~ 240V , 48Hz ~ 63Hz , Auto selection		
MISCELLANEOUS	**Multi-Language Menu**	Available		
	Online Help	Available		
DIMENSIONS & WEIGHT	310(W) x 142 (H) x 140(D) mm, Approx. 2.5kg			

The specifications apply when the oscilloscope is powered on for at least 30 minutes under +20°C~+30°C.

Specifications subject to change without notice. DS-1000AGD4BH

ORDERING INFORMATION

GDS-1062A 60MHz, 2 channel, 1GSa/s & 2Mega Memory DSO

GDS-1102A 100MHz, 2 channel, 1GSa/s & 2Mega Memory DSO

GDS-1152A 150MHz, 2 channel, 1GSa/s & 2Mega Memory DSO

ACCESSORIES

User manual x1, Power cord x1

Probe GTP-060A-4 or equivalent:60MHz(10:1/ 1:1)Switchable passive probe for GDS-1062A(one per channel)

Probe GTP-100A-4 or equivalent:100MHz(10:1 / 1:1) Switchable passive probe for GDS-1102A(one per channel)

Probe GTP-150A-2 or equivalent:150MHz(10:1 / 1:1) Switchable passive probe for GDS-1152A(one per channel)

OPTIONAL ASSESSORIES

GTL-242 USB Cable, USB 2.0 Type A - Type B, 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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GW INSTEK

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