

Realizing Professional Functionalities with an Entry-Level Pricing



GW Instek GDS-1202B

Dual Channel 200MHz Oscilloscope

[New Product Announcement](#)

This document allows GW Instek's partners to quickly grasp product's main features, FAB and ordering information.

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GDS-1202B NEW PRODUCT INFORMATION- 0

GDS-1000B Series Digital Oscilloscope - Realizing Professional Functionalities with an Entry-Level Pricing

The GDS-1000B series incorporates 200MHz dual channel model "GDS-1202B" to expand the GDS-1000B series to more diversified bandwidth options, including 200/100/70/50MHz. The entry-level oscilloscope is a very competitive market in which all oscilloscope manufactures devote great efforts. GW Instek provides GDS-1202B model to allow the educational market and users with basic test requirements to purchase 200MHz dual channel oscilloscope at an affordable price.



Although, the GDS-1000B series is under the category of general purpose oscilloscope, the full functionalities within this simple-in-look oscilloscope, including 36 parameters measurement, cursor indication, digital voltage meter, and data logging, etc. The serial bus trigger and decoding function originally provided in higher-end oscilloscopes is now also a standard in the entire GDS-1000B series. Users who had already purchased the GDS-1000B series can obtain the function by upgrading the firmware to V1.27 or the newer version. At an affordable price, users can analyze I2C, SPI, UART, CAN, LIN serial bus trigger and decoding functions with an oscilloscope. All applications of the GDS-1000B series can be applied to the educational field and the fundamental R&D units of the industrial sector.

The maximum sampling rate for each single channel is 1GSa/s, and the memory depth is 10Mpts per channel independently. The waveform update rate is 50,000wfms/s, which helps users to precisely observe the detailed waveform variation. Additionally, 7" WVGA color LCD display and the 256 color gradient display function together allow waveforms to be observed with the senses of transparency and gradation. With respect to the horizontal time scale adjustment knob and trigger level adjustment knob, GW Instek provides a very thoughtful design—the zero key function, which allows engineers to work more effectively.

For mathematical analysis mode, 1Mpts FFT signal display makes the dull frequency domain signal analysis more delicate. Diversified trigger functions, X-Y mode analysis, and Go/NoGo function arm the GDS-1000B series oscilloscope with higher level measurement technologies. The GDS-1000B series oscilloscope also provides OpenWave connection software, which allows users to conduct waveform observation and data storage controlled by remote PC via LAN or USB interface.

GDS-1202B Major Specifications and Functions

Main features

- 200MHz bandwidth selections, 2 Channels
- 1GSa/s maximum sampling rate
- 10M maximum memory depth for each channel
- 7" 800 x 480 WXGA LCD display
- 1Mpts FFT frequency domain signal display
- I2C/UART/CAN/LIN bus trigger and decoding
- Zero Key function for horizontal time, vertical voltage and triggering

Interface

- High-speed USB device port ,host port
- Go/NoGo BNC
- Kensington Style lock

Software and Driver

- PC software (OpenWave software)
- LabVIEW driver
- USB driver



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Customers and Applications

Customers	Applications
<ul style="list-style-type: none"> ● Educational institutions ● Fundamental R&D 	<ul style="list-style-type: none"> ● Educational courses ● Basic signal analysis

Product model selection

Including GDS-1202B, the entire GDS-1000B series has 6 models. The specific functions for each model are as follows:

GDS-1202B	200MHz, 2 channels, Digital Storage Oscilloscope
GDS-1104B	100MHz, 4 channels, Digital Storage Oscilloscope
GDS-1102B	100MHz, 2 channels, Digital Storage Oscilloscope
GDS-1074B	70MHz, 4 channels, Digital Storage Oscilloscope
GDS-1072B	70MHz, 2 channels, Digital Storage Oscilloscope
GDS-1054B	50MHz, 4 channels, Digital Storage Oscilloscope

Features/ Advantages / Benefits

	Features	Advantages	Benefits
1	Waveform update rate up to 50,000wfms/s	The highest waveform update rate among the 1000 series oscilloscopes	Accurately grasp waveform variation details to identify the root cause
2	256 color gradient display	Same functionalities as that of Rigol and Keysight	Strengthen waveform display as if using an analog oscilloscope
3	10M memory depth per channel independently	10Mpts long memory per channel will not be reduced by opening the channel	Clearly differentiate the details of problems under the long observation
4	1Mpts FFT display	Provides high-resolution FFT display	Obtain clear spectrum quantity under the FFT mode as if using a spectrum analyzer
5	I2C ,UART ,CAN ,LIN bus trigger and decode	Standard equipped with serial bus trigger and decoding function	No additional cost is required. Bus decoding is provided as a standard
6	The zero key function	Quickly return to the original vertical, horizontal, and triggered positions	Users can use this function to improve measurement efficiency.

Position

GDS-1202B provides an affordable price for a 200MHz, dual channel oscilloscope, which is suitable for the educational market and entry-level industrial applications.

Key Dates for Product Announcement

1. Order Queue Open (Mar/9/2020)
2. Global Market Announcement (Apr/13 /2020)



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Service Policy

1. **3 years warranty.** The GDS-1202B oscilloscope carries a standard warranty for 3 years.
(Three-year warranty, excluding probes and LCD display panel)
2. **Service Support.** The service instructions in the Service Manual will help distributors repairing damage units promptly. The parts-swapping service support is provided by Good Will Instrument to facilitate the repair jobs done at the distributor's site.

Marcom Material and Manual download through Website. Good Will Instrument continues to provide after sales support through its website. The most updated version of service manual and Marcom material of GDS-1202B oscilloscope will be posted on the distributor zone of GW Instek's website at <http://www.gwinstek.com>

Ordering Information

GDS-1202B: 200MHz, 2-channel, Digital Storage Oscilloscope

PART NO: 01DS122B10GT

EAN code: 4713008673485

Standard Accessories

Power Cord, Certificate of Calibration,

CD-ROM (with Quick Start Guide, User Manual, Programming Manual)

Passive probe (one probe per channel)

Free Download

OpenWave software; USB driver; LabVIEW driver



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Detailed product information

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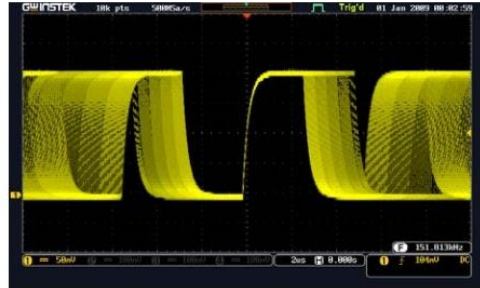


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Feature introduction

Waveform update rate up to 50,000wfms/s

The GDS-1000B series oscilloscope is under the category of general and fundamental oscilloscope by the market segmentation. Nevertheless, the series arms itself with the waveform update rate up to 50,000wfms/s. Users can input a rapid frequency modulation carrier signal as shown on the diagram. An unsmooth temporarily holding phenomenon will occur while using conventional digital oscilloscopes to measure this signal.



As a result, the conventional digital oscilloscopes could not clearly yield the modulation variation process of frequency modulation signals. With the GDS-1000B series oscilloscope, the measurement result will produce not only a smooth waveform modulation variation, but also detailed changes by distinct layers. Engineers could easily grasp the root cause of electric circuits while measuring the unexpected and fast changing signals. The GDS-1000B series is indeed an excellent debugging weapon for the test and measurement industry.

256 color gradient display

With respect to the waveform display technology, the GDS-1000B series oscilloscope is capable of displaying 256 color gradients which can delineate the profound gradational fluctuations; as if it can recreate the analog oscilloscope display capability. When a multi-layer video signal is input, the GDS-1000B series, with 256 color gradient display, has the ability to precisely reveal the colored burst signal and to show details of layers with the brightness.



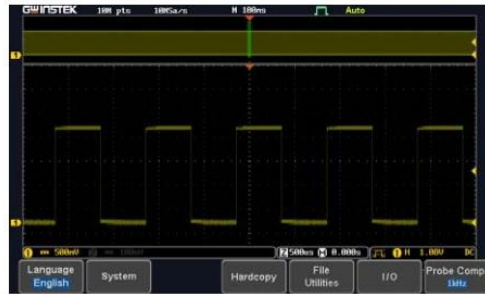
Hence, the dull monochrome waveform is imbued with vitality, which is precisely the unlimited measurement fascination the GDS-1000B series intends to bring to the general purpose oscilloscope arena.

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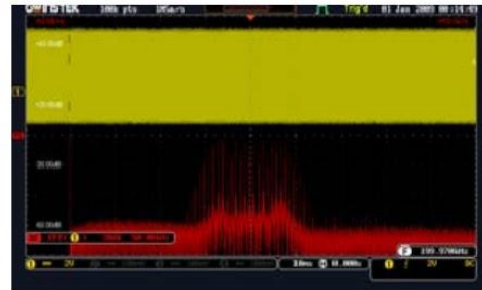
10M memory depth per channel independently

The GDS-1000B series oscilloscope has a powerful and incomparable memory depth for the data retrieving. 10M memory depth per channel independently surpasses the specification of the industry's 1000 series boundary. 10M memory depth allows users to easily seize the waveform detail while conducting fundamental measurement applications. If a long serial sequent sine waveform is input and the time scale is adjusted to 1mv/div, other 1000 series oscilloscopes for lack of sufficient memory depth will appear a distorted waveform while enlarging the waveform for its details. The GDS-1000B series while enlarging the waveform to 20ns/div reveals a very clear sine waveform detail which is precisely the true value of the GDS-1000B series oscilloscope.



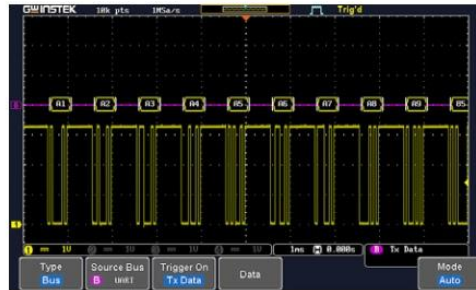
1M FFT mathematical sampling analysis mode

The GDS-1000B series oscilloscope, under the Fast Fourier Transform mathematical analysis mode, is equipped with the 1M memory depth retrieving mode. For the conventional digital oscilloscopes, the FFT mode often has only 1000 point retrieving length; therefore, they cannot show the strength distribution of each spectrum quantity under the frequency domain mode. The GDS-1000B series oscilloscope leads the industry to provide the display mode of 1M retrieving points, which can clearly show the detail of each spectrum quantity. On top of that, the 50,000 wfms/s waveform update rate augments the FFT analysis mode to be fast and precise as if a real time spectrum analyzer is used. These features substantially elevate oscilloscope's signal processing capability for the frequency domain analysis. The diagram illustrates a 200 KHz carrier waveform to be modulated as a standard FM signal with 40 KHz carrier waveform and 5 KHz frequency deviation. Since the GDS-1000B series is equipped with 1M memory depth, a 5 KHz frequency deviation interval can be clearly revealed that allows engineers to fully grasp the measurement details.



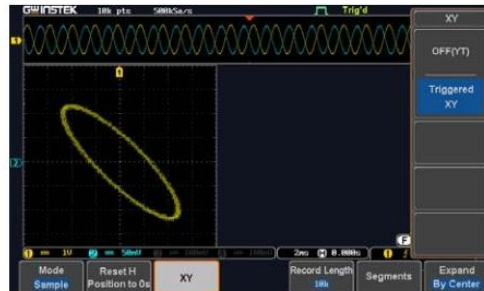
Support I2C/SPI/UART/CAN/LIN serial bus Decoding and Analysis

The serial bus technology has been widely applied in the present embedded application design. To rapidly and correctly trigger and analyze serial bus data has posed a difficult challenge to engineers. The GDS-1000B series provides serial bus analysis function and 10M long memory depth to trigger, decode, and analyze, in a long period, frequently used I²C,SPI,UART serial bus and CAN/LIN bus, which is often used by automotive communications. Without the extra software cost, school courses and embedded system design can easily conduct excellent serial bus decoding and analysis by using the GDS-1000B series oscilloscopes. (*SPI decoding only available on 4 channel models)



X-Y Mode Display

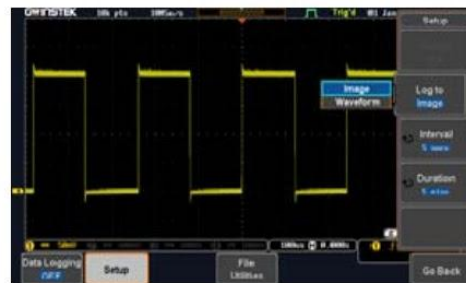
The GDS-1000B series oscilloscope provides the educational market with some powerful measurement functions. Among them, the X-Y mode display is an excellent example. Teachers and students can use X-Y mode display to conduct Lissajou diagram teaching, which allows users to easily understand the relation between waveforms and frequency while measuring sine waveforms with different frequency by dual channels.



For engineers working for the industries, the X-Y mode display can be used to conduct yield rate tests for basic components' electric conduction and non-conduction. Therefore, the X-Y mode display plays an important role in basic oscilloscopes.

Data log function

The GDS-1000B series oscilloscope has the data log function option, which allows users to observe and record waveform changes in a long period of time to ensure product's reliability and stability. The data log function can set data storage time and interval based on the test requirements. Record time can be set from 5 minutes to 100 hours and the interval can be set as 5 seconds the shortest. Data log formats include waveform and point data in CSV file. Data can be saved to USB, GDS-1000B or remote computer via LAN. It is very user-friendly and also an advanced measurement management tool.

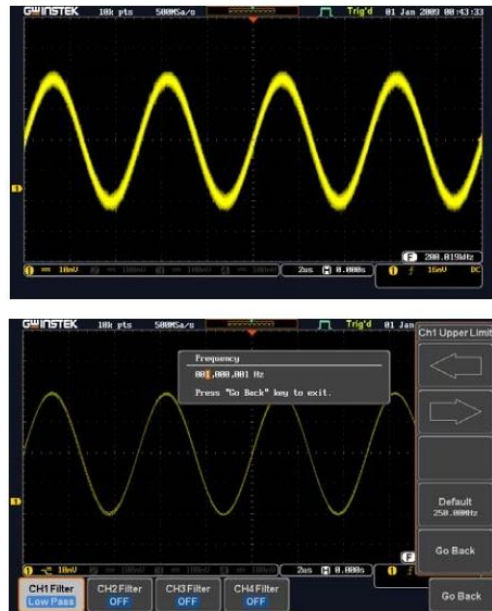


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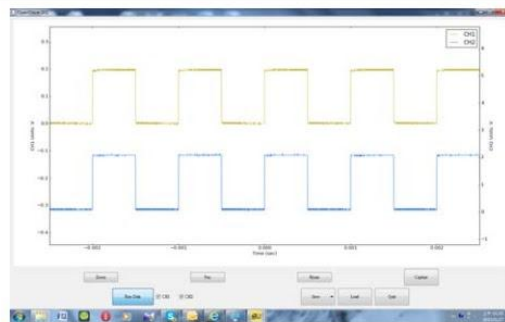
Digital Filter Function

In electric circuit tests, engineers are often troubled by noise interference while measuring signals. The GDS-1000B series oscilloscope provides the digital filter function option, which can be set as high pass, low pass and band pass filter. The filter frequency can be adjusted according to the requirements. The filter parameters of each channel can also be set. The tracking on function can be used to set same filter frequency for all channels.



OpenWave Connection Software

The GDS-1000B series oscilloscope, via the OpenWave connection software developed by GW Instek, can connect with the PC. Users, after installing USB driver under Windows interface, can connect GDS-1000B with the PC through USB cable or LAN and OpenWave software. Waveform interpretation and retrieval can be done from the PC end. Data retrieval and storage can better facilitate users in processing analysis. OpenWave connection software is indeed a very powerful tool for engineers to compile reports or to integrate systems.



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Panel Introduction



1. Hardcopy key

2. Autoset ,Run/Stop ,Single & Default keys

3. Zooming controls

4. Trigger controls

5. Math ,Reference & Bus keys

6. Probe Calibration output

7. USB Host port

8. Menu off key

9. USB Device port

10. Go-NoGo output




11. Calibration output

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Competition

GDS-1202B vs. Rigol DS1202Z-E and Siglent SDS1202X-E Comparison Chart

	GW Instek GDS-1202B	Rigol DS1202Z-E	Siglent SDS1202X-E
Specs			
Bandwidth	200MHz	200MHz	200MHz
Channels	2+EXT	2+EXT	2+EXT
Record Length	10M/Ch	24 Mpts shared	14M shared
Real Time Sample rate	1GSa/s (shared)	1G Sa/s (shared)	1GSa/s (shared)
Display	7" (800*480) TFT LCD	7" (800*480) TFT LCD	7" (800*480) TFT LCD
waveform update rate	50,000 wfms/s	30,000wfms/s (dot display)	100,00 wfms/s
Horizontal range	5ns/div ~ 100s/div	2 ns/div ~50 s/div	1.0ns/div ~ 100s/div
Vertical range	1mV/div ~ 10V/div	1 mV/div ~ 10 V/div	500µV/div - 10V/div
Math function	+, -, *, / , FFT , FFTms , user define math	A+B , A-B , A×B , A÷B , FFT , A&&B , A B , A^B , A , intg , diff , sqrt , lg , ln , exp , abs	FFT, addition, subtraction, multiplication, division, integration, differential, square root
Trigger type	11 kinds Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event- Delay(1~65535 events), Time-Delay(Duration, 4ns~10s) , bus trigger	11 kinds Edge , Runt , window ,Nth edge , delay , Video, Slope, time out , Setup/hold ,Duration and bus trigger	9 kinds Edge, Slope, Pulse Width, Window, Runt, Interval, Time out (Dropout), Pattern ,bus trigger
Serial bus trigger and decode	I2C , UART,CAN ,LIN	UART, I2C, SPI	I2C, SPI, UART, CAN, LIN
Auto measurement function	36	33	38
Max. of add measurement	8	5	5
1M FFT	Yes	NA	Yes
Digital filter	Yes	Yes	NA
Enhance CAL function	Yes	NA	NA
GO/NO-GO Function	Yes	Yes	Yes
Zoom-FFT	Yes	NA	Yes
Data logger	Yes	NA	Yes
USB Host	1 set	1 set	1 set
USB Device	1 set	1 set	1 set
LAN	NA	Yes	Yes
PC software	Yes (Openwave)	Yes (UltraScope)	Yes (Easywave)



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GDS-1202B Specifications

The specifications apply when the GDS-1202B is powered on for at least 30 minutes under +20°C~+30°C.

GDS-1000B Specifications		
GDS-1202B		Channels: 2 + Ext Bandwidth: DC ~ 200MHz (−3dB) Rise Time: 1.75ns Bandwidth Limit: 20MHz
Vertical	Vertical Sensitivity Resolution	8 bit :1mV~10V/div
	Input Coupling	AC, DC, GND
	Input Impedance	1MΩ// 16pF approx.
	DC Gain Accuracy*	±3%
	Polarity	Normal & Invert
	Maximum Input Voltage	300Vrms, CAT I (300Vrms CAT II with GTP-070B- 4/100B-4 10:1 probe)
	Offset Position Range	1mV/div : ±1.25V ; 2mV/div ~ 100mV/div : ±2.5V ; 200mV/div ~ 10V/div : ±125V
	Waveform Signal Process	+, -, ×, ÷, FFT, FFTrms, User Defined Expression ; FFT: 1Mpts; FFT: Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS ; FFT Window Display : Rectangular, Hamming, Handing, or Blackman-Harris
Trigger	Source	CH1, CH2, Line, EXT
	Trigger Mode	Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Sequence
	Trigger Type	Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay(Duration, 4ns~10s)
	Holdoff range	4ns to 10s
	Coupling	AC, DC, LF rej., Hf rej., Noise rej.
	Sensitivity	1div
External Trigger	Range	±15V
	Sensitivity	DC ~ 100MHz Approx. 100mV 100MHz ~ 200MHz Approx. 150mV
	Input Impedance	1MΩ±3%~16pF
Horizontal	Time base Range	5ns/div ~ 100s/div (1-2-5 increments)
	ROLL:	100ms/div ~ 100s/div
	Pre-trigger	10 div maximum



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	Post-trigger	2,000,000 div maximum
	Time base Accuracy	±50 ppm over any ≥ 1 ms time interval
	Real-Time Sampling Rate	1GSa/s max.
	Record Length	Max. 10Mpts
	Acquisition Mode	Normal, Average, Peak Detect, Single
	Peak Detection	2nS (typical)
	Average	selectable from 2 to 256
X-Y Mode	X-Axis Input	Channel 1
	Y-Axis Input	Channel 2
	Phase Shift	±3° at 100kHz
Cursors and Measurement	Cursors	Amplitude, Time, Gating available; Unit: Seconds(s), Hz(1/s), Phase(degree), Ration(%)
	Automatic Measurement	36 sets: Pk-Pk, Max, Min, Amplitude, High, Low, Mean, Cycle Mean, RMS, Cycle RMS, Area, Cycle Area, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Frequency, Period, RiseTime, FallTime, +Width, -Width, Duty Cycle, +Pulses, -Pulses, +Edges, -Edges, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF, Phase
	Cursors measurement	Voltage difference between cursors (ΔV) Time difference between cursors (ΔT)
	Auto counter	6 digits, range from 2Hz minimum to the rated bandwidth
Control Panel Function	Autoset	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo Autoset
	Save Setup	20set
	Save Waveform	24set
Display	TFT LCD Type	7" TFT WVGA color display
	Display Resolution	800 horizontal × 480 vertical pixels (WVGA)
	Interpolation	Sin(x)/x
	Waveform Display	Dots, vectors, variable persistence (16ms~4s), infinite persistence
	Waveform Update Rate	50,000 waveforms per second, maximum
	Display Graticule	8 x 10 divisions
	Display Mode	YT, XY



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Interface	USB Port	USB 2.0 High-speed host port X1, USB High-speed 2.0 device port X1
	Ethernet Port(LAN)	RJ-45 connector, 10/100Mbps with HP Auto-MDIX (Only for the GDS-1054B, GDS-1074B, GDS-1104B.)
	Go-NoGo BNC	5V Max/10mA TTL open collector output
	Kensington Style Lock	Rear-panel security slot connects to standard Kensington-style lock
Miscellaneous	Multi-language menu	Available
	Operation Environment	Temperature: 0°C to 50°C. Relative Humidity ≤80% at 40°C or below; ≤ 45% at 41°C ~ 50°C
	On-line help	Available
	Dimensions	380mmX208mmX127.3mm
	Weight	2.8kg

Please do not hesitate to contact us if you have any queries on the GDS-1202B announcement.

Sincerely yours,

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