#### 200/100/70/50 MHz DIGITAL STORAGE OSCILLOSCOPE



The GDS-1000B Series digital storage oscilloscopes equip with 200/100/70 MHz : 2 Channel models; 100/70/50 MHz : 4 Channel models, that provide entry level users with diversified selections. The maximum real time sampling rate can be up to 1GSa/s. The robust functional performance makes the economical oscilloscope more colorful and allows entry level users to sumptuously enjoy the fun and value brought by test and measurement which is precisely the emerging mission of the test and measurement industry that GW Instek works relentlessly to achieve.

10M memory depth for each channel yields exquisite measurement results and allows each retrieved waveform to successfully reveal the details of signal. Engineers are often baffled by failing to retrieve signal details when measuring basic electric circuit signals. Now, GDS-1000B series oscilloscopes, with 10M memory depth for each channel, are capable to uncover all signal details.

7" 800 x 480 WVGA LCD display and the 256 color gradient display function together allow the GDS-1000B Series to distinctly display waveform details in gradients while measuring fast changing analog signals. Additionally, 50,000wfms/s waveform update rate helps engineers clearly understand the gradients of signal variations and easily identify the problem of transient signal variations. 1 Mpts FFT signal display makes the frequency domain display function more delicate. Engineers can clearly observe the distributed details of frequency domain signals. Smooth and rapid response can even better locate where the problems are originated. Powerful FFT function realizes high efficient spectrum analysis measurement which is indispensable for technology and education arenas.

The GDS-1000B series provides serial bus analysis function with 10M long memory depth. Users can trigger, decode, and analyze frequently used I<sup>2</sup>C, SPI and UART serial bus and CAN/LIN bus, which is often used by automotive communications.

The GDS-1000B Series oscilloscopes provide the zero key function for vertical voltage scale adjustment, horizontal time scale adjustment and trigger level adjustment. When processing complicate waveform adjustment and observation, engineers often require the zero key function to start a new measurement, adjust waveform or reset trigger level. The zero key function can reduce time in turning control knobs that is a great benefit for engineers.

#### **GDS-1000B Series**

#### FEATURES

- 200/100/70 MHz : 2 Channel models ; 100/70/50 MHz : 4 Channel models
- 1GSa/s Maximum Sampling Rate
- 10M Maximum Memory Depth For Each Channel
- 7" 800 x 480 WVGA LCD Display
- 256 Color Gradient Display Function to Strengthen Waveform Performance
- 1Mpts FFT Frequency Domain Signal Display
- I<sup>2</sup>C/SPI/UART/CAN/LIN Serial Bus Trigger and Decoding Functions
- Zero Key Function For Horizontal Time, Vertical Voltage and Triggering



Front



Rear Panel

#### APPLICATIONS

- Educational Market General Purpose Instruction
- Industrial Sector Fundamental R&D Measurement Applications



### **GDS-1000B** Series

SPECIFICATIONS		CD2 14-1-	CDC 1077	CDC 147	CDALLAS	CDC 114	0001000			
VERTICAL		GDS-1054B	GDS-1072B	GDS-1074B	GDS-1102B	GDS-1104B	GDS-1202B			
VERTICAL	Channels Bandwidth	4 DC~50MHz (-3dB)	2 + Ext DC~70MHz (-3dB) 5ns	4 DC~70MHz (-3dB) 5ns	2 + Ext DC~100MHz (-3dB) 3.5ns	4 DC~100MHz (-3dB) 3.5ns	2 + Ext DC~200MHz (-3dB)			
	Rise Time Bandwidth Limit	7ns 20MHz	1.75ns 20MHz							
	Vertical Sensitivity Resolution	$\begin{array}{ c c c c c c c }\hline 20MHz & $								
	Input Coupling Input Impedance DC Gain Accuracy*									
	Polarity Maximum Input Voltage									
	Offset Position Range Waveform Signal Process	<ul> <li>ImV/div: ±1.25V; 2mV/div ~ 100mV/div: ±2.5V; 200mV/div ~ 10V/div: ±125V</li> <li>+, ×, ÷, FFT, FFTrms, User Defined Expression; FFT: 1Mpts; FFT: Spectral magnitude. Set FFT Vertical Scale to</li> <li>Linear RMS or dBV RMS; FFT Window Display: Rectangular, Hamming, Handing, or Blackman-Harris</li> </ul>								
TRIGGER	Source	CH1, CH2, CH3*, CH4*, Line, EXT** ; *four channel models only. ; **two channel models only								
	Trigger Mode Trigger Type	Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Sequence Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay(Duration, 4nS~10S) 4ns to 10s AC, DC, LF rej., Hf rej., Noise rej.								
	Holdoff range Coupling									
	Sensitivity	1 div								
EXTERNAL TRIGGER	Range Sensitivity Input Impedance	±15V DC ~ 100MHz Approx. 100mV ; 100MHz ~ 200MHz Approx. 150mV 1M Ω ±3%~16pF								
HORIZONTAL	Time base Range	1	v (1-2-5 increments	)						
	ROLL Pre-trigger	100ms/div ~ 100s/div 10 div maximum 2,000,000 div maximum								
	Post-trigger									
	Timebase Accuracy Real Time Sample Rate	±50 ppm over any ≥1 ms time interval 1CSa/s max. Max. 10Mpts Normal, Average, Peak Detect, Single 2nS (typical)								
	Record Length Acquisition Mode									
	Peak Detection									
	Average	selectable from 2 t								
X-Y MODE	X-Axis Input Y-Axis Input Phase Shift	Channel 1; Channel 3*(*four channel models only) Channel 2; Channel 4*(*four channel models only) ±3° at 100kHz								
CURSORS AND	Cursors Automatic Measurement				(1/s), Phase(degree)					
MEASUREMENT	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, LRR, LRF, LFR, LFF, Phase Voltage difference between cursors (ΔV) Time ; difference between cursors (ΔT)								
	Cursors Measurement									
	Auto Counter	Voltage difference between cursors ( $\Delta$ V) Time ; difference between cursors ( $\Delta$ T) 6 digits, range from 2Hz minimum to the rated bandwidth								
CONTROL PANEL FUNCTION	Autoset Save Setup	Single-button, auto 20set	omatic setup of all	channels for vertical	l, horizontal and trig	ger systems, with ur	ido Autoset			
	Save Waveform	24set								
DISPLAY	TFT LCD Type Display Resolution	7" TFT WVGA color display 800 horizontal × 480 vertical pixels (WVGA) Sin(x)/x Dots, vectors, variable persistence (16ms~4s), infinite persistence 50,000 waveforms per second, maximum 8 x 10 divisions YT, XY								
	Interpolation Waveform Display									
	Waveform Updaté Rate Display Graticule Display Mode									
INTERFACE	USB Port Ethernet Port(LAN)	USB 2.0 High-speed host port x1, USB High-speed 2.0 device port x1 BL45 connector 10/100Mbrs with HB Auto MDIX (Only for 4 channel models )								
	Go-NoGo BNC Kensington Style Lock	RJ-45 connector, 10/100Mbps with HP Auto-MDIX (Only for 4 channel models.) SV Max/10mA TTL open collector output Rear-panel security slot connects to standard kensington-style lock								
POWER SOURCE	Kensington Style Lock		•	-	er consumption: 30	) Watts				
MISCELLANEOUS	Multi-Language Menu	Available		,,						
	Operation Environment Online Help	Temperature : 0°0 Available	C ~ 50°C. Relative	Humidity ≤80% a	t 40°C or below; $\leq$	45% at 41°C ~ 50°	C			
DIMENSIONS & WEIGHT	380(W) × 208 (H) × 127.3(D)									
The specifications apply when th	e GDS-1000B is powered on for at leas		0°C~+30°C .	Specific	cations subject to chan	ge without notice.	DS-1000BGD2D			
ORDERING INFORM	MATION			PTIONAL ASSESS						
	, 2 channels, Digital Storage			DB-03 Demo Bo L-110 Test lead	oard I, BNC to BNC head	le le				
	, 4 channels, Digital Storage , 2 channels, Digital Storage		GT	L-246 USB cab	le, USB 2.0 A-B type		1			
	4 channels, Digital Storage C			A-426 Rack Mo C-008 Soft carr	unt Kit ying case					
	2 channels, Digital Storage O		G	<b>DP-025</b> 25MHz	High voltage differ					
ACCESSORIES	4 channels, Digital Storage C	schloscope			High voltage differ High voltage differ					
User manual x1, Power						ential probe				
	sive Probe. Suitable for GDS-12 sive Probe. Suitable for GDS-11		So	<b>ftware</b> OpenWa	ave Software					
	ive Probe.Suitable for GDS-1074		S-1054B Dr	iver USB Dri	ver ; LabView Drive	r				
Global Headquarters		U.S.A. Subsidiary								
GOOD WILL INSTRUN No.7-1, Jhongsing Road, Tucheng	Dist., New Taipei City 236, Taiwan		et Montclair, CA 91							
T +886-2-2268-0389 F +886-2 E-mail: marketing@goodwill.c	-2268-0639		5 <b>F</b> +1-909-399-08	19						
		Japan Subsidiary <b>TEXIO TECH</b>	NOLOGY CO	RPORATION.						
China Subsidiary GOOD WILL INSTRUMEN	NT (SUZHOU) CO., LTD.	7F Towa Fudosar	n Shin Yokohama B ku-ku, Yokohama,	ldg., 2-18-13 Shin						
No. 521, Zhujiang Road, Snd, Su	uzhou Jiangsu 215011 China	222-0033 Japan		-	-					
<b>T</b> +86-512-6661-7177 <b>F</b> +86-512	2-6661-7277	T +81-45-620-230 Korea Subsidiary	)5 F +81-45-534-71	81	L	<u>5  IU</u>	5 I EK			
Malaysia Subsidiary			NSTRUMENT KO	DREA CO., LTD.		Simply F				
GOOD WILL INSTRUMEN No. 1-3-18, Elit Avenue, Jalan	Room No.503, Gy	reonginro 775 (Mull v B/D 1Dong), Yeon	ae-Dong 3Ga,							
11950 Bayan Baru, Penang, N T +604-6111122 <b>F</b> +604-61152	Aalaysia	Seoul 150093, Ko			L. L					
		I +82-2-3439-220 India Subsidiary	J г +о∠-∠-3439-220	,						
Europe Subsidiary GOOD WILL INSTRUME	NT EURO B.V.	GW INSTEK IN			22					
De Run 5427A, 5504DG Veldhov	No.2707/B&C, 1st Floor UNNATHI Building, E-Block, Sahakara Nagar, Bengaluru-560 092. India Website Facebook LinkedIr									
T +31(0)40-2557790 F +31(0)40	-2541194		500 <b>F</b> +91-80-6811-							



# **GDS-1000B** Series

200/100/70/50MHz Digital Storage Oscilloscope

#### **FEATURES**

- 200/100/70/50MHz Bandwidth Selections, 2ch or 4ch Input
- 1GSa/s Maximum Sampling Rate
- 10M Maximum Memory Depth For Each Channel
- 7" 800 x 480 WVGA LCD Display
- 256 Color Gradient Display Function to Strengthen Waveform Performance
- 1Mpts FFT Frequency Domain Signal Display
- I<sup>2</sup>C/SPI/UART/CAN/LIN Serial Bus Trigger and Decoding Functions
- Zero Key Function For Horizontal Time, Vertical Voltage and Triggering
- Compact and Innovative Exterior Design

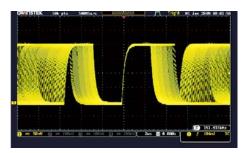


## Realizing Professional Functionalities with an Entry-Level Pricing

The GDS-1000B Series features four bandwidth selections - 200MHz, 100 MHz, 70 MHz, 50MHz and equips with analog signal input terminals by four or two channels. The maximum sampling rate for each single channel is 1GSa/s, and the memory depth is 10Mpts per channel independently. The GDS-1000B Series has a waveform update rate of 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.

Moreover, the innovative exterior design and compact design also bring much convenience to users. Other diversified and charming multi-functional operation demonstrates the concept of complete technology integration.

#### A. WAVEFORM UPDATE RATE UP TO 50,000wfms/s AND VPO DISPLAY TECHNOLOGY



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 and VPO waveform display technology. 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.

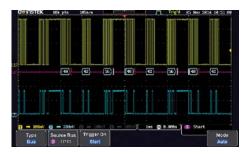
#### 256 COLOR GRADIENT DISPLAY & 10M MEMORY DEPTH PER CHANNEL INDEPENDENTLY



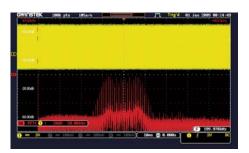
With respect to the waveform display technology, the GDS-1000B Series oscilloscope is capable of displaying 256 color gradients which can delineate the profound gradational fluctuations; as if it can recreate the analog oscilloscope display capability. When a multi-layer video signal is input, the GDS-1000B 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 intents to bring to the general purpose oscilloscope arena.



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 GDS-1000 Series oscilloscopes for lack of sufficient memory depth will appear a distorted waveform 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.

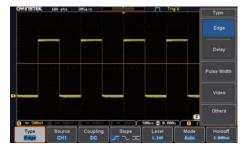


#### D. 1M FFT MATHEMATICAL SAMPLING ANALYSIS MODE



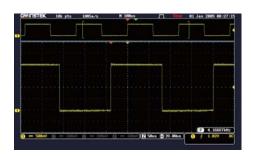
The GDS-1000B Series oscilloscope, under the Fast Fourier Transform mathematical analysis mode, is equipped with the 1M memory depth retrieving mode. For the conventional digital oscilloscopes, the FFT mode often has only 1000 point retrieving length; therefore, they can not show the strength distribution 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 and 5 kHz frequency deviation. Since the GDS-1000 $\bar{\mathrm{B}}$  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.

#### F. DIVERSIFIED TRIGGER FUNCTIONS



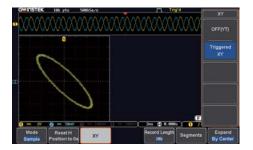
The GDS-1000B series oscilloscope is equipped with diversified trigger functions, including Edge Trigger, Delay Trigger, Pulse Width Trigger, and Video Trigger. Engineers, based upon different waveform measurements, can select different trigger functions to lock waveforms in order to identify the root cause of the complicated circuit designs to save development time and to accomplish tasks. The serial bus technology has been widely applied in the present embedded application design. The IoT devices connecting sensors and the peripheral components are using serial bus such as UART, I<sup>2</sup>C, and SPI. 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 with 10M long memory depth. Users can trigger, decode, and analyze frequently used I<sup>2</sup>C, SPI and UART serial bus and CAN/LIN bus, which is often used by automotive communications.

#### ZOOM IN/PLAY AND PAUSE FUNCTION



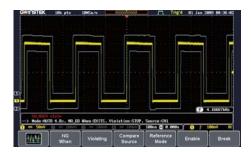
The GDS-1000B series provides engineers with partial waveform zoom in function to observe waveform in great details. The display screen can be split into two windows: the upper window shows waveform data log in a long period of time and the marked vicinity of the waveform needed to be zoomed in; the lower window shows the enlarged partial waveform. The function not only allows engineers to make a comparison but also grasp waveform details in the different timeframe. Additionally, the GDS-1000B series also features the play/pause function. For the long waveform observation, the play/pause function facilitates engineers to rapidly skim through the whole section of DUT's waveforms as well as to swiftly identify waveform's problems.

#### G. X-Y MODE DISPLAY



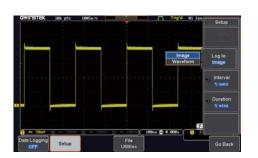
The GDS-1000B series oscilloscope provides the educational market with some powerful measurement functions. Among them, the X-Y mode display is an excellent example. Teachers and students can use X-Y mode display to conduct Lissajou diagram teaching, which allows users to easily understand the relation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

#### H. GO/NOGO FUNCTION



For the industries, the yield rate determination is very important to mass production. The GDS-1000B series oscilloscope provides the Go/NoGo analysis function to accelerate the yield rate analysis. From the right diagram, the Go/NoGo function provides a standard waveform template for examining DUT's waveforms. The function can freely adjust the size of template. A defect message will be shown if the DUT's waveform is abnormal and touches the template. The function is not only very useful measurement tool for production lines but also a very convenient tool for engineers to observe waveforms in a long period of time.

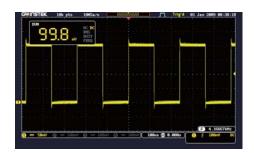
DATA LOG FUNCTION



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.

\* Users need to download this application from GW Instek website

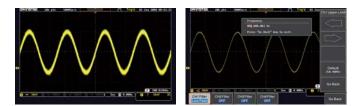
#### DIGITAL VOLTAGE METER FUNCTION



For electric circuit measurement and debugging, R&D engineers require oscilloscopes as well as basic voltage meters. The GDS-1000B series oscilloscope equips with a digital voltage meter with three-digit voltage value and five-digit frequency value. Engineers, by pressing the option key, can select the digital voltage meter function from the menu to measure DC/AC voltage, duty cycle, and frequency. Engineers can not only measure waveforms but also monitor the electric parameters of each component on the circuit board. The function is a very convenient tool.

\* Users need to download this application from GW Instek website

#### 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 or low 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.

\* Users need to download this application from GW Instek website

#### 36 MEASUREMENT PARAMETER SELECTIONS



The GDS-1000B series oscilloscope is equipped with 36 different automatic measurement parameter functions. Users, after obtaining measured waveforms, can select different measurement parameters from Measure key according to different measurement requirements. The GDS-1000B Series shows simultaneously eight sets of different measurement parameters on the bottom of the

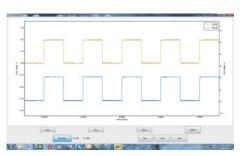


display screen. Users can also select to show all parameters if the preset eight sets are insufficient. Once the selection is made, all 36 measurement parameters will be shown on the center of the display screen. This is a very convenient measurement tool for students writing dissertations or engineers writing reports.

#### PANEL INTRODUCTION



#### M. 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 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.

#### 4 Channel Model

GDS-1104B 100MHz GDS-1074B 70MHz GDS-1054B 50MHz



2 Channel Model

GDS-1202B 200MHz GDS-1102B 100MHz GDS-1072B 70MHz



SPECIFICATIO	NS									
		GDS-1054B	GDS-1072B	GDS-1074B	GDS-1102B	GDS-1104B	GDS-1202B			
VERTICAL	Channels Bandwidth Rise Time Bandwidth Limit	4 DC~50MHz(-3dB) 7ns 20MHz	2 + Ext DC~70MHz(-3dB) 5ns 20MHz	4 DC~70MHz(-3dB) 5ns 20MHz	2 + Ext DC~100MHz(-3dB) 3.5ns 20MHz	4 DC~100MHz(-3dB) 3.5ns 20MHz	2 + Ext DC~200MHz(-3dB) 1.75ns 20MHz			
	Vertical Sensitivity Resolution Input Coupling Input Impedance DC Gain Accuracy <sup>*</sup> Polarity Maximum Input Voltage Offset Position Range Waveform Signal Process	AC, DC, GND           iM Ω // 16pF approx.           ±3%           Normal & Invert           300Vrms, CAT I (300Vrms CAT II with GTP-070B- 4/100B-4, 200B-4 10:1 probe)           ImV/div : ±1.25V ; 2mV/div ~ 100mV/div : ±2.5V ; 200mV/div ~ 10V/div : ±125V								
TRIGGER	Source Trigger Mode Trigger Type Holdoff range Coupling Sensitivity	CH1, CH2, CH3*, CH4*, Line, EXT**; *four channel models only.; **two channel models only Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Sequence Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay (Duration, 4nS~10S) 4ns to 10s AC, DC, LF rej., Hf rej., Noise rej. 1div								
EXTERNAL TRIGGER	Range Sensitivity Input Impedance	±15V DC ~ 100MHz Approx. 100mV ; 100MHz ~ 200MHz Approx. 150mV 1M Ω±3%~16pF								
HORIZONTAL	Time base Range ROLL Pre-trigger Post-trigger Timebase Accuracy Real Time Sample Rate Record Length Acquisition Mode Peak Detection Average	Sns/div ~ 100s/div (1-2-5 increments) 100ms/div ~ 100s/div 10 div maximum 2,000,000 div maximum ±50 ppm over any ≥1 ms time interval 1CSa/s max. Max. 10Mpts Normal, Average, Peak Detect, Single 2nS (typical) selectable from 2 to 256								
X-Y MODE	X-Axis Input Y-Axis Input Phase Shift	Channel 1; Channel 3*(*four channel models only) Channel 2; Channel 4*(*four channel models only) ±3° at 100kHz								
CURSORS AND MEASUREMENT	Cursors Automatic Measurement Cursors Measurement Auto Counter	<ul> <li>Amplitude, Time, Gating available; Unit : Seconds (s), Hz(1/s), Phase(degree), Ration(%)</li> <li>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,</li> <li>-Pulses, +Edges, -Edges, FRR, FRF, FFR, FFF, LRR, LRF, LFF, Phase</li> <li>Voltage difference between cursors (△V) Time ; difference between cursors (△T)</li> <li>6 digits, range from 2Hz minimum to the rated bandwidth</li> </ul>								
CONTROL PANEL FUNCTION	Autoset Save Setup Save Waveform	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo Autoset 20set 24set								
DISPLAY	TFT LCD Type Display Resolution Interpolation Waveform Display Waveform Update Rate Display Graticule Display Mode	7" TFT WVGA color display 800 horizontal × 480 vertical pixels (WVGA) Sin(x)/x Dots, vectors, variable persistence (16ms~4s), infinite persistence 50,000 waveforms per second, maximum 8 x 10 divisions YT, XY								
INTERFACE	USB Port Ethernet Port(LAN) Go-NoGo BNC Kensington Style Lock	USB 2.0 High-speed host port x1, USB High-speed 2.0 device port x1 RJ-45 connector, 10/100Mbps with HP Auto-MDIX (Only for 4 channel models.) SV Max/10mA TTL open collector output Rear-panel security slot connects to standard kensington-style lock								
POWER SOURCE		AC 100V ~ 240V , 50Hz ~ 60Hz , Auto selection , Power consumption: 30 Watts								
MISCELLANEOUS	Multi-Language Menu Operation Environment Online Help	Available Temperature : 0°C ~ 50°C. Relative Humidity ≤ 80% at 40°C or below; ≤ 45% at 41°C ~ 50°C Available								
DIMENSIONS & WEIGHT	380(W) × 208 (H) × 127.3		0	)°C	Specifications subject	to change without notice	DS-1000BGD4BH			
ORDERING IN		ea on for at least 30 mil		OPTIONAL	ASSESSORIES		D3-1000BGD4BH			
GDS-1202B GDS-1104B200MHz, 2 channels, Digital Storage Oscilloscope 100MHz, 4 channels, Digital Storage OscilloscopeGDS-1102B GDS-1074B100MHz, 2 channels, Digital Storage Oscilloscope 70MHz, 4 channels, Digital Storage OscilloscopeGDS-1074B GDS-1072B70MHz, 2 channels, Digital Storage Oscilloscope 50MHz, 2 channels, Digital Storage OscilloscopeGDS-1054B50MHz, 4 channels, Digital Storage Oscilloscope				GDB-03 GTL-110 GTL-246 GRA-426 GSC-008 FREE DOW Software	Demo Board Test lead, BNC to BN USB cable, USB 2.0 Å Rack Adapter Panel Soft carrying case (NLOAD OpenWave Software		)mm			
ACCESSORIES       Software       Open Wave Software         User manual CD x 1, Power cord x 1       Driver       USB Driver ; LabView Driver         GTP-200B-4       200MHz Passive Probe. Suitable for GDS-1202B       Driver       USB Driver ; LabView Driver         GTP-100B-4       100MHz Passive Probe. Suitable for GDS-1104B, GDS-1102B       Driver       USB Driver ; LabView Driver										
Global Headquarters GOOD WILL INST T +886-2-2268-0389 F +	<b>RUMENT CO., LTD.</b> -886-2-2268-0639	INS	A. Subsidiary <b>TEK AMERICA C</b> -909-399-3535 <b>F</b> +1-9							
China Subsidiary <b>GOOD WILL INSTRU</b> T +86-512-6661-7177 F +	JMENT (SUZHOU) CO., -86-512-6661-7277	LTD. TEX	T +1-909-3399-3535       F +1-909-399-0819         Japan Subsidiary       GUISTEK         TEXIO TECHNOLOGY CORPORATION.       Simply Reliable							
Malaysia Subsidiary GOOD WILL INSTRU T +604-6111122 F +604 Europe Subsidiary	JMENT (SEA) SDN. BHE -6115225	<b>GOU</b> T +82	Korea Subsidiary <b>COOD WILL INSTRUMENT KOREA CO., LTD.</b> T +82-2-3439-2205 F +82-2-3439-2207							
Europe Subsidiary         India Subsidiary           GOOD WILL INSTRUMENT EURO B.V.         GW INSTEK INDIA LLP.           T +31(0)40-2557790 F +31(0)40-2541194         T +91-80-6811-0600 F +91-80-6811-0626         Website         Facebook							ebook LinkedIn			