



# GDS-200/300 Series

200/100/70MHz Digital Storage Oscilloscope

## FEATURES

- 200/100/70MHz Bandwidth Selections, Two Input Channels
- 1GSa/s Maximum Sample Rate
- Maximum 5M/1M Memory Depth Per Channel
- 7" 800 x 480 Full Touch Panel Capacitive LCD Multi-Point Control, Landscape and Portrait Display
- Built-In 50,000/5,000 Counts DMM
- True RMS Measurement in DMM Function
- 30,000 Consecutive Waveform Records Logging Function, Replay Measurement Results Any Time
- Temperature Measurement and Logging Function
- Built-In Engineering Calculator, SMD Resistance Coding, Color Coding Info, and Attenuator Calculation Application Software
- Optional Differential Probe to Achieve Isolation Effect

**GW INSTEK**  
Simply Reliable

The brand new portable 7" full touch panel capacitive LCD, featuring multi-point touch panel method which allows engineers to move waveform position, adjust waveform size, and set trigger conditions easily, subverts the traditional handheld instrument. With this unique feature, engineers can retrieve DUT's signals easily under the complex working environment. Landscape or portrait measurement display not only clearly shows waveforms under full screen status but also combines multi-functional measurement environment to achieve unimaginable measurement results.

Built-in, the second to none, the longest 5M sample memory depth helps engineers diagnose waveforms in great details. The long memory depth can record detailed waveform data and help engineers reproduce the original waveforms while engineers are conducting long observation or retrieving detailed transient signals. Any delicate changes of analog waveforms can be clearly presented in front of engineers when they adjust time scale from long to short that leaves no measurement problems unanswered.

Built-in 50,000 counts (GDS-300) or 5,000 counts (GDS-200) DMM helps engineers accurately measure DUT's electric parameters including not only measurements of D.C. voltage, A.C. voltage, D.C. current, A.C. current, resistance and diode polarity, but also temperature measurement and monitoring. The analysis of trend diagrams further completes test and measurement. DMM can simultaneously work with oscilloscope to conduct multi-measurement tasks.

Normally, engineers wish to effectively record intermittent signals while retrieving a series of signals during a long period of time. GDS-300/GDS-200's built-in 30,000 consecutive waveform records logging function not only records 30,000 waveform records in a long period of time but also replays the recorded data that allows engineers to identify intermittent problems occurred during the recorded time. Leave no problems unidentified.

Engineers need to isolate power and solve corresponding grounding issue while conducting circuit debugging. One of the criteria engineers must overcome is to maintain system grounding and isolation safety in the strict test and measurement environment such as no grounding system or no isolation. GDS-300/200 provide optional differential probe to effectively assist engineers in solving isolation and grounding problems that elevates the efficiency and safety of test and measurement.

Engineers often need some calculation tool software to conduct circuit design and debugging analysis during the R&D process. GDS-300/200 oscilloscopes, with the built-in standard engineering calculator, allow engineers to verify parameters during the test and measurement process. While using unknown resistance, engineers can obtain resistance value via color coding calculation software. If any attenuator was designed in the circuit, GDS-300/200 can also provide corresponding attenuator model and attenuation value calculation.

## 200/100/70 MHz Digital Storage Oscilloscope



### GDS-200 Series



### GDS-300 Series



GDS-300/200 Series Rear Panel

### SELECTION GUIDE

MODEL	GDS-307	GDS-310	GDS-320	GDS-207	GDS-210	GDS-220
Bandwidth	70MHz	100MHz	200MHz	70MHz	100MHz	200MHz
Sample Rate	1GSa/s	1GSa/s	1GSa/s	1GSa/s	1GSa/s	1GSa/s
Memory Length	5M pts	5M pts	5M pts	1M pts	1M pts	1M pts
DMM Count	50,000	50,000	50,000	5,000	5,000	5,000
Temperature Measurement	✓	✓	✓	-	-	-

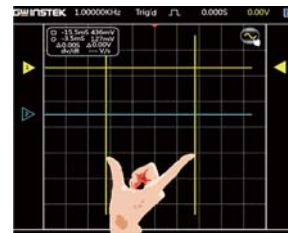
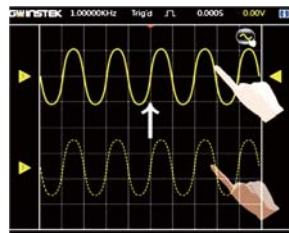
## A. BRIEF ELABORATION



GDS-200/300 Series oscilloscopes, with two analog signal input channels, have standard advanced and economical models which come with 70MHz, 100MHz and 200MHz bandwidth. The maximum sample rate per channel is 1GSa/s and memory depth is 5Mpts. Both series oscilloscopes are equipped with 50,000 counts DMM which can simultaneously measure and monitor A.C. and D.C. voltage and current, and temperature. Trend diagrams in a long period of time can also be drawn that allows engineers to effectively monitor standard electric parameters while measuring basic

circuit signals. Engineers are aware of GW Instek oscilloscopes' thoughtful designs through diversified application software. Advanced DMM function and GO/NOGO template editing facilitate users in conducting advanced diversified measurement functions. Engineering calculator, attenuator calculation analysis, and resistance value calculation analysis help users apply auxiliary functions that demonstrate the concept of powerful and comprehensive technological integration.

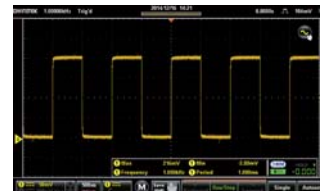
## B. FULL TOUCH PANEL CAPACITIVE LCD



GDS-200/300 series oscilloscopes adopt full touch panel capacitive LCD. In the era of smart phone explosion, GW Instek can also usher users into the full touch panel measurement era. With only one finger, users not only can move waveform up and down but also the trigger line position. Two-point touch panel is also applied. Engineers can use two fingers to

adjust vertical voltage level and to enlarge or narrow time division scale. The brand new touch panel and swift response renew your measurement concept. Additionally, one finger drag menu selection allows users to follow their intuition to locate required measurement functions, and to save and retrieve diagrams and data anytime anywhere.

## C. PORTRAIT/LANDSCAPE DISPLAY



GDS-200/300 series oscilloscopes allow portrait and landscape display. Engineers have different requirements under different environments. When field test and measurement is necessary engineers often need portrait display to conduct measurement due to environment limitation and the emphasis of integrated functions. Waveform measurement and

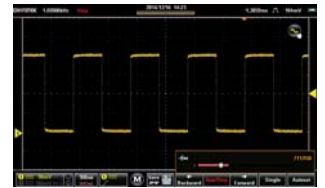
DMM can be simultaneously operated. When indoor test and measurement is required engineers often need stable measurements and large screen which is answered by landscape display. 7" full measurement screen can also be applied as a stable desk-top oscilloscope.

## D. SIMULTANEOUS APPLICATION OF OSCILLOSCOPE AND DMM



Traditional oscilloscopes can not meet users' requirements of conducting integrated system circuit measurement. One extra DMM is often required to work with traditional oscilloscopes to handle enormous test requirements. GDS-200/300 series oscilloscopes integrate the functions of oscilloscope and DMM to conduct simultaneous measurement. In the analysis of system circuit waveforms, GDS-200/300 can also use DMM to measure basic voltage and current of the peripheral components that provides users with very powerful test integration.

## E. 30,000 WAVEFORM RECORDS REPLAY FUNCTION

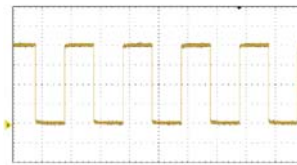


GDS-200/300 series oscilloscopes have built-in 30,000 waveform records replay function. With this function, engineers can monitor circuit in a long period of time. When 30,000 waveform records are completed history records can be replayed repeatedly. Any intermittently appeared abnormal waveforms can be identified by this function which provides users with a very powerful search and debugging weapon.

## F. BRIEFING MATERIAL COMPILATION



Engineers or students often compile briefing material for work or class requirements. The completeness and convenience of briefing often determine users' performance. GDS-200/300 series oscilloscopes provide very strong briefing material compilation function. Before compiling briefing material, users can select different test and background



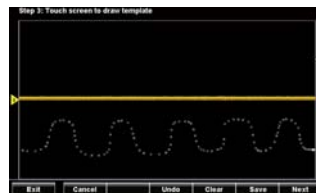
Waveform: 14.141414  
Scale: 1.000000  
Position: 0.000000  
Time: 1.000000  
Auto: 1.000000

conditions such as date, time and cursor. In addition, measurement parameters can also be determined based upon different requirements. This customer-made function not only shows the complete waveforms but also provides peripheral parameters to become the key communication bridge for work and class requirements.

## G. GO/NOGO TEMPLATE EDITING

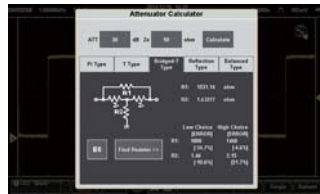


Many component or system manufacturers require GO and NOGO product analysis for quality control or production. GDS-200/300 series oscilloscopes have the same GO/NOGO function as that of GW Instek other oscilloscopes. This function establishes corresponding waveform templates based on waveforms measured to conduct GO or NOGO



results calculation. Additionally, GDS-200/300 have template editing function. Users not only can edit template freely according to test or environment conditions but also set templates with different ceiling and floor boundaries, making GO/NOGO function more diversified and user-friendly.

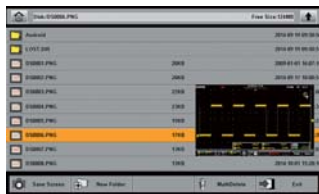
## H. TOOLS ELECTRICAL ENGINEERS OFTEN APPLIED



GDS-200/300 series oscilloscopes have built-in diversified application software to provide users with very thoughtful auxiliary tools. In the tedious circuit design process, engineering calculator software provides mathematical calculation functions from basic to advanced allowing engineers to thoroughly understand circuit response and parameter

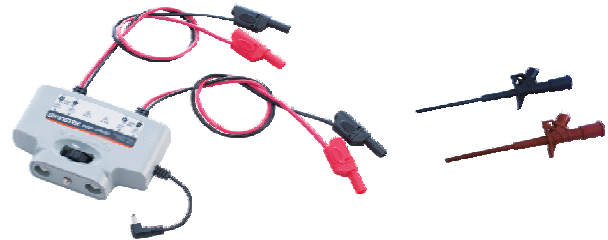
value. Resistance calculation software not only provides accurate resistance value for different surface embedded resistance codes but also color coding resistance value enquiry function. It is a very powerful auxiliary tool for users from students to senior electrical engineers

## I. IMAGE STORAGE AND PREVIEW FUNCTION



GDS-200/300 series oscilloscopes can record screen images and preview images. In many complex test and measurement environments, when engineers can not observe images from his or her computer immediately after images were stored the image preview function allows users to make sure file is correct right away. Pre-observation operation is also very convenient to users.

## J. OPTIONAL DIFFERENTIAL PROBE



In many strict test and measurement environments, system power isolation and grounding problem have become one of the key issues. Bad isolation and grounding will have serious impact on circuit system safety. Optional differential probe of GDS-200/300 series oscilloscopes can achieve equivalent isolation results for measurement system and there is no grounding problem. Under today's economic constraints, using differential probe to achieve isolation result is one of the best choices.

## K. USED AS USB COMPONENT



Once engineers finished waveform measurement and report compilation, GDS-200/300 series oscilloscopes can be used as USB storage component to retrieve and store files. Briefing speaking, users can use USB connecting cable to connect GDS 200/300 with the PC or handheld device to retrieve any required files for follow-up actions. Today, smart phone is ubiquitous, measurement results can be transmitted via smart phone that saves a lot of troubles.

## L. TEMPERATURE MEASUREMENT AND LOGGING FUNCTION



GDS-200/300 series oscilloscopes' built-in temperature measurement and logging function allows users to conduct systematic temperature measurement and logging for electric components and electric systems. This function can collocate with different temperature measurement probes. B,E,J,K,N,R,S,T thermal coupling measurement probes are also supported to conduct Celsius and Fahrenheit scaled temperature measurement. Users can also use trend plot editing to conduct temperature monitoring in a long period of time. It is a simple and convenient measurement tool for quality assurance and test departments.

## SPECIFICATIONS

		GDS-307	GDS-310	GDS-320	GDS-207	GDS-210	GDS-220
VERTICAL	Channels	2 (BNC-Shield)					
	Input Impedance	1MΩ±2%, 16.5pf approx.					
SIGNAL ACQUISITION	Maximum Input	CAT II 300VRMS					
	Input Coupling	AC, DC, GND					
	Bandwidth	DC~70MHz(-3dB)	DC~100MHz(-3dB)	DC~200MHz(-3dB)	DC~70MHz(-3dB)	DC~100MHz(-3dB)	DC~200MHz(-3dB)
	Calculated Rise Time	5ns	3.5ns	1.75ns	5ns	3.5ns	1.75ns
	Sensitivity	2mV/div~10V/div (1-2-5 increments)					
	Accuracy	±(3% x Readout + 0.1 div + 1mV)					
	Bandwidth Limit	20MHz(-3dB)					
	Polarity	Normal, Invert					
	Offset Position Range	2mV/div~50mV/div : ±0.4V; 100mV/div~500mV/div : ±4V; 1V/div~5V/div : ±40V; 10V/div : ±300V					
	Waveform Signal Process	+, -, ×, ÷, FFT, FFTrms					
TRIGGER	Realtime Sample Rate	1GSa/s					
	Memory Depth	5Mpoints per ch			1Mpoints per ch		
	Acquisition Mode	Average : 2~256 waveforms; Peak detect : 10ns; sin(x)/x or ET					
HORIZONTAL	Replay Wfms.	30,000 wfms.					
	Source	Ch1 or Ch2					
	Trigger mode	Auto, Normal, Single, Force					
	Trigger type	Edge, Pulse Width, Video, Alternate					
	Trigger Holdoff	10ns ~ 10s					
CURSOR AND MEASUREMENT	Coupling	AC, DC, LFR, HFR, NR					
	Sensitivity	DC~25MHz : approx. 0.5div or 5mV; 25MHz~ 70/100/200MHz : approx. 1.5div or 15mV					
	Range	5ns~100s/Div (1-2-5 increments)					
	Roll	100ms/div ~ 100s/div					
XY MODE	Pre-trigger	10 div max.					
	Post-trigger	1,000 div max(depend on time base)					
TEMPERATURE MEASUREMENT	Accuracy	±20ppm over any > 1ms time interval					
	Phase Shift	±3° at 100KHz					
	Cursors	Voltage difference between cursors(ΔV), Time difference between cursors(ΔT), frequency measure(1/ΔT)					
MISCELLANEOUS	Auto-measurement	36 sets.					
	Auto-counter Autoset	6 digits. Range: 2Hz to rated bandwidth					
BATTERY	Available	Available			Non-Available		
	Multi-Language Menu	Available					
	On-line Help	Available					
PROBE COMPENSATION	Time and Clock	Available					
	Battery power	Li-polymer 6000mAh, 7.4V (Built-in)					
	Charge time	5.0 hour (75%)					
INTERFACE	Operation time	4 hour, depending on operating condition					
	USB	USB Device (Isolation)					
DISPLAY	Internal Flash Disk	120MB					
	Type	7 inch					
	Display Resolution	480 x 800 pixels					
	Display Direction	Landscape & Portrait					
DMM	Backlight Control	Manual adjustable, ECO mode					
	Touch Panel	Capacitive					
POWER ADAPTOR	Digit Level	50,000 counts			5,000 counts		
	DC Voltage*	CAT II 600VRMS, CAT III 300VRMS					
	Range	50mV, 500mV, 5V, 50V, 500V, 1000V 6 ranges					
	Accuracy	*Input protection 10V only on mV ranges. GDS-320/310/307: 50mV, 500mV, 5V, 50V, 500V: ±(0.05%+0.1%); 1000V: ±(0.1%+0.1%) GDS-220/210/207: 50mV, 500mV, 5V, 50V, 500V: ±(0.1%+0.1%); 1000V: ±(0.1%+0.1%)					
	Input Impedance	10MΩ					
	DC Current	50mA, 500mA, 10A 3 ranges					
	Range	GDS-320/310/307: 50mA, 500mA: ±(0.1%+0.1%), 10A: ±(0.5%+0.1%) GDS-220/210/207: 50mA, 500mA: ±(0.5%+0.1%), 10A: ±(0.5%+0.5%)					
	Accuracy	50mV, 500mV, 5V, 50V, 700V 5 ranges					
	AC Voltage*	*Input protection 10V only on mV ranges. 50mV, 500mV, 5V, 50V, 700V: ±(1.5%+1.5%) at 50Hz~1kHz					
	AC Current	50mA, 500mA, 10A 3 ranges					
OPTION	Range	50mA, 500mA, ±(1.5%+0.1%) at 50Hz~1kHz; 10A: ±(3%+0.5%) at 50Hz~1kHz					
	Accuracy	*Measure range:>10mA 500Ω, 5KΩ, 50KΩ, 500KΩ, 5MΩ 5 ranges					
	RESISTANCE*	500Ω, 5KΩ, 50KΩ, 500KΩ ±(0.3%+0.01%); 5MΩ±(0.5%+0.1%) *Measure range:50Ω~5MΩ					
	Diode Test	Maximum forward voltage 1.5V, Open voltage 2.8V					
	Temperature (thermocouple)	-50°C ~ +1000°C					
	Resolution	0.1°C					
	Thermocouple	B, E, J, K, N, R, S, T *Specifications do not include probe accuracy. Temperature specifications only apply to the GDS-320/310/307					
	Continuity Beep	< 15 Ω					
	Functions	Auto Range, Max, Min, Hold, Trend plot *Accuracy:±(% of Reading + % of Range).					
	DIMENSIONS & WEIGHT	Line Voltage	AC 100V~240V, 48~63Hz, Power Consumption 40W; DC Output : 12V/3A, Double Shield				
Differential Probe		Dual-channel, 40MHz, CAT II 600V					
		240(W) x 136(H) x 60(D) mm; Approx. 1.5 Kg					

Specifications subject to change without notice. DS300200GD3BH

ORDERING INFORMATION	
GDS-320	200MHz, 2 Channels, Digital Oscilloscope
GDS-310	100MHz, 2 Channels, Digital Oscilloscope
GDS-307	70MHz, 2 Channels, Digital Oscilloscope
GDS-220	200MHz, 2 Channels, Digital Oscilloscope
GDS-210	100MHz, 2 Channels, Digital Oscilloscope
GDS-207	70MHz, 2 Channels, Digital Oscilloscope

ASSESSORIES	
User manual CD x 1	GSC-010 Soft Carrying Case
GTP-150B-2 150MHz Probe, Suitable for GDS-307/207, GDS-310/210	GSC-011 Soft Carrying Bag
GTP-250B-2 250MHz Probe, Suitable for GDS-320/220	GAP-001 AC-DC Adaptor
GTL-207A Multimeter Test Lead x 1	GWS-001 Wrist Strap
OPTIONAL ASSESSORIES	
GDP-040D 40MHz Dual-Channel Differential Probe, Suitable for GDS-300/200	CTL-131 Test Clip, Suitable for GDP-040D
GTL-253 USB Cable, USB 2.0, A-mini B Type, 1400mm	GCL-001 Vertical Calibration Cable
GTL-205 Temperature probe adaptor with thermocouple (K type)	GPF-700 Protective Films for 7" Touch Screen
FREE DOWNLOAD	
OpenWave 200	Software

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