

## 350MHz/250MHz/150MHz DIGITAL STORAGE OSCILLOSCOPE



The GDS-3000 Series digital storage oscilloscope is a full-featured and powerful tool that allows you to tackle complex measurement issues with ease.

The GDS-3000 Series, carrying a maximum bandwidth of 350MHz, is equipped with a real-time sampling rate up to 5GSa/s and an equivalent-time sampling rate of 100GSa/s. The large 8-inch SVGA TFT LCD screen, combined with the advanced digital signal processing technology – VPO, provides meticulous detail and clarity for the displayed waveforms. The GDS-3000 Series gives you confidence not to miss any part of the test signal in the product verification and debugging stages and allows you to speed up your task without hesitation.

#### Rich Features

With widespread applications of embedded system using serial bus communications, resolving unexpected issues, such as propagation delay and bus contention, is often a challenge to design and testing engineers. The GDS-3000 Series provides (optional) design and testing engineers with powerful tools for the communication analysis and debugging of the most popular serial interface projects including I<sup>2</sup>C, SPI and UART.

To fulfill the increasing power measurement demands, as a green energy trend, GDS-3000 provides an embedded power-measurement software (optional), which includes measurements of Power Quality, Harmonics, Ripple and Inrush Current, meeting requirements of most power measurement standards.

#### Convenient platform

With 5GSa/s sampling and Visual Persistence Oscilloscope (VPO) technology, GDS-3000 displays waveforms truthfully and captures less-frequently-appeared signals, like glitches or runts, simultaneously without missing any spot of waveform information. A unique Split-screen feature allows each input channel to be operated independently with respective setting and waveform display. This gives users flexibility to use GDS-3000 Series as a multi-scope-in-one DSO.

To alleviate the burden of manual operation and to reduce human error, additional features such as auto range are used to automatically adjust the horizontal and vertical scale of a displayed signal so that waveforms are displayed with the best possible viewing ratio.

The I/O Interfaces give you a good range of choices and convenience. In the front panel, a USB host port is used for easy data access. And in the rear panel, another USB port can be used for remote control or for screen printout directly from PictBridge compatible printers. In addition, RS-232 and LAN interfaces provide the flexibility supporting broad range of applications. The SVGA video output port allows you to display the screen on an external projector or monitor for information sharing and discussion.

#### Unique Signal Processing -VPO

The GDS-3000 VPO (Visual Persistence Oscilloscope) technology adopts a very unique signal-processing design. To significantly increase the data processing speed and the waveform capture rate, GDS-3000 uses FPGA platform to replace conventional serial microprocessor architecture. This unique technology allows the GDS-3000 Series to show waveforms in a fashion like that of an analog oscilloscope. The VPO three dimension waveform display, containing the information of amplitude, time and intensity, provides more useful signal contents for the analysis of rapidly-changed events, such as video, jitter and infrequent signals.

## GDS-3000 Series

### FEATURES

- 350/250/150MHz Bandwidth,
- Dual Sampling Modes: 5GSa/s Real-Time Sampling Rate and 100GSa/s Equivalent Time Sampling Rate
- 25k points Memory for each input channel
- VPO (Visual Persistence Oscilloscope) Technology to Display Less-Frequently-Appeared Signals
- 8" 800 x 600 High Resolution TFT LCD Display
- Unique Split Screen System with Independent Setting for Each Signal Channel
- Three Input Impedance Selection: 50Ω/75Ω/1MΩ
- Optional Power Measurement Software for Power Supply Measurement and Analysis
- Optional Serial BUS Triggering, Decoding Software Supporting I<sup>2</sup>C, SPI and UART



Front



Rear Panel

### APPLICATIONS

- Industrial and Educational R&D Labs
- Product Testing and Quality Assurance
- Power Supply and Serial BUS Design
- System Integration & Debugging
- Maintenance & Repair Service

## SPECIFICATIONS

SPECIFICATIONS						
<b>VERTICAL</b>	Channels Bandwidth Rise Time Vertical Resolution Vertical Resolution(1MΩ) Vertical Resolution(50/75Ω) Input Coupling Input Impedance DC Gain Accuracy Polarity Maximum Input Voltage(1MΩ) Maximum Input Voltage(50/75Ω) Offset Position Range Bandwidth Limit Waveform Signal Process	2Ch+EXT DC-150MHz(-3dB) 2.3ns	4Ch+EXT DC-150MHz(-3dB) 2.3ns	2Ch+EXT DC-250MHz(-3dB) 1.4ns	4Ch+EXT DC-250MHz(-3dB) 1.4ns	2Ch+EXT DC-350MHz(-3dB) 1ns
<b>TRIGGER</b>	Source Trigger Mode Trigger Type Trigger Holdoff Range Coupling Sensitivity	CH1, CH2, Line , EXT Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Edge, Pulse Width, Video, Runt, Rise & Fall, Alternate, Event-Delay(1~65,535 events), Time-Delay(10ns~10s) (for 4-channel models only), I <sup>2</sup> C, SPI, UART(optional) 10ns ~ 10s AC, DC, LF rej. , Hf rej. , Noise rej. DC-30MHz Approx. 0.5div or 5mV;30MHz~150MHz Approx. 1.5div or 15mV;150MHz~350MHz Approx. 2div or 20mV				
<b>EXT TRIGGER</b>	Range Sensitivity Input Impedance	±15V DC ~ 30MHz Approx. 50mV;30MHz ~ 150MHz Approx. 100mV 150MHz ~ 250MHz Approx. 150mV;250MHz ~ 350MHz Approx. 150mV 1MΩ±3%, ~16pF				
<b>HORIZONTAL</b>	Range Pre-trigger Post-trigger Accuracy	1ns/div ~ 50s/div (1-2-5 increments); ROLL : 100ms/div ~ 100s/div 10 div maximum 1,000 div ±20 ppm over any ≥ 1 ms time interval				
<b>X-Y MODE</b>	X-Axis Input/Y-Axis Input Phase Shift	Channel 1; Channel 3/Channel 2; Channel 4 ±3° at 100kHz				
<b>SIGNAL ACQUISITION</b>	Real Time Sample Rate ET Sample Rate Record Length Acquisition Mode Peak Detection	2.5GSa/s 5GSa/s 2.5GSa/s 5GSa/s 5GSa/s 5GSa/s 100GSa/s maximum for all models 25k points Normal, Average, Peak Detect, High Resolution, Single 2ns (Max.) Normal: Acquire sampled values ; Average: From 2 ~ 256 waveforms included in average ; Peak Detect: Captures glitches as narrow as 2 ns at all sweep speeds ; Hi Res: Real-time boxcar averaging reduces random noise and increases vertical resolution.				
<b>CURSORS AND MEASUREMENT</b>	Cursors Automatic Measurement Cursors measurement Auto counter	Amplitude, Time, Gating available 28 sets: Vpp , Vavg , Vrms , Vhi , Vlo , Vmax , Vmin , Rise Preshoot/ Overshoot , Fall Preshoot/Overshoot, Freq , Period , Rise Time , Fall Time , Positive Width , Negative Width , Duty Cycle, Phase, and eight different delay measurements (FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF) Voltage difference between cursors (△V) Time difference between cursors (△T) 6 digits, range from 2Hz minimum to the rated bandwidth				
<b>POWER MEASUREMENTS (OPTION)</b>	Power Quality Measurements Harmonics Ripple Measurements In-rush current	VRMS, VCrest Factor, Frequency, IRMS, ICrest Factor, TruePower, Apparent Power, Reactive Power, Power Factor, Phase Angle. Freq, Mag, Mag rms, Phase, THD-F, THD-R, RMS V ripple ,I ripple First peak, second peak				
<b>CONTROL PANEL FUNCTION</b>	Autoset Auto-Range Save Setup Save Waveform	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo autoset Allow users to quickly move from test point to test point without having to reset the oscilloscope for each test point 20set 24set				
<b>DISPLAY SYSTEM</b>	TFT LCD Type Display Resolution Interpolation Waveform Display Display Graticule Display Brightness	8" TFT LCD SVGA color display(LED Back-light) 800 horizontal x 600 vertical pixels (SVGA) Sin(x)/x & Equivalent Time Sampling Dots, vectors, variable persistence, infinite persistence 8 x 10 divisions Adjustable				
<b>INTERFACE</b>	RS-232C USB Port Ethernet Port SVGA Video Port GPIB Go/NoGo BNC Internal Flash Disk Kensington Style Lock Line Output	DB-9 male connector 2 sets USB 2.0 High-speed host port ;1 set USB High-speed 2.0 device port RJ-45 connector, 10/100Mbps DB-15 female connector, monitor output for display on SVGA monitors USB-to-GPIB converter (Option) 5V Max/10mA TTL Open collector output 64MB Rear-panel security slot connects to standard Kensington-style lock 3.5mm stereo jack for Go/NoGo audio alarm				
<b>POWER SOURCE</b>	Line Voltage Range	AC 100V ~ 240V, 48Hz ~ 63Hz, Auto selection				
<b>MISCELLANEOUS</b>	Multi-Language Menu On-Line Help Time clock	Available Available Time and Data, Provide the Data/Time for saved data				
<b>DIMENSIONS &amp; WEIGHT</b>	400(W) X 200(H) X 130(D)mm, Approx. 4 kg					

Specifications subject to change without notice.

DS-3000GD1DH

## ORDERING INFORMATION

<b>GDS-3352</b>	350MHz, 2-Channel, Visual Persistence DSO
<b>GDS-3354</b>	350MHz, 4-Channel, Visual Persistence DSO
<b>GDS-3252</b>	250MHz, 2-Channel, Visual Persistence DSO
<b>GDS-3254</b>	250MHz, 4-Channel, Visual Persistence DSO
<b>GDS-3152</b>	150MHz, 2-Channel, Visual Persistence DSO
<b>GDS-3154</b>	150MHz, 4-Channel, Visual Persistence DSO

## ACCESSORIES

User manual x 1 ,Power cord x 1  
GTP-151R:150MHz(10:1/1:1) Switchable Passive Probe for GDS-3152/3154(one per channel)  
GTP-251R:250 MHz(10:1/1:1) Switchable Passive Probe for GDS-3252/3254(one per channel)  
GTP-351R:350MHz(10:1/1:1) Switchable Passive Probe for GDS-3252/3254(one per channel)

## OPTION

DS3-PWR Power analysis software: Power quality/Harmonic/Ripple/In-rush current measurements  
DS3-SBD Series Bus analysis software: I<sup>2</sup>C/SPI/UART/RS-232/422/485(for 4-channel models only)  
Opt.01 GPIB to USB Converter

## OPTIONAL ACCESSORIES

GDP-025 25MHz high voltage differential probe  
GDP-050 50MHz high voltage differential probe  
GDP-100 100MHz high voltage differential probe  
GCP-530 50MHz/30A Current probe  
GCP-1030 100MHz/30A Current probe  
GCP-206P Power supply for current probe (2 input channel)  
GCP-425P Power supply for current probe (4 input channel)

## FREE DOWNLOAD

PC Software FreeWave software Driver USB driver ; LabView Driver

# TRANSCAT<sup>®</sup>

Visit us at [Transcat.com](http://Transcat.com)!

35 Vantage Point Drive Rochester, NY 14624  
Call 1.800.800.5001

**GW INSTEK**

Made to Measure Since 1975

 Simply Reliable

Our lowest TCO helps you control costs with reliable products and services.