

350MHz/250MHz/150MHz DIGITAL STORAGE OSCILLOSCOPE




Visual Persistence 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 I²C, 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 rapid-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-Appared 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 I²C, 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

GDS-3000 Series



Made to Measure Since 1975

SPECIFICATIONS

		GDS-3152	GDS-3154	GDS-3252	GDS-3254	GDS-3352	GDS-3354	
VERTICAL	Channels	2Ch+EXT	4Ch+EXT	2Ch+EXT	4Ch+EXT	2Ch+EXT	4Ch+EXT	
	Bandwidth	DC~150MHz(-3dB)	DC~150MHz(-3dB)	DC~250MHz(-3dB)	DC~250MHz(-3dB)	DC~350MHz(-3dB)	DC~350MHz(-3dB)	
VERTICAL	Rise Time	2.3ns	2.3ns	1.4ns	1.4ns	1ns	1ns	
	Vertical Resolution	8 bits						
	Vertical Resolution(1M Ω)	2mV~5V/div						
	Vertical Resolution(50/75 Ω)	2mV~1V/div						
	Input Coupling	AC, DC, GND						
	Input Impedance	1M Ω // 16pF						
	DC Gain Accuracy	$\pm(3\% \times Readout + 0.1div + 1mV)$						
	Polarity	Normal, Invert						
	Maximum Input Voltage(1M Ω)	300V (DC+AC Peak), CAT I						
	Maximum Input Voltage(50/75 Ω)	5 Vrms max, CAT I						
	Offset Position Range	2mV/div ~ 100mV/div : $\pm 0.5V$; 200mV/div ~ 5V/div : $\pm 25V$						
	Bandwidth Limit	20MHz/100MHz/200MHz (-3dB)						
	Waveform Signal Process	Add, subtract, multiply, and divide waveforms, FFT, FFTrms; FFT : Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS, and FFT Window to Rectangular, Hamming, Hanning, or Blackman-Harris.						
	TRIGGER	Source	CH1, CH2, Line, EXT					
		Trigger Mode	Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Edge, Pulse Width, Video, Runt, Rise & Fall, Alternate,					
Trigger Type		Event-Delay(1~65,535 events), Time-Delay(10ns~10s) (for 4-channel models only), I ² C, SPI, UART (optional)						
Trigger Holdoff Range		10ns ~ 10s						
Coupling		AC, DC, LF rej., Hf rej., Noise rej.						
EXT TRIGGER	Sensitivity	DC~30MHz Approx. 0.5div or 5mV; 30MHz~150MHz Approx. 1.5div or 15mV; 150MHz~350MHz Approx. 2div or 20mV						
	Input Impedance	$\pm 15V$ DC ~ 30MHz Approx. 50mV; 30MHz ~ 150MHz Approx. 100mV 150MHz ~ 250MHz Approx. 150mV; 250MHz ~ 350MHz Approx. 150mV 1M Ω $\pm 3\%$, ~16pF						
HORIZONTAL	Range	1ns/div ~ 50s/div (1-2-5 increments); ROLL : 100ms/div ~ 100s/div						
	Pre-trigger	10 div maximum						
	Post-trigger Accuracy	1,000 div ± 20 ppm over any ≥ 1 ms time interval						
X-Y MODE	X-Axis Input/Y-Axis Input	Channel 1; Channel 3/Channel 2; Channel 4						
	Phase Shift	$\pm 3^\circ$ at 100kHz						
SIGNAL ACQUISITION	Real Time Sample Rate	2.5GSa/s	5GSa/s	2.5GSa/s	5GSa/s	5GSa/s	5GSa/s	
	ET Sample Rate	100GSa/s maximum for all models						
	Record Length	25k points						
	Acquisition Mode	Normal, Average, Peak Detect, High Resolution, Single						
	Peak Detection	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.						
CURSORS AND MEASUREMENT	Cursors	Amplitude, Time, Gating available						
	Automatic Measurement	28 sets: Vpp, Vamp, 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, LFF)						
POWER MEASUREMENTS (OPTION)	Power Quality Measurements	VRMS, VCrest Factor, Frequency, IRMS, ICrest Factor, TruePower, Apparent Power, Reactive Power, Power Factor, Phase Angle.						
	Harmonics	Freq, Mag, Mag rms, Phase, THD-F, THD-R, RMS						
CONTROL PANEL FUNCTION	Ripple Measurements	V ripple, I ripple						
	In-rush current	First peak, second peak						
DISPLAY SYSTEM	Autoset	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo autoset						
	Auto-Range	Allow users to quickly move from test point to test point without having to reset the oscilloscope for each test point						
INTERFACE	Save Setup	20set						
	Save Waveform	24set						
	TFT LCD Type	8" TFT LCD SVGA color display(LED Back-light)						
	Display Resolution	800 horizontal x 600 vertical pixels (SVGA)						
	Interpolation	Sin(x)/x & Equivalent Time Sampling						
POWER SOURCE	Waveform Display	Dots, vectors, variable persistence, infinite persistence						
	Display Graticul	8 x 10 divisions						
MISCELLANEOUS	Display Brightness	Adjustable						
	Line Voltage Range	AC 100V ~ 240V, 48Hz ~ 63Hz, Auto selection						
DIMENSIONS & WEIGHT	Multi-Language Menu	Available						
	On-Line Help	Available						
DIMENSIONS & WEIGHT	Time clock	Time and Date, Provide the Data/Time for saved data						
		400(W) X 200(H) X 130(D)mm, Approx. 4 kg						

Specifications subject to change without notice.

DS-3000GD1DH

ORDERING INFORMATION

GDS-3352	350MHz, 2-Channel, Visual Persistence DSO
GDS-3354	350MHz, 4-Channel, Visual Persistence DSO
GDS-3252	250MHz, 2-Channel, Visual Persistence DSO
GDS-3254	250MHz, 4-Channel, Visual Persistence DSO
GDS-3152	150MHz, 2-Channel, Visual Persistence DSO
GDS-3154	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:250MHz(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 ² C/SPI/UART/RS-232/422/485(for 4-channel models only)
Opt.01	GPIO 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
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GW INSTEK

Made to Measure Since 1975

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