



VPO
Visual Persistence Oscilloscope

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 I²C, SPI and UART



Front



Rear Panel

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.

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

		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(1MΩ)	2mV~5V/div					
	Vertical Resolution(50/75Ω)	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(1MΩ)	300V (DC+AC Peak), CAT I					
	Maximum Input Voltage(50/75Ω)	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 Sensitivity		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					
EXT TRIGGER	Range	$\pm 15V$					
	Sensitivity	DC ~ 30MHz Approx. 50mV; 30MHz ~ 150MHz Approx. 100mV 150MHz ~ 250MHz Approx. 150mV; 250MHz ~ 350MHz Approx. 150mV					
HORIZONTAL	Input Impedance	1M Ω $\pm 3\%$, ~16pF					
	Range	1ns/div ~ 50s/div (1-2-5 increments); ROLL : 100ms/div ~ 100s/div					
X-Y MODE	Pre-trigger Accuracy	10 div maximum					
	Post-trigger Accuracy	1,000 div ± 20 ppm over any ≥ 1 ms time interval					
SIGNAL ACQUISITION	X-Axis Input/Y-Axis Input Phase Shift	Channel 1; Channel 3/Channel 2; Channel 4 $\pm 3^\circ$ at 100kHz					
	Real Time Sample Rate	2.5GSa/s	5GSa/s	2.5GSa/s	5GSa/s	5GSa/s	5GSa/s
CURSORS AND MEASUREMENT	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.					
	Automatic Measurement	Amplitude, Time, Gating available 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)	Cursors measurement Auto counter	Voltage difference between cursors (ΔV) Time difference between cursors (ΔT) 6 digits, range from 2Hz minimum to the rated bandwidth					
	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					
CONTROL PANEL FUNCTION	Autoset	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo autoset					
	Auto-Range Save Setup Save Waveform	Allow users to quickly move from test point to test point without having to reset the oscilloscope for each test point 20set 24set					
DISPLAY SYSTEM	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					
	Waveform Display	Dots, vectors, variable persistence, infinite persistence 8 x 10 divisions Adjustable					
INTERFACE	Display Graticul	Adjustable					
	Display Brightness	Adjustable					
	RS-232C	DB-9 male connector					
	USB Port	2 sets USB 2.0 High-speed host port; 1 set USB High-speed 2.0 device port					
	Ethernet Port	RJ-45 connector, 10/100Mbps					
	SVGA Video Port	DB-15 female connector, monitor output for display on SVGA monitors					
	CPIB	USB-to-GPIB converter (Option)					
POWER SOURCE	Go/NoGo BNC	5V Max/10mA TTL Open collector output					
	Internal Flash Disk	64MB					
	Kensington Style Lock	Rear-panel security slot connects to standard Kensington-style lock					
	Line Output	3.5mm stereo jack for Go/NoGo audio alarm					
	Line Voltage Range	AC 100V ~ 240V, 48Hz ~ 63Hz, Auto selection					
MISCELLANEOUS	Multi-Language Menu	Available					
	On-Line Help	Available					
DIMENSIONS & WEIGHT	Time clock	Time and Data, 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: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 ² 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
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Global Headquarters

GOOD WILL INSTRUMENT CO., LTD.

No. 7-1, Jhongsing Road, Tucheng City, Taipei County 236, Taiwan
T +886-2-2268-0389 F +886-2-2268-0639
E-mail: marketing@goodwill.com.tw

China Subsidiary

GOOD WILL INSTRUMENT (SUZHOU) CO., LTD.

NO. 69, Lushan Road, Snd, Suzhou Jiangsu 215011 China
T +86-512-6661-7177 F +86-512-6661-7277
E-mail: marketing@instek.com.cn

Malaysia Subsidiary

GOOD WILL INSTRUMENT (M) SDN. BHD.

27, Persiaran Mahsuri 1/1, Sunway Teras,
11900 Bayan Lepas, Penang, Malaysia
T +604-6309988 F +604-6309989
E-mail: sales@goodwill.com.my

U.S.A. Subsidiary

INSTEK AMERICA CORP.

3661 Walnut Avenue Chino, CA 91710, U.S.A.
T +1-909-5918358 F +1-909-5912280
E-mail: sales@instekamerica.com

Japan Subsidiary

INSTEK JAPAN CORPORATION

4F, Prosper Bldg, 1-3-3 Iwamoto-Cho Chiyoda-Ku,
Tokyo 101-0032 Japan
T +81-3-5823-5656 F +81-3-5823-5655
E-mail: info@instek.co.jp

Korea Subsidiary

GOOD WILL INSTRUMENT KOREA CO., LTD.

Room No.805, Ace Hightech-City B/D 1Dong,
Mullaee-Dong 3Ga 55-20, Yeongdeungpo-Gu, Seoul, Korea
T +82-2-3439-2205 F +82-2-3439-2207
E-mail: gwinstek@gwinstek.co.kr

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