

GDS-2000 Series DSO New Product Announcement

Good Will Instrument is announcing to the global market its new GDS-2000 series Digital Storage Oscilloscopes, which create a new benchmark of price/performance value for the 1GS/s sampling DSO in the field. The GDS-2000 series, including bandwidths of 200MHz, 100MHz and 60MHz and inputs of 2 and 4 channels, make up a family with 6 members in total. The 5.6" TFT color LCD greatly enhances the GDS-2000 display performance letting you see the waveform details clearly from a broad range of view-angle. The combination of 1GS/s sampling rate (25GS/s for ET sampling) and 25k points record length of GDS-2000 provides the highest value platform among all equivalent products available in the market today. All the advanced features, including **high sampling, long record length, TFT color display, 4 channel inputs and battery power operation**, extend the GDS-2000 application range into **industrial market**.



Two **USB host ports**, on the front and the rear of the oscilloscope, significantly enhance the data storage capability of the product. The large amount of data, including screenshot, waveform and panel setup could be easily stored into a popular USB flash drive. The color printout of screen image with grayscale could be done via USB connection to a color printer. A **USB device port** on the rear of the product transfers the screen image and waveform raw data to PC and also allows PC to remote control GDS-2000. Besides USB, RS-232 interface (standard) and GPIB interface (optional) are also available with GDS-2000 series.



USB Host/ Device Supported

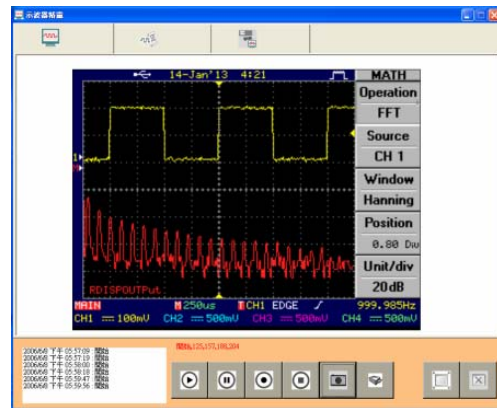


Battery power operation

The battery power operation (optional) of GDS-2000 extends its market coverage to the field application areas where AC power is not available. After full charge, the two light-weight battery packs keep GDS-2000 running under normal operation for over 3 hours. The built-in battery charger automatically recharges the battery whenever the AC power is connected to the oscilloscope.

The 27 Auto Measurement functions, FFT measurement, Advanced Triggering, 12 Division Horizontal Display, Time Clock, Frequency Counter, GO-No Go, Multi-Language Screen Menu, On-Line Help, and Setup Sequence are all standard features of GDS-2000. A total of 24 waveforms could be saved into memory for later recall and display, and 4 saved reference waveforms together with 4 live waveforms could be shown on the screen at the same time for comparison. A snapshot of all time & voltage related Auto Measurement readings of an input signal could be shown on the screen simultaneously.

A PC Software supporting GDS-2000 is available to all customers for free, downloadable from GW Website. This software enables the full screen image transfer from GDS-2000 to PC via USB port in a fast-updating manner, so the user is able to see a nearly-real-time display on the PC screen. The screen image (.bmp or .jpg) and waveform raw data (.csv) could be saved into PC for further applications. The continuous waveform images (.avi) in a time period could be recorded for later playback. This video recorder function facilitates the repetitive observation of a saved waveform with continuous variation in a certain period of time.



GDS-2000 Series PC Software

The unmatched performance and unparalleled value of GDS-2000 come along with a strong price competency. The 1GS/s sampling, the 2CH and 4CH selection, the TFT color display, the USB mass storage and programmability, the standard features of RS-232 and USB interface, and the battery power operation (optional) all together make GDS-2000 series a new standard for the main stream DSO market.



GDS-2000 Series Product Description

1. GDS-2204, 200MHz, 4CH with TFT Color LCD Display
2. GDS-2202, 200MHz, 2CH with TFT Color LCD Display
3. GDS-2104, 100MHz, 4CH with TFT Color LCD Display
4. GDS-2102, 100MHz, 2CH with TFT Color LCD Display
5. GDS-2064, 60MHz, 4CH with TFT Color LCD Display
6. GDS-2062, 60MHz, 2CH with TFT Color LCD Display

Key Features

- + 200MHz, 100MHz and 60MHz Bandwidth
- + Up to 1GS/s Real Time Sampling Rate & 25GS/s Equivalent Time Sampling Rate
- + 25k points Record Length Max.
- + TFT Color LCD Display with Wide View-Angle
- + Trigger Capabilities: TV Line Trigger, Pulse Width Trigger, Time Delay & Event Delay Trigger(2CH Models only)
- + 27 Auto Measurement Parameters plus Snapshot, ΔT & ΔV Cursor Measurement, Auto Setup Sequence, Frequency Counter, and Go/No Go Measurement
- + 12 Division Horizontal Display, Multi-Language Screen Menu & On-Line Help, and Time Clock
- + USB Host: Support USB Flash Drive storage and USB Color Printing with Grayscale
- + USB Device: Enable the Remote Control & Remote Monitoring from a PC
- + Battery Power Operation(Optional): Last for 3 Hours of normal operation
- + USB & RS-232 provided as standard, and GPIB Optional
- + Software: Most updated firmware & PC Software provided for free, downloadable from GW Website

Selection Guide

	GDS2062	GDS2064	GDS2102	GDS2104	GDS2202	GDS2204
Bandwidth	60MHz	60MHz	100MHz	100MHz	200MHz	200MHz
Channels	2	4	2	4	2	4
Sampling Rate	1.0 GSa/s (real-time sampling) & 25 GSa/s (equivalent-time sampling)					
Record length	25k Points					
Display	5.6" Color TFT LCD					
USB Host/Device	Standard					
RS232 interface						
Go-NoGo output						
GPIB interface	Option					
Battery Power Pack						

Key Dates for Product Announcement

1. Order queue open (June 12)
2. Distributor Announcement (June 12)
3. Global Market Announcement (Mid-June)
4. Market Promotion Activities (July-December)
5. Demo Units Shipped to Distributors (End of June)
6. Mass quantity order fulfillment (End of July)

GDS-2000 Product Position

1. Compete against all TDS1000/2000 Color Models for both 2CH & 4CH products
2. Win over other DSO players in the same range with far better Price/Performance value
3. 4CH models to target the industrial applications with price advantage over Tektronix
4. **1GS/s sampling, 25k point Memory, USB Host & Device support, TFT LCD Display, Battery Power Operation and Free Software** provide the core value of GDS-2000 series.
5. Estimated 80% replace all color models of GDS-820/840 series and GDS-806/810 series
6. GDS-2000 series Color Display Models & GDS-800 Mono Display Models come together to provide a full range selection of GWinstek DSO products.

Target Markets and Associated Features

1. **Manufacturing** (4 CH inputs, 27 Auto Measurements, Auto Setup Sequence, Go-No Go, Compact Size, USB Host & Device Support)
2. **Education** (Price leader for tender bid with 1GS/s sampling, 25k memory, TFT Color Display, FFT feature and Flash Drive Mass Storage)
3. **Service** (4 CH inputs, Flash Drive Mass Storage, Light Weight and Battery Power Operation)
4. **R&D** (4 CH inputs, Flash Drive Mass Storage, Direct Printout and Free Software)

Competition

1. Tektronix is the DSO leader in this range with TDS1000/2000, which have good reputation and market share for years. However, TDS1000/2000 were designed many years ago without modern features like USB flash drive support and Go-NoGo etc. The modern design of USB Host & Device support, TFT Color LCD Display & 25k Memory are the key features of GDS-2000 to beat TDS1000/2000 in the main stream market.

2. Besides Tektronix, other DSO manufacturers are trying to get into the market with some basic level products. GDS-2000 series, featuring 4 channel inputs, 25k Memory, TFT Color Display, Powerful USB capability and DC power operation, represents an unparalleled price/performance value over all those moderate performance DSOs available in the market today.
3. The market demand transition from Analog Oscilloscope to Digital Oscilloscope continues in progress, though some key features of Analog Scope remain irreplaceably necessary in some niche markets. GDS-2000 series, with high sampling rate, long memory and fast update rate, adequately display the Analog-Oscilloscope-like waveform capturing performance, which will expedite the speed of Analog Oscilloscope replacement in the 60MHz and up product range.

	GW Instek GDS 2000 Series	GW Instek GDS 800 Series	Agilent DSO 3000 Series	Tek TDS 1000/2000
Bandwidth	60MHz~200MHz	60MHz~250MHz	60MHz~200MHz	60MHz~200MHz
Channels	2 / 4	2	2	2 / 4
Record Length	25k points	125k points	4k points	2.5k points
Real-time sampling rate	1GSa/s	100MSa/s	1GSa/s	1GSa/s
Equivalent sampling rate	25GSa/s	25GSa/s	5GSa/s (Normal Mode) 50GSa/s (Delayed Sweep Mode only)	Nil
Display	5.6" TFT LCD	5.7" STN LCD	5.7" STN LCD	5.7" STN LCD
Horizontal	1ns/div~10s/div	1ns/div~10s/div	2ns/div~50s/div	5ns/div~50s/div
Vertical	2mV/div~5V/div	2mV/div~5V/div	2mV/div~5V/div	2mV/div~5V/div
12div horizontal display	Yes	Yes	Yes	Nil
Auto measurement	27	15	20	11
Program Mode	Yes	Yes	Nil	Nil
Go/NoGo Function	Yes	Yes	Nil	Nil
RS232 interface	Std.	Std.	Opt.	Opt.
Direct Hardcopy Printout	Std. (USB Color Printout with Grayscale)	Std. (Centronic Mono Printout)	Nil	Opt. (Centronic Mono Printout)
USB Host Port	Yes	Nil	Nil	Nil
USB Device Port	Std. (User-Programmable)	Std. (None User-Programmable)	Std. (Non User-Programmable)	Nil
GPIB	Opt.	Opt.	Opt.	Opt.
Battery operation	Yes	Nil	Nil	Nil

Market Strategy

1. Focus on the competition of TDS1000/2000 by emphasizing the GDS-2000 **strengths** over TDS1000/2000:
 - (A) **20% lower market price than that of equivalent Tektronix TDS1000/2000 products.**
 - (B) **More valued features of 1GS/s sampling with 25k point Memory, USB Host & Device support, TFT LCD Display, Battery Power Operation and Free Software.**
2. Create an intensive announcement exposure. GWinstek has become one of the key players in the mid-range DSO market with a significant market share. Besides the building of the brand awareness and reputation, to effectively release the new product information to the market in a timely manner and gain recognition of the product value from a wide range of users will be key to the success of GDS-2000 series.
3. **A 128M Flash Drive will be provided as a promotional gift for each unit of GDS-2000 series DSO ordered before July 31 and shipped before August 31.** This is to create excitement of New Product Announcement in the market and attract the customers' attention over GDS-2000 series' USB storage capability.
4. All Good Will's distribution partners in the global market are requested to start promotion activities for new GDS-2000 series from mid-June. **The e-files of GDS-2000 Marcom material, including advertisement artwork, data sheet, brochure and NPI presentation material, will be posted on Good Will's Website for download. The adequate amount of hardcopy of Marcom material will be sent to all GW's distributors before end of June.**
5. The demo units will be available for shipment starting from End of June. The demonstrations to enhance the strengths of GDS-2000 will be a very effective way to ramp up the new product sales in the market.
6. The mass quantity orders will be shipped starting from End of July. The plan is to deliver distributor orders within 1month after receipt of order, so the end user orders could be fulfilled promptly starting from August.

Existing GW Products Replacement

1. GDS-2000 series is estimated to replace 80% of Color Display models of GDS-800 sales. **GW will continue to supply all GDS-800 products for at least one year after the announcement of the GDS-2000 series.**
2. The continual supply in big quantity of GDS-800 Mono Display Models will not be affected by the GDS-2000 series announcement.

Service Policy

1. **3 year warranty.** With SMD design GDS-2000 series Oscilloscopes are highly reliable products, which carry 3 year warranty to enhance reliability competency against TDS1000/2000.
The exceptions for the warranty are LCD Display with 1 year warranty and Battery Pack with 3 months warranty.
2. **Service Support.** The service instructions in the Service Manual will help distributors repair defective units promptly. Should the board replacement is necessary to fix the defective unit, the board swapping service support is provided by Good Will Instrument to facilitate the repair jobs done at the distributor's site.
3. **Firmware upgrade through Website.** Good Will Instrument continues to provide the after sales support through its website. The most updated version of firmware and PC software of GDS-2000 series will be posted on the distributor zone of Good Will Instrument Website at <http://www.gwinstek.com.tw> for free download **via USB Flash Drive**.

Should you have any questions on the GDS-2000 series announcement, please don't hesitate to contact us

Sincerely Yours;

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Specification

MODEL	GDS-2062	GDS-2064	GDS-2102	GDS-2104	GDS-2202	GDS-2204
VERTICAL						
Channels	2	4	2	4	2	4
Bandwidth	DC~60MHz (-3dB)		DC~100MHz (-3dB)		DC~200MHz (-3dB)	
Rise Time	~5.8ns		~3.5ns		~1.75ns	
Sensitivity	2mV/div ~ 5V/div (1-2-5 increments)					
Accuracy	$\pm(3\%* \text{Readout} +0.05\text{div*Volts/div}+0.8\text{mV})$					
Input Coupling	AC, DC & Ground					
Input Impedance	1M Ω \pm 2%, ~16pF					
Polarity	Normal & Invert					
Max. Input	300V (DC + AC peak), CATII					
Waveform Signal Process	+, -, FFT					
Offset Range	$\pm 0.5\text{V}: 2\text{mV/div} \sim 20\text{mV/div}; \pm 5\text{V}: 50\text{mV/div} \sim 200\text{mV/div}; \pm 50\text{V}: 500\text{mV/div} \sim 2\text{V/div}; \pm 300\text{V}: 5\text{V/div}$					
Bandwidth Limit	20MHz (-3dB)					
TRIGGER						
Sources	CH1, CH2, LINE, EXT. (2CH Only) / CH3, CH4					
Modes	Auto-Level, AUTO, NORMAL, SINGLE, TV, Edge, Pulse Width / Time-Delay, Event-Delay (2CH Only)					
Coupling	AC, DC, LF rej. , HF rej. , Noise rej.					
Sensitivity	DC~25MHz: Approx. 0.5div or 5mV 25MHz~60/100/200MHz: Approx. 1div or 10mV					
EXT TRIGGER (2CH Only)						
Range	$\pm 15\text{V}$					
Sensitivity	DC~30MHz: ~ 50mV ; 30~60/100/200MHz: ~ 100mV					
Input Impedance	1M Ω \pm 2%, ~ 16pF					
Max. Input	300V (DC + AC peak), CATII					
HORIZONTAL						
Range	1ns/div ~ 10s/div (1-2-5 increments); ROLL:250ms/div~10s/div					
Modes	MAIN, ROLL, X-Y					
Accuracy	$\pm 0.01\%$					
Pre-trigger	20 div maximum					
Post-trigger	1000 div					
X-Y MODE						
X-Axis Input	Channel 1					
Y-Axis Input	Channel 2					
Phase shift	$\pm 3^\circ$ at 100kHz					

SIGNAL ACQUISITION	
Real-time Sa/s	1GSa/s maximum
Equivalent Sa/s	25Gsa/s
Vertical Resolution	8 Bits
Record Length	25k Dots maximum
Acquisition Mode	Normal, Peak Detect, Average
Peak Detection	10ns
Average	2, 4, 8, 16, 32, 64, 128, 256
CURSORS AND MEASUREMENT	
Voltage measurement	V_{pp} , V_{amp} , V_{avg} , V_{rms} , V_{hi} , V_{lo} , V_{max} , V_{min} , Rise Preshoot/ Overshoot, Fall Preshoot/ Overshoot
Time measurement	Freq, Period, Rise Time, Fall Time, Positive Width, Negative Width, Duty Cycle
Delay Measurement	Eight different delay measurement
Cursors Measurement	Voltage difference between cursors (ΔV); Time difference between cursors (ΔT)
Auto Counter	Resolution: 6 digits Accuracy: $\pm 2\%$ Signal Source: All available trigger source except the Video trigger mode
CONTROL PANEL FUNCTION	
Auto set	Adjust Vertical VOLT/DIV, Horizontal TIME/DIV, and Trigger level automatically
Save Setup	Up to 20 sets of measurement conditions
Save Waveform	24 sets of waveform
DISPLAY	
TFT LCD Type	5.6 inch
Display Resolution	234 (Vertically) x 320 (Horizontally) Dots
Display Graticule	8 x 10 divisions; 8 x 12 divisions (menu off)
Display Brightness	Adjustable
INTERFACE	
Go/ NoGo Output	5V Maximum/10mA TTL Open Collector Output
RS-232 Interface	DB 9-pin male DTE RS-232 interface
GPIB Interface (Option)	Fully programmable with IEEE488.2 compliance
USB	USB Host/ Device 2.0 full speed supported
POWER SOURCE	
Line Voltage Range	AC 100V ~ 240V, 48Hz ~ 63Hz, Auto selection
Battery Power (Option)	Battery: 10.8V Li-Ion battery pack Charge Time: 12 hours from AC line Operating Time: 3 hours, depending on operating condition
ACCESSORIES	Instruction manual Power Cord Probe
DIMENSIONS & WEIGHT	254D x 142H x 310W (mm), Approx. 4.3kg

Order Information

GDS-2062 60MHz, 2-channel, Color LCD Display DSO
GDS-2064 60MHz, 4-channel, Color LCD Display DSO
GDS-2102 100MHz, 2-channel, Color LCD Display DSO
GDS-2104 100MHz, 4-channel, Color LCD Display DSO
GDS-2202 200MHz, 2-channel, Color LCD Display DSO
GDS-2204 200MHz, 4-channel, Color LCD Display DSO

Option

Opt. 01: GPIB Interface

Opt. 02: DC Power Operation

(Factory installed, include additional DC Power & Battery charger circuits and Li-Ion Battery pack x2)

Standard Accessories

Probe: GTP060A-2 (one per channel): 60MHz x10/x1 Switchable Passive Probe for GDS-2062/2064

Probe: GTP150A-2 (one per channel): 150MHz x10/x1 Switchable Passive Probe for GDS-2102/2104

Probe: GTP250A-2 (one per channel): 250MHz x10/x1 Switchable Passive Probe for GDS-2202/2204

Instruction manual

Power cord

Optional Accessories

Li-Ion Battery Pack x1

GTL-232: RS-232C Cable, 9-pin Female to 9-pin Female, Null modem for computer, 2000mm

GTL-242: USB Cable, USB 1.1 A-B TYPE CABLE, 4P, 1800mm

GSC-005: Soft carrying case

GRA-405: Rack Mounting, 19" 4U Type