



## Two-In-One Function : Dual Channel Oscilloscope and True RMS DMM

GDS-122 is a multi-function measurement tool. By using the oscilloscope functionalities, you can measure simple waveforms, use advanced measurement functions, and configure system settings. The multimeter functionality includes three major items (Voltage, Current, and Impedance) and three additional items (Diode, Continuity, and Capacitance). The current measurement and capacitance measurement use extension modules to deal with large current and small capacitance, respectively. Delta measurement and automatic range switching features offer flexibility and convenience.

## Dual Waveform Math

The waveform math function runs mathematical operations between CH1 and CH2 waveform, and then shows the result in the display. It offers 5 math function, CH1-CH2, CH2-CH1, CH1+CH2, CH1 x CH2, CH1/CH2.

## Automatic Measurement

The automatic measurement function measures the input signal's characteristics and lists them in the top left corner of the display. The measurement items are Frequency, Period, Mean Voltage, Peak-to-Peak Voltage, Cycle Voltage (True RMS).

## Autoset Function

The autoset function automatically configures the following parameters according to the input signal. It can offer CH1/CH2 on/off, Vertical scale/level, Horizontal scale/level, Trigger level.

## Self Calibration

The self calibration function automatically configures internal parameters to maintain the sensitivity and accuracy. Run the self calibration in the following cases.

When the temperature changes more than 5 degrees Celsius during operations  
When operating the GDS-122 in a new benchtop or field environment.

## 6 Hours Running Time Li-ion Battery & Very Light Weight

GDS-122 is equipped with a Li-ion battery, which is able to maintain its normal operation for about 6 hours. After pressing the power key, press any key (for example the MENU key) to enter the oscilloscope or multimeter mode. See the battery level icon at the top left corner of the display and connect the power cord if the level is < 25%. With only 690g light weight and compact size, GDS-122 well fits into outdoor applications.

## Free PC Software

The GDS-122 PC software, included in the CD-ROM, allows you to view the waveforms in your familiar PC environment large display and mouse operation. Multiple cursors provide flexible waveform measurements. The PC Software is through from USB connection.

## GDS-122 (20MHz)

### FEATURES

- 20 MHz Bandwidth
- 100 MS/s Realtime Sampling Rate
- Digital Storage Oscilloscope & Multimeter
- True RMS Multimeter Volts, Amps, Ohms, Continuity, Diode
- Dual Independent Floating Isolated Channels (for Multimeter and Between Oscilloscope and Multimeter)
- Trigger Modes Free Run, Single Shot, Edge, Video
- USB Interfaces
- 6 Hour Capacity Li-ion Rechargeable Battery
- 3.8" Color LCD, Resolution: 320 x 240
- Light Weight at 690g

### APPLICATIONS

- Automotive Testing
- Electric Cooling Fans Maintain & Development
- Industrial Troubleshooting
- Installation Maintain
- Circuit Repair & Debug



**GW INSTEK**

Made to Measure

GDS-122

[www.valuetronics.com](http://www.valuetronics.com)

## SPECIFICATIONS

<b>VERTICAL</b>	<b>Analog Digital Converter A/D</b> <b>Sensitivity Range V/div</b> <b>Displacement Range</b> <b>Analog Bandwidth</b> <b>Single Bandwidth</b> <b>Low Frequency Response AD Coupling,-3dB</b> <b>Rise Time Typical One at the BNC</b> <b>DC Gain Accuracy</b> <b>DC Measurement Accuracy Average</b> <b>Value Sampling Mode</b>	With the resolution of 8 bits,make sampling on both channels synchronously 5mV/div 5V/div at the input BNC $\pm 50V(500mV 5V), \pm 1V(5mV 200mV)$ 20MHz Full bandwidth $\pm 5Hz$ at the BNC 17.5ns $\pm 5\%$ The voltage difference (V) between any two points on the waveform after averaging the captured waveforms more than 16: $\pm(5\% \text{ reading} + 0.05 \text{ divisions})$
<b>TRIGGER</b>	<b>Trigger Sensitivity Edge Triggering</b> <b>Triggering Lever Range</b> <b>Triggering Level Accuracy (Typical)</b> <b>Trigger Displacement</b> <b>Make a 50% Level Setting (Typical)</b> <b>Trigger Sensitivity</b> <b>Signal System and Line/Field Frequency</b>	DC coupling : CH1 and CH2: 1div (DC full bandwidth) AC coupling : Same as the DC coupling when it is equal to or larger than 50Hz $\pm 6$ divisions from the screen center $\pm 0.3$ divisions 655 divisions for pre-triggering and 4 divisions for post-triggering Operation with the input signal frequency equal to or larger than 50Hz 2 divisions of peak-to-peak value Support the NTSC, PAL and SECAM broadcasting systems of any field or line frequency
<b>HORIZONTAL</b>	<b>Sampling Rate Range</b> <b>Waveform Interpolation</b> <b>Record Length</b> <b>Scanning Speed Range S/div</b> <b>Sampling Rate and Relay Time Accuracy</b> <b>Time Interval</b> <b>(T)Measurement Accuracy Full Bandwidth</b>	10S/s~100MS/s $\sin x / x$ 6K points on each channel 5ns/div 5s/div, stepping in the "1-2.5-5" mode. $\pm 100ppm$ (any time interval which is equal to or larger than 1ms) Single: $\pm(1 \text{ sampling interval time} + 100ppm \times \text{reading} + 0.6ns)$ >average 16 : $\pm(1 \text{ sampling interval time} + 100ppm \times \text{reading} + 0.4ns)$
<b>INPUT</b>	<b>Input Coupling</b> <b>Input Impedance</b> <b>Probe Attenuation Coefficient</b> <b>Max. Input Voltage</b> <b>Channel Delay Time (Typical)</b>	DC, AC $1M\Omega \pm 2\%$ connected in parallel with $20pF \pm 3pF$ 1X, 10X, 100X, 1000X 400V (peak) 150ps
<b>SAMPLING</b>	<b>Sampling Modes</b> <b>Sampling Rate</b>	Normal sampling Peak detection Average value 100 MSa/s
<b>MEASUREMENT</b>	<b>Cursor Measurement</b> <b>Auto Measurement</b>	Voltage difference (V) and time difference (T) between cursors Peak-to-peak value, average value, root mean square value, frequency and cycle
<b>MULTIMETER SPECIFICATIONS</b>	<b>Input Impedance</b> <b>Voltage</b> <b>Max Input</b> <b>VAC</b> <b>Frequency</b> <b>Max Input</b> <b>Current</b> <b>Impedance</b> <b>Capacitance</b> <b>Diode</b>	10M $\Omega$ VDC: 400mV, 4V, 400V $\pm(1\% + 1 \text{ digit})$ DC 400V 4V, 40V, 400V $\pm(1\% + 3 \text{ digit})$ 40Hz ~ 400Hz AC 400V (Virtual value) DCA : 40mA, 400mA $\pm(1.5\% + 1 \text{ digit})$ ; 20A: $\pm(3\% + 3 \text{ digit})$ DAA : 40mA $\pm(1.5\% + 3 \text{ digit})$ , 400mA $\pm(2\% + 1 \text{ digit})$ ; 20A: $\pm(5\% + 3 \text{ digit})$ 400 $\Omega$ $\pm(1\% + 3 \text{ digit})$ , 4K $\Omega$ , 40K $\Omega$ , 400K $\Omega$ , 4M $\Omega$ $\pm(1\% + 1 \text{ digit})$ , 40M $\Omega$ $\pm(1.5\% + 3 \text{ digit})$ 51.2nF ~ 100uF $\pm(3\% + 3 \text{ digit})$ 0V ~ 1.5V On/Off measurement < 50 ( $\pm 30$ ) beeping
<b>GENERAL SPECIFICATIONS</b>	<b>Display</b> <b>Power Adapter</b> <b>Operating Temperature</b>	Display type : 3.8" color liquid crystal display Display resolution : 320 (horizontal) x 240 (vertical) pixels Display color : 4096 colors Power supply : 100-240 VAC, 50/60Hz, CAT II ; Power consumption : < 6W Used battery : 0~50 °C (32~122 °F); Power adapter : 0~40 °C (32~104 °F)

Note : (\*)USE "REL" Mode

Specifications subject to change without notice. DS-1220GD1DH

## ORDERING INFORMATION

**GDS-122** Handheld Digital Storage Oscilloscope & Multimeter

## ACCESSORIES:

User Manual x 1, Probe x 2, Multimeter test lead x 2, AC-DC adaptor x 1,  
 Probe adjustment tool x 1, Soft Carrying case x 1, 1kHz square wave cable x 1,  
 Extension module for large current measurement x 1,  
 Extension module for small capacitance measurement x 1,  
 USB communication cable x 1, CD-ROM (PC software) x 1

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