GPIB to USB Adapter

GUG-001

USER MANUAL

GW INSTEK PART NO. 82UG-00100M01

ISO-9001 CERTIFIED MANUFACTURER

GW INSTEK

The information in this manual was correct at the time of printing. However, Good Will continues to improve its products and therefore reserves the right to change the specifications, equipment, and maintenance procedures at any time without notice.

Good Will Instrument Co., Ltd.
No. 7-1, Jhongsing Rd., Tucheng City, Taipei County 236, Taiwan.

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SAFETY INSTRUCTIONS

This chapter contains important safety instructions that should be followed when using the GPIB to USB adapter. Read the following before any operation to ensure your safety and to keep the adapter in the best condition.

Safety Symbols

These safety symbols may appear in this manual or on the instrument.

 WARNING	Warning: Identifies conditions or practices that could result in injury or loss of life.
 CAUTION	Caution: Identifies conditions or practices that could result in damage to the instrument or to other objects or property.
	Attention: Refer to the Manual
	Protective Conductor Terminal
	Earth (Ground) Terminal
	Do not dispose electronic equipment as unsorted municipal waste. Please use a separate collection facility or contact the supplier from which this instrument was purchased.

Safety Guidelines

General Guideline  CAUTION	• Do not use the adapter in a damp environment or where there is risk of explosion. • Do not use the adapter with the case open. • The adapter is for indoor use only. • Do not place heavy objects on the adapter. • Avoid severe impact or rough handling that may damage the adapter. • Use only mating connectors, not bare wires, for the interface ports.
Cleaning the instrument	• A soft cloth dampened in a solution of mild detergent and water can be used to clean the case. • Do not spray any liquid into the instrument. • Do not use chemicals containing harsh products such as benzene, toluene, xylene, and acetone.
Operation Environment	• Location: Indoor, no direct sunlight, dust free, almost non-conductive pollution (Note below) • Relative Humidity: ≤ 80%, 40°C or below ≤ 45%, 41°C~50°C • Altitude: < 2000m • Temperature: 0°C to 50°C

(Pollution Degree) EN 61010-1:2001 specifies pollution degrees and their requirements as follows. The instrument falls under degree 2.

Pollution refers to "addition of foreign matter, solid, liquid, or gaseous (ionized gases), that may produce a reduction of dielectric strength or surface resistivity".

- Pollution degree 1: No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
- Pollution degree 2: Normally only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected.
- Pollution degree 3: Conductive pollution occurs, or dry, non-conductive pollution occurs which becomes conductive due to condensation which is expected. In such conditions, equipment is normally protected against exposure to direct sunlight, precipitation, and full wind pressure, but neither temperature nor humidity is controlled.

Storage environment

- Location: Indoor
- Storage Temperature: -10°C~60°C, no condensation-
- Relative Humidity: 93% @ 40°C
  65% @ 41°C ~60°C

Disposal

Do not dispose this instrument as unsorted municipal waste. Please use a separate collection facility or contact the supplier from which this instrument was purchased. Please make sure discarded electrical waste is properly recycled to reduce environmental impact.

GETTING STARTED

The Getting Started chapter introduces the features, functions and appearance of the GUG-001 GPIB to USB adapter.

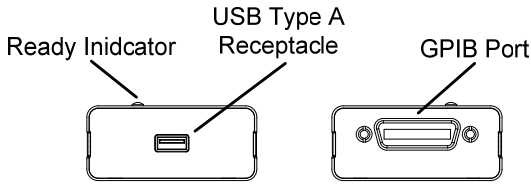
Main Features

The GW Instek GPIB to USB adapter is used to connect a GPIB controller to the USB B receptacle on the GDS-3000 as the scope does not have a GPIB interface. The GUG-001 GPIB to USB adapter is currently only supported on the GDS-3000.

Features	• Enables GPIB control of the GDS-3000 via the USB B receptacle. • No power adapter, all power requirements from USB. • The GPIB primary address can be assigned via the GDS-3000.
Accessories	• User manual, USB type A-B cable.

Instrument Overview

GUG-001



GPIB Port		24 pin female GPIB port.
USB Type A Receptacle		USB type A receptacle connects to the GDS-3000 type B receptacle.
Ready Indicator		The ready indicator lights when the adapter is ready to use.

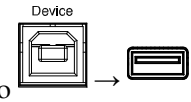
OPERATION

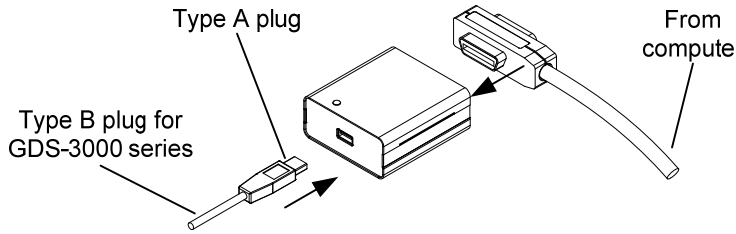
GDS-3000 Set Up

Procedure

1. Connect a GPIB cable from a GPIB controller to the GPIB port on the adapter.

2. Connect the USB cable from the rear panel device port (type B receptacle) on the oscilloscope to the USB port (type A receptacle) on the GPIB to USB adapter.





3. The Ready Indicator should be lit after the USB cable is connected.

Configure GPIB

1. Press the *Utility* key on the GDS-3000 front panel.

2. Press *I/O* from the bottom menu.

3. Press *USB Device* Port from the side menu and choose *Computer*.

4. Press *GPIB* from the side menu.

5. Use the variable knob to set the GPIB address from the side menu.

Range 1 ~ 30

Limitations

- Only the GDS-3000 can be used to change the GPIB address from the default GPIB address of 1.
- GPIB secondary addresses are not supported.

Trouble Shooting

If the Ready indicator will not come on:

- Check that the cables are correctly inserted.
- Ensure the USB device powering the adapter is turned on and is functioning correctly.

Function Check

To check that the GPIB connection is working, National Instruments Measurement & Automation Explorer (MAX) can be used. The following function check is based on version 4.6.2f1.

For further information about National Instruments, please see the NI website at www.ni.com.

Steps

1. Complete the setup procedure described previously. Page 9

2. Start the Measurement and Automation Explorer (MAX) program. Using Windows, press;

Start>All Programs>National Instruments>Measurement & Automation

The Measurement & Automation Explorer initial splash screen.

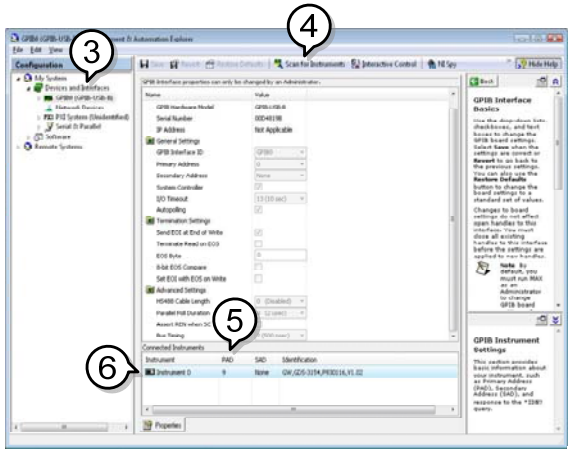
3. From the **Configuration** panel access;

   My System>Devices and Interfaces>GPIB0(GPIB-USB-B)

4. Press the **Scan for Instruments** button.

5. In the **Connected Instruments** panel the oscilloscope should be detected as **Instrument 0** with the address the same as that configured on the scope.

6. Double click the **Instrument 0** icon.



7. Click on **Communicate with Instrument**.

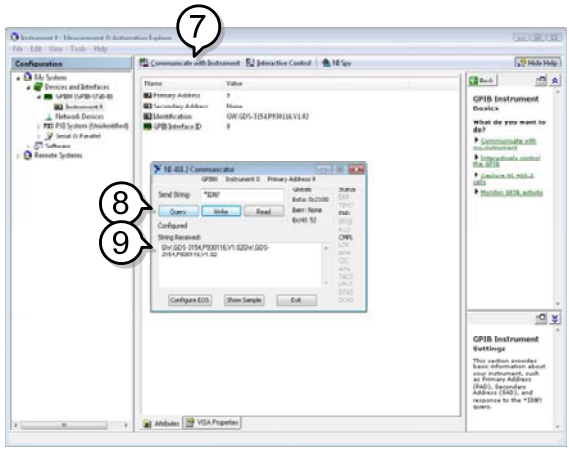
8. In the **NI-488.2 Communicator** window, ensure **IDN?* is written in the **Send String:** text box.

   Click on the **Query** button to send the **IDN?* query to the oscilloscope.

9. The **String Received** text box will display the query return:

   GW, GDS-3XXX,PXXXXXX,V1.XX

   (manufacturer, model, serial number, version)



10. The function check is complete.

APPENDIX

GUG-001 Specifications

USB Specification	USB Device	USB 2.0 full speed device interface
GPIB Specification	The GPIB interface of this device corresponds to the standard of IEEE488.1-1987, IEEE488.2-1992. The GPIB interface functions are listed as following:	
	SH1 (Source Handshake):	This device can transmit multilane messages across the GPIB.
	AH1 (Acceptor Handshake):	This device can receive multilane messages across the GPIB.
	T6 (Talker):	Talker interface function includes basic talker, serial poll, and un-address if MLA capabilities, without talk only mode function.
	L4 (Listener):	This device becomes a listener when the controller sends its listen address with ATN (attention) line asserted. This device dose not have listen only capability.
	SR0 (Service Request):	This device has no SRQ (Service Request) function.
	RL0 (Remote/Local):	This device will ignore the LLO (local lockout) command.
	PP0 (Parallel Poll):	This device has no “Parallel Poll” interface function.
	DC1 (Device Clear):	This device has “Device Clear” capability to return the device to power on status.
	DT0 (Device Trigger):	This device has no “Device Trigger” interface function.
	C0 (Controller):	This device can not control other devices.

Miscellaneous	Current Consumption	Less than 0.5 ADC from 5V
	Operating Environment	Ambient temperature: 0 ~ 50°C Relative humidity: ≤ 80%, 40°C or below ≤ 45%, 41°C~50°C
	Storage:	Storage Temperature: -10°C~60°C, no condensation- Relative humidity: 93% @ 40°C 65% @ 41°C~60°C
	Altitude	Up to 2,000 meters
	Dimensions	Approximately 8.6(L)×7.5(W)×3.3(H) cm