

# Installation Guide Agilent GPIB/RS-232 Interface Kit Accessory 19257A



**Agilent Technologies** 

© Agilent Technologies 2000

All Rights Reserved. Reproduction, adaptation, or translation without permission is prohibited, except as allowed under the copyright laws.

Part number 19257-90107

First Edition, DEC 2000

Replaces Part No. 19257-90100 Operating and Service Manual.

HP® is a registered trademark of Hewlett-Packard Co.

Printed in USA

#### Safety Information

The Agilent Technologies GPIB/RS-232 meets the following IEC (International Electrotechnical Commission) classifications: Safety Class 1, Transient Overvoltage Category II, and Pollution Degree 2.

This unit has been designed and tested in accordance with recognized safety standards and designed for use indoors. If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired. Whenever the safety protection of the Agilent 19257 has been compromised, disconnect the unit from all power sources and secure the unit against unintended operation.

Refer servicing to qualified service personnel. Substituting parts or performing any unauthorized modification to the instrument may result in a safety hazard. Disconnect the AC power cord before removing covers. The customer should not attempt to replace the battery or fuses in this instrument.

#### **Safety Symbols**

Warnings in the manual or on the instrument must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions violates safety standards of design and the intended use of the instrument. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

#### WARNING

A warning calls attention to a condition or possible situation that could cause injury to the user.

#### CAUTION

A caution calls attention to a condition or possible situation that could damage or destroy the product or the user's work.

## Sound Emission Certification for Federal Republic of Germany

Sound pressure Lp < 68 dB(A)

During normal operation At the operator position According to ISO 7779 (Type Test)

#### Schallemission

Schalldruckpegel LP < 68 dB(A) Am Arbeitsplatz Normaler Betrieb Nach DIN 45635 T. 19 (Typprüfung)

Agilent Technologies, Inc. 2850 Centerville Road Wilmington, DE 19808-1610 USA

## Installing a Communications Interface Board Accessory 19257A

## **Before You Begin**

- 1. Complete any unfinished analytical run.
- 2. Save any data.
- 3. List any important conditions.
- 4. Turn off all the instrument's heated zones.
- 5. Allow time for the oven and other heated zones to cool.
- **WARNING** The Flame Ionization Detector (FID), Nitrogen-Phosphorus Detector (NPD), and Flame Photometric Detector (FPD) use hydrogen gas as a fuel. Shut off all hydrogen gas to the detectors before shutting off the power to the instrument.
  - 6. Turn off all gas supplies.
- **WARNING** Hazardous voltages are present in the instrument when it is plugged in. To avoid a potentially dangerous shock hazard, unplug the power cord before working on the instrument.

- OFF DE Red O visible
- 7. Turn off the GC and unplug the main power cord.

8. Remove the four holding screws in the rear panel. Slide the entire panel rearward and lift it away from the instrument. A new rear panel has been provided to replace this panel.



9. Remove the electronics carrier top cover by grasping it at the rear and lifting upwards until its catch releases, then pulling it towards the rear of the instrument.



10. Remove the right side panel by removing four screws, two each along its top and bottom edges.



## **Install the Board**

# **WARNING** The following procedure requires protection against ESD (electrostatic discharge). Ground yourself by connecting a grounded wrist strap, part no. 9300-0969 (large) or part no. 9300-0970 (small), to a suitable ground, such as any unpainted part of the GC oven top.

- 1. Attach the ribbon cable to the bottom connector (J102) of the GPIB/RS-232 interface board. It can only be inserted in one direction. Be certain that the ribbon cable connector is fully locked in position.
- 2. Install the GPIB/RS-232 interface board into the interface board slot of the GC main board. The slot is located about midway along the top of the main board. Position the board near the slot, alongside the instrument. The board's component side should face forward with its INET connector (J101) located at the top of the interface board. Slide the INET J101 connector into the groove of the top rail of the instrument, and mate the J100 connector of the interface board to the P12 connector of the main board.
- 3. Route the ribbon cable from the GPIB/RS-232 interface board to the back edge of the main board and through the slot between the main board area and the area of the instrument's rear panel. Route the ribbon cable alongside the clear plastic channel located at this slot.

**WARNING** Do not insert the ribbon cable in the clear plastic cable channel.

4. With the three screws provided, secure the rear panel connector PCB assembly to the new instrument rear panel as shown below. Attach the ribbon cable to the connector board assembly.



- 5. Install the new rear panel onto the instrument.
- 6. If you are installing the GPIB/RS-232 interface board in a 5890A GC, replace the existing ROM chip in the U710 socket on the main circuit board with the new ROM chip provided. Be particularly careful that the notched end is toward the top and that all the pins are properly inserted.

No ROM exchange is needed when installing the GPIB/RS-232 interface board in an Agilent 4890D or 5890 Series II GC.

## **Configure Your Interface Card**

- 1. If not already done, remove the top right cover and the right side panel from the instrument.
- 2. Locate the eight-toggle S1 switch on the GPIB/RS-232 interface board.
- 3. When the bottom toggle is set toward the outer edge, the board is configured for RS-232 use. Set the bottom toggle for your desired configuration.

### For GPIB

- 1. Set the bottom toggle toward the main board. The five top toggles determine the GPIB address. Setting the toggles toward the main board activates the address. For example, if the top four toggles were all set toward the main board's outer edge (and the fifth toggle positioned toward the interface board's outer edge), the resulting GPIB address would be 1 + 2 + 4 + 8 or 15.
- 2. Set the seventh toggle. Unless otherwise specified by the host computer's documentation, set the default SRQ\_EN toggle toward the main board (the enable position).



#### For RS-232

Set the bottom toggle toward the board's outer edge. The top three establish the baud rate. Use the table below to set the toggles. Note that a toggle ON means that it is set toward the board's outer edge.

	Baud Rate							
Toggle	150	300	600	1.2K	2.4K	4.8K	9.6K	19.2K
1	Off	On	Off	On	Off	On	Off	On
2	Off	Off	On	On	Off	Off	On	On
3	Off	Off	Off	Off	On	On	On	On

#### **Starting the Instrument**

- 1. Connect the HP-IL cable (part no. 82167-60002) from the interface board's OUT connector to its IN connector. This will loop information from its transmitter section back into its receiver section for initial testing.
- 2. Install the instrument side panel.
- 3. Plug the power cord into a power source.
- 4. Turn on the instrument.
- 5. Press the CLEAR button as soon as the GC display reads TESTING SIGNAL PATH.
- Continue to press the CLEAR button until the User Tests Sel
  0..7 message appears on the display.
- 7. Press 0 on the keypad. The response on the display will be the revision code for the RS-232/GPIB interface installed in your instrument.
- 8. Press 3. The message HP-IL Loop Passed should appear when the INET portion of the interface is functioning and the HP-IL cable is connected from OUT to IN.
- Test 4 will verify your selection of type of interface and its address or its baud rate. Press 4 on the keypad. It will display a message RS-232
  Baud = [the selected rate] or GPIB Addr = [the selected address].

If the display indicates an incorrect type of interface, address, or baud rate, turn off the instrument and reset switch S1 on the interface board.

10. When the proper interface and baud rate or address is displayed, press7 on the keypad to restart the system with all of the new parameters just entered.

The display will prompt you to press the ENTER key. When the ENTER key is pressed, the instrument will undergo its standard self-test and the new parameters will be configured into memory.

11. When the board passes its self-test, disconnect the HP-IL cable from the IN and OUT connectors, and connect the INET cable or RS-232 to your GC as desired.

If the board fails self-test, see Troubleshooting below and your GC's *Operating Manual*.

12. Replace all of the instrument's panels and covers.

#### Troubleshooting

• Test 1: Short Memory Test displays TEST 0000.

This rapidly cycles through memory pages incrementing the test number to determine if all 256 1K pages are accessible.

• Test 2: Long Memory Test initially displays Set Memory to 0's, then changes to Bank: 000, PASS: 000 during the test. The bank number will cycle through 0 ... 255, displaying the number of the current 1K segment under test. After all 256 segments are tested, the pass count is incremented and the test restarts.

Note that **Test 4: GPIB Addr or RS-232 Baud** must be run before Test 5 or 6 to set the current selection into the interface chip.

- **Test 5: GPIB Communication Test** displays characters received on the GPIB bus. It also sends 5890A GPIB/RS-232 User Tests<CRLF>. It transmits and receives at a rate of about 3 characters per second. Timeouts may be a problem.
- **Test 6: RS-232 Communication Test** transmits 5890A GPIB/RS-232 User Tests<CRLF> at a rate of 3 characters per second. It displays characters received (at any speed) from the RS-232 line.







Agilent Technologies, Inc. Printed in USA Dec 2000

