# N4906B-02A

# S E R V I C E     N O T E

Supersedes:
N4906B-02

## N4906B - Serial Bit Error Ratio Tester

**Serial Numbers:**     **DE45200370 – DE45200400**
**MY45200500 - MY45200520**

**An incorrect setting within the Agilent IO Libraries may lead to programmatic inaccessibility and communication failure of the N4906B when connected via the GPIB bus.  There are 3 items to verify and modify when this occurs.**

**Parts Required:**
**P/N**                          **Description**                          **Qty.**

NONE

## ADMINISTRATIVE INFORMATION

| SERVICE NOTE CLASSIFICATION: | | |
|---|---|---|
| **MODIFICATION RECOMMENDED** | | |
| ACTION CATEGORY: [[]] ON SPECIFIED FAILURE  XX AGREEABLE TIME | STANDARDS      LABOR: 0.3 Hours | |
| LOCATION CATEGORY: XX CUSTOMER INSTALLABLE  XX ON-SITE  XX SERVICE CENTER  XX CHANNEL PARTNER | SERVICE     [[]] RETURN  INVENTORY: [[]] SCRAP        XX SEE TEXT | USED     [[]] RETURN  PARTS: [[]] SCRAP        XX SEE TEXT |
| AVAILABILITY:   PRODUCT'S SUPPORT LIFE | NO CHARGE AVAILABLE UNTIL: 31-Jan-2012 | |
| AUTHOR: HK | PRODUCT LINE: PL24 | |
| ADDITIONAL INFORMATION: | | |

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**Agilent Technologies**

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**Situation:**

There are 3 items to verify and modify if required:
1. An older version of the Agilent IO-Libraries may lead to problems.
   Verify whether the correct version is installed.
2. Verify the configuration of the Agilent IO Libraries "Internal Instruments".
3. An incorrect setting within the Agilent IO Libraries may lead to programmatic inaccessibility and communication failure of the N4906B when connected via the GPIB bus.

# Verify installed version of Agilent IO-Libraries

Units in the specified range of serial numbers may have an older version of the Agilent IO Libraries installed which shows unwanted behavior.

Please check the installed version of the Agilent IO Libraries:

1. Identify the icon of the Agilent IO Libraries in the lower right corner of the N4906B display ( ), right-click on it, search for the menu entry "Agilent Connection Expert" and start it.

2. On the menu bar of the Agilent Connection Expert select Help → About



   The version number should be at least **15.5.13009.1**. If that is the case please continue with the steps in the next chapter: "Check the configuration of the Agilent IO Libraries "Internal Instruments"

3. If the installed version is lower than that please do the following:

   a. Install the newer version on top of the older version. You can get it from here:
      \\wbbnps03\ftp_support\All-Support\PV_Software\Agilent_IO_Libs\IO_Libs_15.5\IOLibSuite_15_5_13009_1.exe
   b. Reboot the N4906B.
      Please check whether the N4906B application starts up without any errors (firmware server and GUI). You should not have to install the N4906B application again after the Agilent IO-Libs update.
   c. Continue with the steps in the next chapter: "Check the configuration of the Agilent IO Libraries "Internal Instruments"

## Verify the configuration of the Agilent IO Libraries "Internal Instruments"

Please check whether all "Internal Instruments" are set up correctly.

1. Close the Agilent Connection Expert, which may still be open from the previous step.
2. Start the IO Configuration Manager "iocfg32.exe" on the N4906B which is located in the directory
   C:\Program Files\Agilent\IO Libraries Suite\bin.
   You will get the following window:
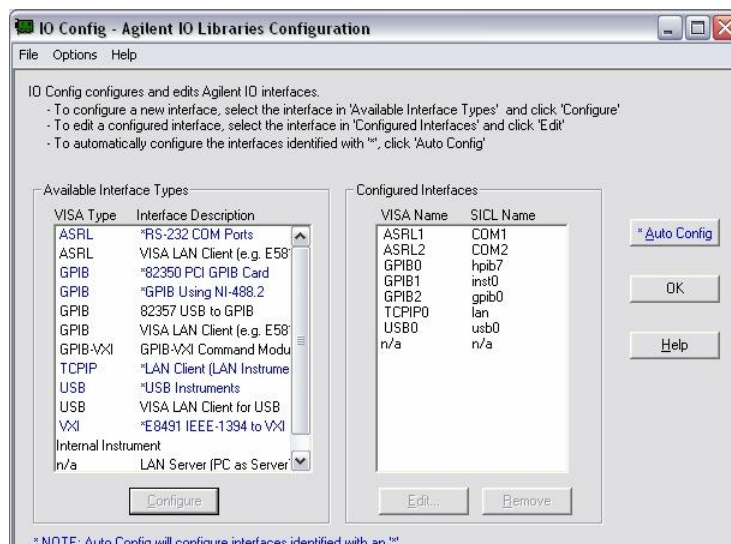


3. On the left side, under "Available Interface Types" you should see a line "Internal Instruments".
   If you do not have the line "Internal Instruments" please do the following:
   a. Exit the IO Configuration Manager" by pressing ok.
   b. Go to the following directory
      C:\Program Files\Agilent\N4906B\GPIB
   c. Execute the program "install.exe" by double-clicking on it.
   d. Again start the IO Configuration Manager "iocfg32.exe" on the N4906B which is located in the directory
      C:\Program Files\Agilent\IO Libraries Suite\bin.
   e. Now you should have a line item "Internal Instruments" on the left side.
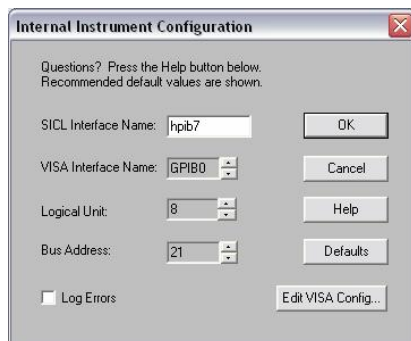
4. On the right side you should see the following important configured interfaces: ASRL1, ASRL2, GPIB0, GPIB1, GPIB2, TCPIP0 and USB0. Now let's check the configuration for each of the important ones.

   **NOTE: At the bottom of this list you find instructions on how to correct the configurations in case they do not match the descriptions!**

5. GPIB0
   GPIB0 is a virtual GPIB interface ("Internal Instrument") which allows programmatic access to the N4906B via GPIB.
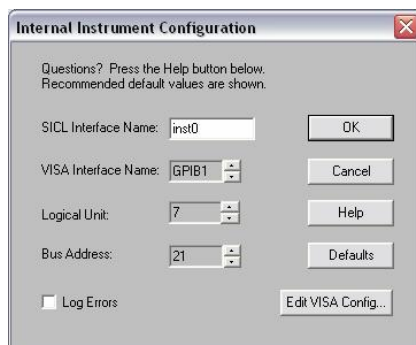


6. GPIB1
   GPIB1 is a virtual LAN interface ("Internal Instrument") which allows programmatic access to the N4906B via LAN
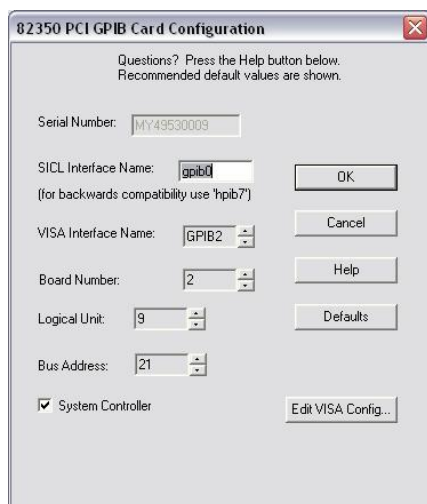


7. GPIB2
   GPIB2 is the physical 82350 PCI GPIB card that is accessible from the rear side of the N4906B. The serial number of the N4906B is shown in the field at the top.
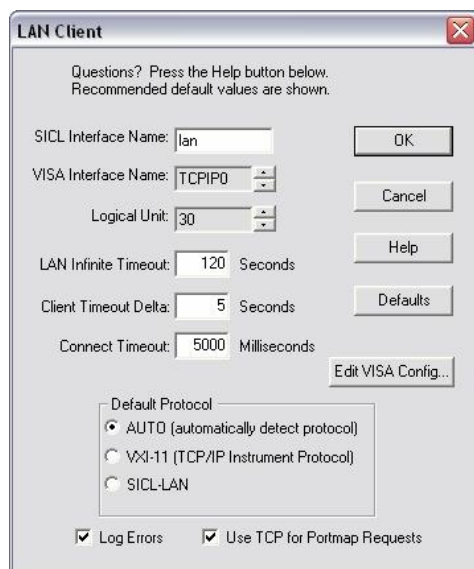
8. TCPIP0
   TCPIP0 is the physical LAN interface of the N4906B, accessible from the rear side of the N4906B.



9. USB0
   USB0 is the physical USB interface of the N4906B. There may be entries in the table below depending on whether one of the following devices was connected to the instrument: N4916A, N4916B, N4876A or alike.

**In case the configurations you find do not match the descriptions above, please change them using the following steps:**

1. Exit the Agilent Connection Expert on the N4906B.
2. Start the IO configuration manager "iocfg32.exe" on the N4906B which is located in the directory
   C:\Program Files\Agilent\IO Libraries Suite\bin.
3. Delete all incorrectly configured interfaces from the list of interfaces below: select the mismatching interface and press "Remove" in the window below (step #1 and #2).
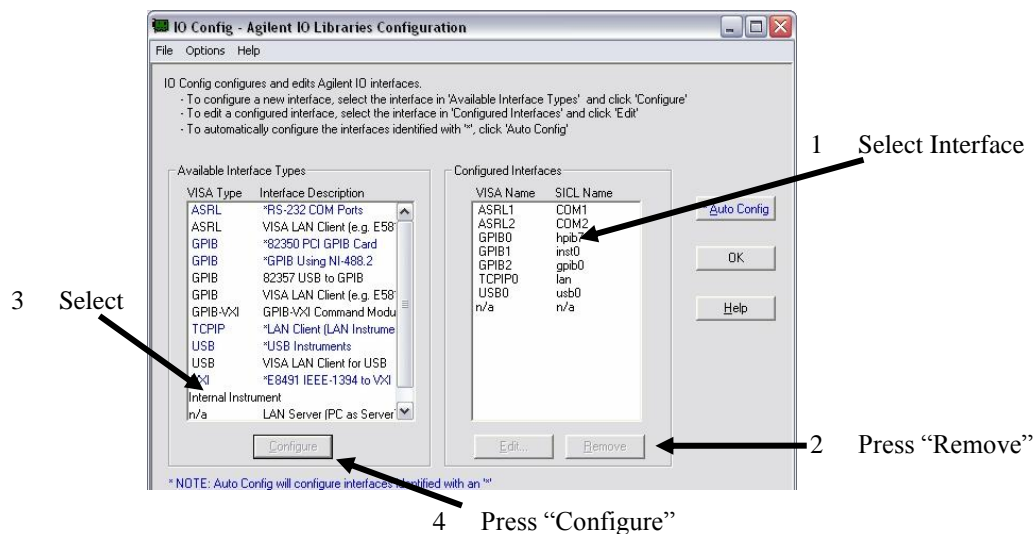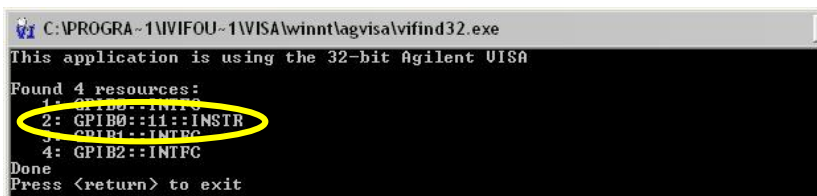


4. Select "Internal Instrument" in the window above and press "Configure" (step #3 and #4).

   **NOTE: Enter the fields (e.g. SICL interface Name, VISA Interface name, etc.) exactly as shown in the above descriptions of the interfaces (previous page)!**
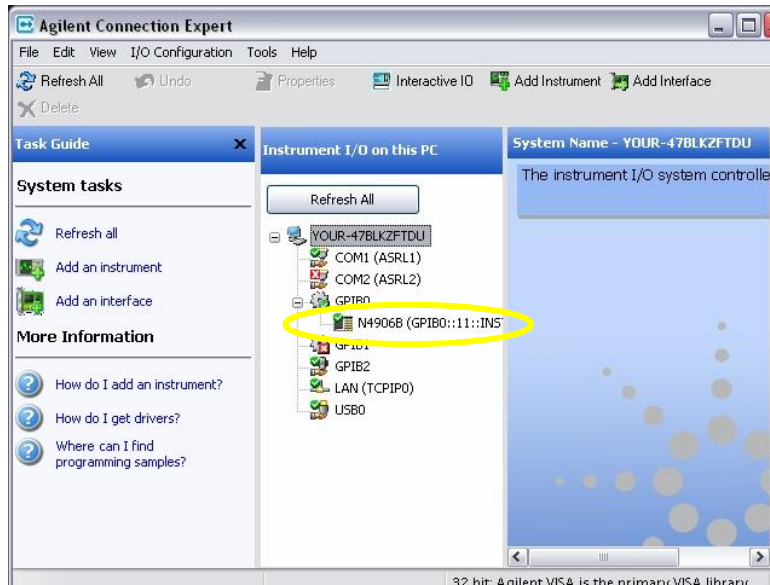
5. Reboot the N4906B and check again.
   Use the ViFind32 debug utility to check the results



The important line is circled in yellow:

The Agilent Connection Expert shows the following:

# Verify GPIB Controller Configuration

The N4906B instrument has a GPIB connector on the back which may be used for programmatic control of the unit. On a GPIB bus there are several slaves and one master, which usually would be an external PC connected to the GPIB bus acting as a controller. However, in the noted serial number range of the N4906B there may be the case that the N4906B may act as master, too. This leads to a communication failure of the complete GPIB bus.

It is necessary to change the settings of the built-in GPIB controller card with the help of the Agilent IO Libraries ("Agilent Connection Expert").

**Solution/Action:**
Please execute the following steps to correctly configure the N4906B GPIB interface card:

1. Identify the icon of the Agilent IO Libraries in the lower right corner of the N4906B display ( ![IO]), right-click on it, search for the menu entry "Agilent Connection Expert" and start it.
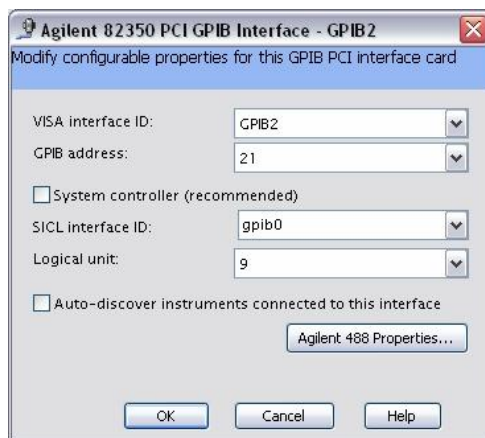
2. You will see the following window:
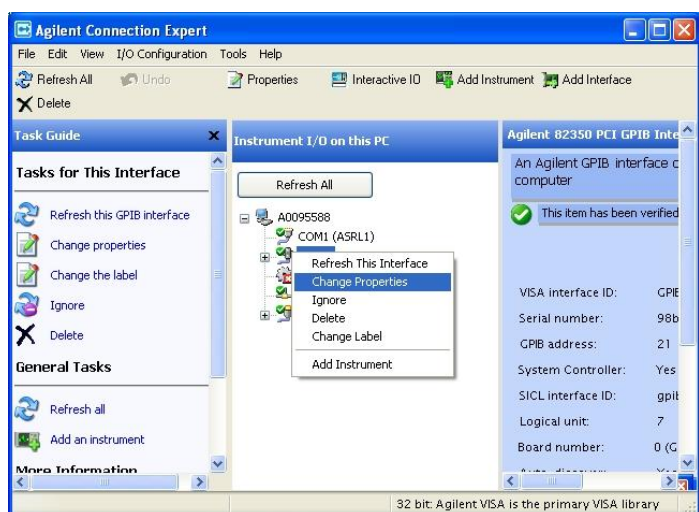


   Identify the GPIB2 interface, select it with the mouse and right-click it to get the menu shown above. In the menu select "Change Properties".

3. You will see the following picture:
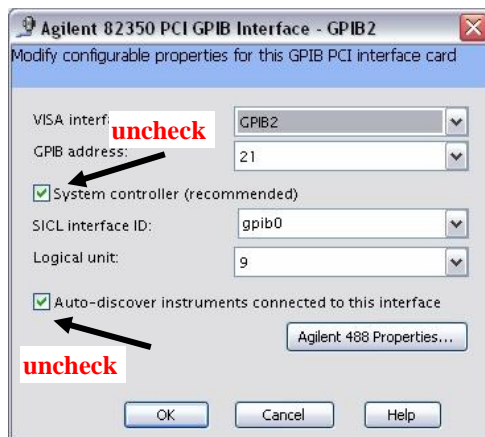


You will find the 2 checkboxes checked as shown in the picture above.

4. Please **uncheck** both checkboxes as shown in the next picture:



The **correct** settings shown in the picture above will make sure that the N4906B does not act as GPIB master and does not disturb communication on the GPIB bus.

5.  Click **ok** in the window above (step 4) and return to the main screen of the "Agilent Connection Expert".
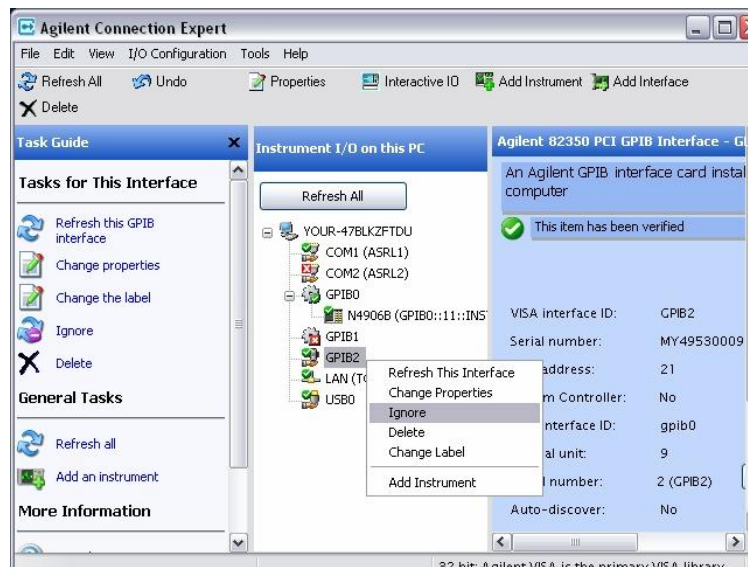


Identify the GPIB0 interface, select it with the mouse and right-click it to get the menu shown above. In the menu select "**Ignore**".

6.  The green next to the GPIB0 in the list should change to purple as shown in the picture below. "Ignore" means, that the "Agilent Connection Expert" will ignore devices connected to this interface on future device scans. This will prevent the "Agilent Connection Expert" from reconfiguring devices connected to this interface and the configuration steps described above will persist.
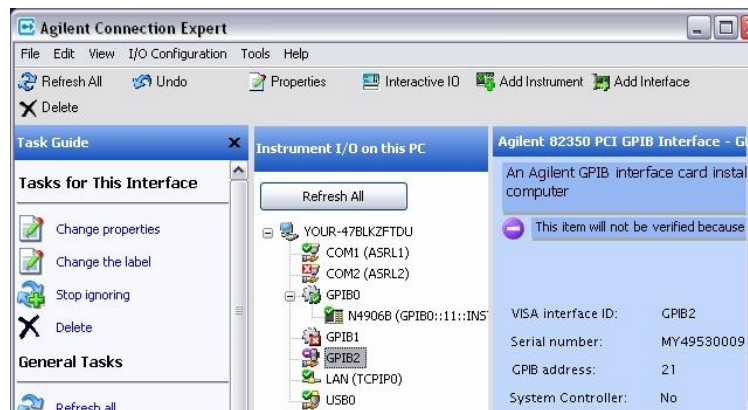


7.  Now reboot the N4906B to check for the firmware/hardware handshake and then verify the implemented "Agilent Connection Expert" configuration is unchanged.