Agilent 4294A Precision Impedance Analyzer

4294A Data Transfer Program

Operation Manual

Rev.03.10

Agilent Technologies

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Sample Program

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1. General information

Overview of the program

This program (a VBA macro for Microsoft Excel®) transfers the measurement data and the display image from the 4294A to a PC.

Supported model and firmware

| Model	Firmware
4294A Precision Impedance Analyzer	Rev. 1.11

Required equipment

• Personal computer

    * Microsoft Excel® installed

    * Agilent I/O Libraries Suite 15 or higher installed

• Connection cable (Use either one of the following cables)

    1. Agilent 82357A or 82357B USB/GPIB interface

   2. LAN cable (cross or straight cable depending on the connection method)

2. Connection configuration through Agilent Connection Expert

A. Connection using 82357A or 82357B USB/GPIG interface

1. Run Agilent Connection Expert by double-clicking the icon in the task tray
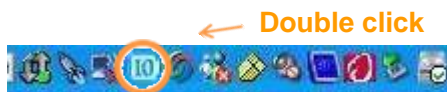
2. Connect the 4294A and the PC using the 82357A/B USB/GPIB interface. Then the connection will be automatically configured. After the connection is properly configured, the 4294A appears on "Instrument I/O on this PC" pane of Agilent Connection Expert as shown in the figure below.
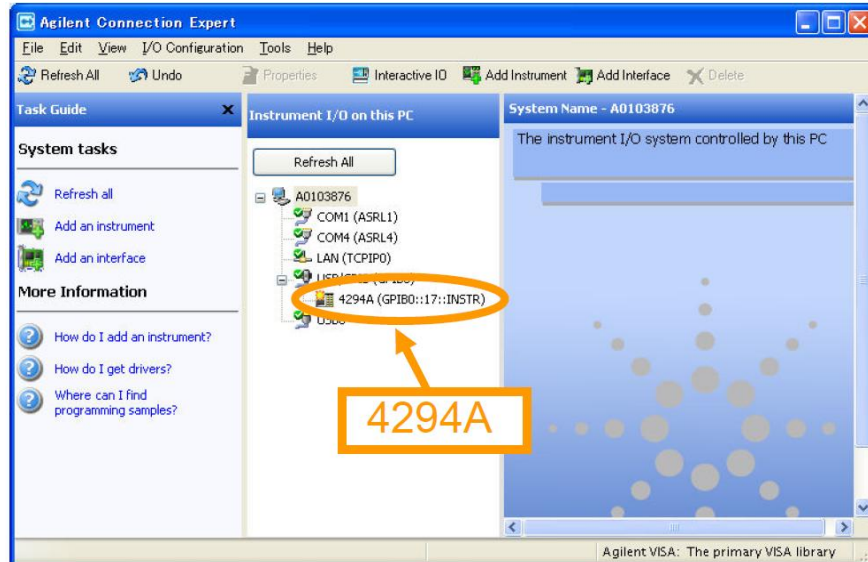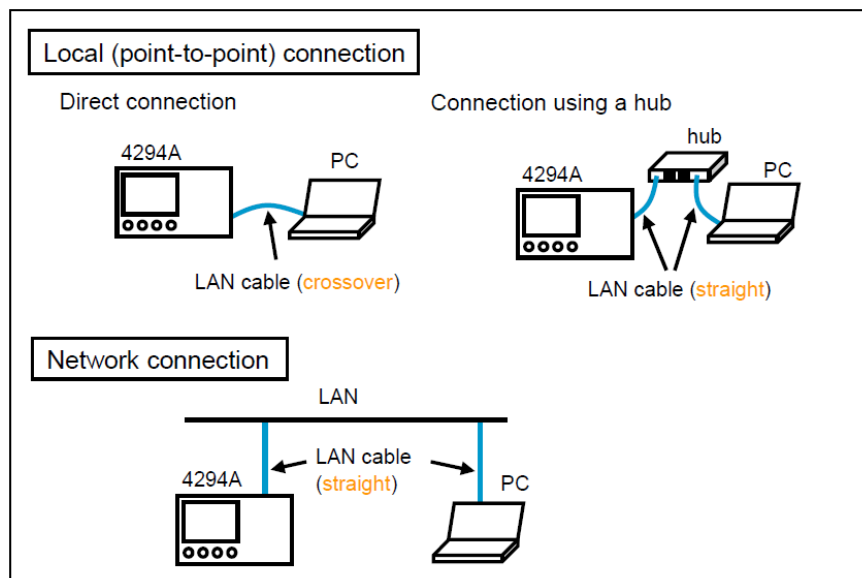
B. Connection using LAN cable

1. Run Agilent Connection Expert by double-clicking the icon in the task tray

← **Double click**

2. Connect the 4294A and the PC using a LAN cable. The type of LAN cable depends on the connection method.

   - Straight LAN cable for:

      Local connection using a hub

      Network connection

   - Cross over LAN cable for:

      Direct local connection (without using a hub)

3. Set the IP address, gateway, and subnet mask of the 4294A.

For local connection

- IP address

Set the 4294A's IP address just off by 1 (or so) from the PC's IP address.

For example, if the IP address of the PC is 100.100.10.10 then the 4294A's IP address can be set to 100.100.10.11.

- Gateway address

Enter the same value as the gateway of the PC.

- Subnet mask

Enter the same value as the subnet mask of the PC.

For network connection

Use the IP address, gateway, and subnet mask assigned by the IT department of your facility.

The LAN setting is available under Local hardkey. After the setting is complete, reboot the 4294A. For more details, refer to "9 Setting/Using Control and Management Functions - Setting/Checking the LAN" in the 4294A Operation Manual.

4. Select "LAN(TCPIP0)" then click "Add Instrument" on the Agilent Connection Expert.
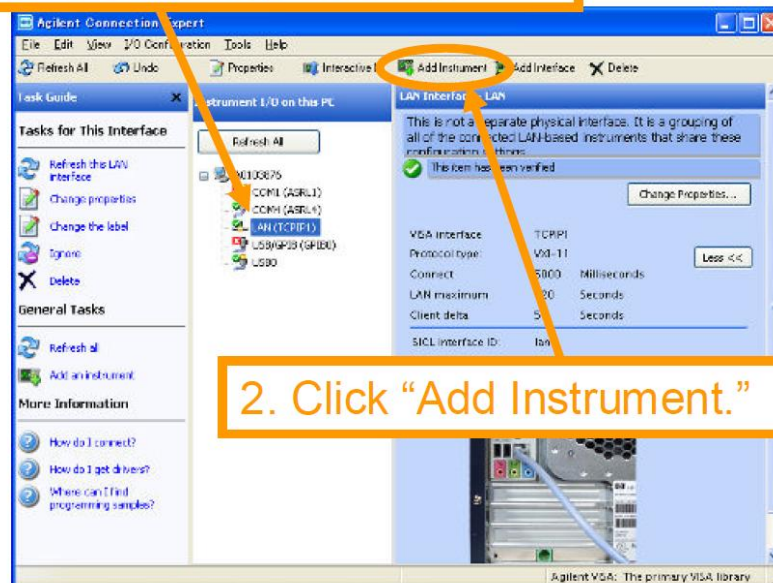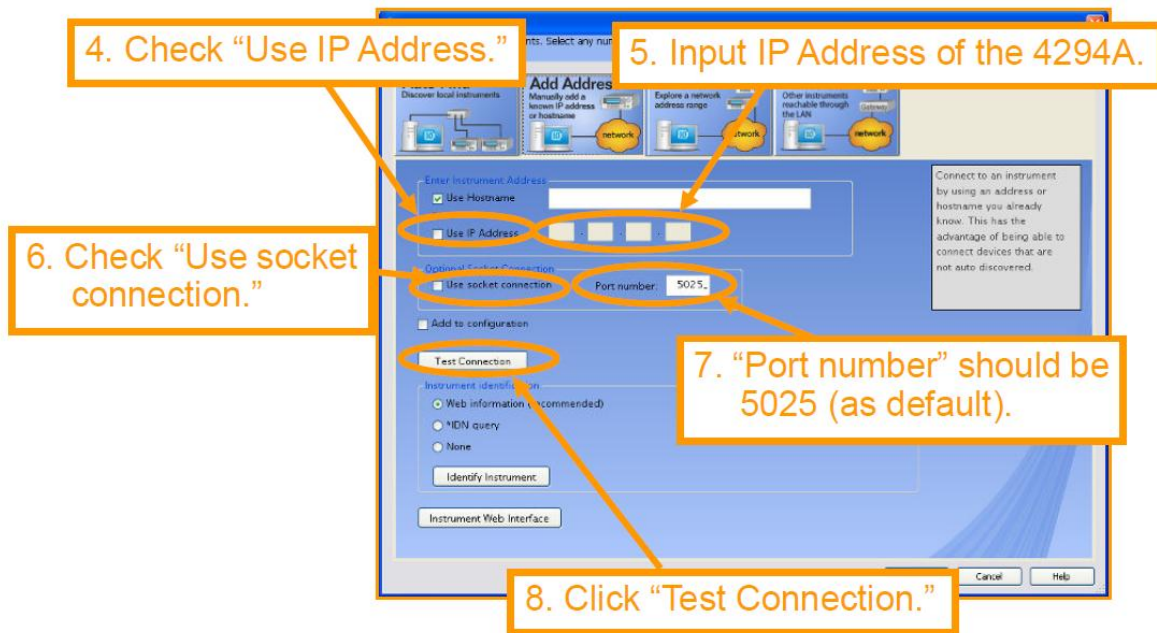
5. "Add LAN Instruments" dialog box appears then click "Add Address" button.
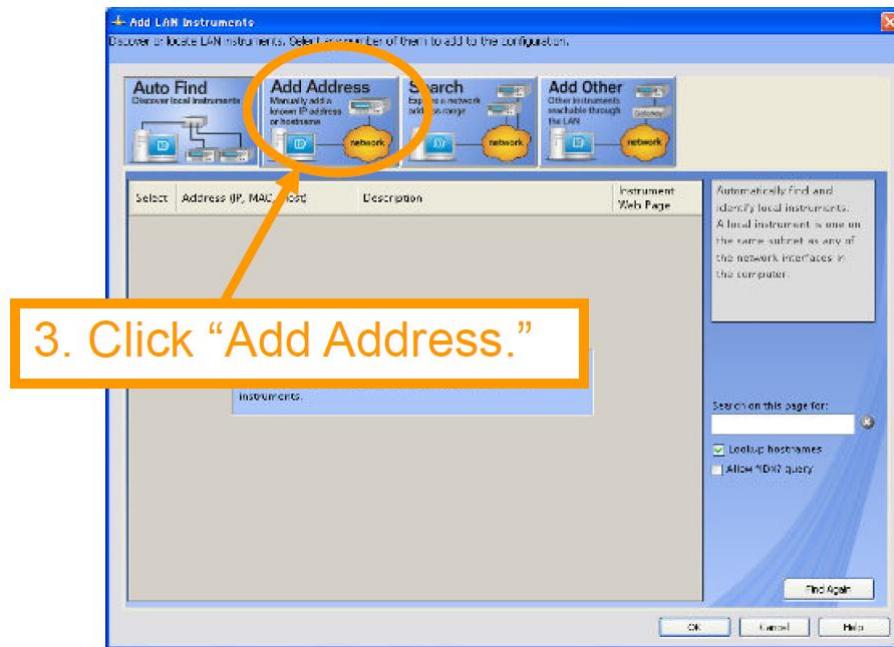
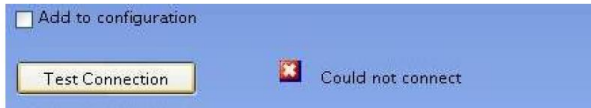6. Enter the information as shown in the figure below.

7. By clicking "Test Connection" in step 6, "The instrument is present" message appears when the settings are all correct. Click "OK" button located at the lower right corner of the window.
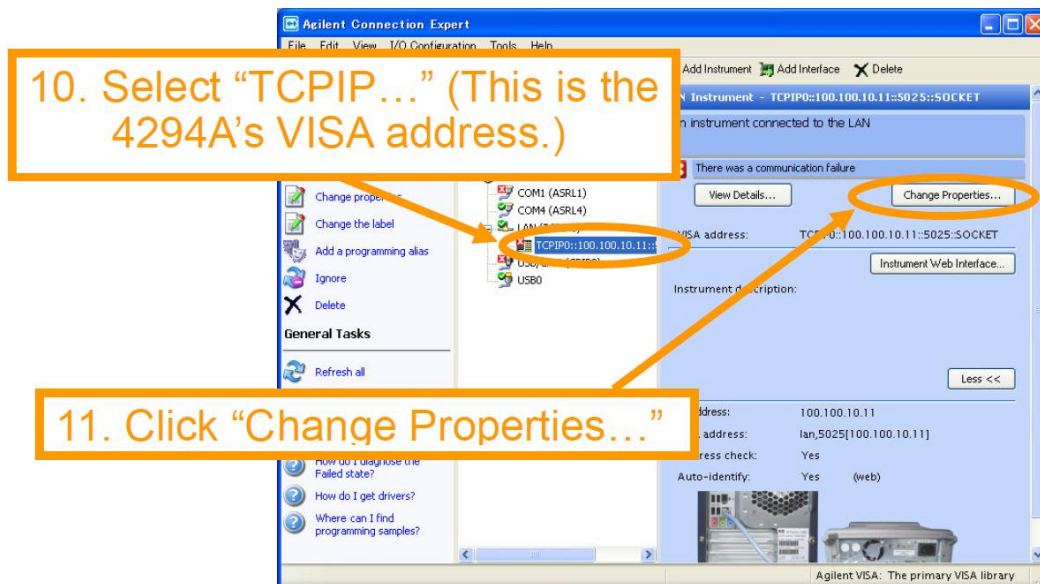

If the setting are not correct, "Could not connect" message appears. In this case, check whether each step was followed correctly.

8. After step 7, the 4294A appears under "LAN(TCIPI0)" in the "Instrument I/O on this PC" pane. Select "TCPIP…" (the 4294A's VISA address) and click "Change Properties…" button.

9. Change the configurable properties of the 4294A as shown in the figure below.

12. Remove the check of "Auto-identify this instrument."

VISA address is updated.

13. Click "Test Connection."

14. Click "OK."

10. When the icon " " is shown, the connection configuration between the 4294A and the PC is completed.

VISA address of the 4294A

(e.g., TCPIP0::100.100.10.11::5025::SOCKET)

3. How to use the program

1. Set the measurement conditions, then perform the compensation. The 4294A can sweep frequency, oscillator level, or DC bias.

2. Perform the single trigger measurement with the DUT by pressing Trigger hardkey > SINGLE softkey.

3. Open "4294A_DataTransfer_xxxx.xls" on the PC. Since this file contains macros, enable "Macros" to boot the program, then follow the "Step-1" and the "Step-2" in the "Main" sheet.

4. Click "Get Data" and "Get Image" button to transfer the measurement data and the display image. The image setting can be changed by pressing Copy hardkey > SETUP softkey then selecting one of B&W, FIXED COLOR, or IMAGE COLOR.

5. Change X/Y-axis format for the graph if necessary (X/Y-axis are changed to Log format in the example below).
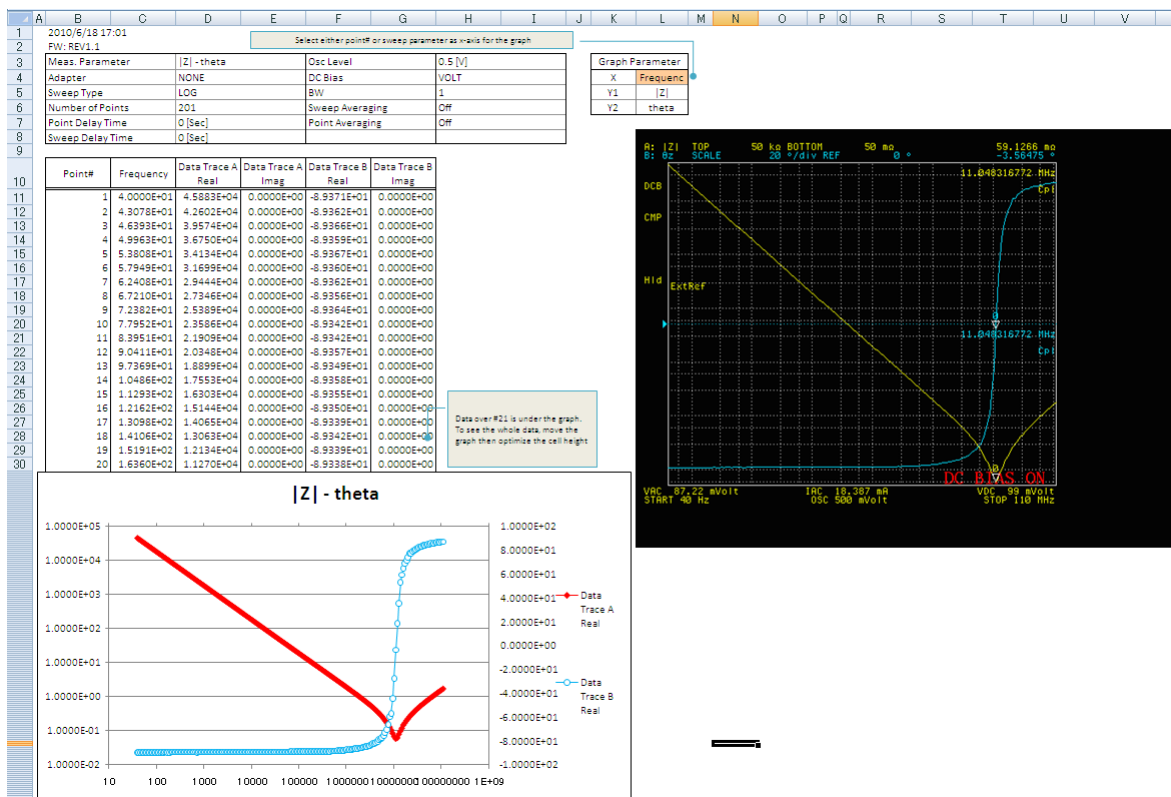
4. Alignment with 4294A IBASIC program

After making measurements using the 4294A IBASIC program such as the dielectric constant measurement sample program, the measurement data and display image also can be transferred to a PC using this VBA marco.

To show the IBASIC key labels on the display after running the VBA marco, press System hardkey > IBASIC softkey > ON KEY LABELS softkey.

Revision History

Revision	Date	Description
01.00	2008/12/29	Initial revision
01.01	2009/02/13	Get Image function added
02.00	2009/04/23	LAN connection function added
03.00	2010/6/21	User interface changed Graph added Imaginary trace data added Other minor changes
03.10	2011/10/07	A minor change for update Verified for Compatibility with Microsoft Windows XP Excel®: 2010, Windows 7 Excel®: 2007 and 2010