

Keysight N5990A Test Automation Software Platform

Installation Guide

Notices

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1 Introduction

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1.1 What's in This Chapter

This chapter provides an introduction of this installation guide.

1.1.1 Overview of This Guide

This guide provides a detailed description of the installation procedures for N5990A Test Automation Software Platform.

1.2 Document History

First Edition (June, 2014)

The first edition of this guide describes installation procedures for the following software versions:

N5990A ValiFrame_2.23_PCI-Express3_1.40,
N5990A ValiFrame_2.23_SATA_2.20, and
N5990A ValiFrame_2.23_USB3_1.40.

Second Edition (October, 2014)

The second edition of this guide describes installation procedures for the following software versions:

N5990A ValiFrame_2.23_PCI-Express3_1.40,
N5990A ValiFrame_2.23_SATA_2.20, and
N5990A ValiFrame_2.23_USB3_1.40.

Third Edition (January, 2015)

The third edition of this guide describes installation procedures for the following software versions:

N5990A ValiFrame_2.23_PCI-Express3_1.50,
N5990A ValiFrame_2.23_SATA_2.21, and
N5990A ValiFrame_2.23_USB3_1.50.

**Fourth Edition
(August, 2015)**

The fourth edition of this guide describes installation procedures for the following software versions:

N5990A ValiFrame_2.23_PCI-Express3_1.60,
N5990A ValiFrame_2.23_SATA_2.24, and
N5990A ValiFrame_2.23_USB3_1.53.

**Fifth Edition
(March, 2016)**

The fifth edition of this guide describes installation procedures for the following software versions:

N5990A ValiFrame_2.23_PCI-Express3_1.63
N5990A ValiFrame_2.23_SATA_2.30
N5990A ValiFrame_2.23_USB3_1.54
N5990A ValiFrame_2.23_MHL_2.20
N5990A ValiFrame_2.23_UHS_1.10
N5990A ValiFrame_2.23_HDMI_2.30
N5990A ValiFrame_2.23_DisplayPort_2.33
N5990A ValiFrame_2.23_MPHY_2.25

2 N5990A Overview

2.1 Test Automation Software Platform / 7

2.1 Test Automation Software Platform

The N5990A Test Automation Software Platform, “ValiFrame” is an open and flexible framework for automating tests such as electrical compliance tests for digital buses. The N5990A supports a wide range of buses, for example, PCI Express (Peripheral Component Interconnect Express), USB (Universal Serial Bus), HDMI (High-definition Multimedia Interface) and MIPI (Mobile Industry Processor Interface). The product runs on a standard PC that controls a wide range of test hardware. Typically, the hardware comprises instruments for stimulus and response tests such as pattern generators, BERTs (Bit Error Ratio Tester), and oscilloscopes. Key elements of the software platform are a test sequencer, receiver test libraries, and interfaces to oscilloscope applications for transmitter tests. Additional options are available, for example, User Programming. N5990A is implemented in C# within the Microsoft .NET Framework.

The software platform is specified in the data sheet 5989-5483EN that includes the PC requirements.

3 Installation Prerequisites

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3.1 Supported Operating Systems

The N5990A Test Automation Software Platform supports the following PC Operating Systems:

- Windows XP
- Windows 7 (32 and 64 bit)

3.2 Software Requirements

Install the following software in this particular order before the N5990A Test Automation Software Platform:

1. Windows XP OS only: Microsoft Windows XP SP3 or higher
2. Microsoft Office 2003 or higher
3. Keysight IO Libraries Suite 16.1 or higher (IO Libs Suite Folder)
4. MicrosoftNETFrameworkredistributable2.0
5. Keysight 81250A ParBERT (Parallel BERT) User Software 6.32 or higher (it is only for the applications which need ParBERT)

The N5990A Software CD includes a version of the software packages that are mentioned in step 1 and 2. It is however recommended to check the Keysight web pages (www.keysight.com) for the latest version of the IO Libraries Suite.

4 Software Installation and Update

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4.1 Introduction

The N5990A Test Automation Software Platform runs on a standard PC which controls the test instruments. The PC system requirements are given in the N5990A data sheet (<http://literature.cdn.keysight.com/litweb/pdf/5989-5483EN.pdf>). If N5990A is already installed on the PC and it is not to be updated, proceed to the next chapter.

NOTE

The N5990A Test Automation Software Platform has similar installation process for all the standards (such as USB, PCIe, or SATA). This guide explains the installation process using USB as an example. Should you want to another standard, follow the same steps as explained for USB installation.

4.2 Software Installation

When the N5990A Software installer file is executed, a window appears as shown in [Figure 4-1](#).

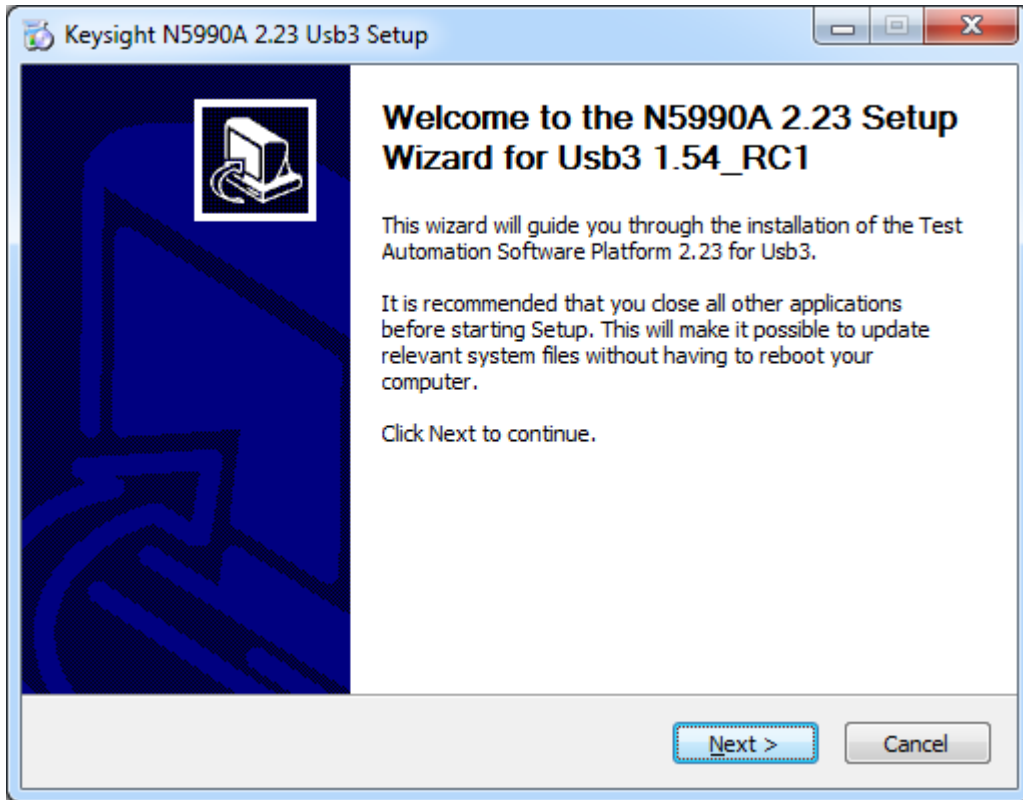


Figure 4-1: N5990A Setup Wizard Example

Click on the “Next” button to continue to the next step. Then, the license agreement of the N5990A Software pops ups (Figure 4-2).

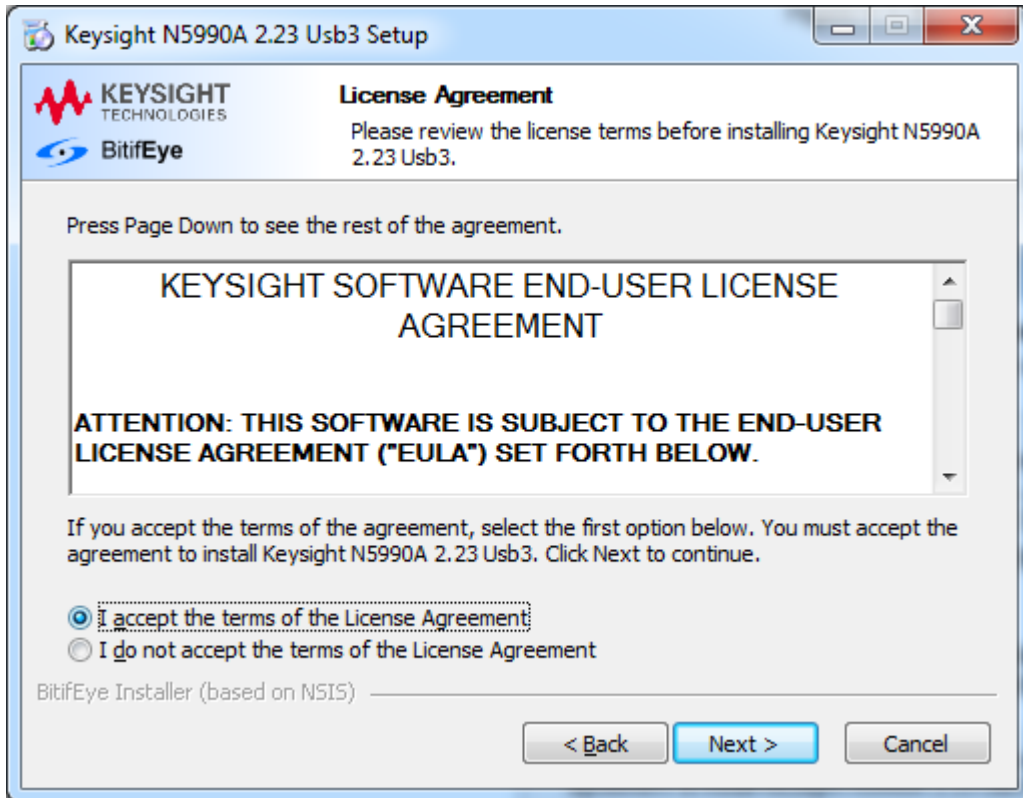


Figure 4-2: N5990A License Agreement Window

First read all the terms and conditions of the license agreement carefully and select “I accept the terms of the License Agreement” option. Then, click on “Next” to continue. After pressing the “Next” button, a window is displayed as shown in [Figure 4-3](#).

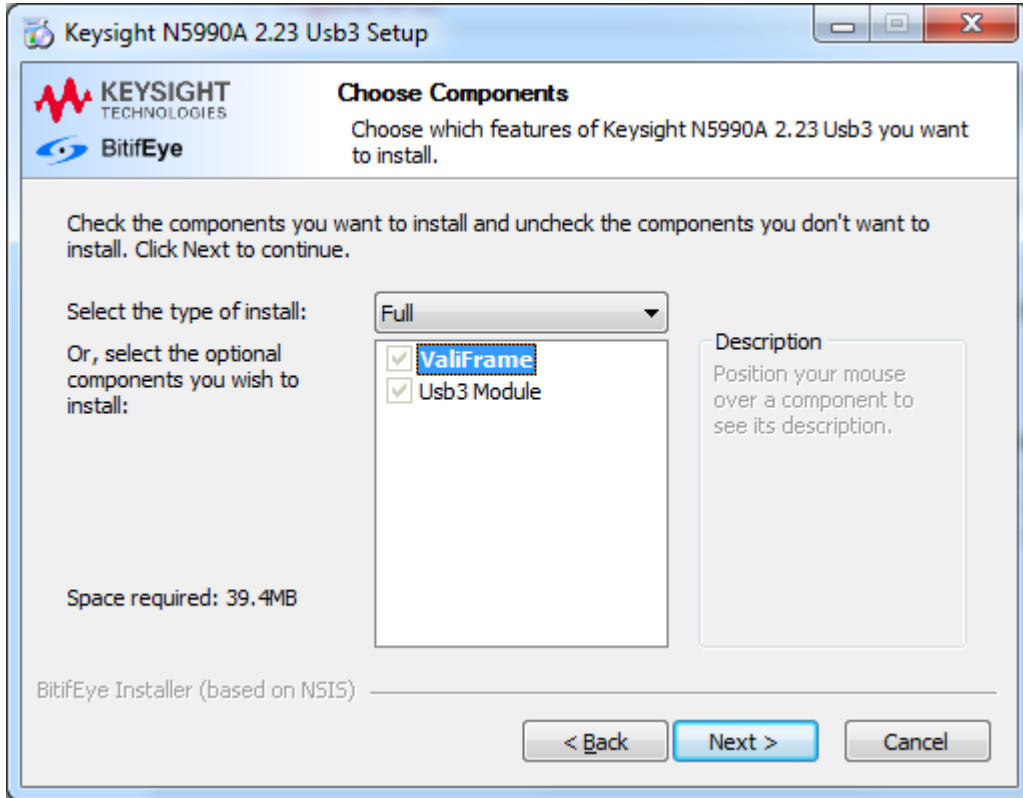


Figure 4-3: N5990A Choose Components Window

Click on the “Next” button to continue to the next step. Then, the window appears as given in [Figure 4-4](#)**Error! Reference source not found.**

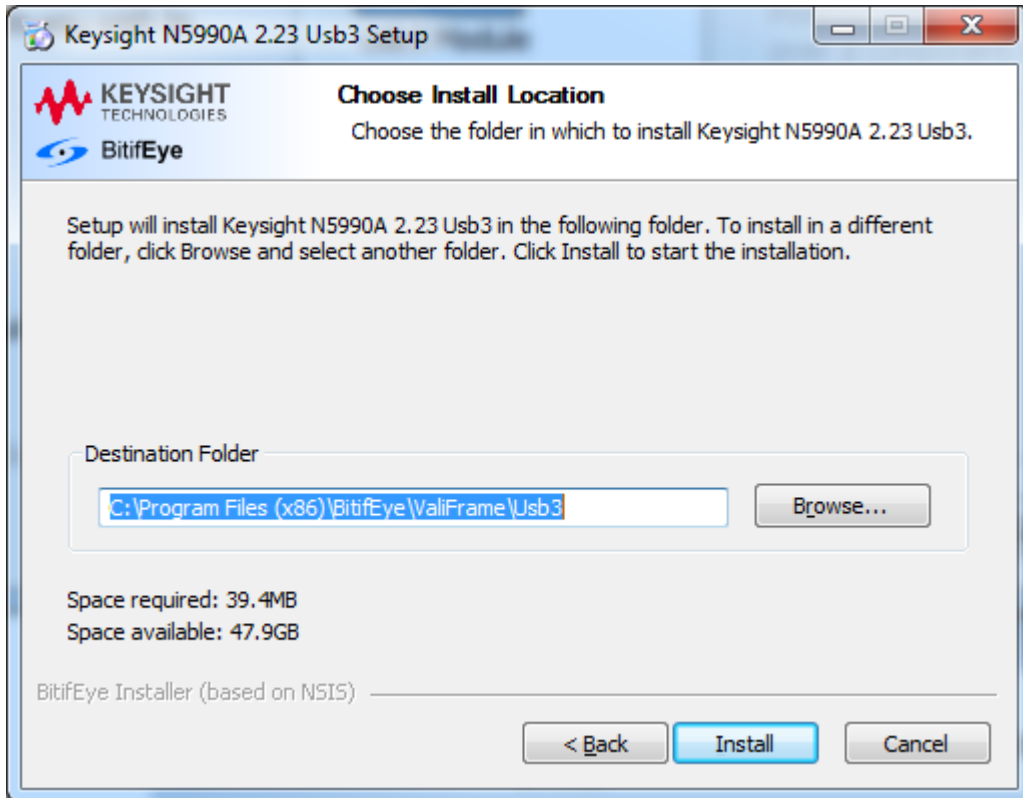


Figure 4-4: N5990A Choose Install Location Window

Click the "Browse..." button to select the destination folder, in which the software shall be installed. Next, click the "Install" button to install the software. The following panel (Figure 4-5) appears and shows the status of the installation.

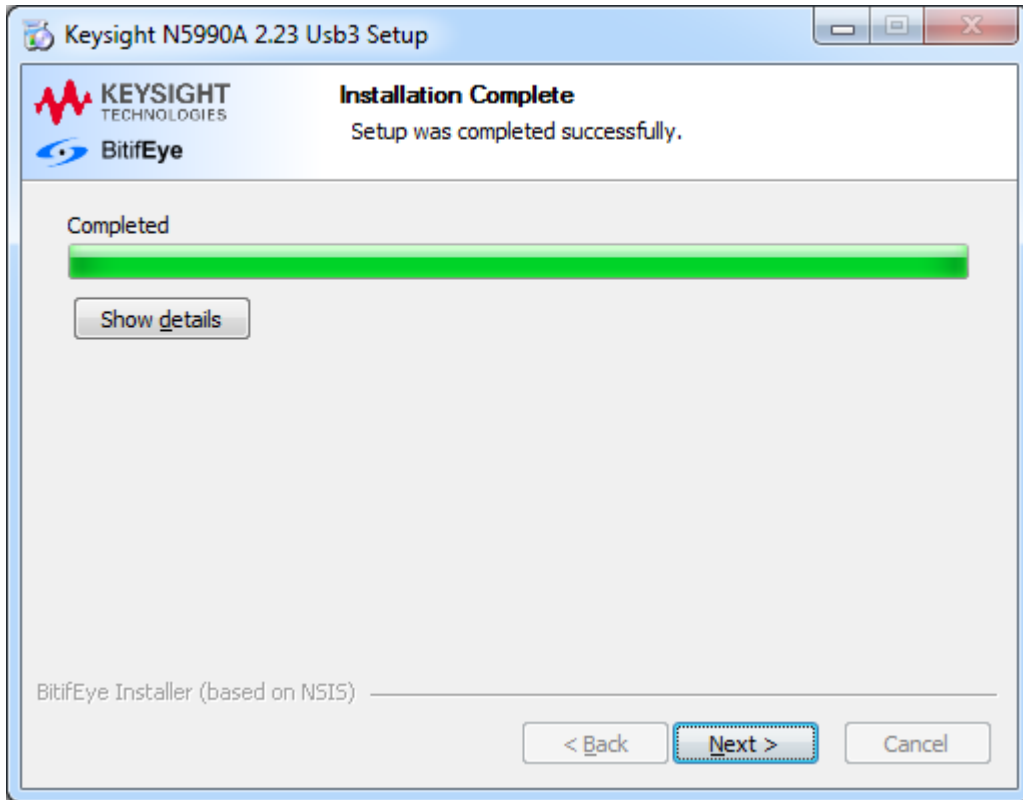


Figure 4-5: N5990A Installation Status Window

Once the installation is completed, click the “Next” button to continue. Figure 4-6 pops up.

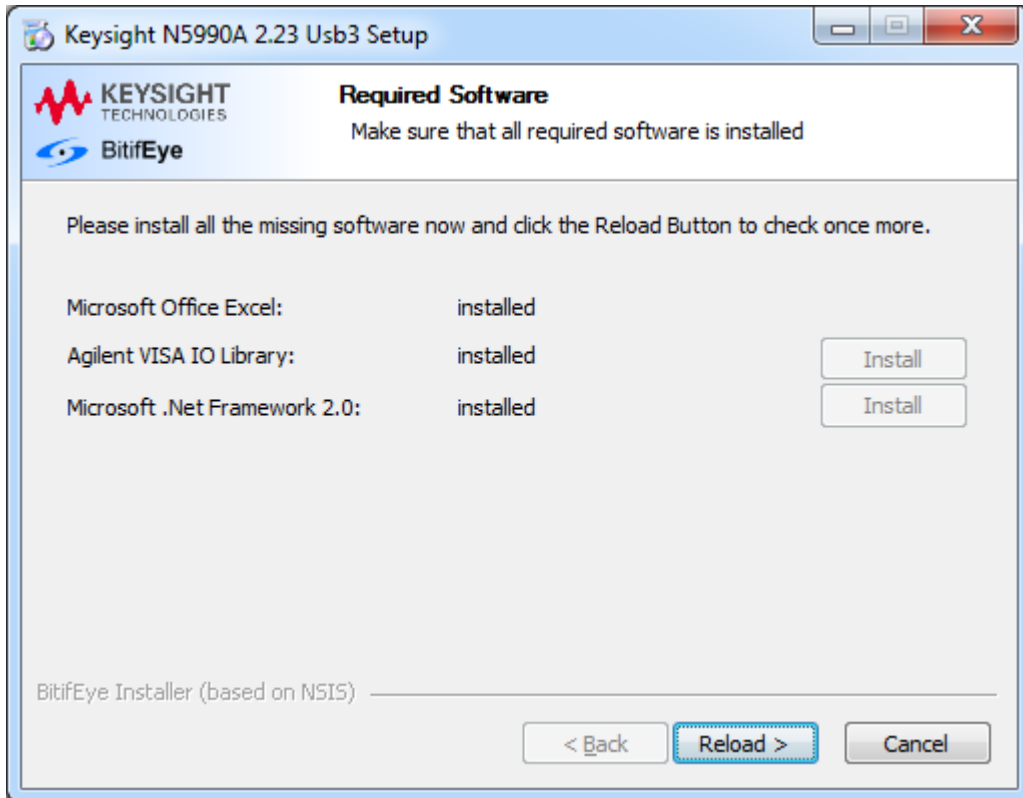


Figure 4-6: N5990A Required Software Window

In Figure 4-6, a list of required software for the N5990A Software and also the status of individual software is also shown. If any required software is not installed prior to N5990A, the N5990A Required Software Window shows that the missing software needs to be installed. Press "Next" button to go to the next step.

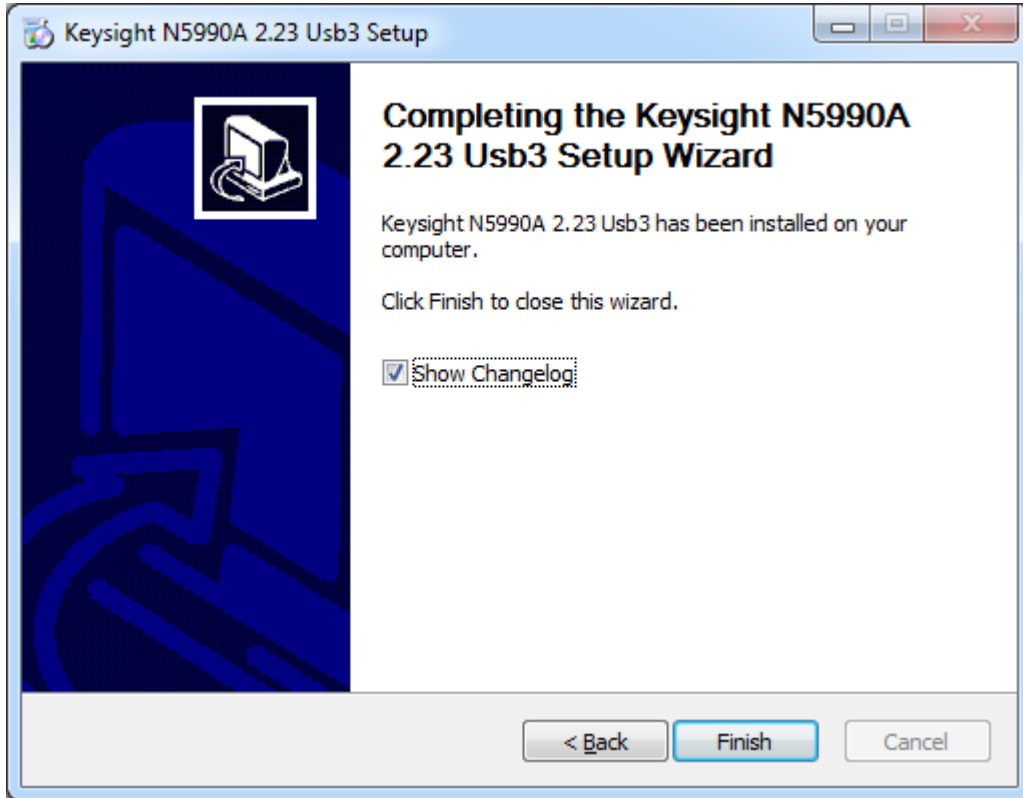


Figure 4-7: N5990A Installation Final Window

The N5990A software installation is completed by clicking "Finish" button.

4.3 Software Update

If you want to upgrade to a new version of the Test Automation Software Platform but wish to keep your software settings, first see Data Structure and Backup in Appendix. Then please uninstall your present version of the Test Automation Software Platform from the PC and continue with the Software Installation.

5 Starting & Registering the Software

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5.2 Software Registration / 19

5.1 Starting Registered Software

Double click on the ValiFrame icon on the desktop or start the N5990A Test Automation Software from the **Start > Programs > BitifEye** menu.
If the N5990A software is already registered, it will start automatically.

5.2 Software Registration

If the software is started without a valid license key, the following panel (see [Figure 5-1](#)) will open. Follow the instructions to request the permanent license.

The screenshot shows a dialog window titled "ValiFrame Test Automation". It has a standard Windows window title bar with minimize, maximize, and close buttons. The main content area is divided into several sections:

- Site code:** A text box containing "1C686203".
- MID:** A text box containing "96BC-B593-3083-897C".
- Days left:** A text box containing "30".
- Uses left:** A text box containing "N/A".
- Activation code:** An empty text box.
- Radio buttons:** Two radio buttons are present. The first is labeled "Unlock application" and is unselected. The second is labeled "Enter application" and is selected.
- EVALUATION:** A blue horizontal bar with the word "EVALUATION" in white capital letters.
- Buttons:** At the bottom, there are two buttons: "Cancel" and "Continue >>".

Figure 5-1: License Start-up Dialog Window

To obtain a valid license key, send an e-mail to licensing@bitifeye.com with the following information:

- Customer name and address (such as company and department or university and institute)
- 16 digit certificate number (XXXX-XXXX-XXXX-XXXX, supplied with the N5990A CD)
- Site Code and MID from the License Start-up Dialog window or the Hardware Information from the Help > About > License Information dialog.

The activation code will be provided within three working days of the mail being received at the address indicated above.

Follow the steps to install the license:

1. Copy the received license file (*.vlf) to any location on the controller PC.
2. Start the “ValiFrame License Installer,” click **Start > All Programs > BitifEye**
3. Select an application such as **USB, SATA, or PCIe**.
4. Click **Valiframe License Installer** option.
5. In the **Valiframe License Installer** dialog box, click **Select and Install License** option.
6. In the **Select License File** dialog box, select the specific license file, and click **Open**.
7. In the **Valiframe License Installer** dialog box, view the message “Result: License Installed!” as shown in [Figure 5-2](#) to ascertain successful installation of the software license.

While the N5990A Software is running, the license information can be reviewed by selecting **Help > About** from the menu (see [Figure 5-3](#)).

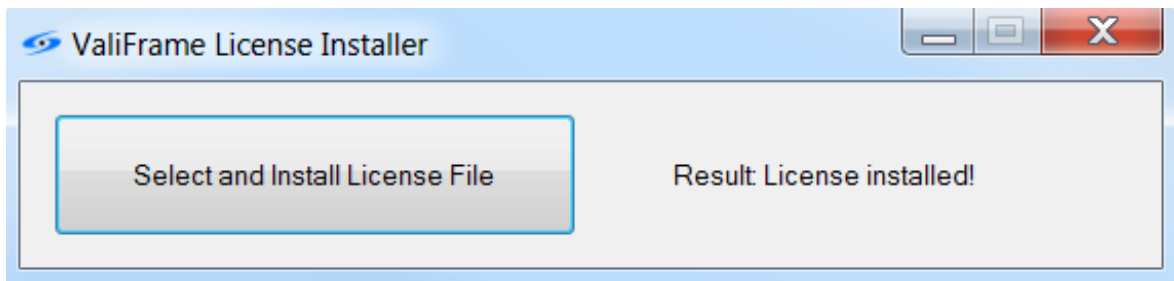


Figure 5-2: License Installation Message

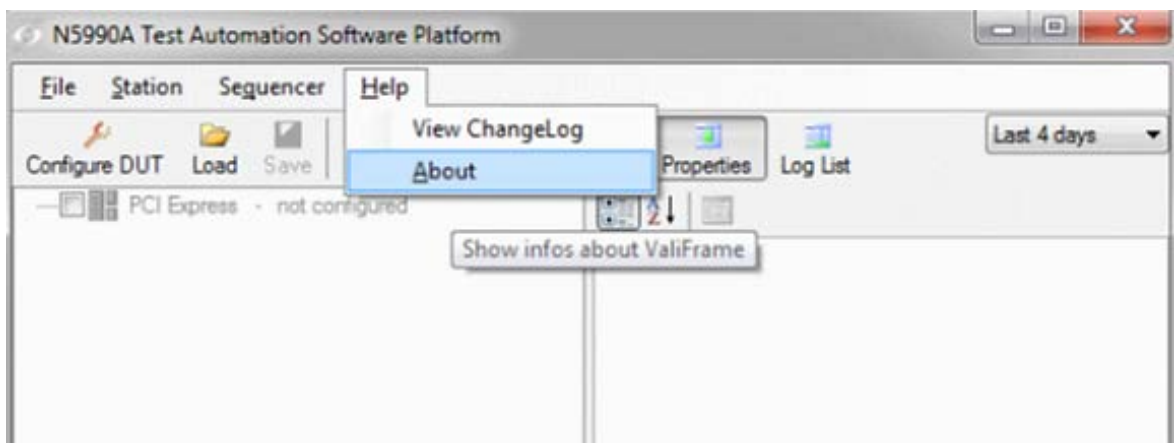


Figure 5-3: Show N5990A Software Info

Click **License Information** to show the installed licenses
(see [Figure 5-4](#)).

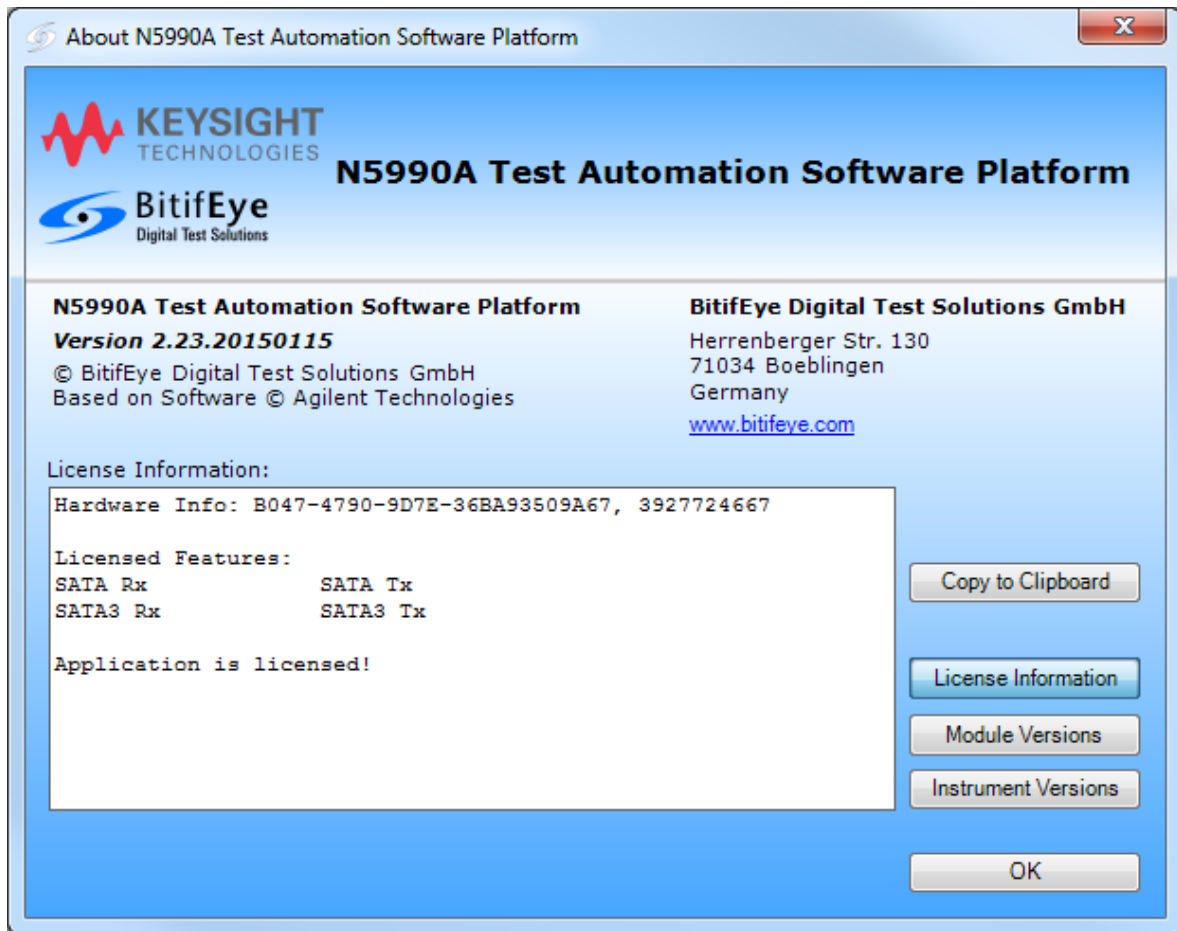


Figure 5-4: N5990A License Info Panel

6 Appendix

6.1 Data Structure and Backup / 23

6.1 Data Structure and Backup

6.1.1 N5990A Data Structure

All the N5990A internal data is saved in the application data folder: "Documents and Settings\All Users\Application Data\BitifEye \ValiFrame" for Windows XP or "ProgramData\BitifEye\ValiFrame" for Windows 7.

NOTE

Windows XP hides the system folders by default. To make the application data folder visible, the "Hidden Files and Folders" setting needs to be set to "Show hidden files and folders" in the Windows file explorer > View settings.

The ValiFrame application data folder contains the following folders:

- Images
- Settings
- Pattern
- Calibrations
- Tmp

6.1.1.1 Images

The "Images" folder contains the connection diagram images.

6.1.1.2 Settings

The "Settings" folder contains the default setting file for the instrument (mainly the Agilent 81250) and .vset files which contains the changes to the default registry entries. For each application, a sub folder is created and a ValiFrame.vset file is created in these sub folder as soon as any ValiFrame setting is changed from its default. The settings files contain for example the instrument connection setup.

6.1.1.3 Pattern

The Pattern folder contains the test pattern files. These are text files which contain the pattern in hexadecimal format.

6.1.1.4 Calibrations

The calibration data is stored in the "Calibrations" folder. For each calibration procedure at least one calibration file is stored. These files are text files and can be imported into MS Excel.

6.1.1.5 Tmp

All temporary files are created in the Tmp folder. The sub folder "Results" contains the Excel file of the final result of each calibration and test procedure. This is a safety feature and these files are used for recovery in case the user forgot to save them.

6.1.2 N5990A Backup

Use the ValiFrame application data folder to save calibration data, modified test pattern or settings for backup or transfer to another PC.

The files in the folders, "Images" and "Pattern" will be generated or if they already exist, be overwritten during a N5990A Software installation. In the "Settings" folder, all instrument settings are overwritten by the installation except the .vset files. In the "Calibration" folder, all files are generated by the calibration procedures and will not be overwritten by the installation. To compare or archive the calibration data, backup the "Calibration" folder.



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