OptiInstrument

OptiInstrument 2.1 Release Notes

IMPORTANT

- Before installing OptiInstrument, make sure that NI-VISA.NET Runtime is installed on the system. When installing the NI-VISA, select the NI-VISA.NET Runtime.

- Users can install NI-VISA from the following link
  https://www.ni.com/en-ca/support/downloads/drivers/download.ni-visa.html#346210.

  Note: The NI-VISA is a large package, it may take longer time to download/install.

Installation Notes:

- When starting the installation process of OptiInstrument, the popup message shown in Fig.1 offers the user a choice to quit the installation process if the NI-VISA.NET Runtime package is not installed on the same computer or continue the installation if the package is installed. However, the error message shown in Fig. 2 appears when the user initiate OptiInstrument application and the NI-VISA package is not installed.

- OptiInstrument 2.1 includes the option to install OptiInstrument samples during (or any time after) installation. The installation location for the samples folder can be defined (by default the samples folder will be installed in the user's **Documents**, under "OptiInstrument 2.1 Samples" folder.
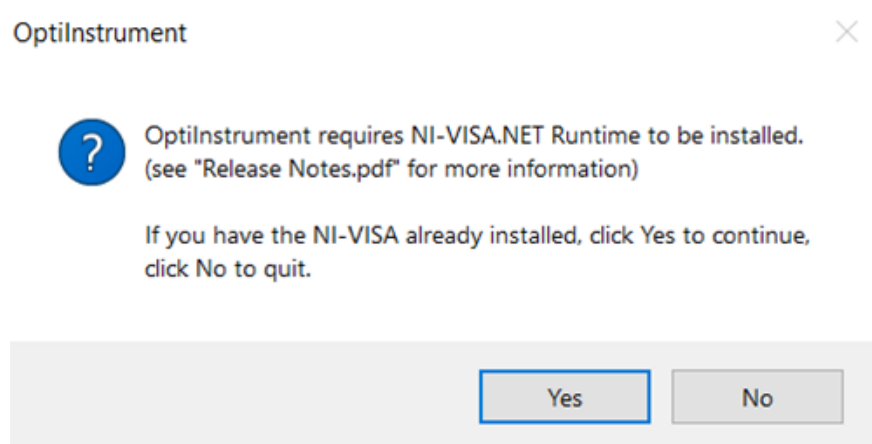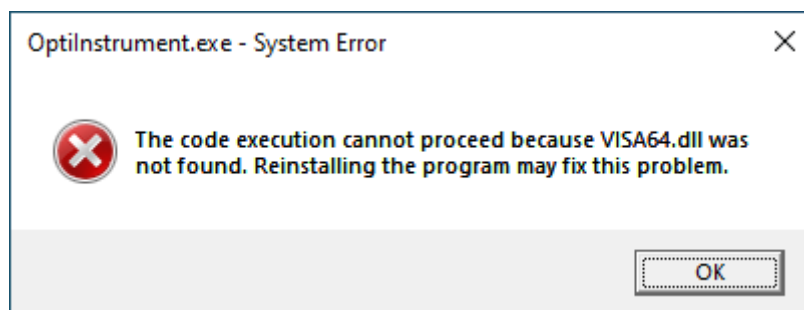

Fig. 1 OptiInstrument installation popup message

Fig. 2 OptiInstrument installation error message when NI-VISA Runtime is not preinstalled

Minimum Hardware and Software Requirements

- OptiInstrument requires the following minimum/recommended system configuration:

- <u>Minimum PC configuration</u>: PC with Pentium processor (E6, G Series) or equivalent.

- 8GB RAM.
- OptiInstrument requires the following third-party software packages to be installed:
- NI-VISA (NI-VISA.NET Runtime).

- <u>Recommended PC configuration</u>: PC with a clock speed > 2 GHz with 2-4 cores (e.g. Intel i3, i5, i7) and 16GB RAM or more.

- <u>Operating Systems</u>: Microsoft Windows 8.1/10 (**64-bit only!**)

- **Microsoft is shelving Windows 7;** we will not support Windows 7 starting this release. However, the software might run under Windows 7, but we do not guarantee it and we will not be able to provide technical support for bugs/crashes.

- 2 GB free hard disk space.

- 1280 x 1024 graphic resolution

Application Execution

- **Administrators:** when installing OptiInstrument for users with Restricted User Profile, install the sample files in a folder where these users have Read/Write access. By default, the sample files are installed in the current user's Document folder. OptiInstrument requires the read/write file access and will not work with read-only files.

- For the OptiInstrument Help feature to function properly, Adobe Acrobat Reader must be installed. To get the latest version please visit the Adobe website at http://www.adobe.com/.

- Some computers are configured in power saving mode to go to Hibernation or Sleep mode when they are not in use. It is recommended to disable this feature, especially when running unattended lengthy simulations. Typically, after the

simulation is complete, the computer idles and eventually goes to Hibernation. This causes the licensing platform drivers to invalidate the license. When the computer wakes up and resume its execution, OptiInstrument software will issue a message that the license is not available and terminate, losing the simulation results in the process. Please disable the computer hibernation feature to avoid this problem.

OptiInstrument Software Overview

The user-friendly graphical user interface (GUI) of **OptiInstrument 2.1** Software is shown in Fig. 3. It is a standalone tool that can be used to communicate and control different kinds of instruments. OptiInstrument uses the standard commands for programmable instruments (**SCPI**) to communicate **physically** or **remotely** with instruments. The tool uses standard communication interfaces such as **TCP/IP**, **USB**, **GPIB**, or a serial port (**RS232/RS485**). Users can load lists of SCPI commands from **XML files** or write individual commands to control the instrument(s). The commands appear in a **tree configuration**. A single command or a sequence of commands can be executed by OptiInstrument. A **Python script** can be generated for the SCPI commands, saved, loaded and executed by OptiInstrument or in a Python environment. OptiInstrument GUI has a built-in viewer and CSV file analysis window. The GUI supports dockable windows that can be split of the main GUI or placed anywhere in the GUI. OptiInstrument is ideal for automated testing and characterization.

OptiInstrument software version 2.1 does not require the user to install python software on his computer. A directory with required python and plotting directories are embedded and offered as part of the installer of OptiInstrument software.
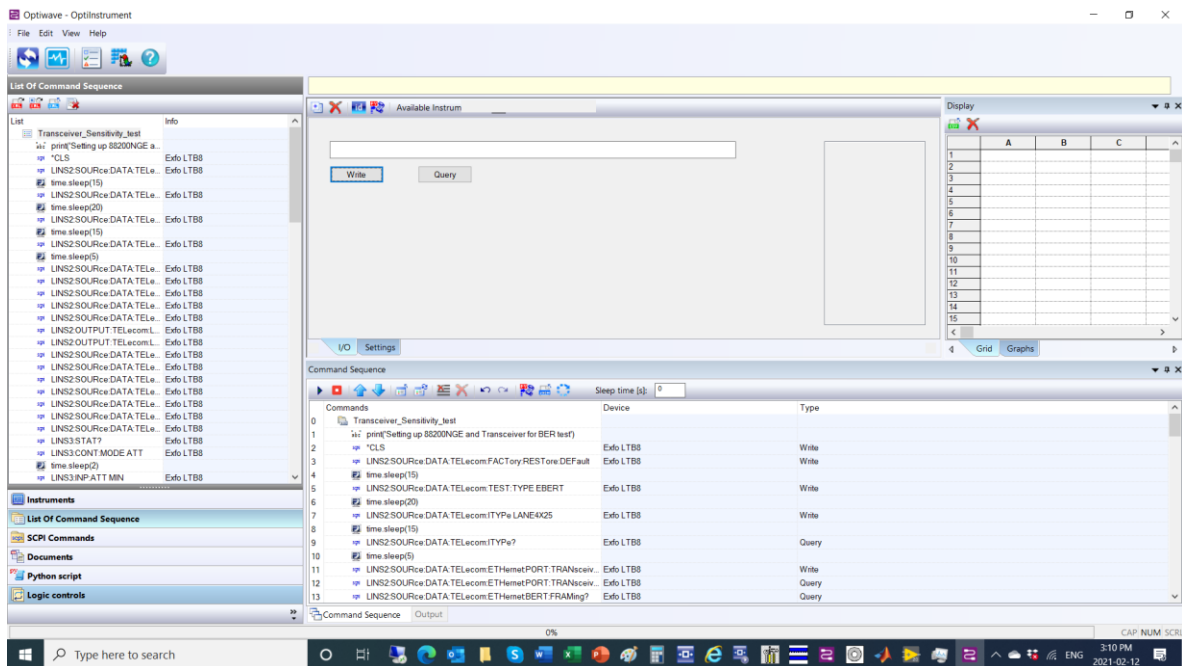

Fig. 3 OptiInstrument GUI

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New icons have been added to the GUI to enable new capabilities of the software. A **Replace Resource Name** icon is added to allow users to modify the instruments' resource name in a sequence loaded from the Example Library based on their actual available resource. Thus, the replacement of the resource name enables executing the same SCPI command sequence used in the example. The newly added **Update Grid** icon is used to update the columns' title and units of the captured data of the instruments in the grid and graph display tabs of OptiInstrument software GUI.

Key Features of OptiInstrument 2.1

New features are added to version 2.1 on top of the great and powerful features of the older versions of OptiInstrument software. Please refer to older versions' file OptiInstrument_New_Features.pdf for a list of their features.

- Users can replace the instrument resource name in any loaded SCPI command sequence with the actual available resource name of connected equipment.
- The units of captured data can be changed to the desired ones.
- The title of the Graph displayed in the GUI can be change as needed.

OptiInstrument Software Applications

- Remotely communicate with instruments
- Setup parameters of equipment
- Automate testing and characterization
- View generated signals
- Extract & save the data of generated signals for post processing
- Integrate instruments with photonics and systems simulation tools

OptiInstrument 2.1 Example Library

OptiInstrument 2.1 Software has many examples that are created using commercial instruments from Rigol and EXFO. The examples are organized in subdirectories for each vendor. Each example has a readme file that describes the setup and the instrument(s)/card(s) used in each example as well as the result file(s). The **Samples** directory has also a subdirectory (**EXFO_General SCPI Commands**) for all SCPI command offered by EXFO for their different equipment as well as the EXFO **Tokens** subdirectory. These commands are saved in XML files that can be loaded into OptiInstrument List of Command Sequence pane and used to build the desired SCPI command sequences.

1. **EXFO Samples**