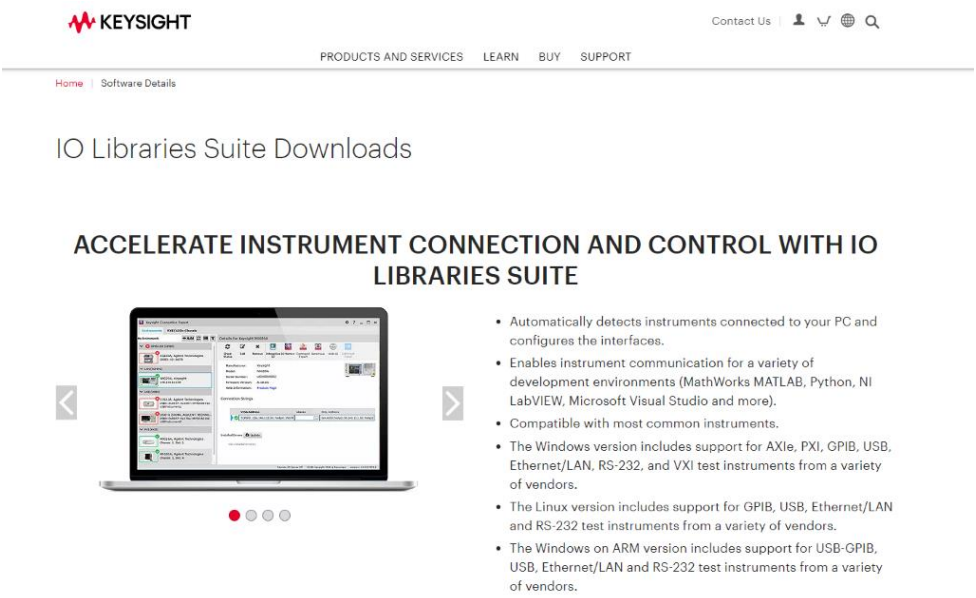
STEPS TO CONNECT AND CONFIGURE THE OSCILLOSCOPE FOR AUTOMATED CONTROL

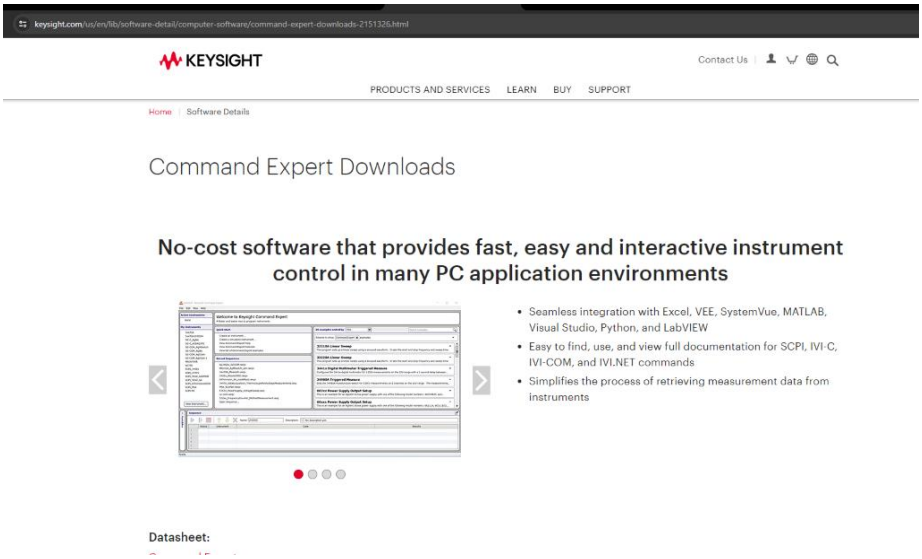
1. Install Required Software

To interface your oscilloscope with your PC, install the following software:

1. **Download and Install Keysight IO Libraries Suite**
    - This suite provides the necessary drivers and communication tools for connecting instruments.
    - Follow the on-screen instructions to complete the installation.



2. **Download and Install Keysight Command Expert**
    - This tool allows you to send SCPI commands and automate instrument control.
    - Complete the installation by following the setup wizard.



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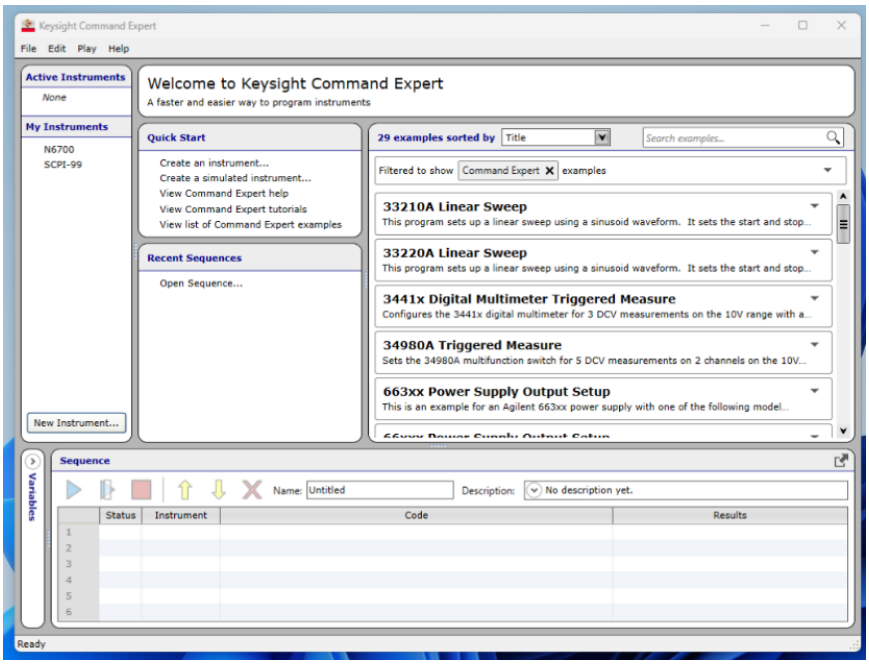
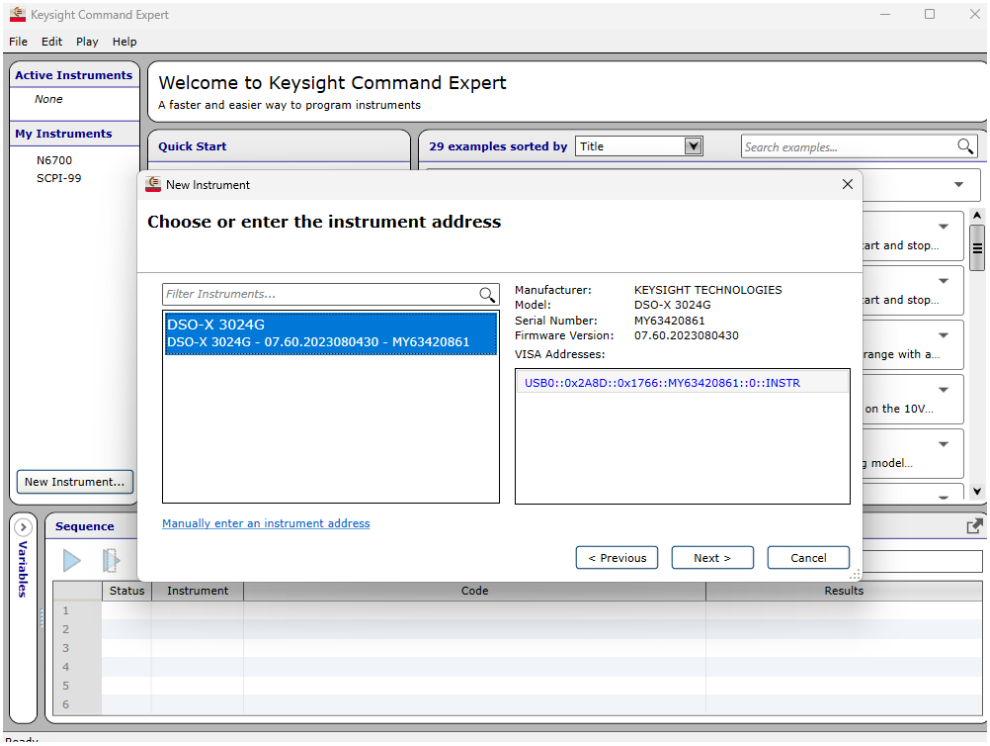
2. Connect the Oscilloscope

1. Open **Keysight Command Expert**.
2. Click on **"New Instrument"**.
3. Use a **USB cable** to connect the oscilloscope to your computer.



4. The program should **automatically detect** the connected instrument.



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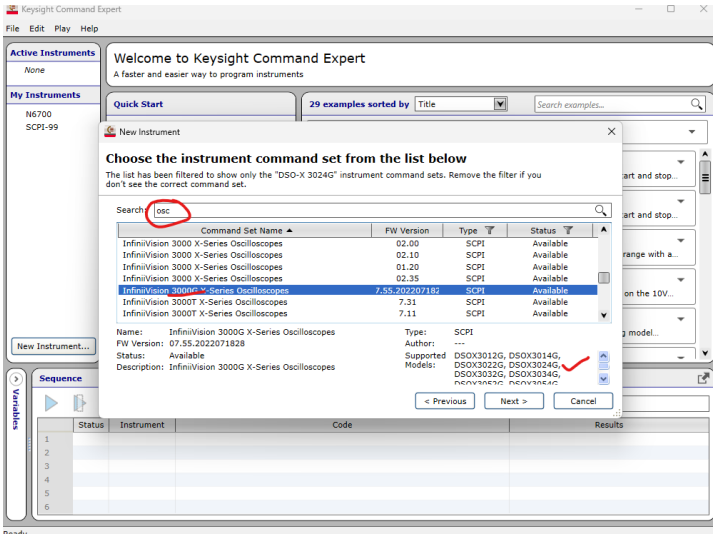
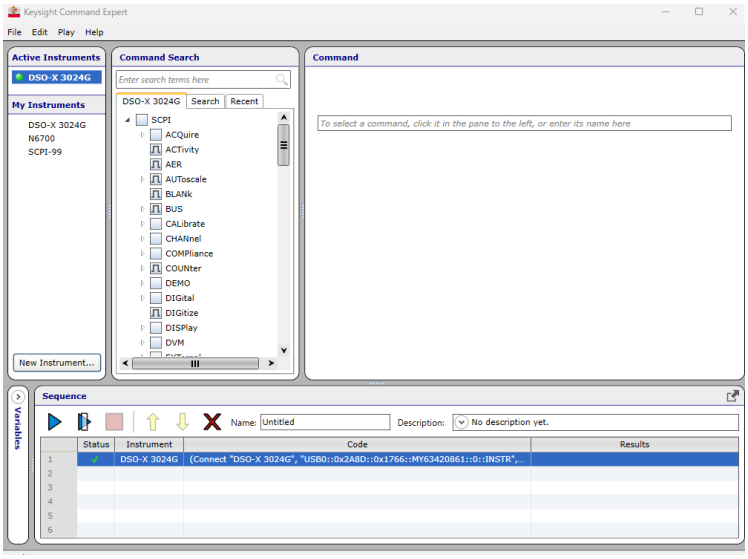
3. Configure the Command Sets

1. The program will provide a **list of available command sets**.
2. Check the **model number** of your oscilloscope to select the appropriate command set.
3. Follow the program's instructions to **download and install** the required command sets.



4. Verify the Connection

1. Ensure the oscilloscope is successfully recognized by the software.
2. If the connection fails, try:
    - Restarting the oscilloscope and software.
    - Reconnecting the USB cable.
    - Checking for missing drivers.



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STEPS TO CONNECT AND CONFIGURE THE OSCILLOSCOPE FOR AUTOMATED CONTROL

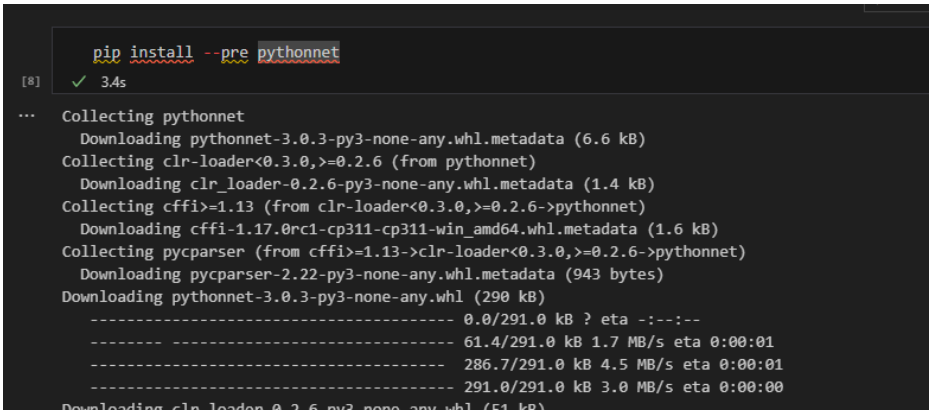
5. Setting Up Python for Instrument Control

To communicate with the oscilloscope using Python in **VS Code**, install the required dependencies:

1. Open a terminal in **VS Code** and run the following commands:

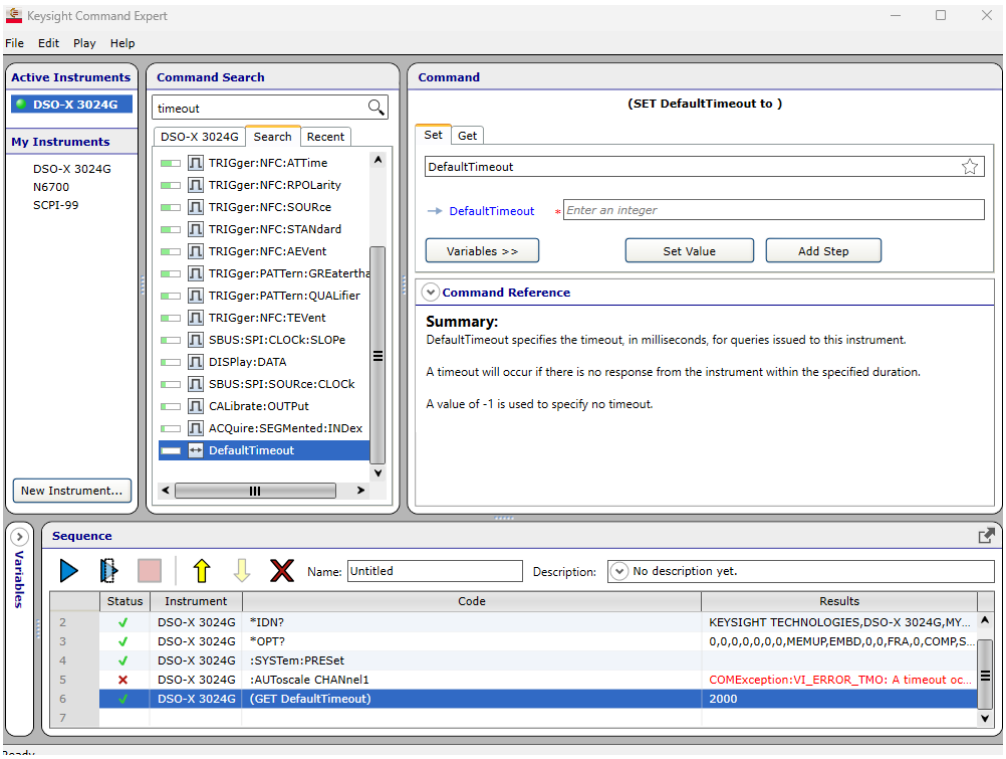
   pip install pyvisa

   pip install --pre pythonnet



2. Test the connection using basic SCPI commands such as:
   - **Auto Scale**
   - **Identify (*IDN?)**

   This ensures the PC can send commands successfully.



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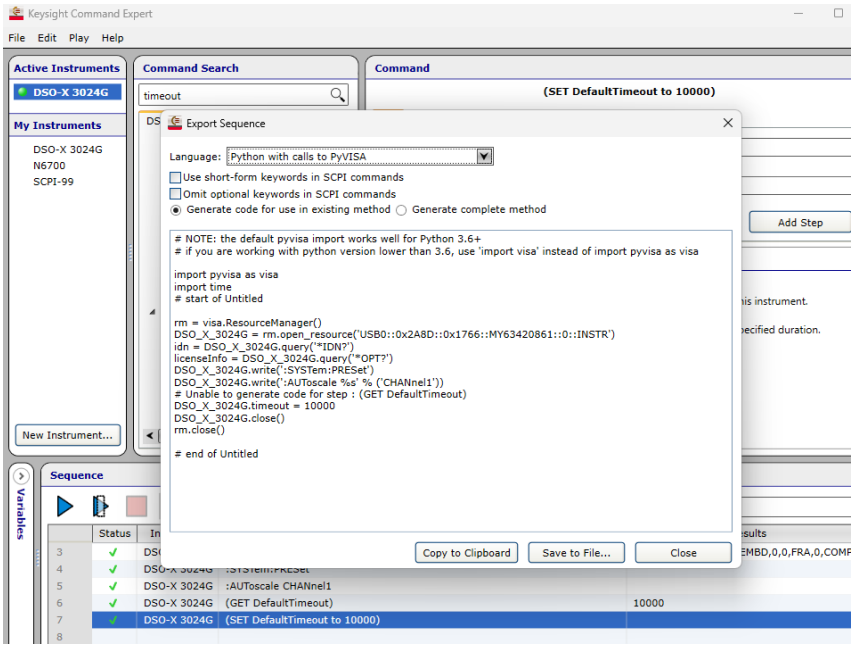
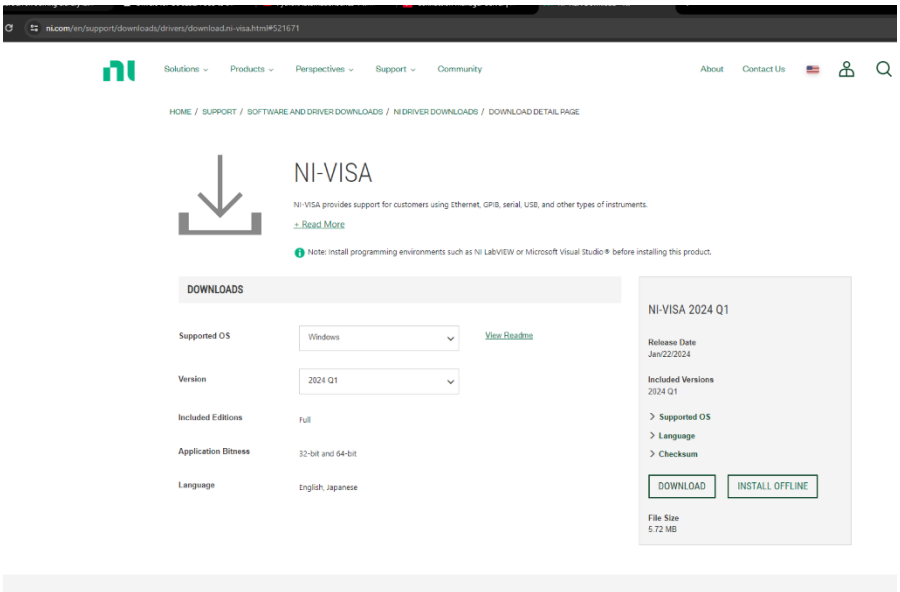
3. You can also **export sequences** of commands from **Keysight Command Expert** in your preferred programming language.



6. Troubleshooting

If you encounter an error like **“Cannot find VISA”** in VS Code:

- **Download and install NI-VISA** from the National Instruments website.
- Restart your system and try running the Python script again.



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