

How to Log Waveform Data to a File

Prerequisites

[How to Display Simulated Signals using Waveforms](#)

Procedure

The Waveform Data Logger Custom Device is an open-source tool freely available for users to download online. It can be deployed in a VeriStand project alongside the Power Electronics Add-On to record [Waveform](#) channel data to a file during execution.

 The Waveform Data Logger Custom Device is not developed, maintained, or supported by OPAL-RT. For any issues or questions related to its use, please contact [National Instruments Support](#).

Installing the Waveform Data Logger Custom Device

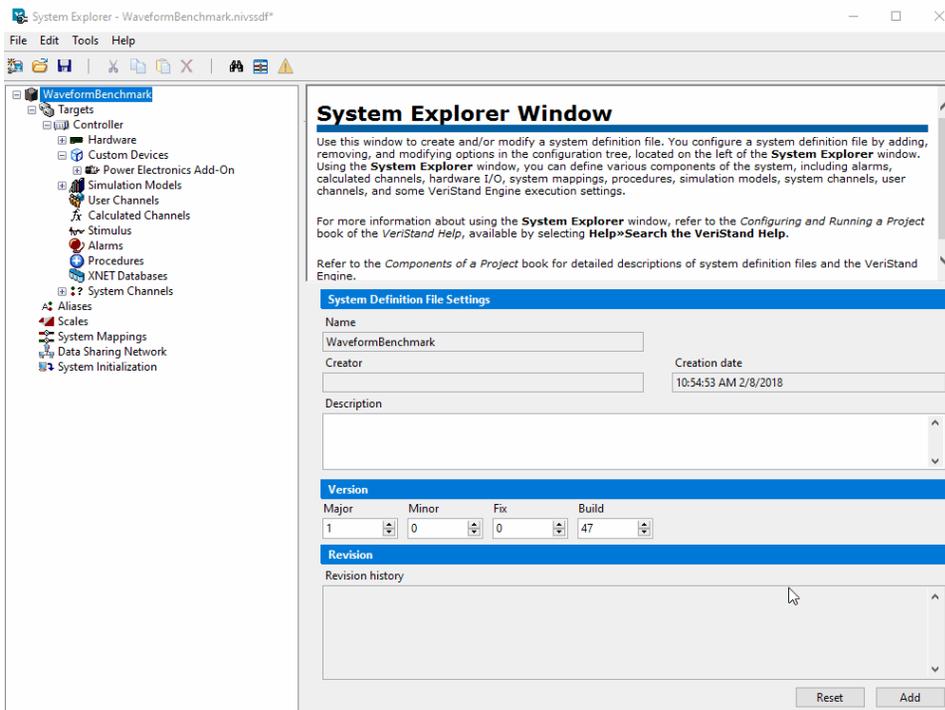
Download and install the Waveform Data Logger Custom Device from GitLab:

1. Navigate to [Waveform Data Logger Custom Device](#) and select the latest build corresponding to your version of VeriStand.
2. Download the `.njpg` file for the build.
3. Double-click the file to open it in the NI Package Manager and follow the installation prompts.

Logging Data to a File

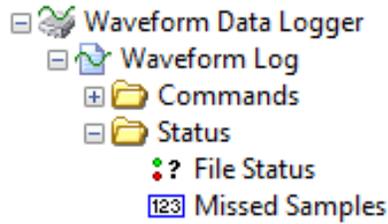
The steps below describe how to add the Waveform Data Logger Custom Device to a VeriStand project alongside the Power Electronics Add-On. Before completing these steps, the desired simulated signals must be mapped to VeriStand Waveform channels in the Power Electronics Add-On. See [How to Display Simulated Signals using Waveforms](#) for more information.

1. In the VeriStand System Definition tree, expand the items until the **Custom Devices** section is reached.
2. Right-click the **Custom Devices** section and navigate to **National Instruments >> Waveform Data Logger**.
3. In the Waveform Data Logger page, click **Add Log File**. Notice that a new item, *Waveform Log*, is added to the System Definition tree.
4. In the **Log File Settings** tab, enter a **Log File Path**. This is the location on the target where the file will be saved.
5. Navigate to the **Waveforms** tab and click select **Waveforms**.
6. Expand **Controller >> Custom Devices >> Power Electronics Add-On >> Circuit Model >> Waveforms** and select the Waveform channels to log to the file.



7. In the System Definition tree, expand **Waveform Data Logger >> Waveform Log >> Commands** to display the **Logging Enabled** channel. This channel must be set to TRUE to record data. If desired, it can be routed to a UI control and manipulated by the user at execution time.
8. **Save** the System Definition file and deploy the project to simulate and record data.

Customizations can be made in the custom device Configuration page to control start triggers, stop triggers, file sizes, and other logging options. At execution time, monitor the **File Status** and **Missed Samples** channels to ensure that data is being recorded as intended.



Transferring the File to the Host PC

During execution, the Waveform signal data will be logged to a TDMS file stored on the real time target. Use FTP to transfer the file back to the Host PC and examine the results.

1. Open a Windows Explorer window, and in the address bar enter `ftp://<ip_address>` to connect to the real time target. For more information about connecting to a target over FTP, refer to the National Instruments KB article [How can I Transfer Files over FTP to a Remote System?](#)
2. On the real time target, navigate to the file path configured in Step 4 above, and locate the TDMS log file.
3. Copy and paste the file from the real time target to the Host PC

Processing Results

TDMS is a custom National Instruments file type designed for storing and managing large amounts of data. More information about TDMS can be found on the National Instruments website:

- [The NI TDMS File Format](#)
- [What Are TDMS Files and How Can I Use Them in My LabVIEW Program?](#)

To quickly view the data in Microsoft Excel, consider installing the [TDM Excel Add-In for Microsoft Excel](#).