

Gain telegraph is a feature of some electrophysiological amplifiers that allow automatic calibration and display of the output when changes in gain are applied from the voltage clamp. The Telegraph Extension for LabChart for Windows provides an easy to use interface for configuring the gain-telegraph output from an electrophysiological amplifier to enable LabChart to continuously display data at the correct scale and units after a gain change. Without the Telegraph Extension, manual adjustment of the display scale is required each time the gain is changed.

Step 1: Connecting the Hardware

- Connect the output of the amplifier to Input 1 of the PowerLab. The Gain telegraph output from the amplifier should be connected to a separate PowerLab input, i.e. Input 2.

Step 2: Accessing the Telegraph Extension

- Download and install the Telegraph Extension from the LabChart Software Updates page (available for free for LabChart users from our website).
- The extension adds “Telegraph...” to each Channel Function pop-up menu. A Telegraph help file is also added to LabChart Help where further information can be found.

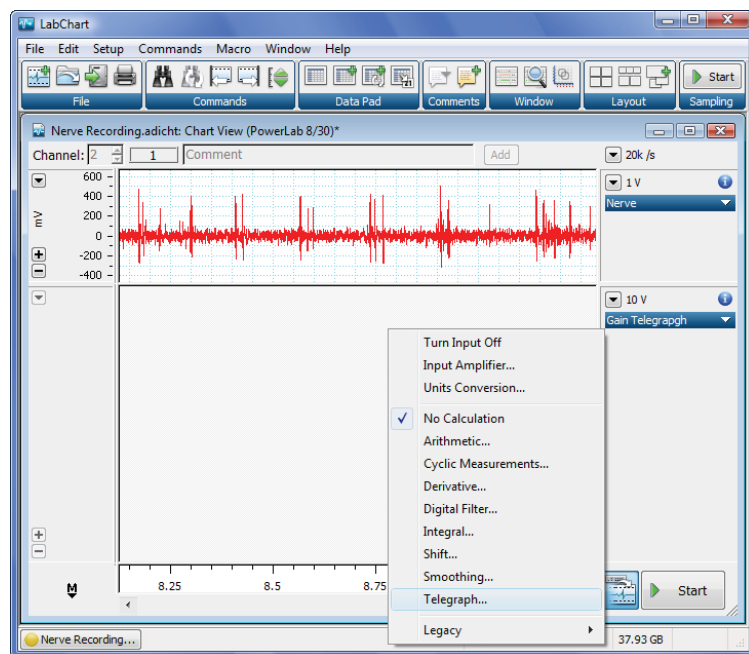


Figure 1: Telegraph Item Added to Channel Function Pop-up Menu

Step 3: Setting Up the Telegraph Extension

- The Telegraph Dialog supports amplifiers from various manufacturers including:
 - Axon
 - BioLogic
 - Cairn Research
 - Dagan
 - ESF Electronic
 - NPI Electronic
 - Nihon Kohden Corporation
 - Warner

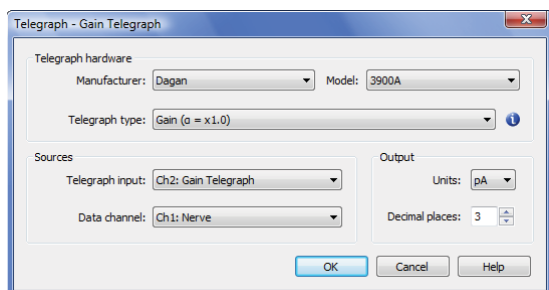


Figure 2: The Telegraph Dialog

- In the Telegraph hardware panel, select the manufacturer, model, and telegraph type. If required click on the “i” icon to see the associated telegraph voltages and sensitivity.
- In the Sources panel, select the Telegraph input (Channel 2 – the channel that receives the gain-telegraph signal) and the data Channel (Input 1 – the channel that receives the data signal).
- Select the appropriate units and number of decimal places.
- Click OK.

Step 4: Adding New Hardware (Optional)

- The Telegraph Extension allows addition of amplifiers that are not listed by creating parameter files. These parameter files are located in LabChart6/Essential Files/Telegraphs. There is only one parameter file for each supported device.
- Personalized user parameter files can also be located in the Documents and Settings\- A template file (~TelegraphTemplate.csv) is provided to facilitate new devices and hardware configuring parameters.

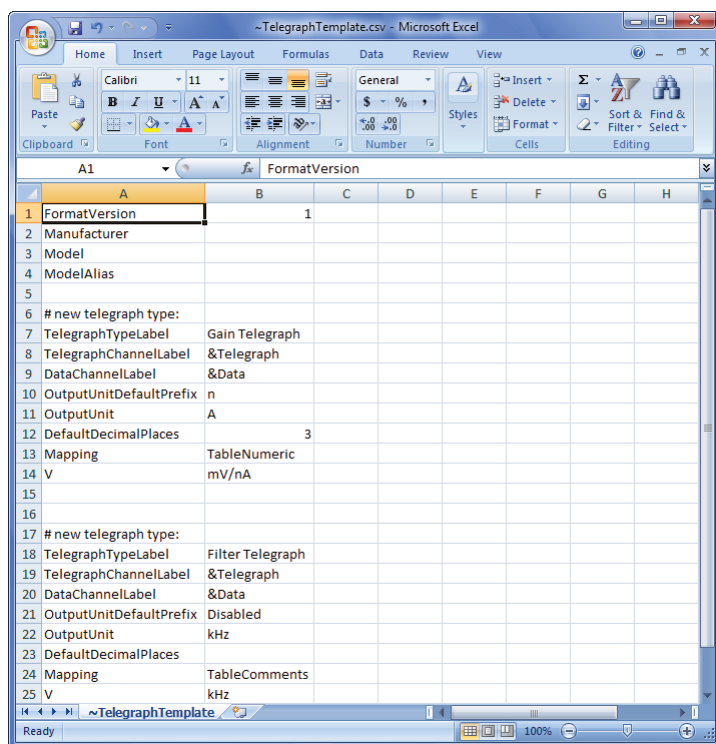


Figure 3: Parameter file template

- Enter the values specified in for the amplifier in the appropriate places. More information on customizing parameter files can be found in the Telegraph help file in LabChart Help.