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1 Configure SCPI-Devices

1.1 Adding a new device type

To be able to create a sequence you need to add a device. This device is based on a predefined device type. To create such a device type you must navigate to “**Edit**” → “**Add device-type**”.

1.1.1 Name the new device type

Each device-type must have a **unique name**. To name it, just type in the name in the text box.

1.1.2 Add a command to the device-type

Once you named your new device-type, you can start with **assigning commands** to it.

In the first two text boxes you can **name** the command and enter the command string. It is recommended to assign the names according to a structure.

To **save** a command, click the blue save button.

1.1.3 Command parameter types

1.1.3.1 None

If the parameter type none is selected the command is created as a **read-only** command. It can only be used to receive data from the device.

1.1.3.2 Number

If the parameter type number is selected, the command can be given a **number** corresponding to the **specified range** and **decimal digits**.

1.1.3.3 Custom

If the parameter type custom is selected, **various selection parameters can be set**. The **name** determines how the parameter is **displayed**, and the field “**command parameter**” defines which **string** actually corresponds to the parameter given to the **command**.

Once you are finished defining a custom parameter you must click the **blue button** with a **plus**. Now you can add a new custom parameter or save the command with the blue save button.

1.1.4 Command priority

If you add a number- or custom-command you have the possibility to set a priority. This determines the position of the command in the operation.

This can be useful, for example, if you want to change the voltage and the current limit in an operation. In this way, you can ensure that the current limit is set before the voltage is increased.

1.2 Export device types

If you like to use your local device types on another device, it can be useful to export the current device types.

To do this, simply click on:

“Edit” → “Export device-types” → Select the location where you want to save the file → Type in a filename → Click on “Save”

1.3 Replace device types

If you like to replace the current device types, with the exported device types from another device click on:

“Edit” → “Replace device-types” → Select the exported device types file → Click on “Open”

1.4 Extend device types

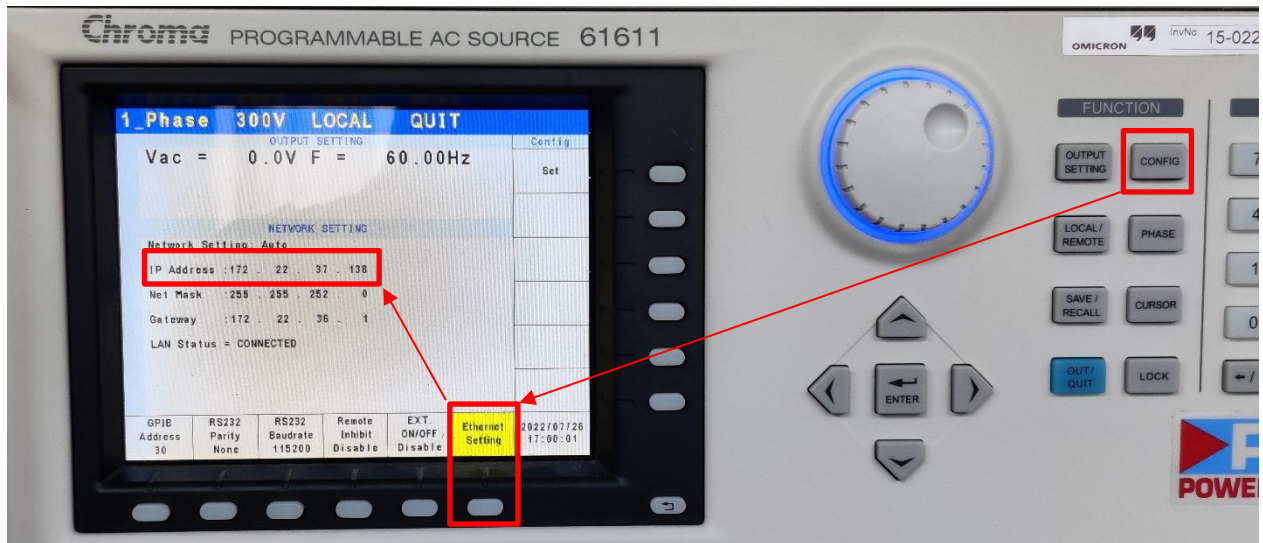
If you like to extend the current device types, with devices from an exported device types file, click on:

“Edit” → “Extend device-types” → Select the exported device types file → Click on “Open”

Note: Only devices with a name that does not already exist in the local device types list will be added.

1.5 Adding a new device to the Sequence

1.5.1 Find the device IP and PORT



The easiest way to find out the **IP-Address** of a device is to go into the “**Ethernet Settings**”.

Note: Most local-area-networks devices get their IPs from a DHCP server, which means that it can change after re-verifying in the network. To edit a device TCP/IP see: [1.2 Edit a device](#)

To find out the **PORT** of the device the easiest way search for it in the manual of the specific device. The default PORT for Chroma devices is **2101**.

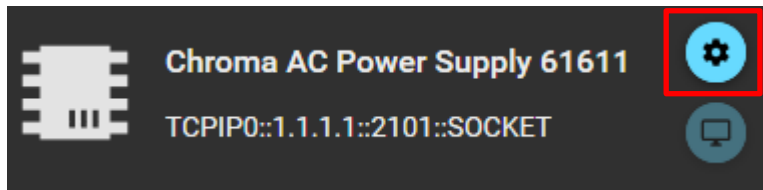
1.5.2 Add a new device

To add a new device, you must click on the plus button next to the headline “Devices:”. Once you clicked it a window shows up where you can define the IP-address, PORT, Socket (usually “SOCKET”) and the device type. To save the device click on the accept button.

If you want to check the connection, you can click on the blue check button.

1.6 Edit a device

If you load a saved sequence, the actual IP of a device could have changed. To change this IP in the sequence you can click on “Settings” button next to each device.



Once you have clicked the button you will get to the window from [1.2.2 Add a new device](#).

2 Add an operation

To add a new operation to the current sequence you must click the blue button “Add operation” in the sequence column.

Once you are finished with the configuration and you have entered all necessary values you can save the operation by clicking “Accept”

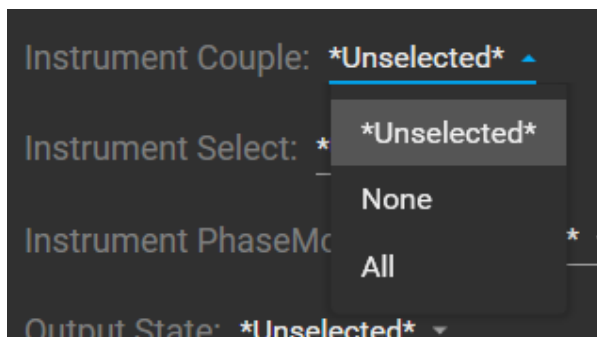
2.1 Preconfigure operation parameter

In the preconfiguration you can select the device type, ip-address of the device and the operation duration.

2.2 Specific operation configuration

Once you have selected device type and ip-address the window will expand to the device-type specific configuration.

2.2.1 Custom command configuration



To add a custom command to the operation you can choose the parameter you wish from the associated combo box.

If a command is added to the operation the command name will change its color to white.

To remove a custom command from the operation just select “*Unselected*” in the combo-box. The command will be removed, and the command name will change its color back to gray.

2.2.2 Number command configuration

To add a number command to the operation you must type in the number to the associated text box. Make sure that the number satisfies the defined validation.

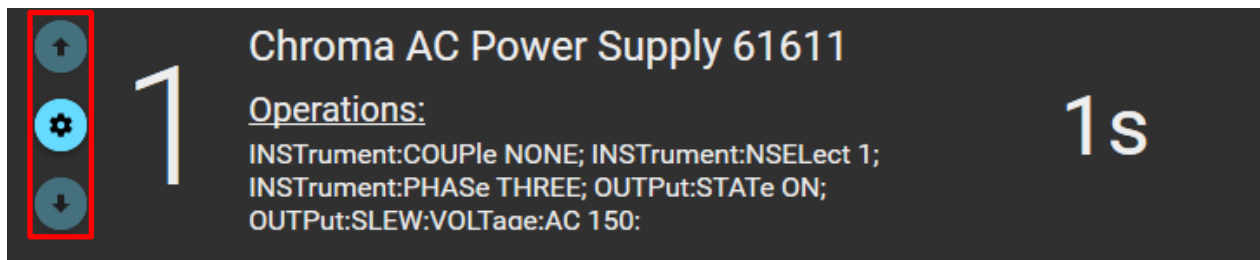
2.3 Sweep Operation

The screenshot displays the 'Configure Command' window. At the top, the title 'Configure Command:' is shown. Below it, there are input fields for 'Device type' (set to 'Chroma AC Power Supply 61611'), 'IP Address' (set to 'TCPIP0::172.22.37.154::2101::SC'), 'Duration' (set to '1'), and a unit dropdown (set to 'S'). A blue 'Configure Sweep' button is highlighted with a red box. Below these fields, there are several 'Instrument' related dropdowns, all set to '*Unselected*'. A 'Configure Sweep' dialog box is open in the center, also highlighted with a red box. It contains a 'Value to Sweep' dropdown, a 'Field is required' error message, and input fields for 'Start Value' (0), 'Stop Value' (0), 'Increment' (0), and 'Time per increment' (0). At the bottom of the dialog are 'ACCEPT' and 'CANCEL' buttons. To the right of the dialog, there are various phase-related settings like 'Phase Angle On:', 'Phase Angle Off:', 'Phase Angle P1 to P2:', 'Phase Angle P1 to P3:', 'Phase Sequence: *Unsel', 'Phase Relock: *Unselect', and 'Phase Tri-Mode: *Unsele'.

To perform a sweep within an operation you must select the device type and the IP address of the device.

Now you can click on the blue "Configure Sweep" button. A window will popup where you can choose the output value you want to sweep, the start and stop value of the sweep, the increment, and the time between the increments. Once you are done, you can click on accept to add the operation to the sequence.

3 Modifying existing operations



To modify an operation in the sequence list you can use the blue buttons to the right of the operation.

3.1 Edit operation

To edit an operation, you must click on the middle blue button. Once you have pressed the button, a window opens in which you can make the configuration as in [2.1 Preconfigure operation parameter](#) and [2.2 Specific operation configuration](#). Once you have done your changes, press “Accept” to save and close the window.

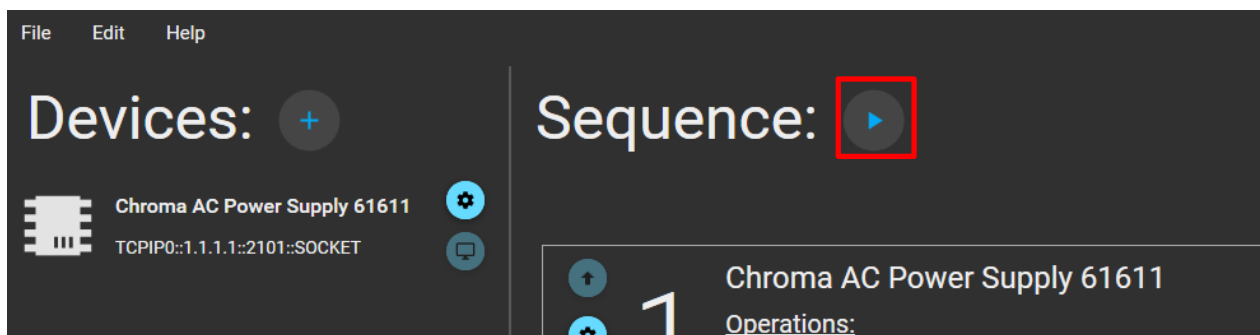
3.2 Delete operation

To delete an operation, you must click on the middle blue button. Once you have pressed the button, a window opens in which you can make the configuration as in [2.1 Preconfigure operation parameter](#) and [2.2 Specific operation configuration](#). To now delete the operation, click on the “Delete” button next to the “Accept” button.

3.3 Move operation

To move an operation, you must click on the top or bottom blue button, depending if you wish to move the operation up or down in the sequence.

4 Start a sequence



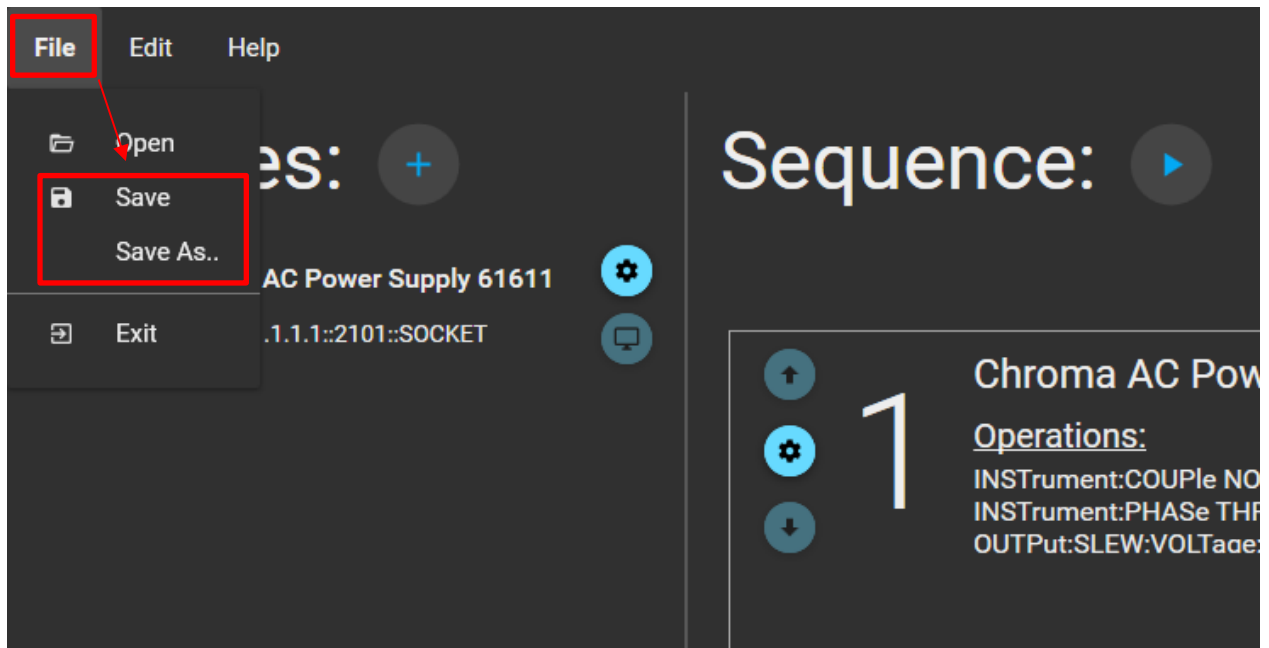
To start a sequence, you must click the “Start” button next to the headline “Sequence:”.

Once you have pressed the button, the connection to all devices used in this sequence is first checked and then the sequence is started.

You will see the progress of execution on a progress bar. In the text block to the right of the sequence list you can see live the commands that are sent to the device.

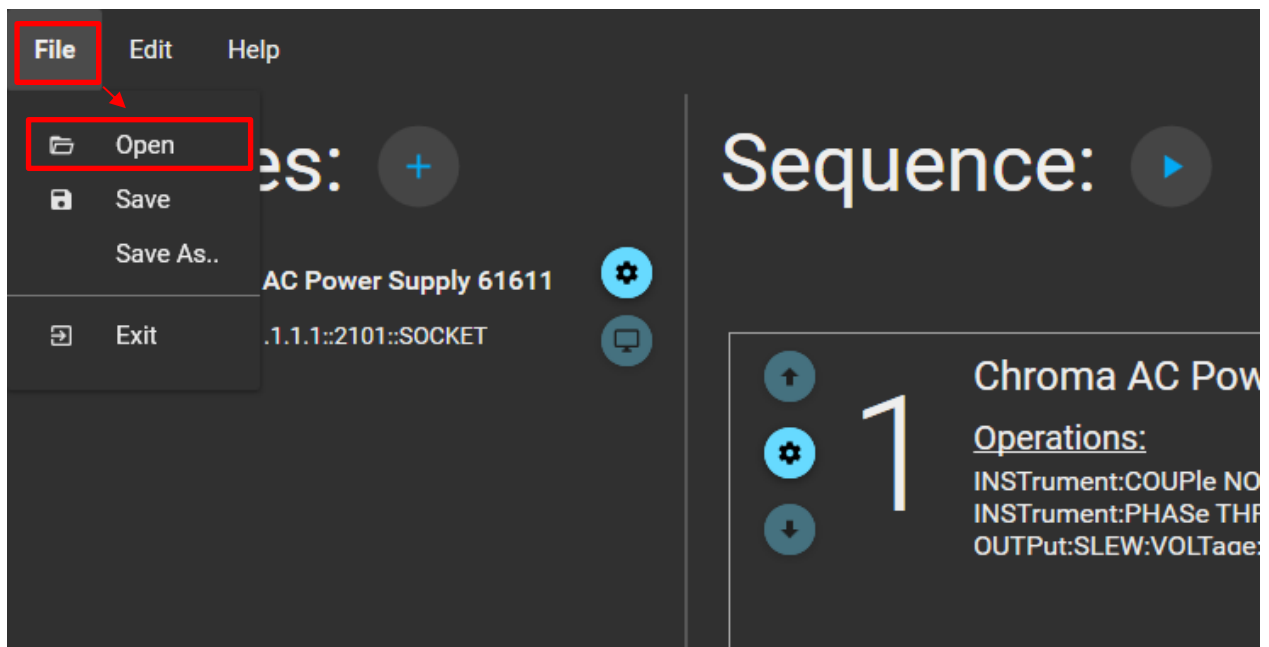
5 Manage sequences

5.1 Save a configured sequence



To save a sequence you must click the “Save” button in the file column of the navigation bar, select a location to save, select a name and click “Save”.

5.2 Load a configured sequence



To load a saved sequence, you must click the “Load” button in the file column of the navigation bar, select your “.seq” sequence file, and click “Open”.

5.3 Create a new sequence

If you want to unload the current sequence to create a new one you must click “New” in the file column of the navigation bar. A blank workspace is now available for a new sequence.

6 Additional information / Typical mistakes

The function to create a new device type is very experimental. If you make a mistake, it cannot be undone or edited after saving it in the program. To undo or edit this, please go to the application folder and make the change to “devicetypes.json”.

Please excuse the circumstances.

If you get “Data out of range” errors or similar on your device, make sure you have set all limits right. For example, if you switch from 150V range to 300V range and then want to output 300V it’s possible that the voltage limit is set to 150V, so in this sequence or before make sure to exceed the output limits.