10MHz controller - Voltage protocols

Revision History

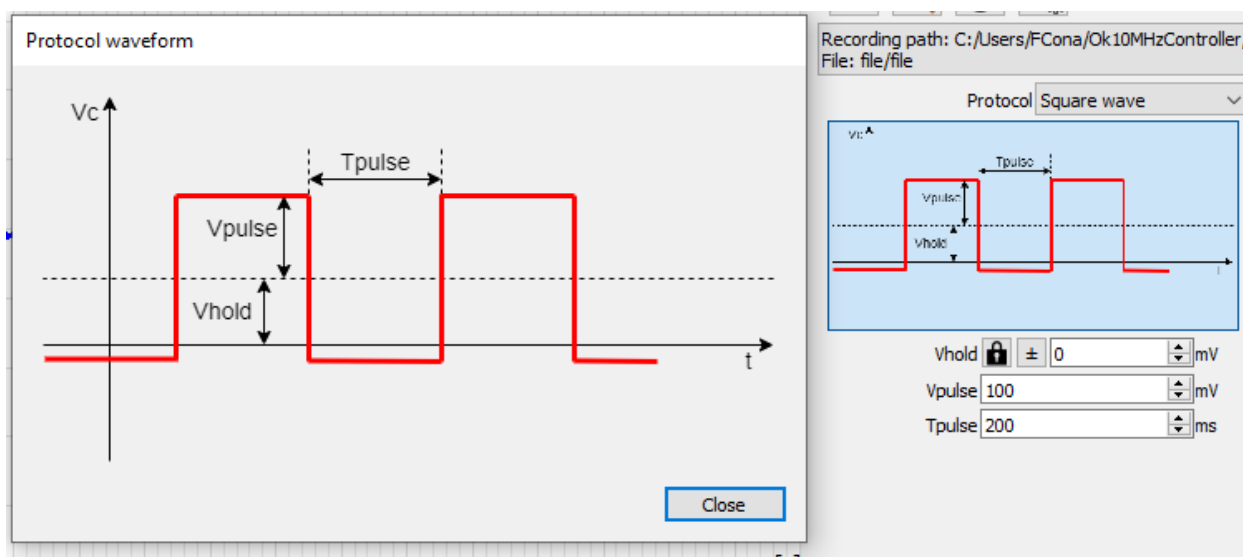| Date	Version	Description
29/03/2022	1.0	First version of document

Protocol design

The Voltage stimulus widget contains a complete set of parametric voltage stimulus protocols.

For each voltage protocol the different parameters represented in the protocol descriptive image can be set.

When the mouse hovers over the small voltage protocol image a bigger image appears. This image can be kept open by clicking on the small image and can be moved in a different position. This way, it will be easier to set all the parameters while keeping the bigger image opened for reference.

Holding Voltage

The holding voltage parameter is available for all protocols and has some additional controls with respect to other parameters:

- Lock/Unlock: the lock button 🔒 can be used to lock the holding voltage across protocols. If the holding voltage is locked its value is maintained when the user selects a different protocol, otherwise each protocol uses its own holding voltage value;

- Invert: the invert button ± can be used to quickly change the polarization of the holding voltage, e.g. if Vhold = 100mV, the invert button sets Vhold = -100mV;

- Increase/decrease shortcuts: the shortcut CTRL + ArrowUp increases the holding voltage by 10mV, while CTRL + ArrowDown decreases the holding voltage by 10mV.

Apply a voltage protocol

Once the desired protocol is selected and designed click the start button to start applying the voltage protocol. A protocol can be started also by pressing enter or return, unless the widget currently focused has a different use for those keys (for example the lab book will add a note).

To quickly select and apply a protocol when the experiment is running, keyboard shortcut Ctrl + 'Protocol Number' can be used. For instance Ctrl + '1' will select and apply protocol number 1.

By clicking the pause button the voltage protocol will be interrupted, so a constant null voltage will be applied instead.

Save and Load protocols

Commonly used protocols and their parameters can be saved for future usage by clicking on the

Save button . This will create a .txt file with the parameters of the saved voltage protocol that can be easily loaded on following EDR4 sessions.

Saved protocols can be loaded by using the load button .

In order to restore the protocols default values click the restore default button .