First connection

Connect STM32F042 to PC via USB VCP interface. Open the MLI application in Windows (XP, 7, 8.1, 10) or macOS (High Sierra). Click on the button ,,Refresh". App finds available Virtual Com ports. Select required VCP and click on the ,,Connect" button. If the connection is successful application is updated and mcu information, pins description are shown. On the right side instruments are enabled.

Select instrument

There are enabled instruments supported by connected mcu. Chose instrument and click on the button. You can open more instruments if you want but pins have to be unshared otherwise is warning shown.

Cursors

Oscilloscope, logic analyzer and voltmeter can measure quantities by cursors. First select vertical or horizontal cursor in the groupbox ,,Cursors". On the left side are cursors plotted (on position 25% and 75% of graph). You can move with cursor. Click left mouse button on the cursor and release. Now cursor is unlocked and fixed to the mouse cursor. Now set new position and fix cursor by double click left mouse button.

Cursor default position

Click on the button ,,Reset position" or key ,,Q" for default cursors position.

Zoom In

Oscilloscope, logic analyzer and voltmeter graphics area support zoom feature. Click on the left mouse button and hold. Now you will see rectangle. One point is fixed to the first click position and second is fixed to the mouse cursor. Select area you want to zoom and release the left mouse button.

Zoom Out

Click right mouse button can zoom out.

Default zoom

Click on the button ,,Reset zoom" or key ,,R" for default zoom position

Saving

Saving feature is located in the groupbox ,,Saving". Default path is set to the Desktop location. You can change it. First select channels you want to save then click on the button ,,Start saving". For disable saving click on the button ,,Stop saving". For new file click on the button ,,New file". File is saved in .csv format. For saving graph visible area click on the button ,,Save graph". Image is saved in .png format.

Voltmeter show graph

Voltmeter can show measured data by labels and graphs. Graph is normally hidden. Graph can show up to 120 000 samples per channel. Click on the check box ,,input x" and click on

the button ,,Start showing". If graph buffer is full the warning is shown and user has to click to the button ,,Clear graphs" or ,,Clear graphs and time".

Voltmeter FPS selection

Voltmeter is designed to real time showing measured data. Older PC cannot handle realtime showing. FPS is limited to 1 Hz. If you have newest PC click on the check box ,,Powerful PC" and select higher FPS.

Oscilloscope, logic analyzer running state

If you are not sure oscilloscope or logic analyser is running check color of the button "Run/stop" border. It has to be green.