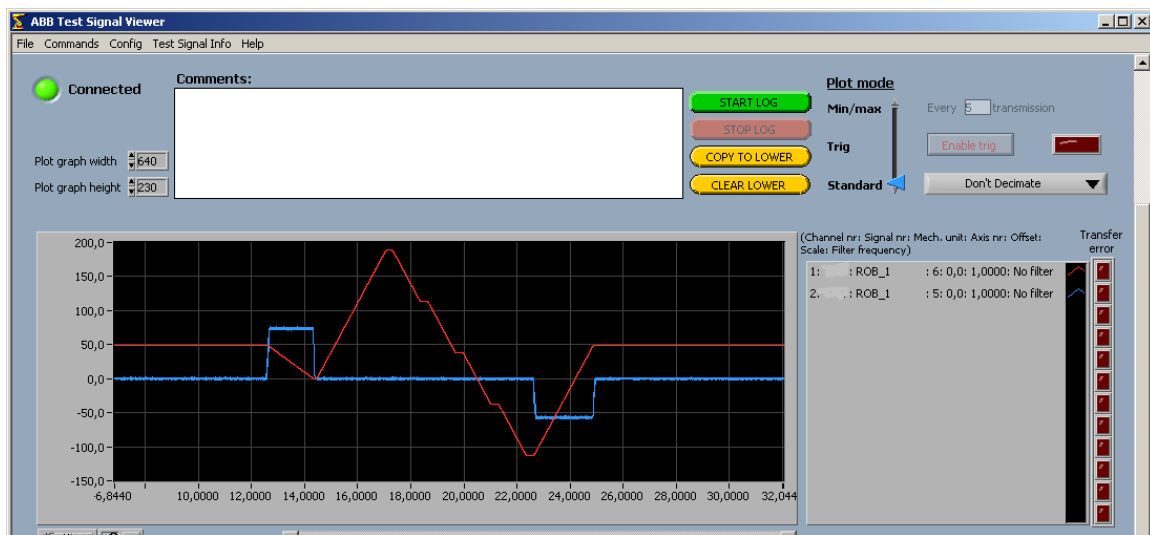


# ABB Test signal viewer



## Version 1.5

# Getting started

This section describes the basic functionality of the ABB Test Signal Viewer-  
software.

## Configuration

In the **Config** menu, choose **Remote Server Settings**. Enter IP address of  
the remote machine (the robot) in the *IP Address* field. The port number  
should always be 4011.

## Connection

In the **Commands** menu, choose **Connect**. The green *Connected* light is lit  
when connection works.

## Define Test Signals

In the **Commands** menu, choose **Define Test Signal**.

The screenshot shows the 'Define Test Signal' window with 12 channels (Channel 1 to Channel 12). Each channel has the following parameters:

- Mechanical Unit: ROB\_1
- Signal Identifier: Speed
- Signal Ident. Man.: 0
- Axis Number: 1
- Sample Time [ms]: 0
- Enabled: (checkbox)

At the bottom of the window, there are five buttons: LOAD DEF., SAVE DEF., APPLY, OK, and CANCEL.

The define Test Signal window allows the operator to define 12  
Individual channels. Each channel setup consists of six parameters.  
Enter name of Mechanical Unit.

*Note! Only digital\_input\_1 and 2 are available on all Mechanical Units.  
Other signals only on external axes (TCP-robots are locked).*

Select Signal identifier in list (see below) or by entering code manually.

The radio button to the left must be changed first.



Select Axis number (1-6).

Enter sample time in ms (0.00 corresponds to fastest sampling rate, i.e. 0.504ms). The actual sample time is adjusted to the nearest multiple of the fastest rate.

*Note: The sample time affects only how the signals are handled in the controller. In the ABB Test Signal Viewer all data is padded to correspond to the fastest possible sampling rate.*

Enabled button shows if the signal should be enabled or not. Light green light indicates that the signal should be enabled and a dark green light indicates that the signal should not be enabled when the **Apply** or **OK** button is pressed. The operator can set the Enabled status by pressing the button.

The operator can store the current setup by pressing the **Save Def.** button and select a name for the definition file.

A stored definition file can be loaded by pressing the **Load Def.** button.

By pressing **Apply** all enabled channels will be defined but the Define Test Signal window will stay active.

When all desired channels have been defined, press **OK** and the program will return to Main window.

By pressing the **Cancel** button the program will exit to the Main Window without defining any signals.

If the definition of a signal is not successful a warning message will appear and the state of the signal will be set to disabled (dark green).

## Data logging

When the desired channels have been defined data logging can be started by pressing



Choose which channels to log and press OK to begin the logging.

## Basic plot handling

Both plot areas can be manipulated using the tool below each area:



The buttons marked X and Y each adjusts the axis interval to the present signal sizes. It is also possible to manually set the interval ends by marking the number and type the desired value. The button can be locked in pressed position by clicking the handle to the left of the button. When the button is locked the axis interval is automatically adjusted and it is not possible to change values manually.

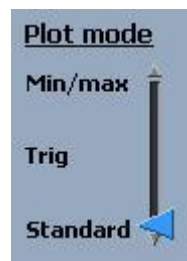
### Stop logging



Logging is stopped by pressing



### Using the lower plot area

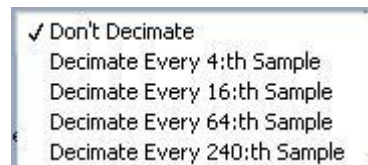
After logging in standard plot mode,



the button  can be used to copy the current plot of the upper plot area to the lower where it can be examined in detail by using the different zooming and scaling tools, especially the line following function. The lower plot area is also useful for comparing two different events since it can be used to store an interesting plot and start another in the upper area. The lower plot area is cleared by pressing the button .

### Change data logging speed

The interval in which the samples are logged can be changed in the list in the upper right corner of the window.



### Removing defined test signals

One or all test signal channels can be removed using **Remove One Test Signal** and **Remove All Test Signals** in the **Command** menu respectively.

### Parameter settings

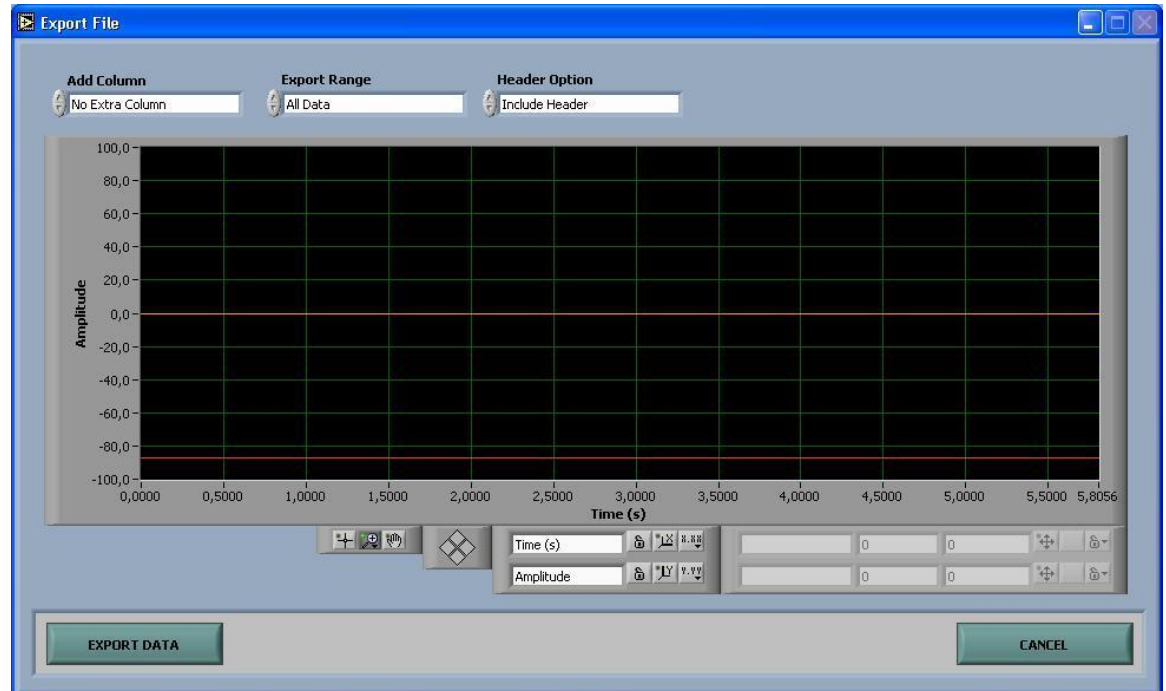
A number of settings can be made for each channel using *Set Offset*, *Scale* and *Low pass Filter* in the **Config** menu.

**Offset** moves the zero level of the signal up or down according to the value set.

**Scale** multiplies the signal with the value set.

**Low pass Filter Freq.** defines the cut frequency of the low pass filter.

## Export data



After the logging has been stopped, the present buffer or a part of it can be exported to a text file by choosing *Export Log* in the **File** menu.

The Export File window shows the present buffer data in a graph and allows the operator to select data interval and also some export file configuration options.

**Add Column** control lets the operator add an extra column in the export file with either time or sample number information. By default no extra column is added.

**Export Range** control has three options: *All Data*, *Between Cursors* and *Visible in Graph*. A short description of each setting follows:

- *All Data* – All data in buffer is saved.
- *Between Cursors* – The data between the two cursors is saved
- *Visible in Graph* – Only data currently visible in the graph is stored.

*Note! Cursors are only visible when Between Cursors option is selected.*

**Header Option** allows the operator to select if a text header with signal information should be included or not in the export file. By default a header is included.

**Export Data** starts the export of data to file.

**Cancel** button exits the Export File window and returns to the Main window.

## Reference manual

This chapter contains a description of all the choices in the menus and guides to some of the features that are not described in the program overview above.

All necessary settings, for instance choice of plot-mode, must be made before the logging is started.

## Menu functions

### Menu: File

Open...

Loads data that has previously been saved in .dat-format. The signals can then be studied using the plot-handling tools of the program.

Save Signals...

Saves data in .dat-format which can be reloaded into the plot window. This format can not be used to export data usable in other programs.

Page setup...

Allows normal configuration of printer and print format.

Print window...

Prints the main window on an available printer. Cannot be used during logging of data.

Export log

Creates a file in text-format with data from the logged channels arranged in columns.

Exit

Quits Test Signal Viewer.

### Menu: Commands

Connect

Establishes a connection with the remote server defined in Remote Server Settings.

Disconnect

Disables the connection with the remote server.

### Define Test Signals

Defines the test signal, mechanical unit and axis that are to be assigned to a certain channel.

### Enumerate All Test Signals

Lists the test signals that are already defined. If the desired signals are among them they can be assigned to a channel by marking them here.

### Remove One Test Signal

Removes the test signal from the specified channel.

### Remove All Test Signals

Removes all test signals.

## Menu: Config

### Remote Server Settings

Defines the IP-address of the remote server.

### Set Offset, Scale and Low pass Filter

Offset moves the zero level of the signal up or down according to the value set.

Scale multiplies the signal with the value set.

Low pass Filter Freq. defines the cut frequency of the low pass filter.

### Set Trig

Defines the properties of the trigger, i.e. which channel, the level and the slope to trig from. It is also possible to set a post trig time, i.e. the time from the trig to the actual stop.

### Show Samples on x-axis

When marked, the x-axes in the plot windows are samples.

## Menu: Test Signal Info

General information about the defined channels.

## Menu: Help

### About Test Signal Viewer

Information about the software.

## Plot handling

### Window size

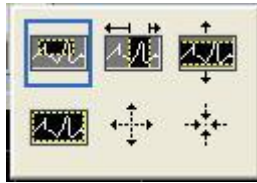


The size of the upper plot area can be changed using the **Plot width** and the **Plot height** buttons in the upper left part of the window. The choice affects both areas, keeping them equally sized.

## Zooming

There are a number of tools available for zooming and magnification of certain parts of the plot. The tools are the same for the two plot areas but it is only the upper plot area that has a scroll bar, making it possible to study the entire plot in the magnified view. The lower plot area has a plot following function that is described in detail below.

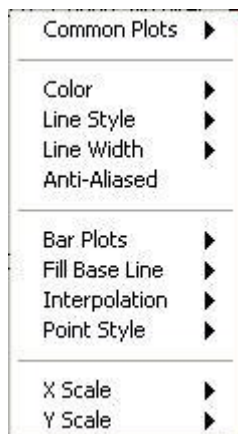
The different magnification choices are shown and described here:



1. Magnification of a desired part of the plot.
2. Magnification of a desired vertical part of the plot.
3. Magnification of a desired horizontal part of the plot.
4. Return to the previous magnification level.
5. Zoom in.
6. Zoom out.

The hand symbol below the magnification glass is used to move the plot in the window. The plus-symbol can be used to move the hair-cross of the line-following function (see below).

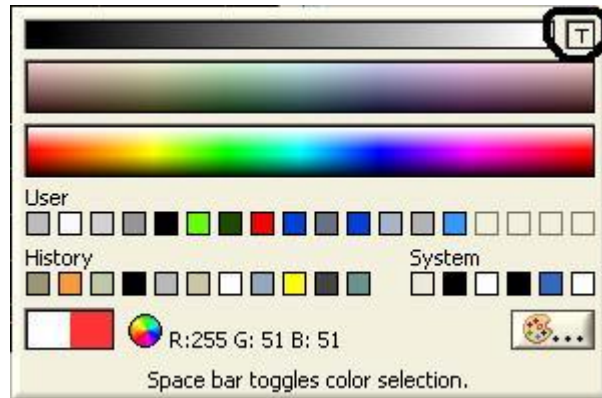
## Line manipulation



By clicking somewhere on one of the channel identification lines right of the plot a line manipulation menu appears. This can be used to change the visual appearance of the channel, including line width and line color. One especially useful feature is the possibility to temporarily hide one channel by assigning a transparent color, T, in the color palette.



The line can be made visible again by giving it another color.



### Line following function

This function is only available in the lower plot area and can be used to locate the coordinates of a certain point. Two cursors are available and the function is activated by clicking this area in the bottom of the window:

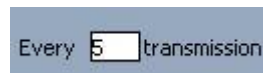


Clicking the padlock symbol allows the user to determine whether the cursor should be locked to a plot or to be free, and which channel it should be associated with. The hair cross symbol left of the padlock is used to determine the visual appearance of the cursor. Clicking one of the white boxes activates that cursor, making it possible to move it with the left/right-arrows to the right. Both cursors can be active simultaneously and they can be deactivated by clicking the box again. The values of the x- and y-coordinates are displayed in the two boxes in the middle and it is also possible to move to a desired point by typing a value in the box.

The up/down-arrows to the right can be used to change which channel the active cursor is associated with, moving up or down the list of channels in the padlock menu.

### Plot Min & Max

This function uses the lower plot area to plot the highest and lowest value within an interval set using the button:



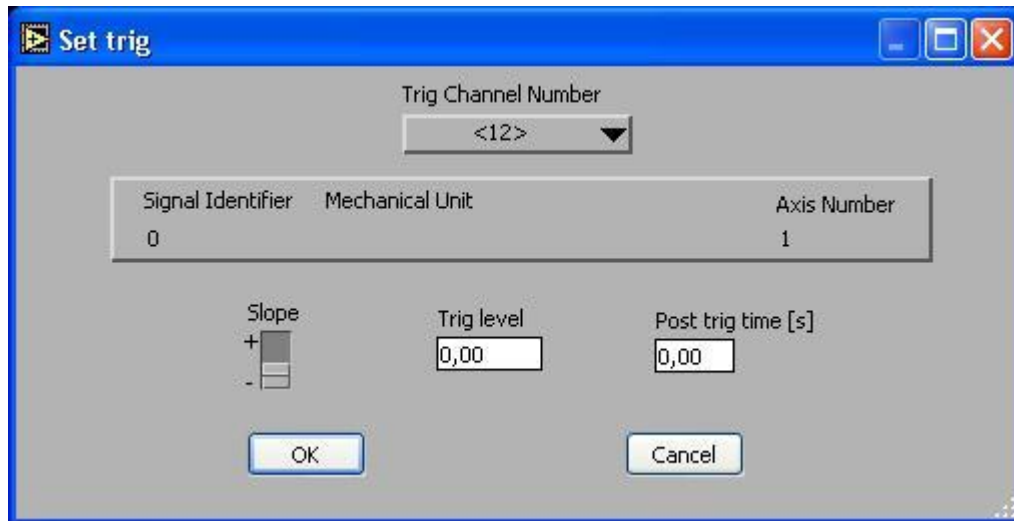
Remember to set the *Plot mode*-handle in Min/max position before starting the log, as shown below.



## Trig function

Using the trig-function it is possible to stop the logging a desired time after a certain event has occurred. This might be useful if a specific behavior is to be observed.

Set *Trig* in the **Config** menu is used to define the properties of the trig, i.e. which channel, slope and level to trig on and a possible post trig time.



After the properties have been set, pressing the button marked **Enable trig** activates the trig function and will change its label to **Disable trig**. When activated, the logging is stopped when the conditions defined in the Set Trig window are met. The trig can be deactivated by pressing the button again.



After the triggered stop, the data of the upper plot data is copied to the lower plot area.

Before starting a log where the trig is to be used, remember to set the *Plot mode*-handle in trig-mode, as shown below.



## Comments

In the white area in the upper part of the screen it is possible to add information about the present plots before printing it.