ibaPDA v8.2.0

New Features

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iba AG

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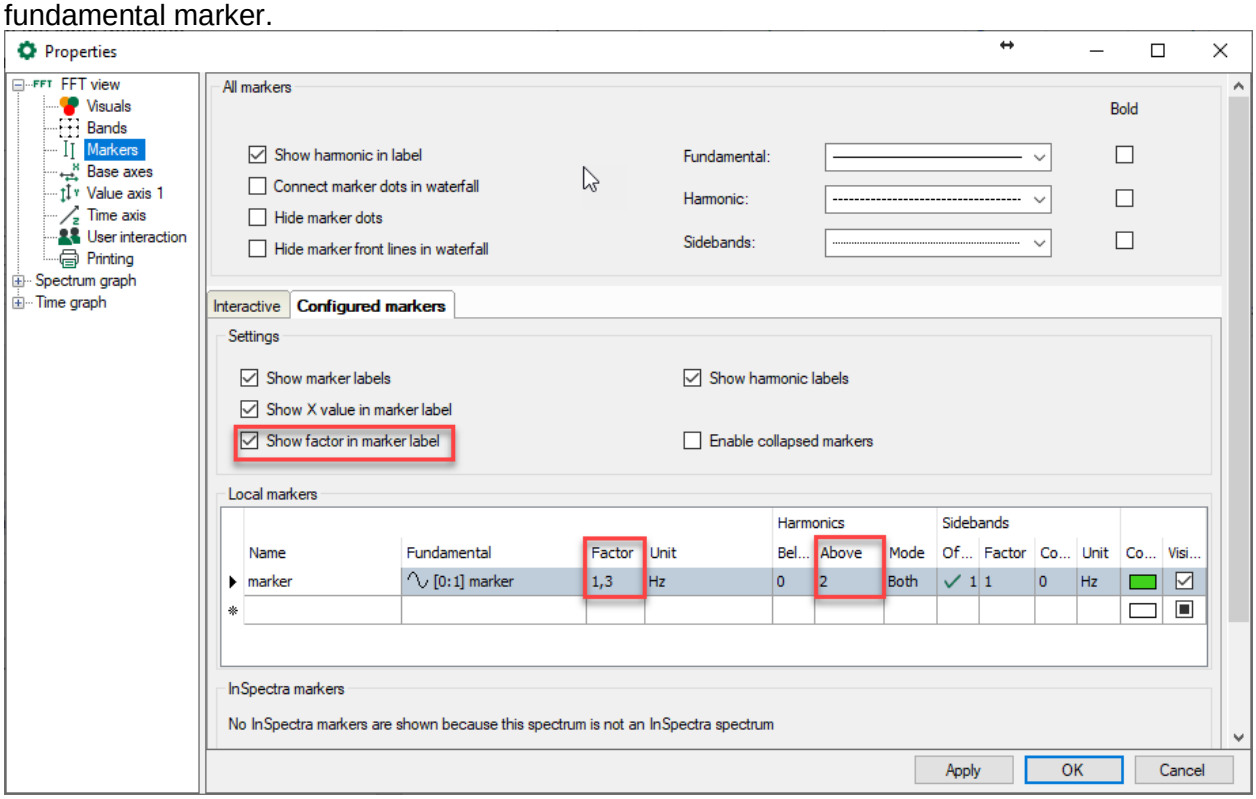
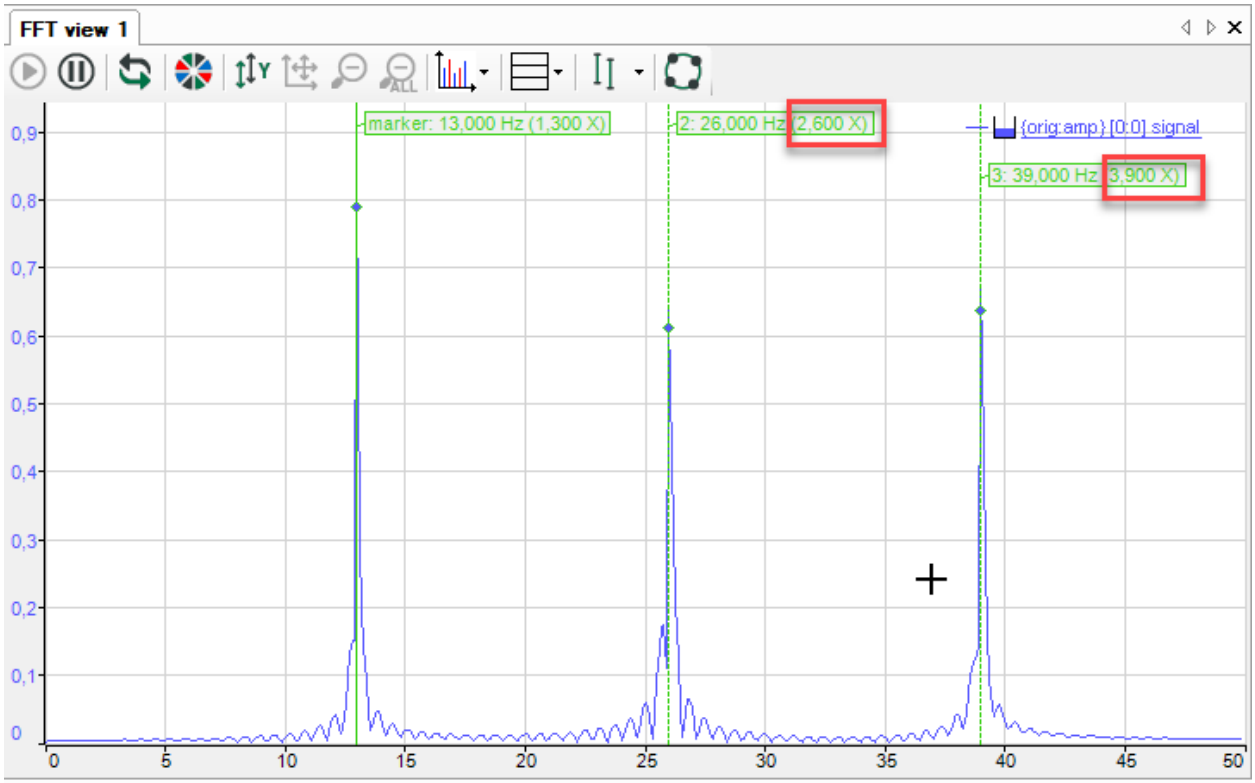
1 InCycle and InSpectra improvements

1.1 FFT view: Factor in harmonic labels

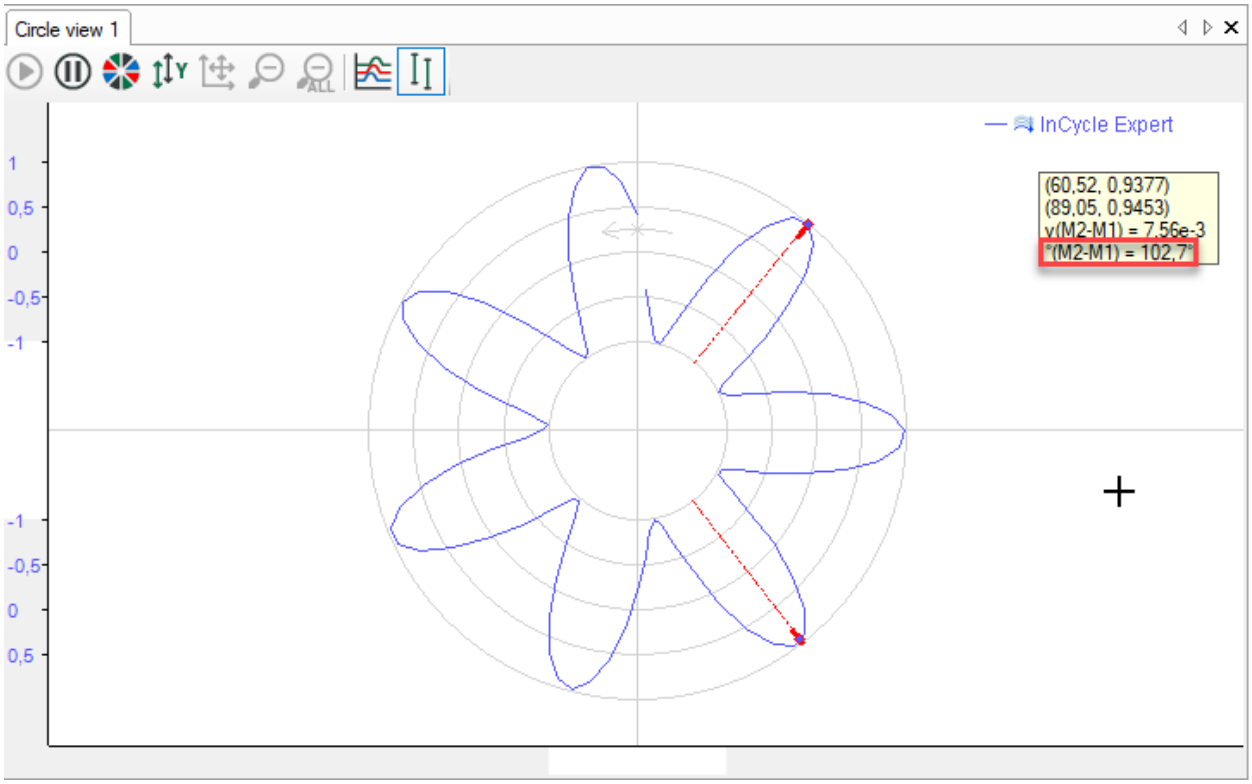
In previous versions, the ‘Show factor in marker label’ setting was ignored for harmonic labels. In the new version, the factor of the harmonic markers is also shown in the label (between brackets). This factor is the multiplication of the harmonic number and the factor of the fundamental marker.





1.2 Angular marker difference in circle view

The value legend in the circle view now displays the angular difference between the two markers. This value is expressed in degrees and is in the range [-180, 180].



1.3 Moving markers with SHIFT in circle view

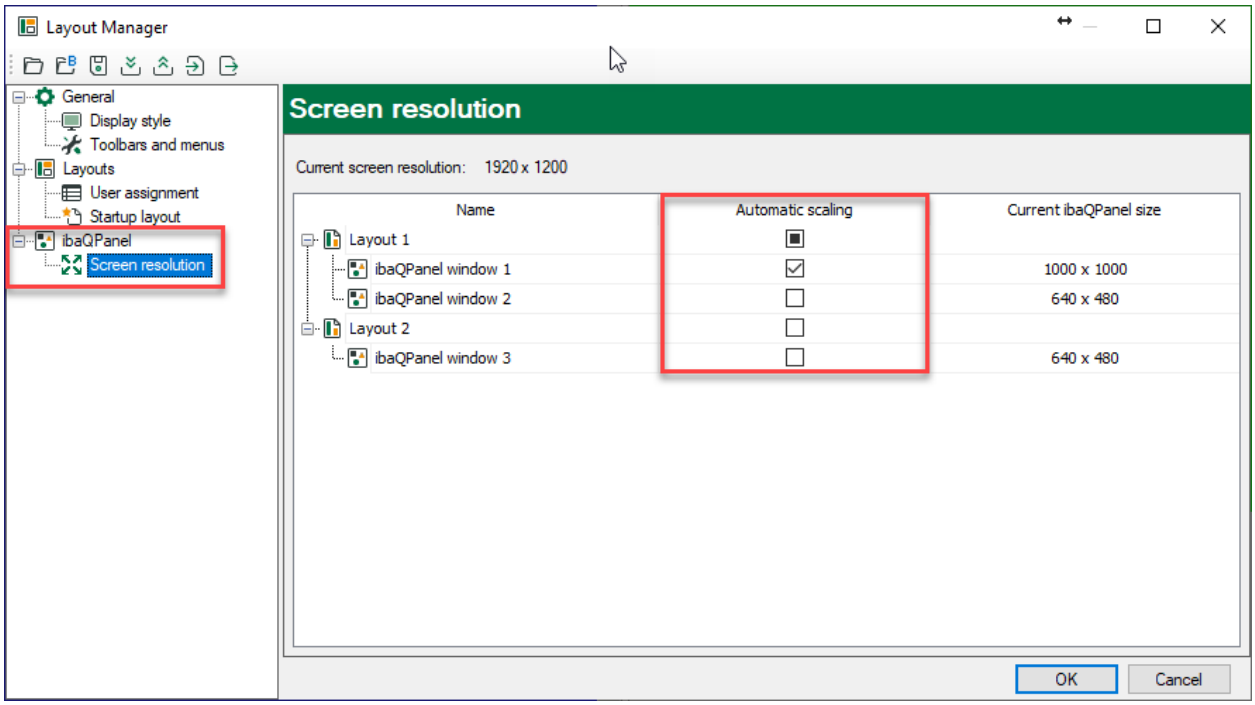
In the circle view, if you move a marker while holding SHIFT, the other marker moves along and the angular difference between the two markers remains the same.

2 ibaQPanel improvements

2.1 Automatic ibaQPanel scaling when screen resolution changes

If an ibaQPanel window is configured for a certain monitor resolution, it no longer has the same relative size if you open it on a monitor with a different screen resolution. It would be good that everything looks the same even when the screen resolution is different. Therefore, the new option ‘Automatic scaling’ was implemented. When enabled, the ibaQPanel window and all of its objects are resized automatically when used on a screen with a different resolution. All font sizes are rescaled as well.

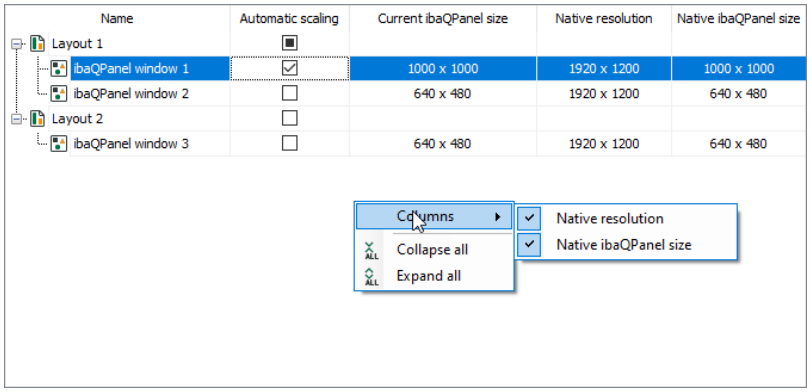
This automatic scaling can be enabled in the layout manager:



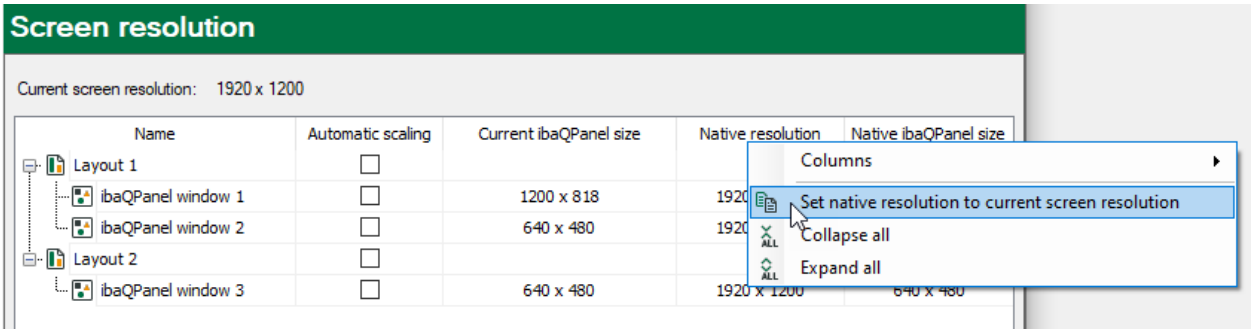
The automatic scaling can be set for every single ibaQPanel or by selecting with SHIFT or CTRL for a group. With CTRL+A all can be selected.

This scaling happens when opening ibaPDA on a screen with a different resolution. It also works on the fly if you drag the ibaPDA window to another screen with a different resolution.

Each ibaQPanel window also has a “Native size” and a “Native resolution”. The “Native resolution” is the resolution of the screen the window was created on. The “Native size” is the size corresponding to the “Native resolution”. One can display these values temporarily using the context menu:



It is possible to change the “Native resolution” to the current screen resolution via the context menu of the “Native resolution” column:



When you open an existing layout with an ibaQPanel window for the first time in the new version, the “Native resolution” is initialized to the current screen resolution and the “Native size” is initialized to the current size.

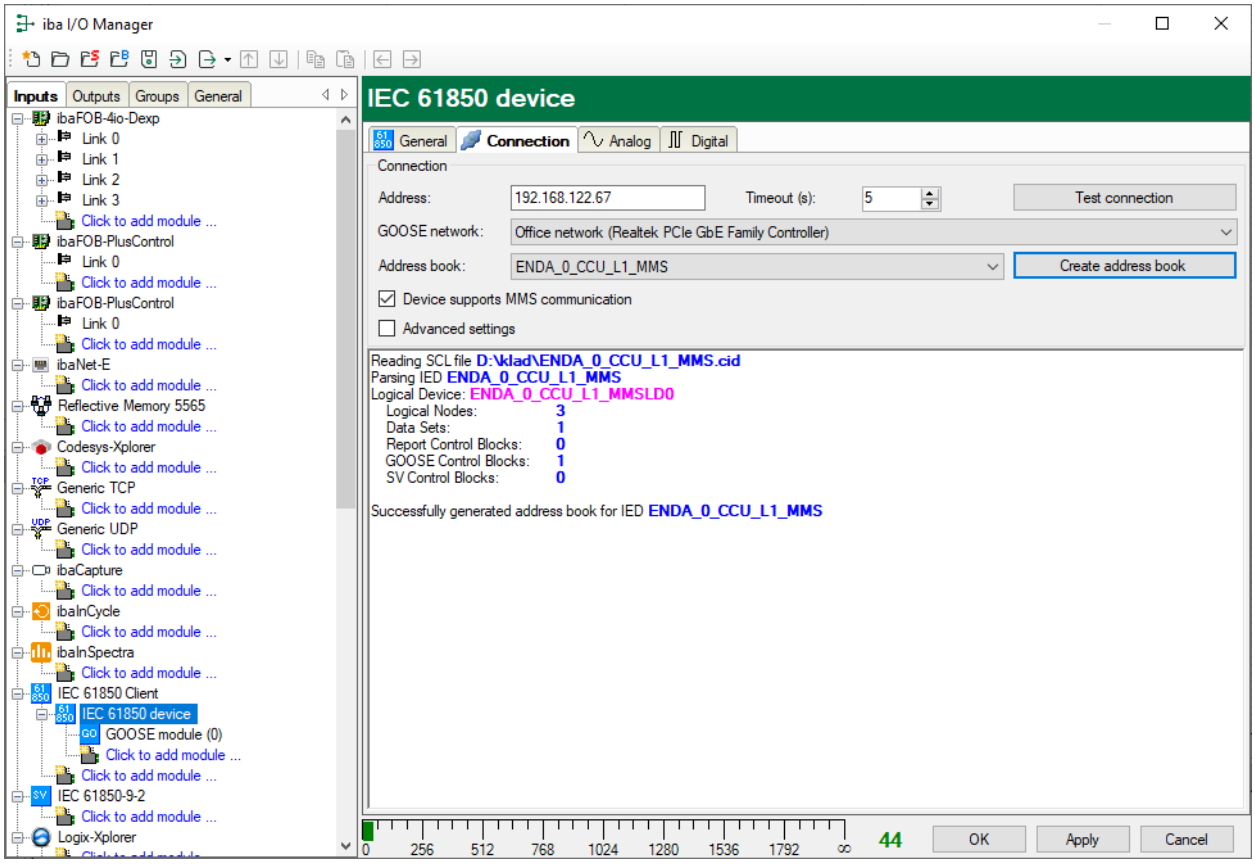
Important remarks:

- An ibaQPanel background picture will not be scaled. If possible, we try to implement this in version 8.3.0.
- The mode of the picture tool should be set to “stretch”. The frame is scaled and picture should also be scaled by using “stretch”. If the original image size is smaller than the new size, the picture could become blurry.

3 IEC 61850 improvements

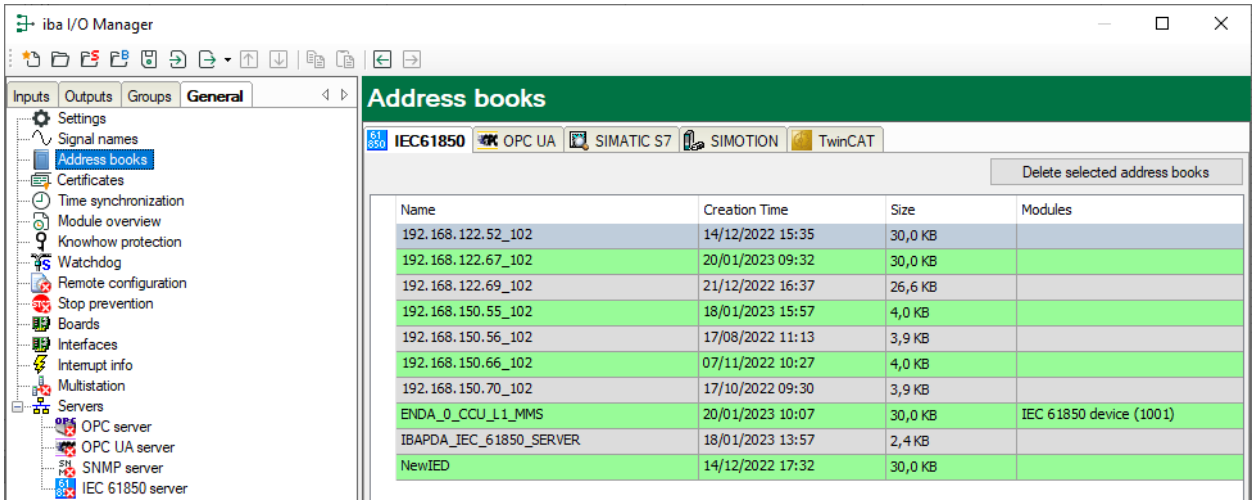
3.1 Offline address book

The configuration of IEDs and substations has been standardized in IEC 61850-6. The configuration is saved in XML format in so-called SCL (Substation Configuration Language) files. IbaPDA is now able to parse these files and generate address books for the IEDs in such an SCL file.



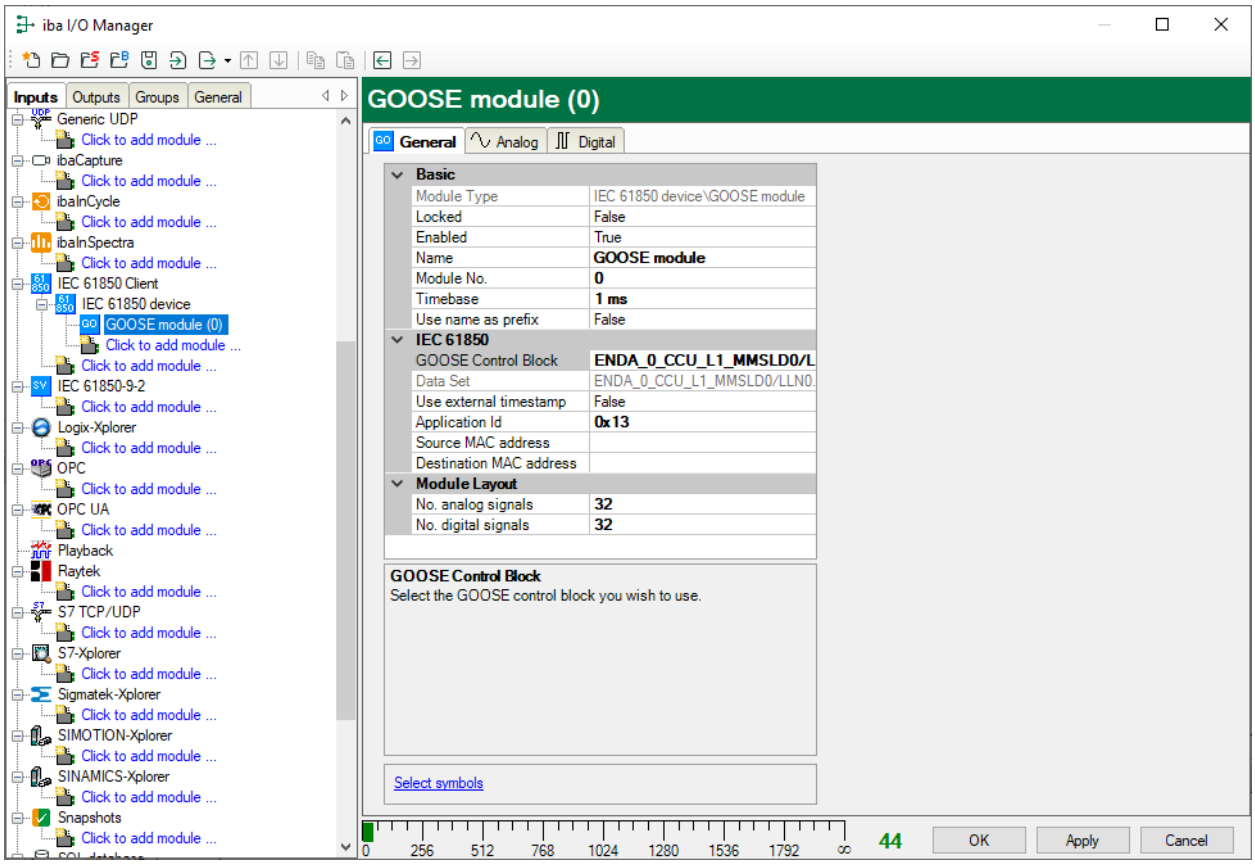
When you click the *"Create address book"* button then you can browse to an SCL file and ibaPDA will parse it. The status window gives some information about the content of the SCL file. The address book name will be the IED name from the SCL file.

When you click the *"Test connection"* button then ibaPDA will connect to the IED and it will load the address book from the device itself. The address book name will be the IP address and port number of the IED.



On the *Address books* node on the *General* tab you can now also see the IEC 61850 address books. In the *Modules* column you can see the modules that use a particular address book. You can double-click on it to jump to that module. The *Delete selected address books* button can be used to delete address books. IbaPDA server v8.2.0 is required for deleting address books.

3.2 GOOSE without MMS communication



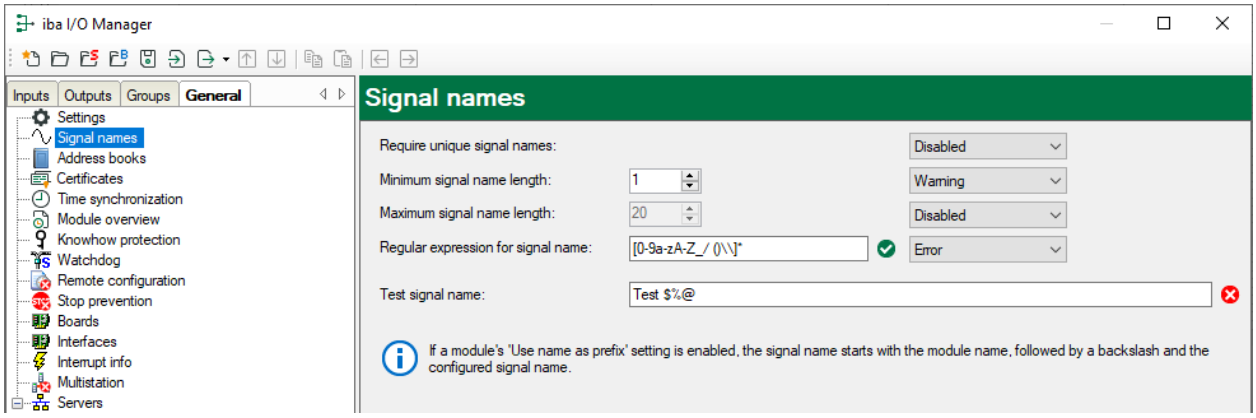
In ibaPDA v8.2.0 you can measure GOOSE messages without an MMS connection to the IED. This means that ibaPDA server doesn't necessarily need to be in the network of the IEDs as long as the GOOSE messages are forwarded to the network ibaPDA server is on. You can configure this via the *"Device supports MMS communication"* checkbox on the *Connection* tab of the IEC 61850 device.

In case there is no MMS communication you have to configure some more properties in the GOOSE module. If you have an address book then you can select the GOOSE control block and it will automatically fill in the *Application Id*. If you don’t have an address book then you have to fill in the *GOOSE Control Block* and *Application Id* yourself. You can optionally also configure a source and/or destination MAC address to identify the correct GOOSE messages.

IbaPDA now uses the time to live in the GOOSE messages to determine if the GOOSE connection is still valid or not. In previous ibaPDA versions the connection was checked using MMS.

4 I/O manager improvements

4.1 Signal name rules

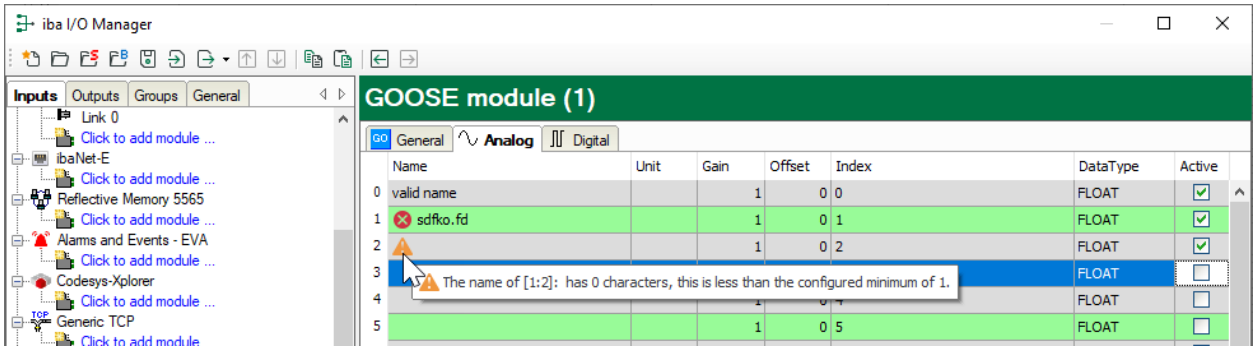


You can configure rules for the signal names. There are 4 rules that can be enabled:

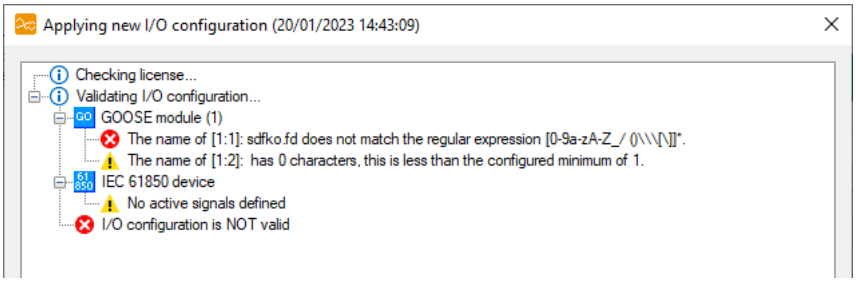
- The signal names should be unique within the complete configuration.
- The signal name should have a minimum length.
- The signal name should not be longer than a maximum length.
- The signal name should match a regular expression.

For each rule you can choose whether it is disabled, it generates a warning or it generates an error.

The test signal name field can be used to try different names to see if they are allowed or not by the configured rules. A tooltip on the status icon will give more details about the test result.



If a signal name does not comply with the rules, then this is indicated in the signal grid via an icon. An error or warning icon will appear and the tooltip will explain which rule is being violated.



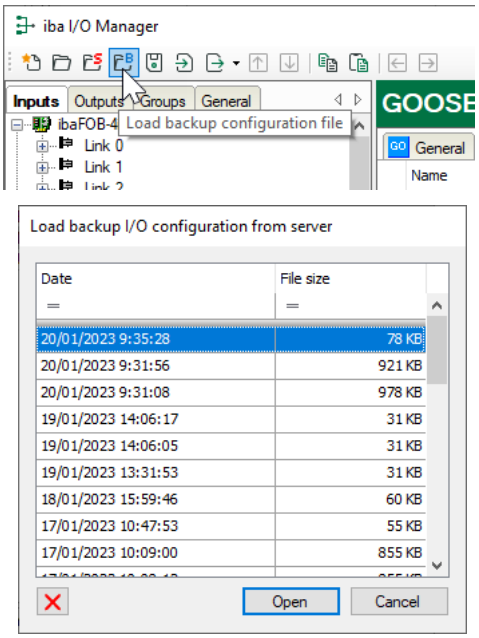
The signal name rules are also checked during the start of the acquisition.

4.2 Shortcut

You can use CTRL+I to open the I/O manager. The data storage manager can be opened via the shortcut CTRL+O. There already existed shortcuts for the user manager (CTRL+U) and the layout manager (CTRL+L).

4.3 Loading backup

Each time a new I/O configuration is applied the previous I/O configuration is backed up. These backups are stored in *%ProgramData%\iba\ibaPDA\Backup* on the ibaPDA server. These backups have always been there but it was difficult to locate them. Now there is a button in the toolbar of the I/O manager to open these backups.



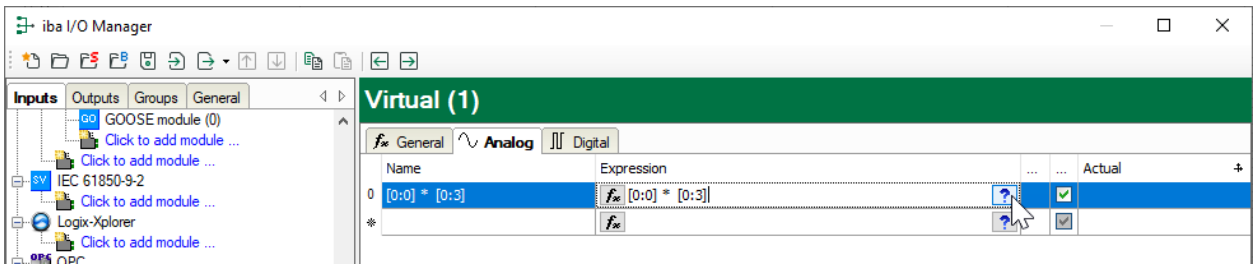
After clicking the button, a window will open that shows you the list of backups. For each backup you see its date and the size of the backup. You can select a row and click *Open* to open the backup in the I/O manager. You can also double-click the row to open it. You still must click *OK* or *Apply* to actually apply this backup to the server.

There is a delete button to remove a backup.

The same principle applies to the data storage configurations and the data storage manager. This open from backup button also exists in the layout manager.

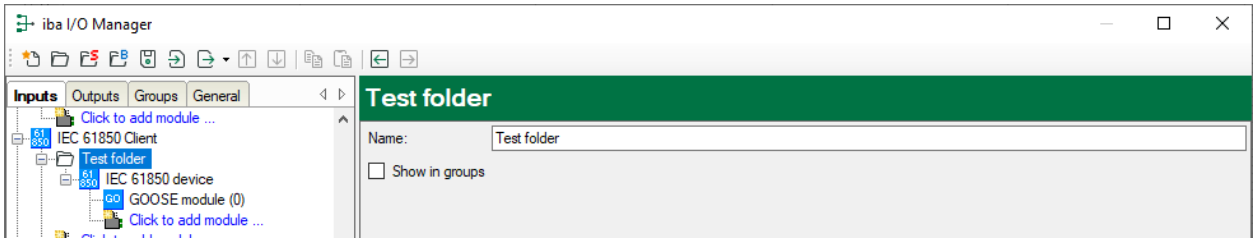
4.4 Navigate to signal from expression

In the expression editor of virtual signals there is a question mark button that opens the expression details form.



In the expression details you can now double-click a signal and ibaPDA will close the form and go to this signal in the I/O manager. You can use the back button or the ALT+Left shortcut to go back to the expression.

4.5 Folder without group

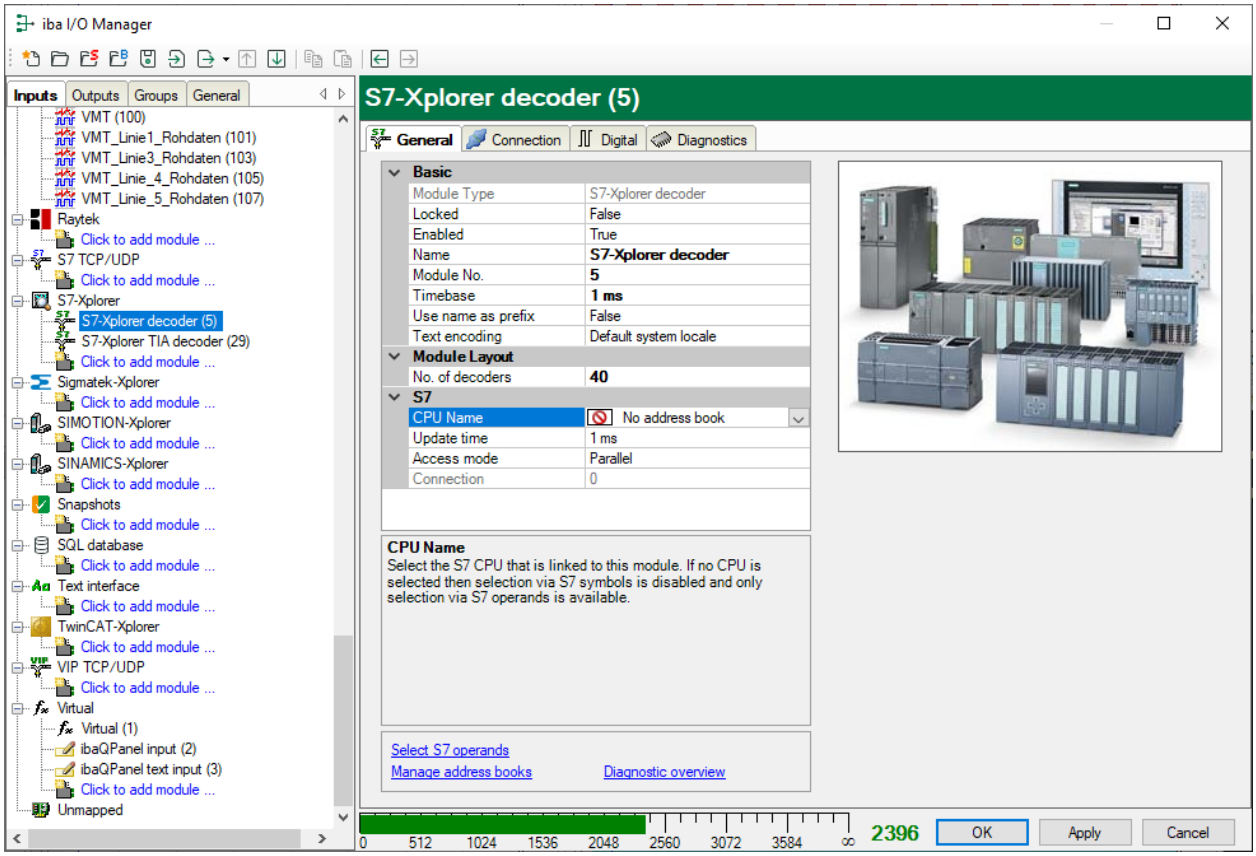


Folders will automatically create groups in the *Groups* tab. If you don't want this and only want to see the folders in the I/O manager then you can disable the generation of the group by unchecking the *Show in groups* checkbox.

5 S7-Xplorer improvements

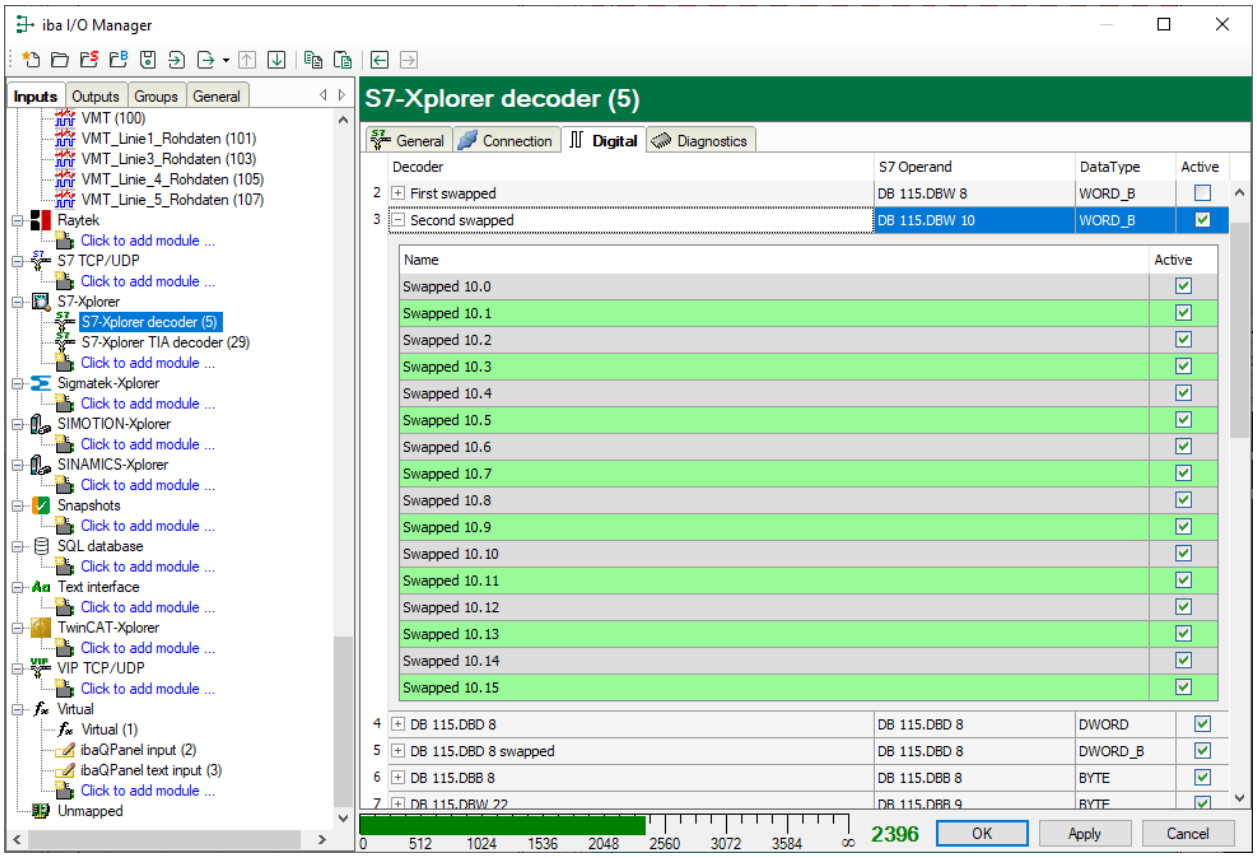
5.1 S7-Xplorer decoder

You can add a new module type *S7-Xplorer decoder* to the S7-Xplorer interface. The S7-Xplorer decoder allows you to measure BYTE, WORD and DWORD variables and split these into 8, 16 or 32 digital signals. It is like the S7 request decoder modules that you can use on the ibaBM-DP and ibaBM-PN.

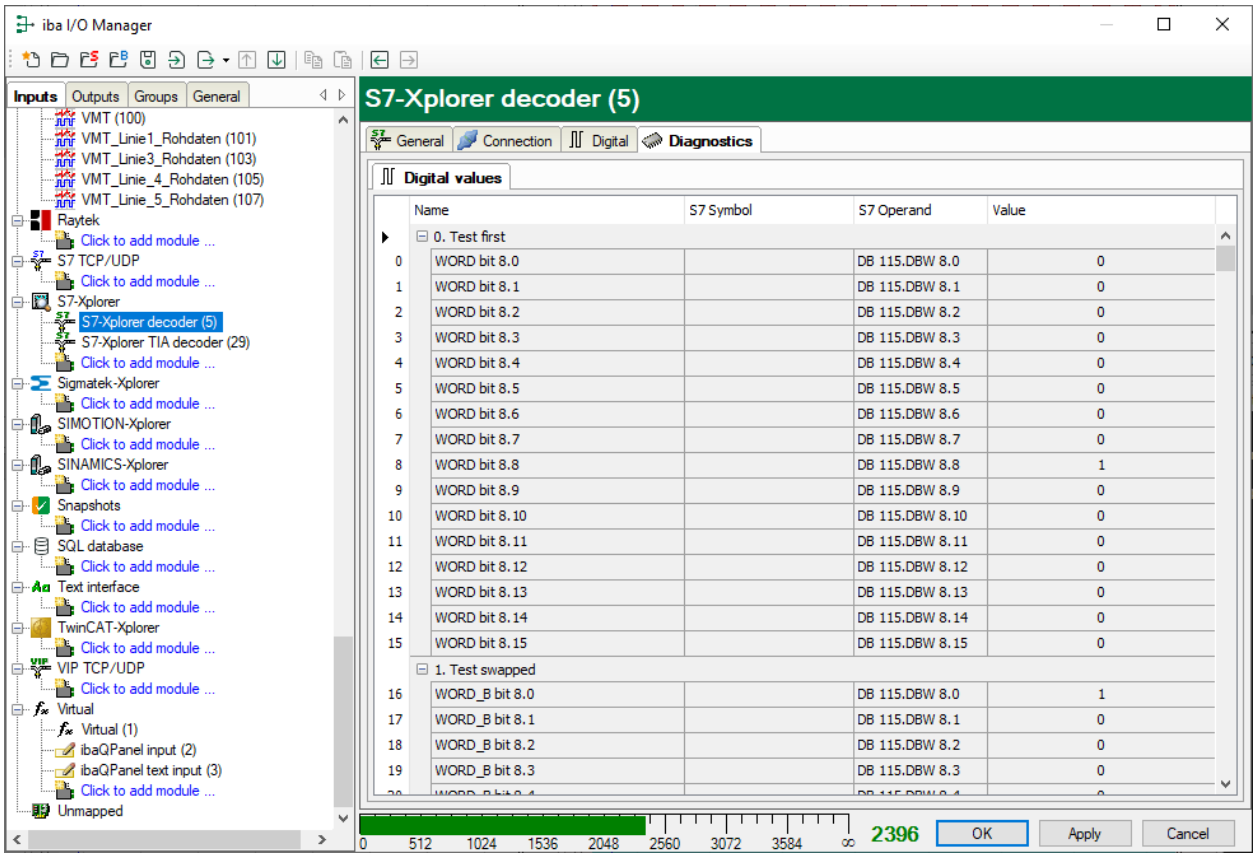


On the *General* tab you can configure the number of decoders.

On the *Connection* tab you have the same configuration options like in the S7-Xplorer module.



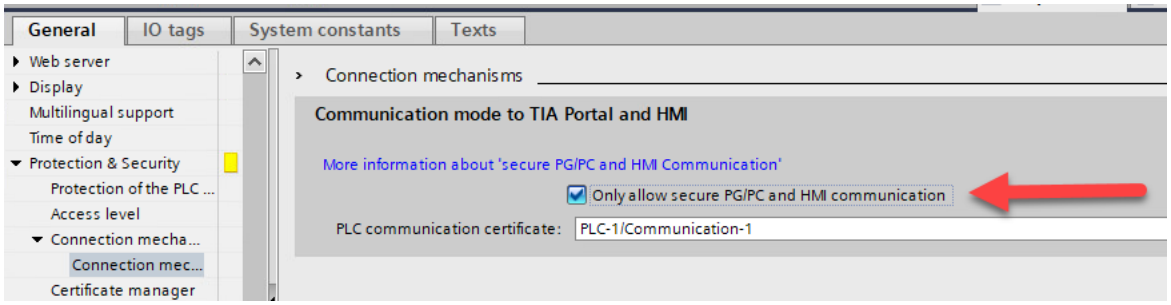
On the *Digital* tab you can configure for each decoder the S7 operand, S7 symbol (if there is an address book configured) and the data type. The data type switches automatically depending on the S7 operand. For 16-bit and 32-bit analog values you can choose between little-endian and big-endian data types. The default is big-endian (WORD_B and DWORD_B) because the S7 is big-endian.



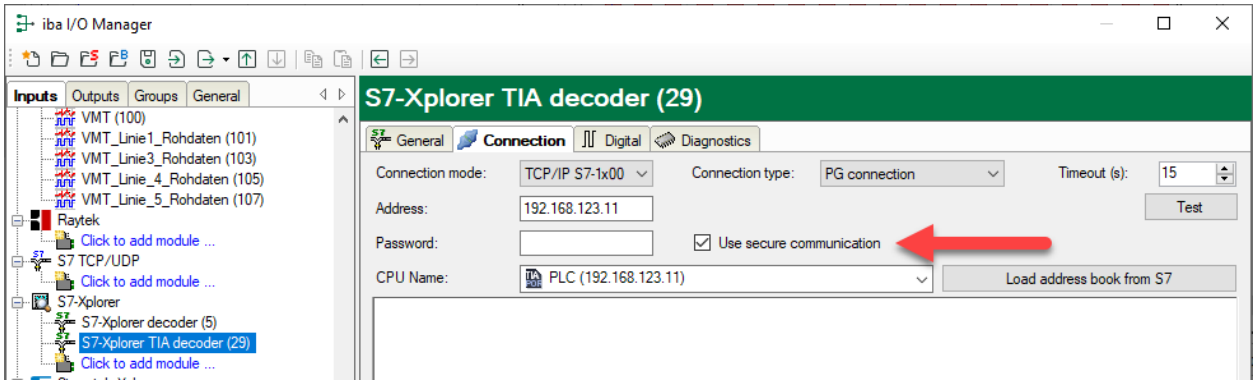
On the *Diagnostics* tab you can see the measured values of the bits.

5.2 Support for secure communication

Since TIA Portal V17 the S7-1200 and S7-1500 PLCs support TLS encryption of the communication. Legacy communication can be prohibited in TIA Portal by checking the *Only allow secure PG/PC and HMI communication* checkbox.



If secure communication is exclusivly configured in the PLC then you have to check the *Use secure communication* checkbox otherwise you will get errors when trying to connect.



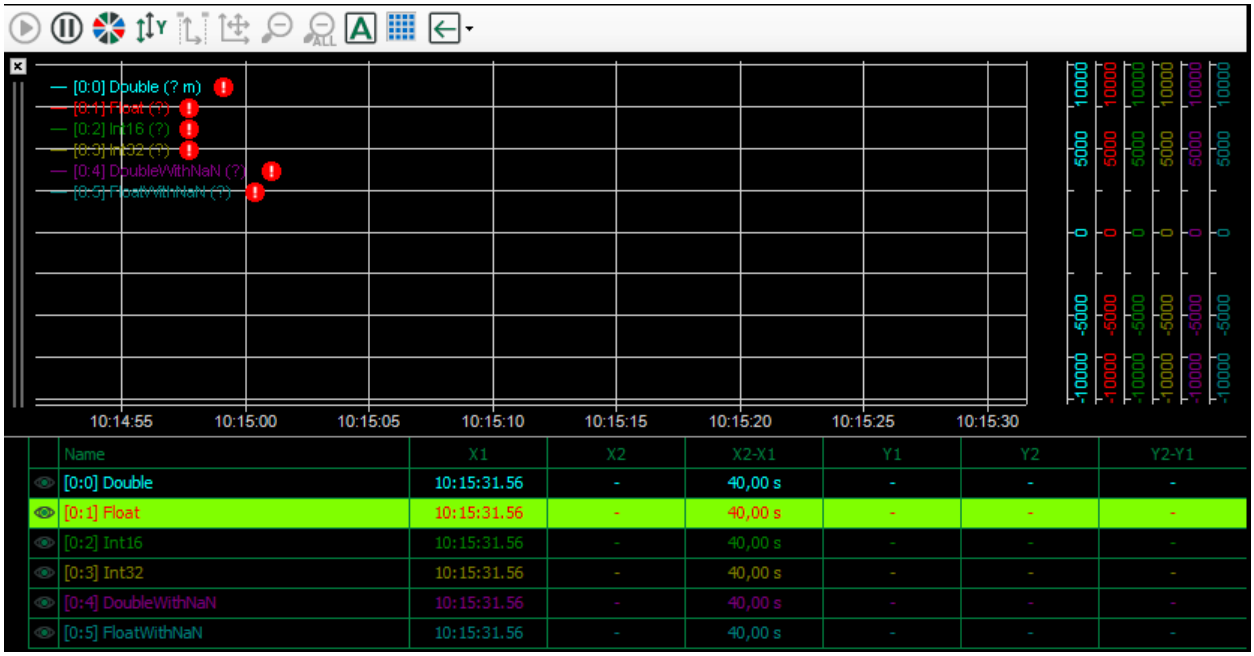
5.3 Support for TIA Portal V18

The S7 address book generator now supports TIA Portal V18 projects. The address book can also be loaded from an S7 that has a TIA Portal V18 project loaded.

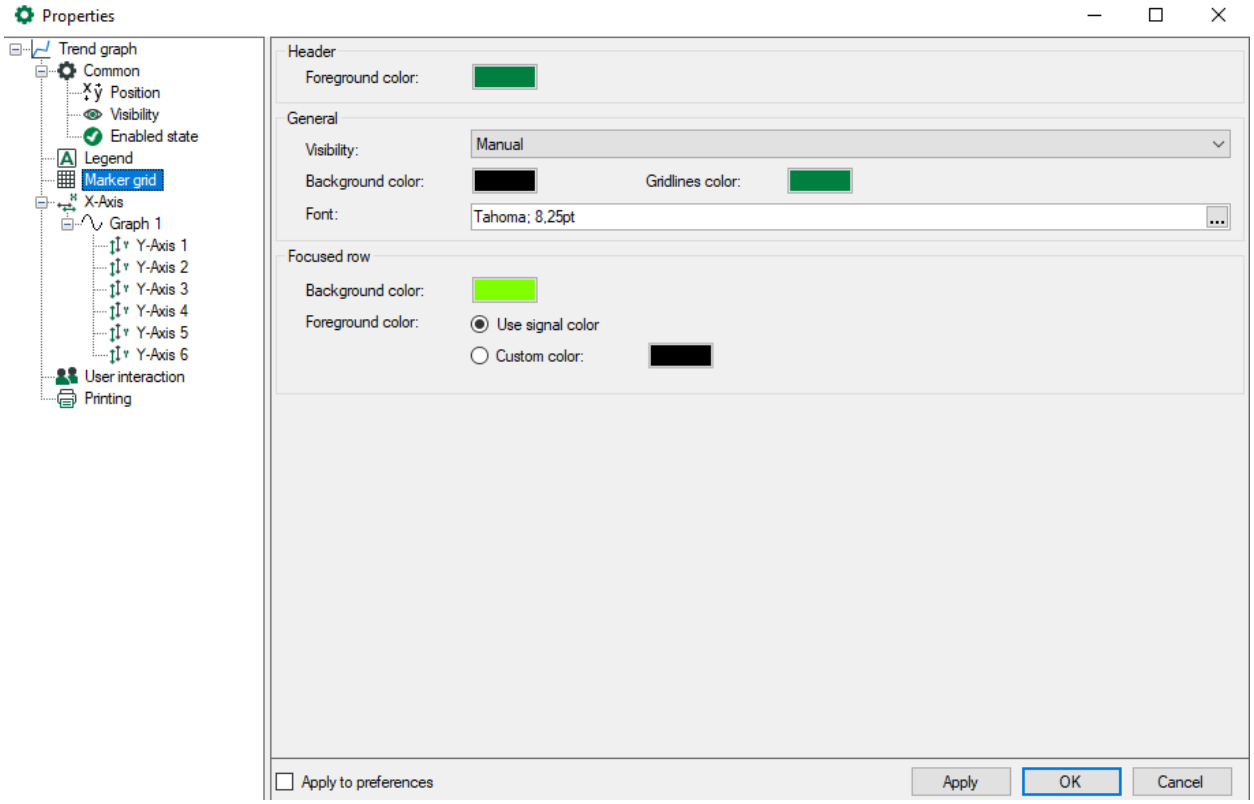
6 Trend graphs

6.1 Marker grid

You can now customize the marker grid in all trend graphs. Available options include the background color, header text color, gridlines color, the font as well as the focused row background and text color.

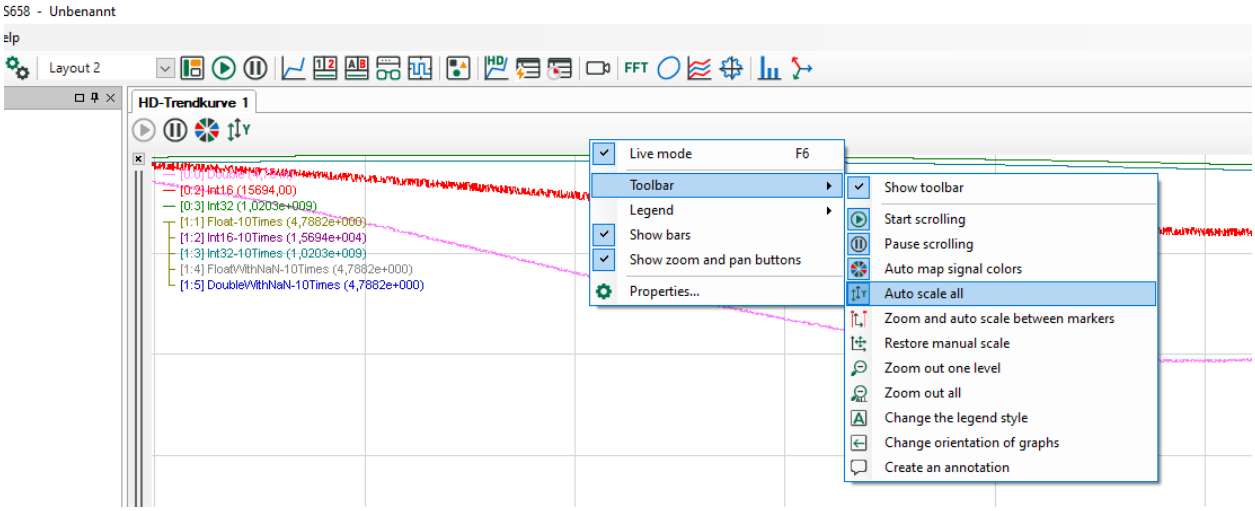


All the options for the marker grid have moved to a new tab in the properties.



6.2 Toolbar

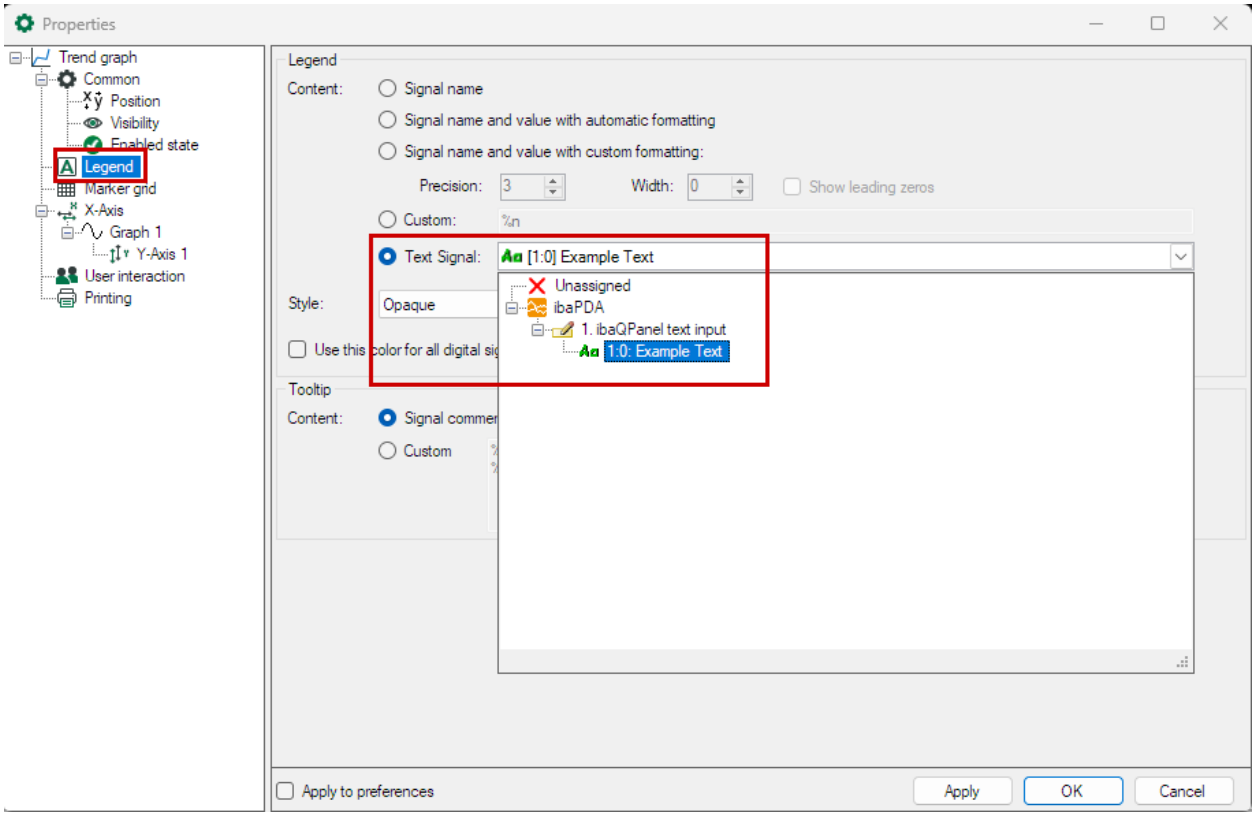
In addition to showing or hiding the whole toolbar in a trend graph you can now show or hide specific buttons. Right-click on a trend graph, go to Toolbar and select the buttons that you want to show.



6.3 Legend text signal

A trend graph now provides the possibility to dynamically change the content of the legend based on a text signal.

Navigate to the properties of a trend graph, then legend and choose ‘Text signal’ to activate the new feature. You must then select a text signal that contains the format of the legend.



The text signal can contain regular text and legend parameters such as %c1, %x1 etc. (see “Custom” tooltip).