New features in ibaPDA v6.22.0

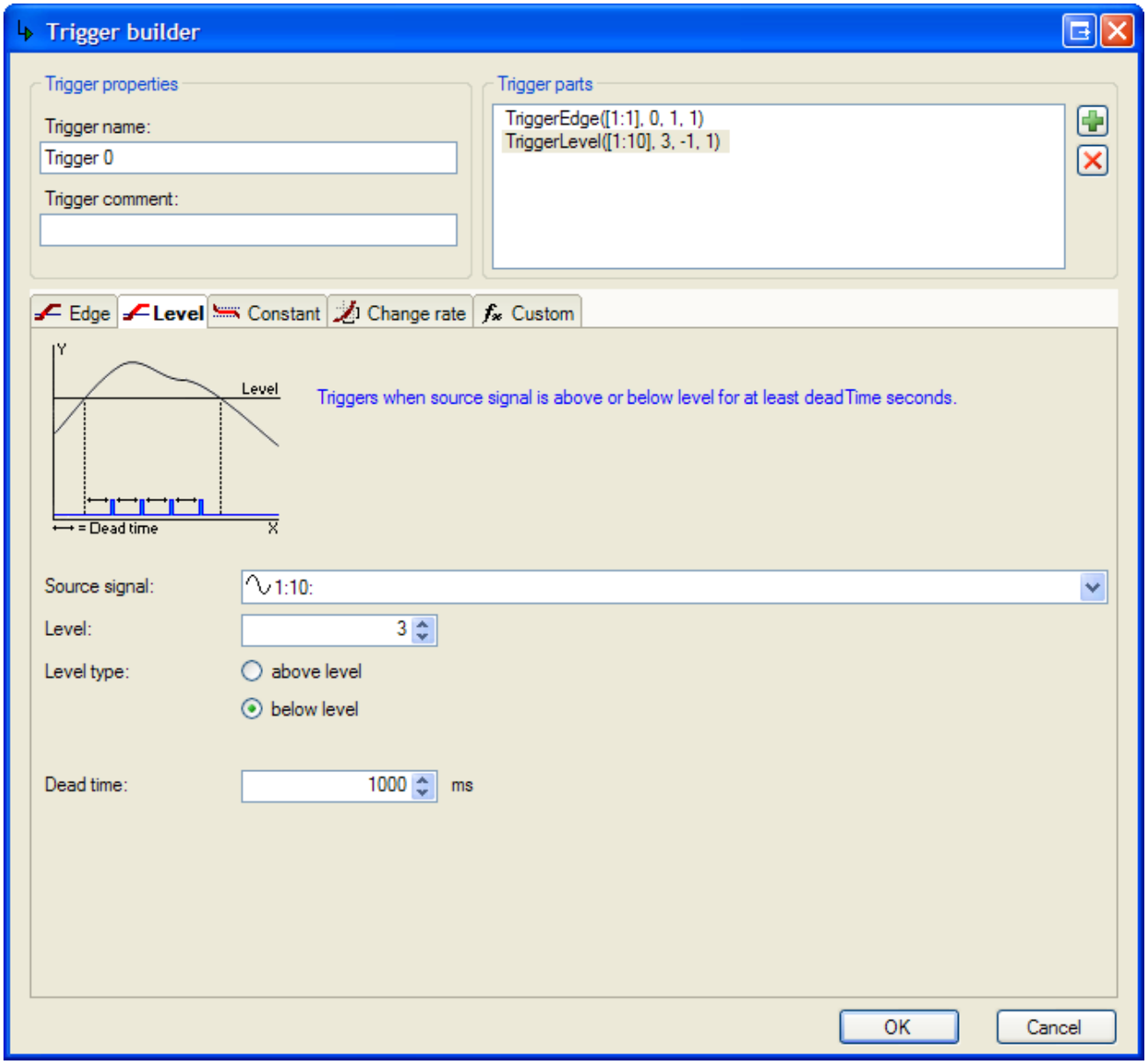
1 New FFT view

See separate document

2 Trigger pool

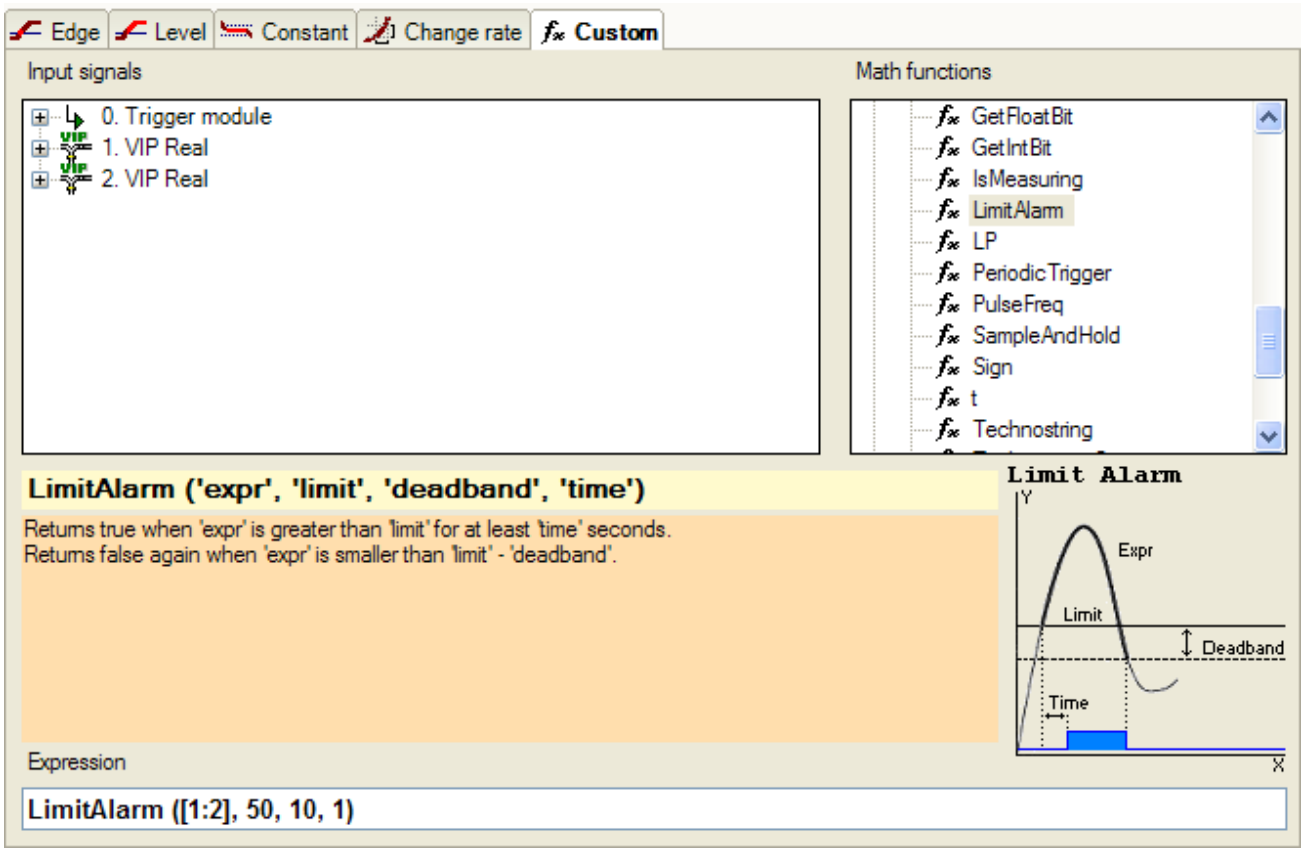
2.1 Trigger module

The trigger module is a virtual module with only digital signals. Each digital signal is a trigger. Instead of the normal expression builder the trigger module uses a special trigger builder dialog to create the expressions for the triggers. The trigger builder is based on the ibaScope trigger editor.



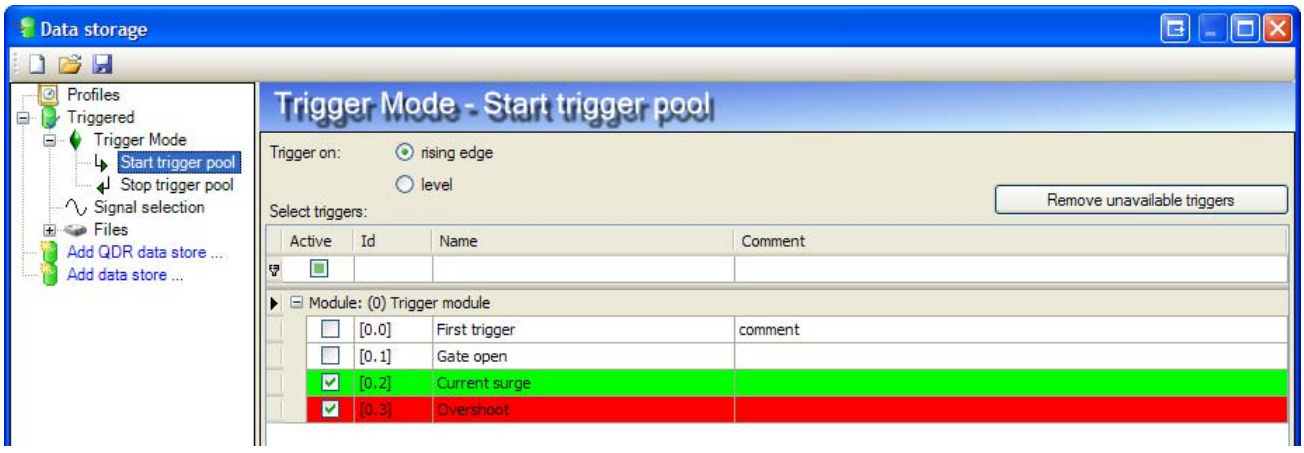
In the trigger properties you can set the name of the trigger and the comment. The expression of a trigger consists of one or more parts. Each part is an expression in itself. These parts are put together via the OR function. So the trigger will be 1 if one of its parts is 1. In the example there are 2 parts: TriggerEdge([1:1],0,1,1) and TriggerLevel([1:10],3,-1,1). The plus button will add a new part and the cross button will remove the currently selected part. The bottom part of the editor allows you to configure the currently selected part. There are 4 standard functions that correspond to the ibaScope trigger functions and

then there is an extra custom function where you can build your own expression. The custom tab contains the regular expression builder.



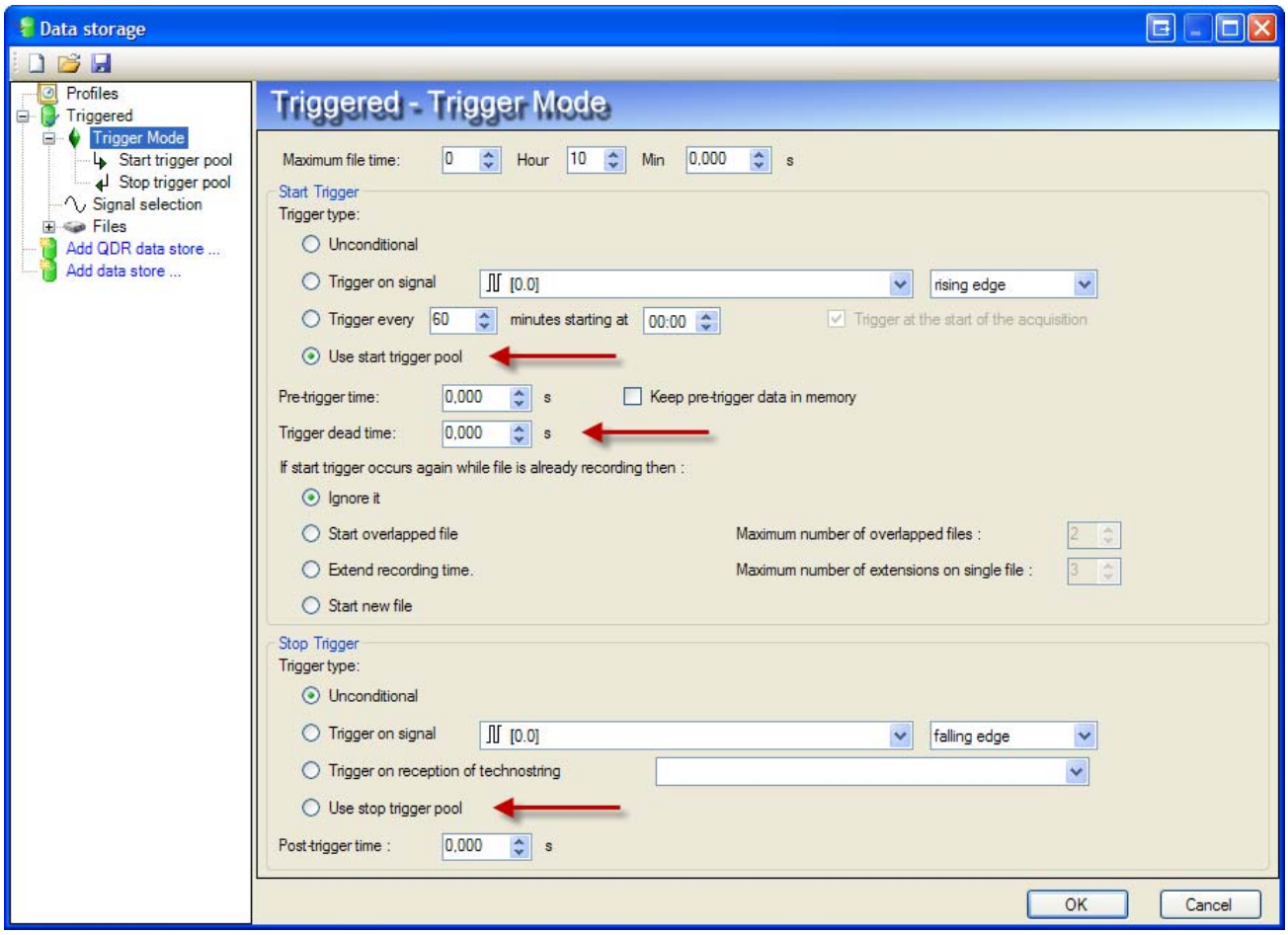
2.2 Datastore

The signals from the trigger modules can be used as triggers in the datastore. Each datastore has a start trigger pool and a stop trigger pool. A trigger pool is actually a list of signals from all trigger modules. If one of the triggers fires then the trigger pool fires. The trigger can fire on a rising edge of the trigger signals or it can fire each sample the trigger signal is 1.



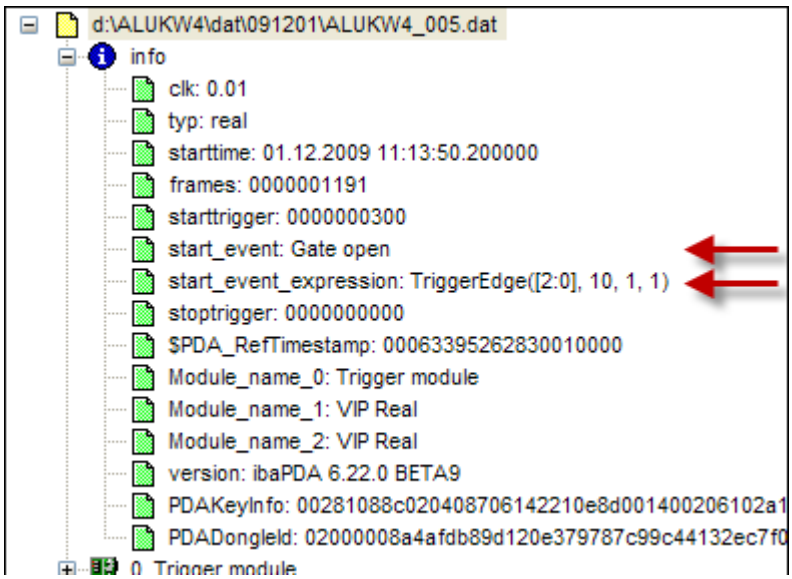
Use the checkboxes to select which trigger signals belong to the trigger pool. The selected trigger signals are marked green. The red trigger signals are signals that are no longer available. This can happen if you e.g. have disabled a trigger module. The unavailable trigger signals will be ignored. You can remove them by clicking the “Remove unavailable triggers” button. The first row of the trigger grid can be used to filter the trigger signals. You can use multiselect via CTRL and SHIFT key to activate or deactivate multiple trigger signals at once. If you click the “Active” column header then the value of the selected row is copied to all rows underneath it. This is the same behaviour as the column header clicking in the I/O manager.

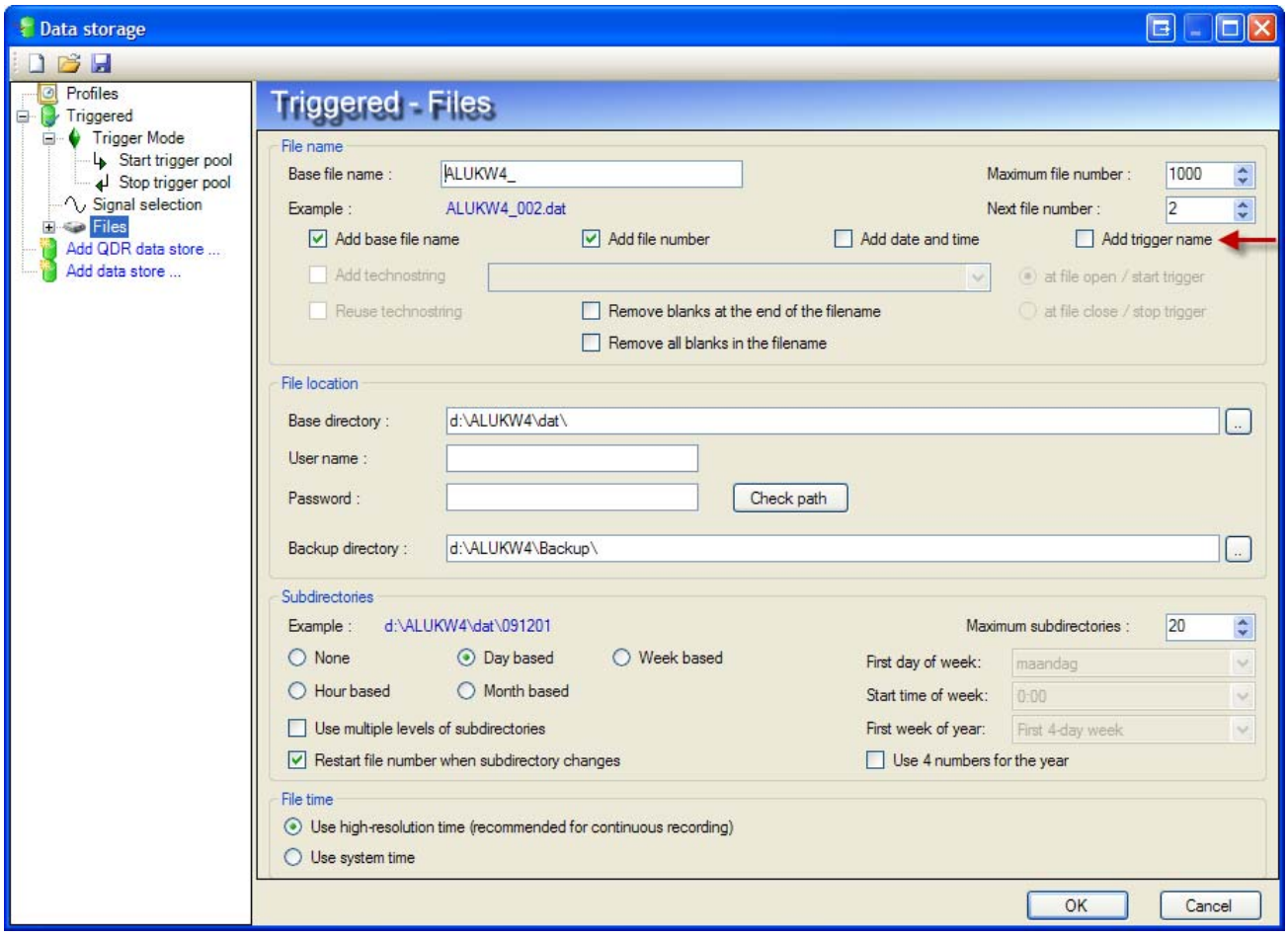
If you want to use a trigger pool as a trigger then you have to set this option on the trigger mode form.



The trigger mode form also contains a new property called “Trigger dead time”. This property works on every start trigger type (signal trigger, periodic trigger and start trigger pool). The trigger dead time determines the time after a trigger occurs that subsequent trigger occurances are ignored. So if the dead time is set to 5 seconds then in the 5 seconds after the first trigger happens all other triggers are ignored.

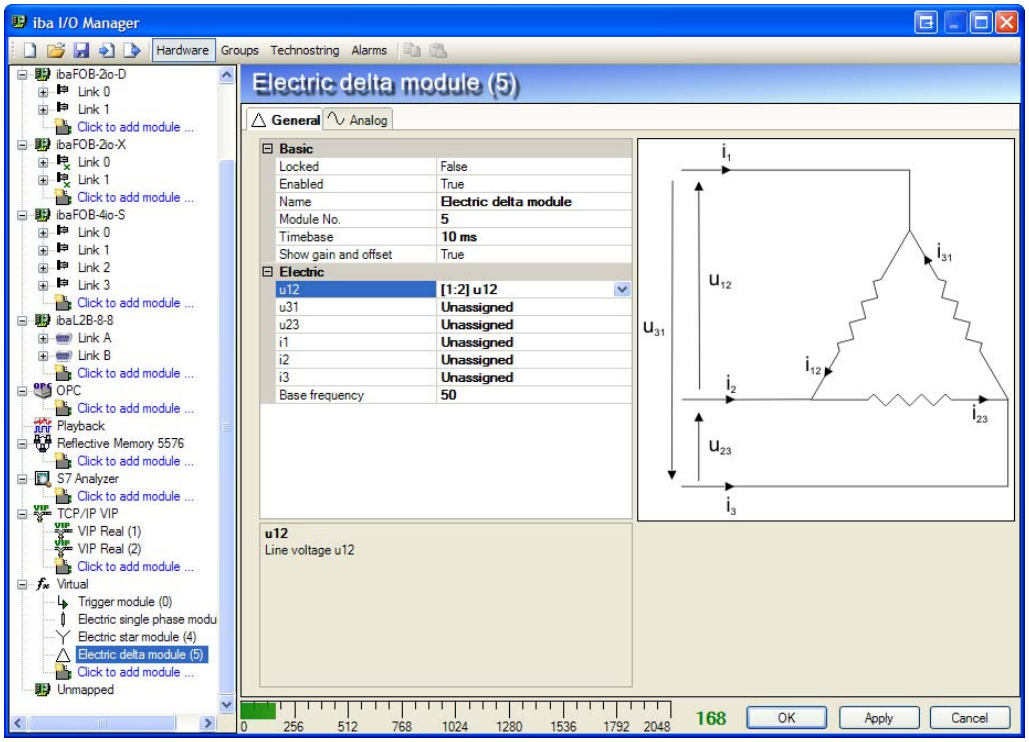
If the trigger pool is used then a file can be started because of any trigger within the trigger pool. The name of the trigger that actually fired is stored in the dat file as the info field start_event for start trigger and stop_event for stop trigger. The expression that is behind the trigger is also stored as an info field start_event_expression or stop_event_expression. The start trigger name can also be added to the filename.


d:\ALUKW4\dat\091201\ALUKW4_005.dat
info
clk: 0.01
typ: real
starttime: 01.12.2009 11:13:50.200000
frames: 0000001191
starttrigger: 0000000300
start_event: Gate open
start_event_expression: TriggerEdge([2:0], 10, 1, 1)
stoptrigger: 0000000000
$PDA_RefTimestamp: 00063395262830010000
Module_name_0: Trigger module
Module_name_1: VIP Real
Module_name_2: VIP Real
version: ibaPDA 6.22.0 BETA9
PDAKeyInfo: 00281088c020408706142210e8d001400206102a1
PDADongleId: 02000008a4afdb89d120e379787c99c44132ec7f0
0 Trigger module

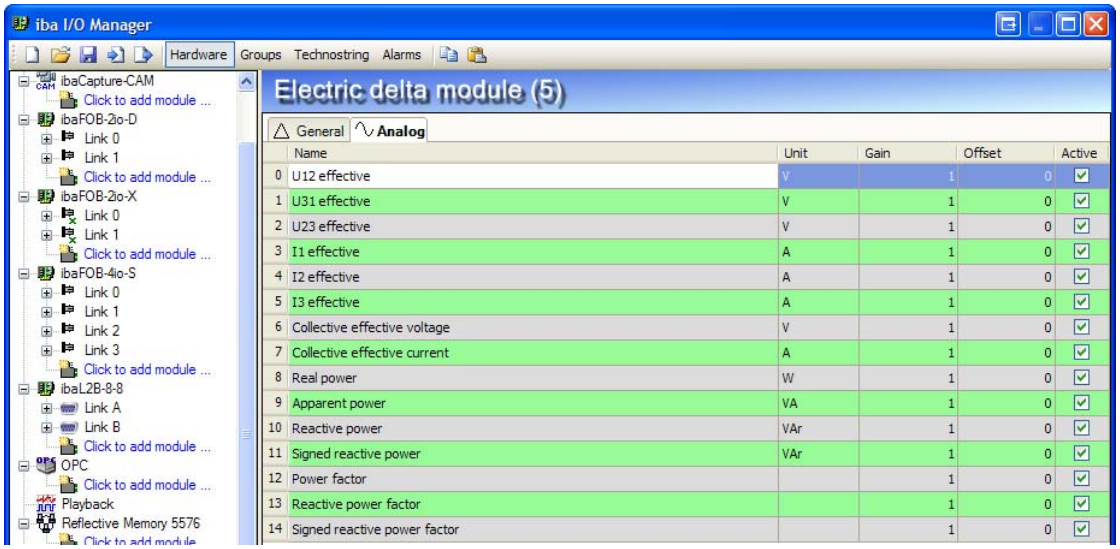

Data storage
Profiles
Triggered
Trigger Mode
Start trigger pool
Stop trigger pool
Signal selection
Files
Add QDR data store ...
Add data store ...
Triggered - Files
File name
Base file name :
ALUKW4_
Maximum file number :
1000
Example :
ALUKW4_002.dat
Next file number :
2
Add base file name
Add file number
Add date and time
Add trigger name
Add technostring
at file open / start trigger
Reuse technostring
Remove blanks at the end of the filename
at file close / stop trigger
Remove all blanks in the filename
File location
Base directory :
d:\ALUKW4\dat\
User name :
Password :
Check path
Backup directory :
d:\ALUKW4\Backup\
Subdirectories
Example :
d:\ALUKW4\dat\091201
Maximum subdirectories :
20
None
Day based
Week based
First day of week:
maandag
Hour based
Month based
Start time of week:
0:00
Use multiple levels of subdirectories
First week of year:
First 4-day week
Restart file number when subdirectory changes
Use 4 numbers for the year
File time
Use high-resolution time (recommended for continuous recording)
Use system time
OK
Cancel

3 Electric modules

There are 3 new virtual modules that calculate effective values, electric powers and electric power factors online. Each module corresponds with a different type of electric network. There is the single phase module, the star module and the delta module. IbaPDA uses the same formulas as ibaAnalyzer to calculate the different electric values. The single phase formulas are the same as the star formulas with u2, u3 and i2, i3, i4 equal to zero.



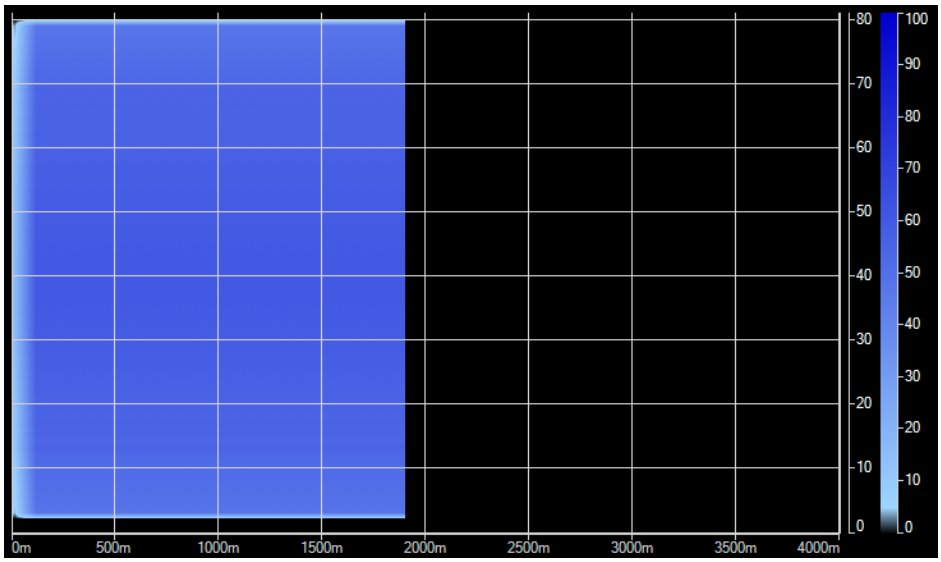
On the general tab you have to specify the input voltages and currents. You also have to specify the base frequency in Hz. The timebase of the module can be set to 1/base frequency because a new value will be available only every period.



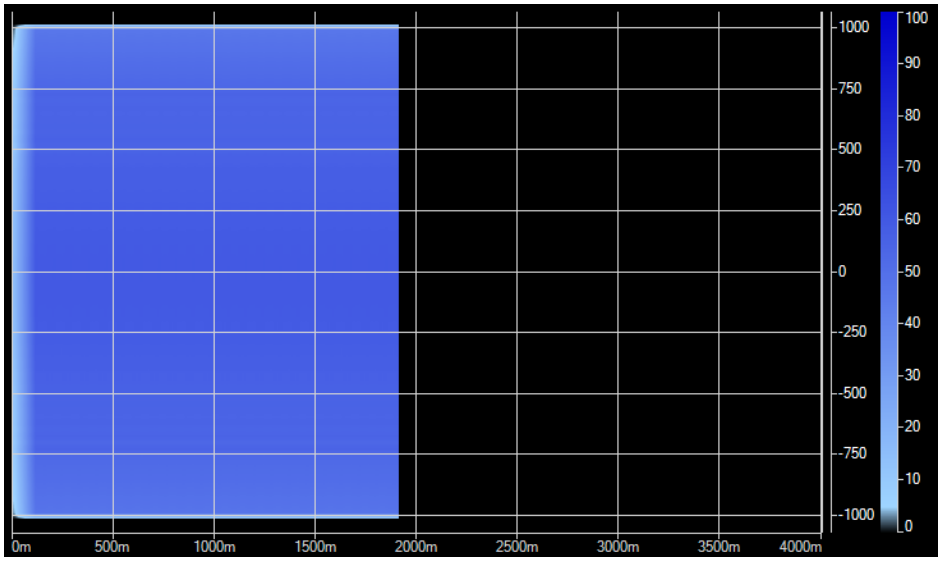
4 Trend graph changes

4.1 Y-axis of 2D graph

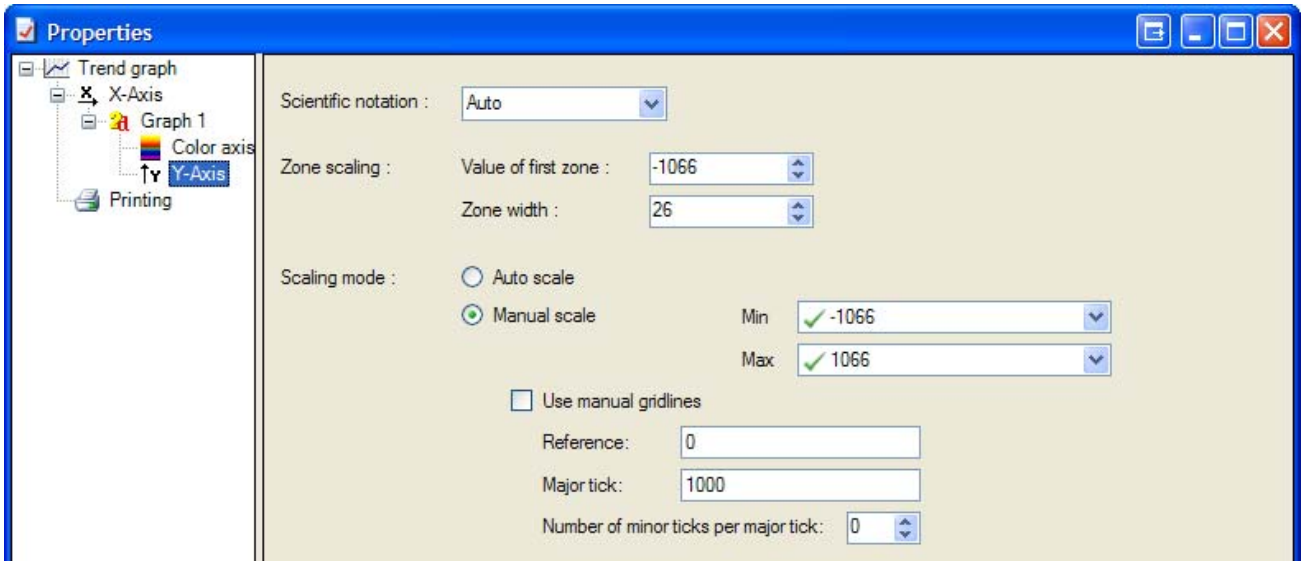
The Y-axis of a 2D graph can be configured now. By default it shows the zones that are part of the displayed vector. In the screenshot you see a vector with 82 zones and the Y-axis goes from 0 to 81.



In the next screenshot you see the same vector but the zones have been scaled so that the first zone starts at -1066 mm and that each zone has a width of 26 mm.

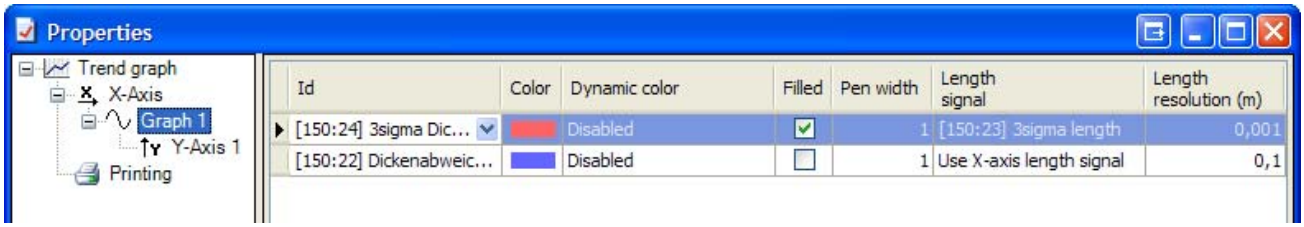


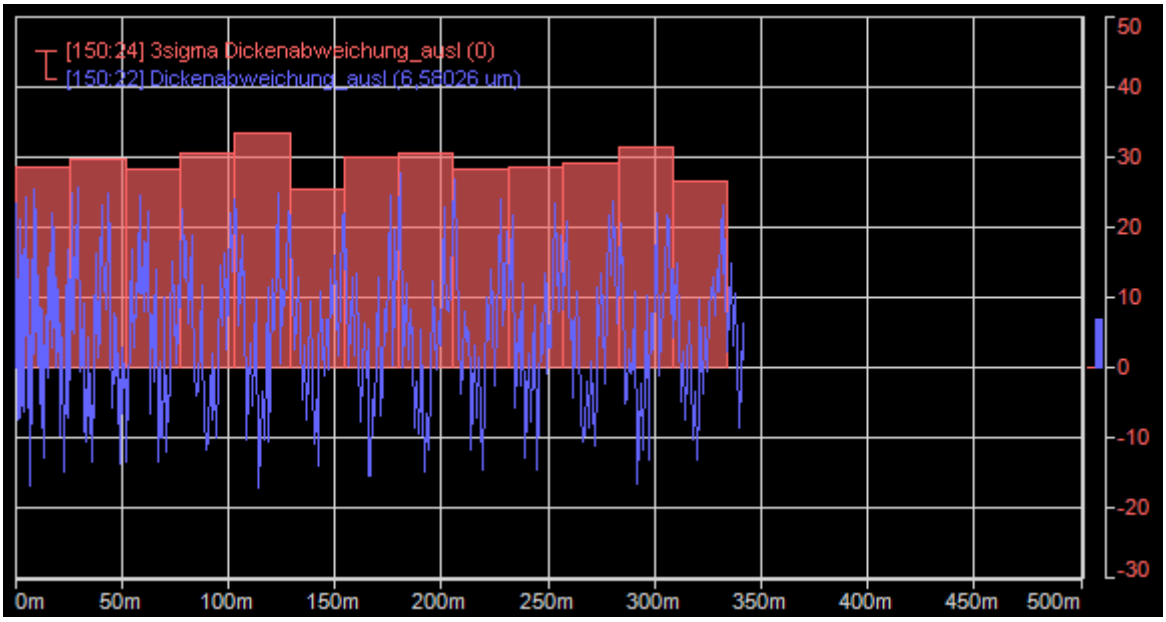
The zone scaling can be set in the 2D Y-axis properties dialog. Like on a normal Y-axis you can set the scaling mode and the gridlines.



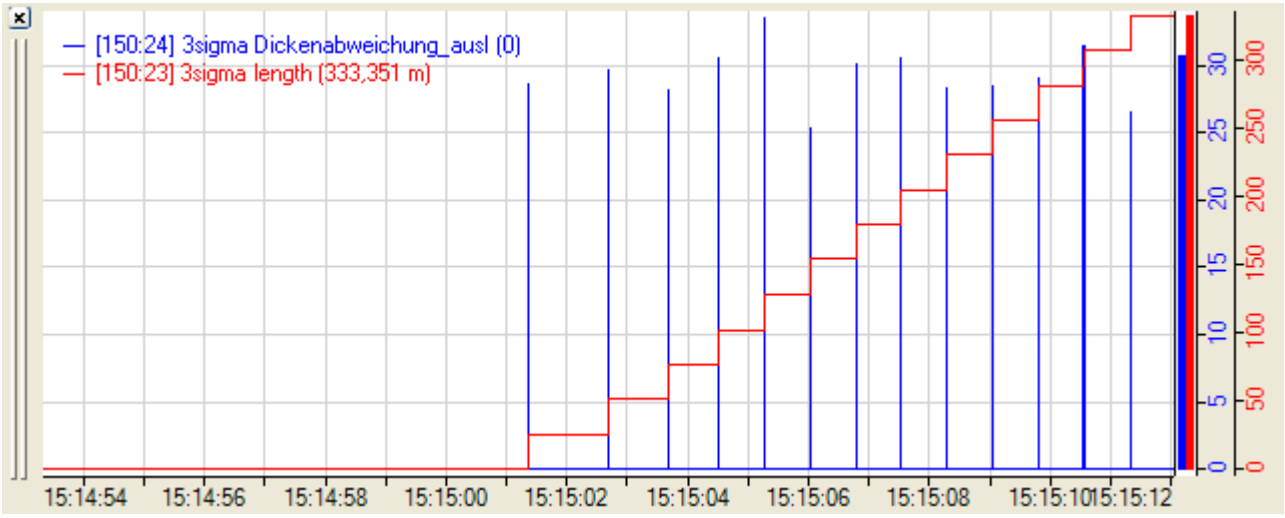
4.2 Rewrite of lengthbased trend graph

In previous versions the time to length conversion for the lengthbased trend graph was done at every paint. The advantage of this was that we always had the maximum length resolution. The disadvantage is that the performance could suffer a lot because we always had to iterate over the timebased samples. If there is a stop for 30 minutes then we would need to iterate over all that timebased data on every paint. This is especially bad for 2D topview graphs of vectors with a lot of zones. In v6.22.0 the time to length conversion is done only once. This gives much better performance. The disadvantage is that you now have to specify a length resolution for the conversion. The length resolution can be setup per signal. By default the length conversion uses the X-axis length signal to do the conversion. If you want you can change this and use another length signal. In the following example we have done this.





The blue thickness signal uses the X-axis length signal. The red 3sigma signal of the thickness is calculated every 26m. So after 26m we know the calculated value for the first 26m. The trend graph shows the current value of the thickness and every 26m it draws a bar with the 3sigma value over the past 26m. This is achieved by generating a length signal that increases only every 26m like you see in the timebased graph. In order to show bars the 3sigma value itself is always 0 except when 26m have passed and a new value is calculated.



The signal bars always show the current value of the signals no matter if the length is constant or if it is changing. In previous version the signal bars only changed when the length changed.

5 Small features

5.1 TDC request via profibus

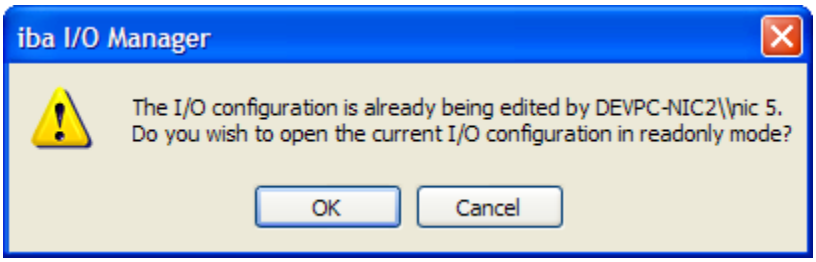
The agents used for FM458 request can also be used on a TDC CPU. You can use them to do request with TDC using profibus instead of using the GDM and a FOB-TDC board. IbaPda supports a TDC request module on the L2B board and on the ibaBM-DPM-S device. The TDC request module behaves exactly the same as the FM458 request module.

5.2 Import of ibaScope setup file

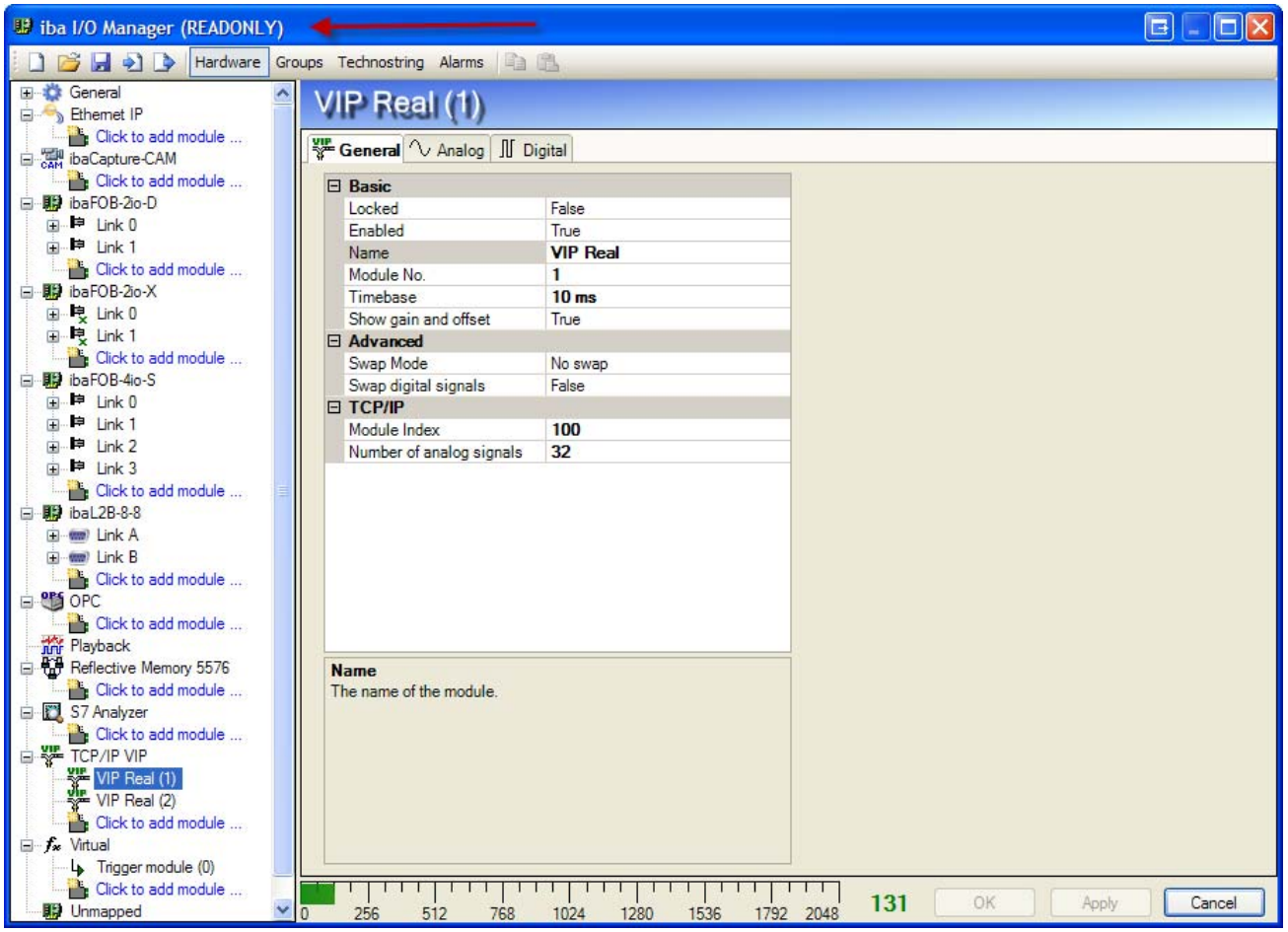
The ibaScope .setup file can be imported by ibaPDA. Open the I/O manager and select import. The file filter now also contains an entry for ibaScope setup files. Only the I/O configuration of ibaScope is imported. The datastore configuration is ignored. IbaScope handles the 2 links of a Padu16-M device as 2 separate modules. Each has a name and a module number. IbaPDA mimics the same behavior by creating 2 Padu16-M modules with only 1 link connected..

5.3 The I/O configuration can be edited by only 1 client at a time

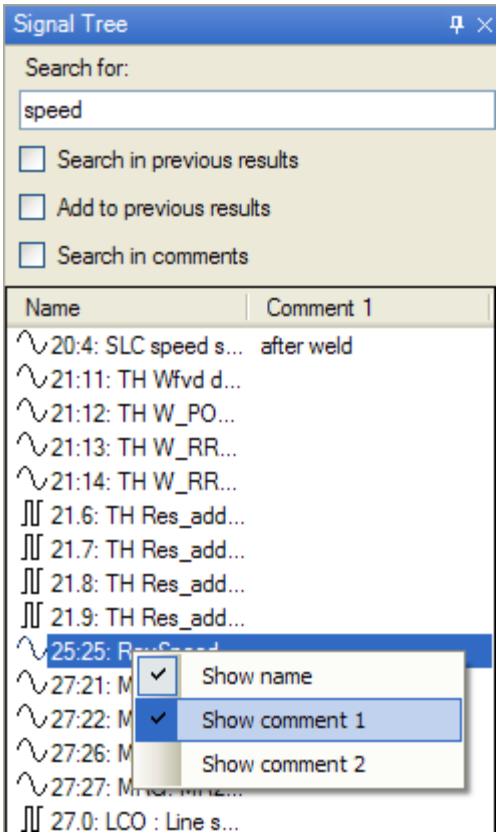
Previously when multiple clients connected to the same server then they could all open the I/O manager and apply a new configuration. The last one that applied the configuration won. In version 6.22.0 this has changed. The first one that opens the I/O manager can change the configuration and apply it. When a second client tries to open the I/O manager while the first one still has the I/O manager open, he will get the following messagebox.



If you press cancel then the I/O manager will not be shown. If you press OK then the I/O manager will open. The title bar will contain the text READONLY. The OK button and the apply button will be disabled. So you can change the configuration but you won't be able to apply the changes to the server. You can save the configuration to a file.

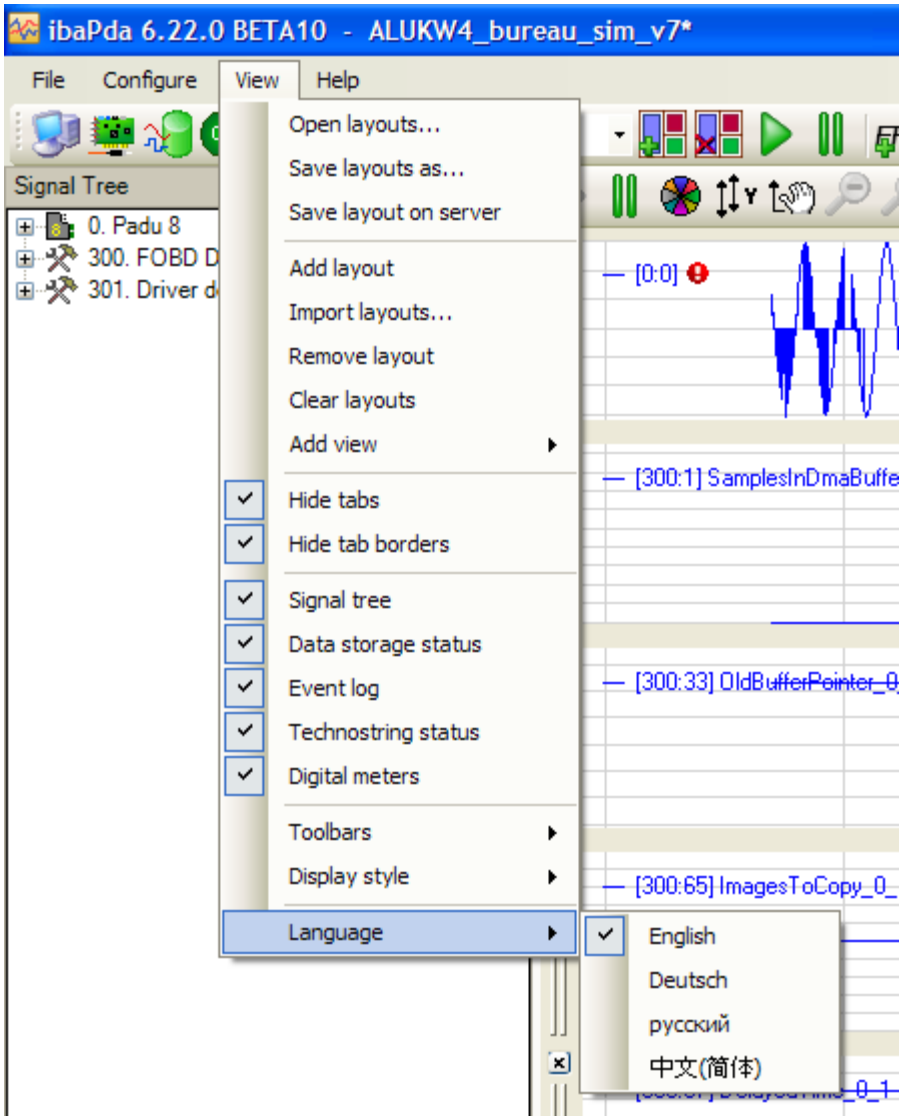

iba I/O Manager (READONLY)
Hardware
Groups
Technostring
Alarms
General
Ethernet IP
Click to add module ...
ibaCapture-CAM
Click to add module ...
ibaFOB-2io-D
Link 0
Link 1
Click to add module ...
ibaFOB-2io-X
Link 0
Link 1
Click to add module ...
ibaFOB-4io-S
Link 0
Link 1
Link 2
Link 3
Click to add module ...
ibaL2B-8-8
Link A
Link B
Click to add module ...
OPC
Click to add module ...
Playback
Reflective Memory 5576
Click to add module ...
S7 Analyzer
Click to add module ...
TCP/IP VIP
VIP Real (1)
VIP Real (2)
Click to add module ...
Virtual
Trigger module (0)
Click to add module ...
Unmapped
VIP Real (1)
General
Analog
Digital
Basic
Locked
False
Enabled
True
Name
VIP Real
Module No.
1
Timebase
10 ms
Show gain and offset
True
Advanced
Swap Mode
No swap
Swap digital signals
False
TCP/IP
Module Index
100
Number of analog signals
32
Name
The name of the module.
0
256
512
768
1024
1280
1536
1792
2048
131
OK
Apply
Cancel

5.4 Comments in signal search grid



You can show 3 columns in the signal tree search grid: the signal name, comment 1 and comment 2.

5.5 Change ibaPDA client language on the fly



There is a new menu item in the View menu of the ibaPDA client called Language. It shows a list of available languages for the client. The language names are given in their native format. In the screenshot you see english, german, russian and chinese. When you select a language then the ibaPDA client changes its language on the fly. So no restart of the ibaPDA client is required. By default ibaPDA uses the language that the current windows user uses. The language selection allows you to change the language. The selected language is not saved so the next time you start an ibaPDA client it will use the windows language again.