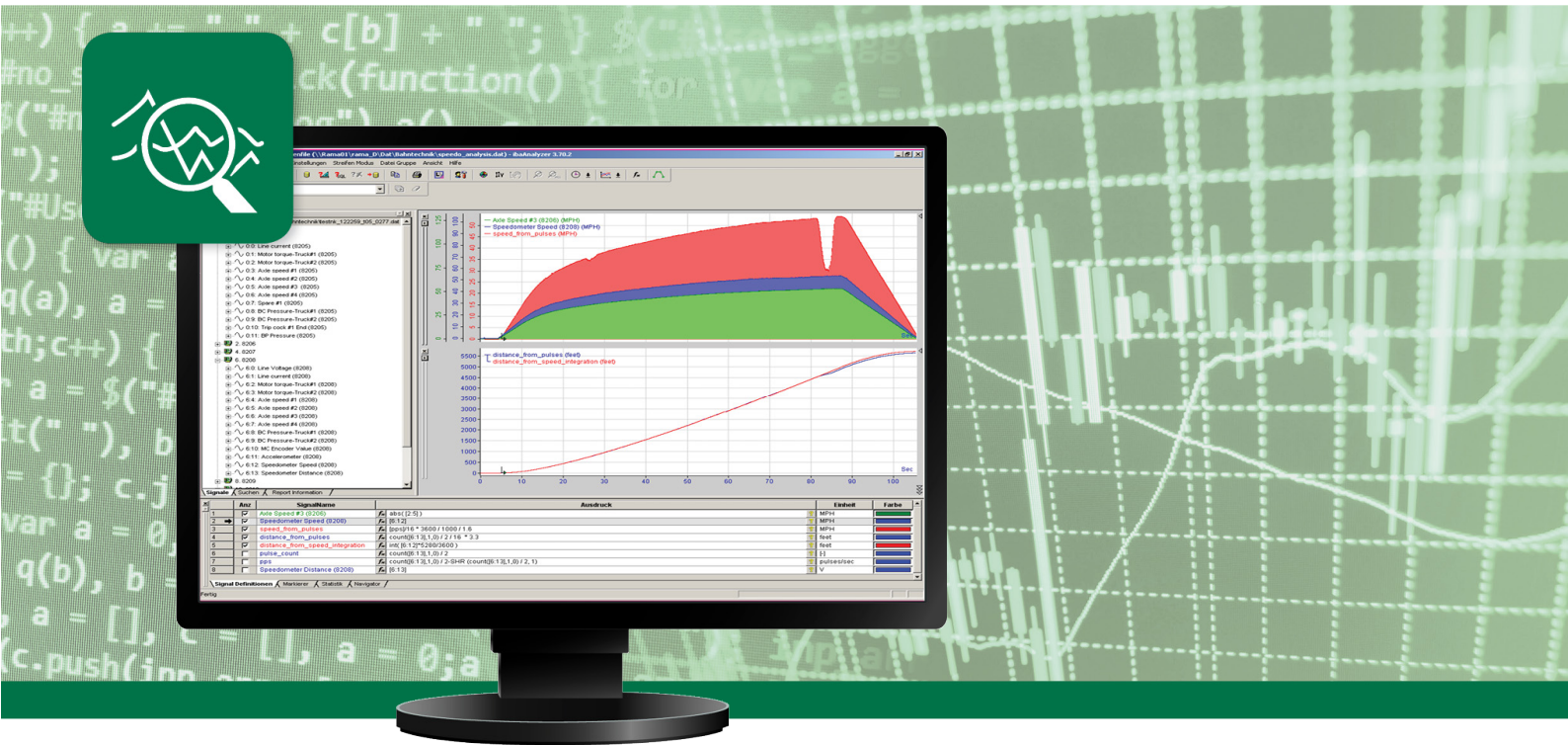




See the Big Picture



ibaAnalyzer-DAT-Extractor

Extract Interface for External Data File Formats

Manual

Issue 1.0

Measurement and
Automation Systems

Manufacturer

iba AG
Koenigswarterstr. 44
90762 Fuerth
Germany

Contacts

Main office +49 911 97282-0
Fax +49 911 97282-33
Support +49 911 97282-14
Engineering +49 911 97282-13
E-Mail iba@iba-ag.com
Web www.iba-ag.com

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The current version is available for download on our web site <http://www.iba-ag.com>.

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1 About this manual

This document describes the function and application of the software *ibaAnalyzer-DAT-Extractor*.

1.1 Target group

This manual addresses in particular the qualified professionals who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

This documentation addresses in particular professionals who are in charge of analyzing measured data and process data. Because the data is supplied by other iba products the following knowledge is required or at least helpful when working with *ibaAnalyzer*:

- Operating system Windows
- ibaPDA-V6* (creation and structure of the measuring data files)

1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu <i>Logic diagram</i>
Calling the menu command	<i>Step 1 – Step 2 – Step 3 – Step x</i> Example: Select the menu <i>Logic diagram - Add - New function block</i> .
Keys	<Key name> Example: <Alt>; <F1>
Press the keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Key name> Example: <OK>; <Cancel>
File names, paths	"Filename", "Path" Example: "Test.doc"

1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

DANGER

The non-observance of this safety information may result in an imminent risk of death or severe injury:

- From an electric shock!
 - Due to the improper handling of software products which are coupled to input and output procedures with control function!
-

WARNING

The non-observance of this safety information may result in a potential risk of death or severe injury!

CAUTION

The non-observance of this safety information may result in a potential risk of injury or material damage!



Note

A note specifies special requirements or actions to be observed.



Important note

Note if some special features must be observed, for example exceptions from the rule.



Tip

Tip or example as a helpful note or insider tip to make the work a little bit easier.



Other documentation

Reference to additional documentation or further reading.



Example

Configuration and application examples for a better understanding

2 Introduction

2.1 What is ibaAnalyzer-DAT-Extractor?

The *ibaAnalyzer-DAT-Extractor* is a purchasable option which enables measurement data acquired in the iba-dat format to be extracted automatically in standard formats which can be imported by other programs, such as spreadsheet processing (e.g. MS Excel), database (e.g. MS Access) or word processing (e.g. MS Word). Other possible formats are the iba-dat format, text files (CSV or ASCII) and files in the COMTRADE or TDMS format.

2.2 Functions and application

The *ibaAnalyzer-DAT-Extractor* functionality is an integral part of current *ibaAnalyzer* versions and is activated during the installation of *ibaAnalyzer* whenever the respective dongle is present. All data in iba data file format (*.dat), created by *ibaPDA*, *ibaQDR*, *ibaLogic*, *ibaScope* or third party applications which have used the *ibaFiles* library can be easily loaded, transformed, and extracted using the *ibaAnalyzer-DAT-Extractor*.

Summary of the major functions:

- Data "Loading" from iba data file
- Data "Transformation" or generation of new virtual signals
- Data "Extraction" in various formats



Other documentation

For detailed information about the general functions of ibaAnalyzer, please see the ibaAnalyzer manual.

3 Installation

ibaAnalyzer-DAT-Extractor is installed with *ibaAnalyzer* and activated by the associated license.

4 Data Extractor

The main dialog for the settings of "Data Extractor" can be opened in *ibaAnalyzer* by one of the two methods shown in the figure.

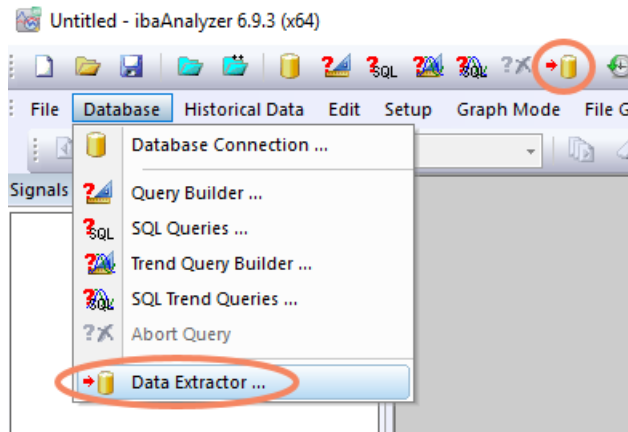


Figure 1: Opening the Data Extractor

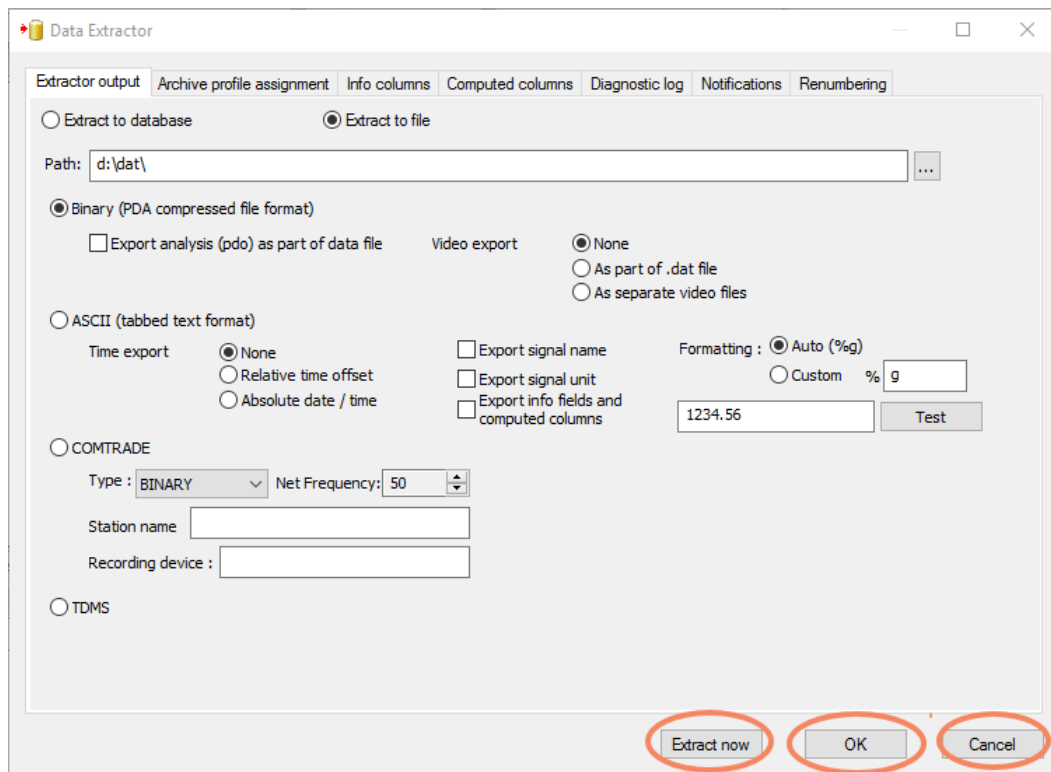


Figure 2: The Data Extractor Window

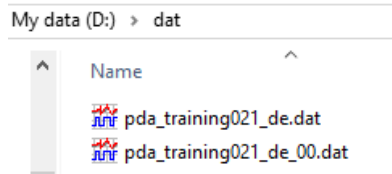
The "Data Extractor" has 7 tabs:

- Extractor output
- Active profile assignment
- Info columns
- Computed columns
- Diagnostic log
- Notifications
- Renumbering

Each tab contains the following buttons:

<Extract now>

A file will be created based on all the current settings in the „Data Extraction" window. All extracted file names will consist of the source file name augmented by „_de". If extraction from the same source file is repeated the extracted files will be indexed starting with „_00".



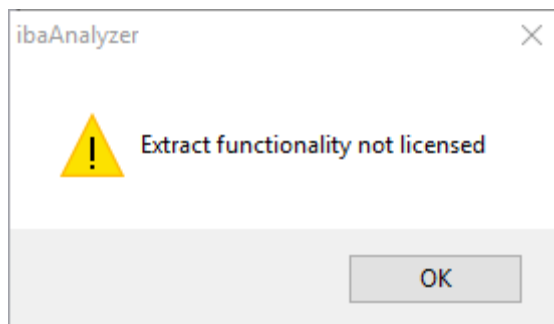
<OK>

All current settings in the "Data Extractor" window are saved and window is closed.

<Cancel>

All settings changed after the "Data Extractor" window was opened are discarded and window is closed.

The following message will appear if the license is not recognized.



4.1 Extractor Output

This tab is used to specify the location and the format of the extraction file.

The screenshot shows the 'Extractor output' window with several tabs: 'Extractor output', 'Archive profile assignment', 'Info columns', 'Computed columns', 'Diagnostic log', 'Notifications', and 'Renumbering'. The 'Extractor output' tab is active. It features a radio button selection for 'Extract to database' (unselected) and 'Extract to file' (selected). Below this, a 'Path:' field contains 'd:\dat\' and a browse button (...). The 'Binary (PDA compressed file format)' section is selected, with options for 'Export analysis (pdo) as part of data file' (unchecked), 'Video export' (radio buttons for 'None', 'As part of .dat file', 'As separate video files'), and 'Time export' (radio buttons for 'None', 'Relative time offset', 'Absolute date / time'). The 'ASCII (tabbed text format)' section has options for 'Export signal name', 'Export signal unit', 'Export info fields and computed columns', and 'Formatting' (radio buttons for 'Auto (%g)', 'Custom %g'). The 'COMTRADE' section has a 'Type' dropdown set to 'BINARY', a 'Net Frequency' spinner set to '50', and fields for 'Station name' and 'Recording device'. The 'TDMS' section is unselected.

Figure 3: Extractor output window

Extract to file

Data will be extracted as files in the format specified below.

Extract to database is described in the *ibaAnalyzer-DB* manual.

Path

Select directory location for files extracted by the DAT-Extractor. Browse the network if required (<...>).



Note

If the specified directory cannot be found it will be created automatically.



Note

If the analysis is called from the *ibaDatCoordinator* then the location of the extracted files must be specified there and will override the location specified in the DAT-Extractor. Should the directory be password protected then the Username and Password must be entered.

The screenshot shows the 'Target' configuration window. It has a radio button selection for 'Extract to database' (unselected) and 'Extract to file:' (selected). Below this, there are fields for 'Target directory:', 'Username:', and 'Password:', each with a corresponding input field and a browse button (...). The 'File type' section has radio buttons for 'Binary (.dat)', 'ASCII (.txt)', 'COMTRADE (.dat;.cfg)', and 'TDMS (.tdms;.tdms_index)'. The 'Binary (.dat)' option is selected.

4.1.1 Extracted File Formats

The format of the extracted files be binary, ASCII, COMTRADE or TDMS.

4.1.1.1 Binary

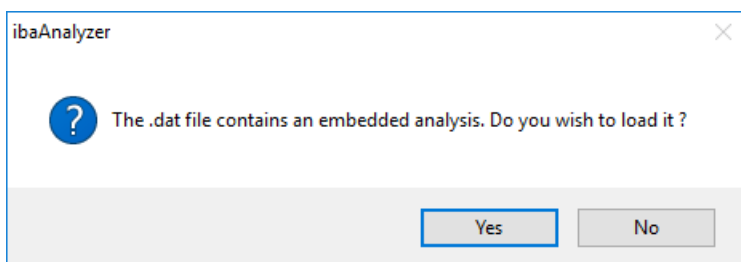
Binary (PDA compressed file format)

Binary (PDA compressed file format)
 Export analysis (pdo) as part of data file
 Video export
 None
 As part of .dat file
 As separate video files

The following options are available:

Export analysis (pdo) as part of data file

The exported .dat file contains the analysis. When this file is opened by *ibaAnalyzer* the decision can be made whether to import the embedded analysis.



Video export

None	No video export required.
As part of .dat file	ibaCapture videos will be exported as part of the export file (.dat). All videos which are selected in the signal tree will be exported.
As separate video files	ibaCapture videos will be exported as separate files (.avi) to the same directory as the .dat file. Although 2 separate files are created opening the .dat file automatically calls up the associated video file. The file name suffix _nn indicates the individual pairs.



Important Note

For exporting the videos, ibaAnalyzer needs access to the video files or ibaCapture server.



Important Note

All extracted data is converted to Real format.

4.1.1.2 ASCII

ASCII (tabbed text format)>

ibaAnalyzer automatically uses a tab-based text format. This means that the measuring series (= signal channels) are separated from each other by tabs (<TAB>) in the extracted text (.txt) file.



The following options are available:

"Time export"

None	Select this option if no time stamp is required.																																																
Relative time offset or Absolute date / time	Select these options to export time stamp information. The time stamp appears as a separate column in the export file. The "relative time offset" begins with 0: <table border="1"> <thead> <tr> <th>Time</th> <th>[18:1]</th> <th>[18:3]</th> <th>[18:5]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>217.272</td><td>190.276</td></tr> <tr><td>0.1</td><td>0</td><td>238.018</td><td>196.484</td></tr> <tr><td>0.2</td><td>0</td><td>219.696</td><td>182.417</td></tr> <tr><td>0.3</td><td>0</td><td>226.913</td><td>182.002</td></tr> <tr><td>0.4</td><td>0</td><td>241.753</td><td>185.631</td></tr> <tr><td>0.5</td><td>0</td><td>223.17</td><td>192.253</td></tr> </tbody> </table> whereas the "absolute date / time" option displays the absolute data and time <table border="1"> <thead> <tr> <th>Time</th> <th>[18:1]</th> <th>[18:3]</th> <th>[18:5]</th> </tr> </thead> <tbody> <tr><td>30.01.2017 00:11:55.120000</td><td>0</td><td>217.272</td><td>190.276</td></tr> <tr><td>30.01.2017 00:11:55.220000</td><td>0</td><td>238.018</td><td>196.484</td></tr> <tr><td>30.01.2017 00:11:55.320000</td><td>0</td><td>219.696</td><td>182.417</td></tr> <tr><td>30.01.2017 00:11:55.420000</td><td>0</td><td>226.913</td><td>182.002</td></tr> </tbody> </table>	Time	[18:1]	[18:3]	[18:5]	0	0	217.272	190.276	0.1	0	238.018	196.484	0.2	0	219.696	182.417	0.3	0	226.913	182.002	0.4	0	241.753	185.631	0.5	0	223.17	192.253	Time	[18:1]	[18:3]	[18:5]	30.01.2017 00:11:55.120000	0	217.272	190.276	30.01.2017 00:11:55.220000	0	238.018	196.484	30.01.2017 00:11:55.320000	0	219.696	182.417	30.01.2017 00:11:55.420000	0	226.913	182.002
Time	[18:1]	[18:3]	[18:5]																																														
0	0	217.272	190.276																																														
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0.3	0	226.913	182.002																																														
0.4	0	241.753	185.631																																														
0.5	0	223.17	192.253																																														
Time	[18:1]	[18:3]	[18:5]																																														
30.01.2017 00:11:55.120000	0	217.272	190.276																																														
30.01.2017 00:11:55.220000	0	238.018	196.484																																														
30.01.2017 00:11:55.320000	0	219.696	182.417																																														
30.01.2017 00:11:55.420000	0	226.913	182.002																																														

Export signal name, Export signal unit.

Export signal name exports the signal names of the measured values. The signal names then appear in the header of the measured value columns.

Export signal unit exports the signal units of the measured values. The signal units appear in the header of the measured value columns.

Time	[18:3]	[18:5]
time	GP: Rectifier 2 current	GP: Rectifier 3 current
sec	A	A
30.01.2017 00:11:55.120000	217.272	190.276
30.01.2017 00:11:55.220000	238.018	196.484
30.01.2017 00:11:55.320000	219.696	182.417

Figure 4: Example for exported signal names and units

Export info fields and computed columns

This option permits the extraction of all signals created in the "Info columns" and the "Computed columns" tabs of the "Data Extractor" window.

Column name	Column type	Function
Module_name_2	char	\$Module_name_2 (0, 0, 4)\$

Figure 5: Example for Info columns

Column name	Expression	X
GP: Average Rectifier 2 plus 3 current	[18:3] + [18:5]	time

Figure 6: Example for Computed columns

The extracted file looks like this.

Time	[18:1]	[18:3]	[18:5]	[18:7]
Module_name_2	MRG_N			
GP: Average Rectifier 2 plus 3	379.305			
	0	0	225.451	186.9
	1	0	232.631	184.234
	2	0	238.449	187.122

Figure 7: Example for exported info and computed columns



Note

Text string signals in the source file are treated like any other source signal.

Formatting auto

Automatically converts measured values to 6 significant figures (%g).

Formatting custom

Enter customized number format.

For a list of available formats see printf C++ reference in the Internet.

For parameters that translate to numerical values ('%x1', '%x2', '%dx', '%y1', '%y2', '%dy', '%x1', and '%s') the width and precision can be specified between the percent sign and the parameter name.

This is similar to the width formatting for the 'printf' statement in C++:

The 'width' parameter is the minimum number of characters which will be displayed. If the printed value is shorter than this number, the result is padded with blank spaces.

The '.precision' parameter is the number of digits behind the decimal point

For example: '%4.2s' means at least 4 digits will be shown and 2 will be after the decimal point. If the parameters are not set, the numerical value will be formatted according to the *ibaAnalyzer* settings.

< Test >

Enter value and press < Test >. Then, the formatted value is displayed.

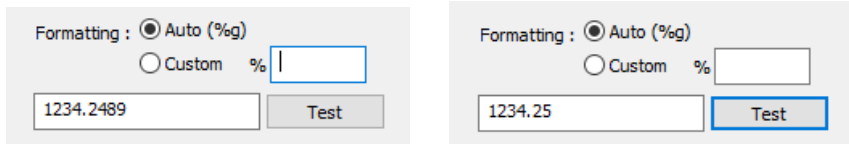
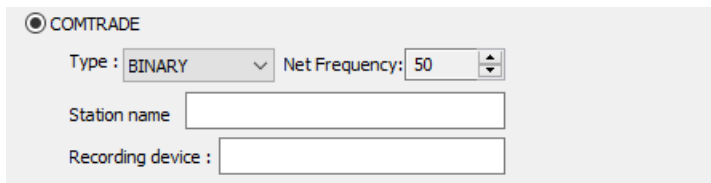


Figure 8: Entry of value (left) and result after pressing <Test> (right)

4.1.1.3 COMTRADE

COMTRADE is an abbreviation that stands for *IEEE Standard Common Format for Transient Data Exchange (COMTRADE) for Power Systems*. This is a definition of a particular format for the exchange of data files as documented in the IEEE Std C37.111-1999 standard. The standardization applies to both the format of the data files and the type of media to be used for exchanging fault signal, test or simulation data of energy supply systems.



Type

Select the required file type (ASCII or binary) of the export file.

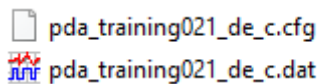
Net Frequency

Select the applicable mains frequency (50 / 60 Hz).

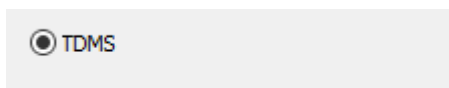
Station name and Recording device

According to the COMTRADE convention, information concerning the station name and the recording device must be entered here. This information is stored in the cfg-file which *ibaAnalyzer* generates during the export process in addition to the data (.dat) file.

ibaAnalyzer generates a *.dat file during the COMTRADE export which contains the measured values, as well as a *.cfg file with configuration data, such as channel information (signal number, signal name, info columns), the start and end time, etc.



4.1.1.4 TDMS



.dat files will be extracted in the binary National Instruments Technical Data Management Streaming file format. These files can be opened in e.g. LabVIEW and DIAdem.

You need a separate license for this feature to be enabled. Contact iba support for more information.

4.2 Archive Profile Assignment

In order to create an archive profile first open at least one data file to be extracted.
Select the tab *Archive profile assignment*.

4.2.1 Profile Definition

An archive profile defines the signals together with the required sampling cycle (time or length based) which will be included in the extracted file. More than one profile can be specified. However a signal can only be assigned to one profile.

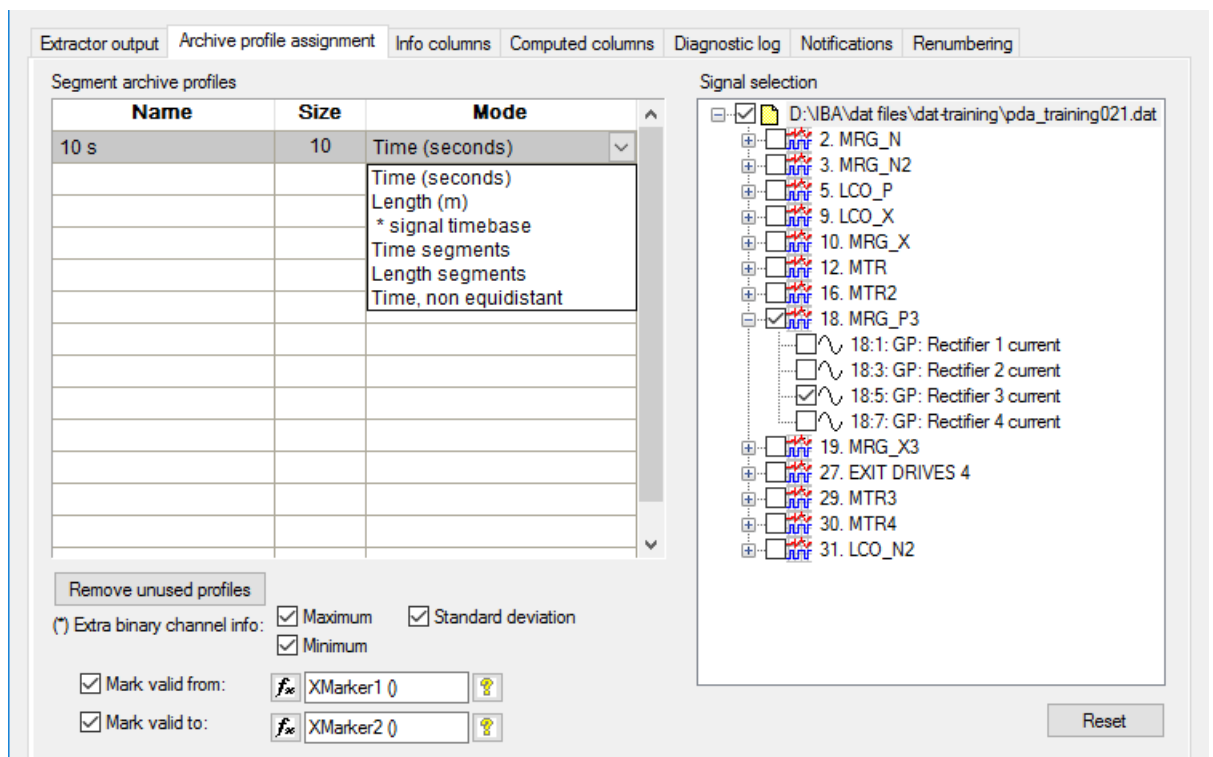


Figure 9: Archive profile definition and assignment

❑ "Mode" column

Use the drop down list to select a sampling mode in an empty cell in the "Mode" column in the *Segment archive profiles* window.



Important information

"Time, non equidistant" is only available for ASCII format.

❑ "Size" column

Select the adjacent cell in "Size" column and enter a multiplier to determine the sampling cycle for the extracted file (e.g. 10 s = "Size (10)" x "Mode (Time(Seconds))").

For the "Time" and "Length" modes, it's possible to enter a "Size" < 1 in order to obtain fractions of the "Mode" unit. Fractions of the "Mode" "*signal time base", of course, make no sense, e. g. a temperature that was measured every minute need not be extracted every 100 ms. If the recording signal time base is 1 ms the sample 100 ms profile could also be defined by "Size" = 100 and "Mode" = "* signal time base".

By using the modes "Time segments" or "Length segments" it is possible to define a fixed number of equidistant time or length segments. For example "Size" = 1 and "Mode" =

"Time segments" means that only 1 segment value for the whole data file is stored. If parts of the source signal are invalid, then extracted segments containing these will be empty. If the empty segments are at the beginning or end of the signal, they will not be transferred to the extracted file. If the empty segments lie between valid segments, then the extracted file will contain corresponding gaps of invalid values.

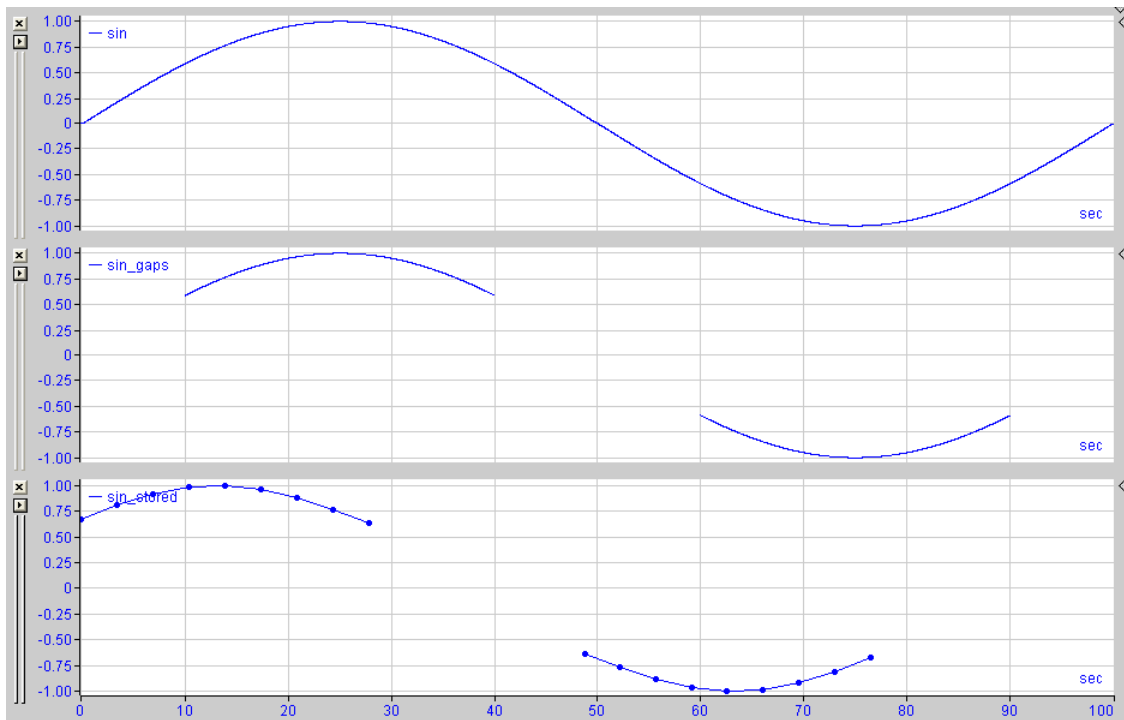


Figure 10: Example for results of extracted time segments

In the case of the mode "Time, non-equidistant" only the times of the actual measurement values will be exported.

Time	[1:0]	[1:3]
time	Channel 1	Channel 2
sec	mm	~
0.06	3641	179
3.35	4026	179
6.84	4364	179
10.1	4733	179
58.78	4735	268.9
62.44	4735	268.9
65.95	4736	268.9
118.12	15	269

Figure 11: Example for non-equidistant values

"Name" column

Select the adjacent cell in the "Name" column and enter a profile name.

It is advisable to use a name which reflects the chosen sampling period for the extracted file (e.g. "10 s" = Size (10) * Mode (Time (Seconds))).

Signal selection

Signals must be assigned to the created profiles.

Select any number of the signals to be included in the extracted file using the check boxes in the *Signal selection* window. The extracted signal values are the averages of the source signal values within the selected sample cycles.

When checking a module node in the "closed" tree view all signals belonging to that module will be checked, resp. unchecked. Before assigning individual signals the module tree has to be opened by clicking on the + symbol. The checked signals are always assigned to the marked profile (gray background color). When changing the profile, the checkmarks in the checkboxes disappear.



Important information

A signal can always be assigned to only 1 profile.



Important information

Assigning a length mode to a time based signal or a time mode to a length based signal will produce an error on extraction.



Note

If the archive profile specifies signals which are not present in the existing data file, these will be listed under "Channels currently unavailable".

Maximum, Minimum or Standard deviation

Select any of these options. The options generate sub-channels which are respectively the maximum, minimum, or standard deviations of the source signal values within the specified size of the profile.



Note

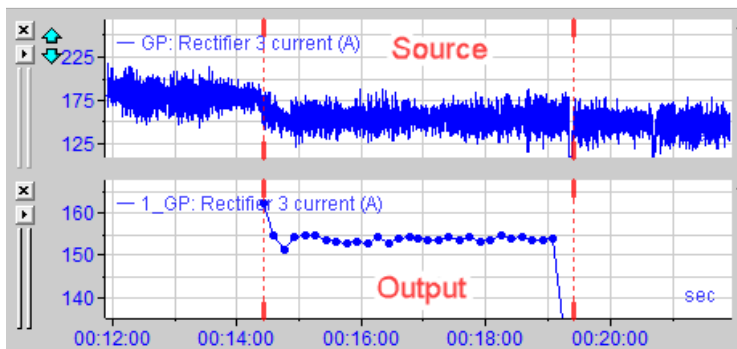
Obviously if the selected profile sample cycle is the same as that of the source signals, these values are meaningless.

Mark value from, Mark value to

Use "Mark value from" and/or "Mark value to" to define a beginning and end of the extracted profile range. If either of these is not defined, the corresponding end of the extracted profile range will be the same as that of the input signal range.

Mark valid from:
 Mark valid to:

If the given expressions cannot be evaluated, an error message will occur during extraction.



Important information

You can use expressions to calculate the range from your data.

<Remove unused profiles>

Profiles which have no signals assigned to them are deleted.

<Reset>

All signals assigned are removed from the selected profile.

4.3 Info Columns

The *Info columns* tab permits the extraction of information from the "Info" part (e. g. techno string columns) of the source file. This data will be found in the "Info" part of the extracted files.

4.3.1 Info Field Assignment

There are two procedures for selecting an info field.

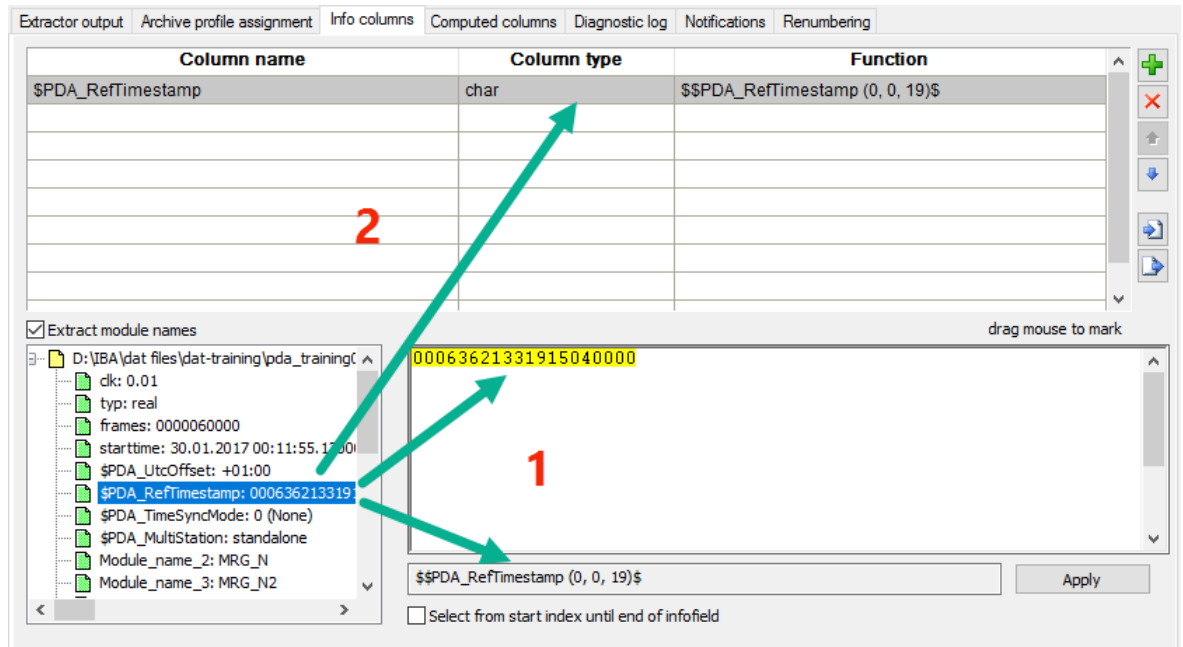


Figure 12: Configuring info columns for extraction

Click on the source field. The field information will be transferred to the processing field.

Double click on the source field. The column line will be filled in addition to the processing field. The "Column type" can only be "char". The "Column name" can be renamed if required. The range of characters within the "Function" can be altered in the processing window.

Select group

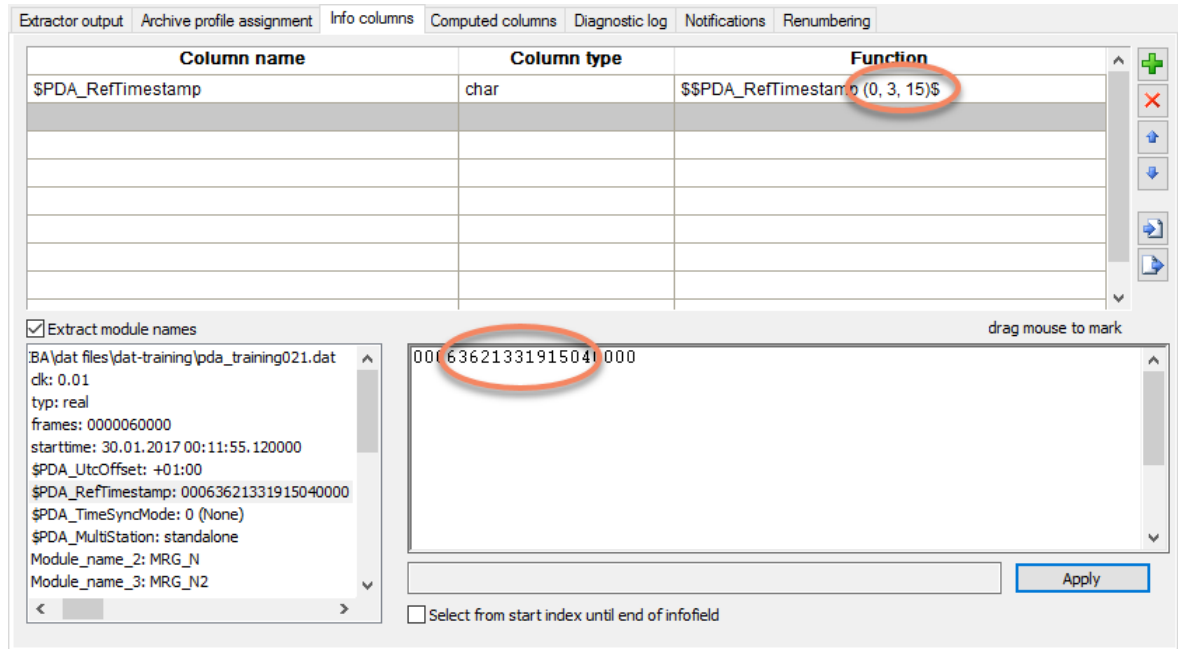
It is also possible to select a group of characters from the contents of the info field.

1. Click on the first of the required characters, drag the mouse to the last required character and release.



2. <Apply>

3. The excerpt from the source string is transferred to the column field.



Select from start index to end of info field

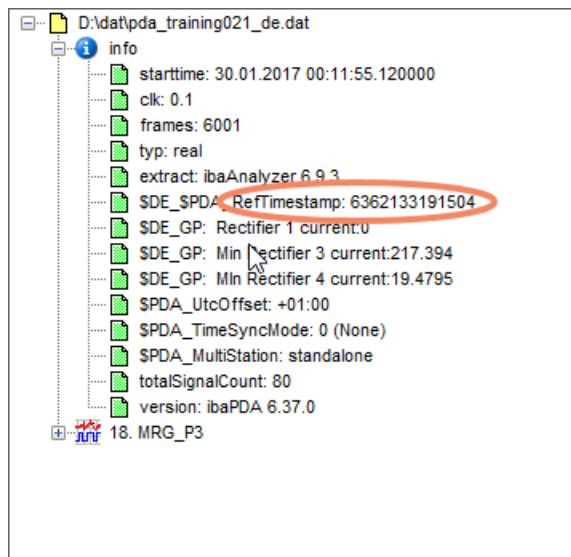
00063621331915040000



All the characters from the marked starting point to the end of the info field are selected.

Location of Info data in extracted files

.dat









ASCII

Time	[18:1]	[18:3]	[18:5]	[18:7]	
\$PDA_RefTimestamp	6362133191504				
	0	0	217.272	190.276	85.6115
	0.1	0	238.018	196.484	88.2832
	0.2	0	219.696	182.417	90.8834
	0.3	0	226.913	182.002	88.1938
	0.4	0	241.753	185.631	88.6585
	0.5	0	223.17	192.253	93.3765

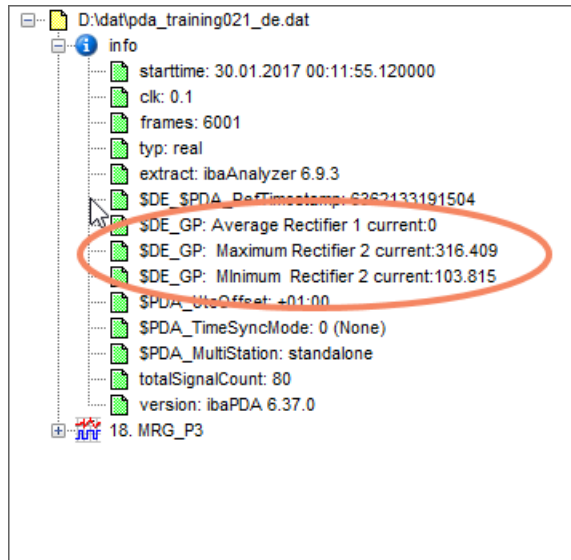
4.3.2 Procedures for Manipulating Info Columns

Column name	Column type	Function
Module_name_2	char	\$Module_name_2 (0, 0, 4)\$
Module_name_3	char	\$Module_name_3 (0, 0, 5)\$
Module_name_5	char	\$Module_name_5 (0, 0, 4)\$
Module_name_9	char	\$Module_name_9 (0, 0, 4)\$
Module_name_10	char	\$Module_name_10 (0, 0, 4)\$

	Add line	Adds a new empty line above the currently selected line.									
	Delete line	Deletes the currently selected line.									
	Move line up	Moves currently selected line up.									
	Move line down	Moves currently selected line down.									
	Import info file	Import Info Column information from text file. The "Open text file" dialog appears.									
		Alternative: right click on header, select <i>Import</i>									
		<table border="1"> <thead> <tr> <th>Column name</th> <th>Column type</th> <th></th> </tr> </thead> <tbody> <tr> <td>\$PDA_RefTimestamp</td> <td>var</td> <td>DA_R</td> </tr> <tr> <td>\$PDA_TimeSyncMode</td> <td>cha</td> <td>DA_M</td> </tr> </tbody> </table>	Column name	Column type		\$PDA_RefTimestamp	var	DA_R	\$PDA_TimeSyncMode	cha	DA_M
Column name	Column type										
\$PDA_RefTimestamp	var	DA_R									
\$PDA_TimeSyncMode	cha	DA_M									
	Export info file	Export Info Column information to text file. The "Save text file" dialog appears.									
		Alternative: right click on header, select <i>Export</i>									
		<table border="1"> <thead> <tr> <th>Column name</th> <th>Column type</th> <th></th> </tr> </thead> <tbody> <tr> <td>\$PDA_RefTimestamp</td> <td>var</td> <td>DA_R</td> </tr> <tr> <td>\$PDA_TimeSyncMode</td> <td>cha</td> <td>DA_M</td> </tr> </tbody> </table>	Column name	Column type		\$PDA_RefTimestamp	var	DA_R	\$PDA_TimeSyncMode	cha	DA_M
Column name	Column type										
\$PDA_RefTimestamp	var	DA_R									
\$PDA_TimeSyncMode	cha	DA_M									

Location of Computed column data in extracted files

.dat



ASCII

Time	[18:1]	[18:3]	[18:5]	[18:7]
\$PDA_RefTimestamp	6.36213E+12			
GP:Average Rectifier 1 current	0			
GP: Maximum Rectifier 2 current	316.409			
GP: Minimum Rectifier 2 current	103.815			
	0	0	217.272	190.276 85.6115
	0.1	0	238.018	196.484 88.2832
	0.2	0	219.696	182.417 90.8834
	0.3	0	226.913	182.002 88.1938
	0.4	0	241.753	185.631 88.6585
	0.5	0	223.17	192.253 93.3765

4.5 Diagnosis and Notification

In a production environment it is necessary to monitor automated processes, to log processing information for diagnostic purpose and to generate notifications.

4.5.1 Diagnostic Log


The diagnostic log is useful for checking progress when automatic extraction is operating (e.g. triggered by the *ibaDatCoordinator*). If a log mode is selected the log file will be created and updated with each extraction.

Mode

None	Log switched off
Brief	Contents of log file 24-May-17 13:45:54: Start extract file 'D:\IBA\dat files\dat-training\pda_training021.dat' 24-May-17 13:46:57: Start extract file 'D:\IBA\dat files\dat-training\pda_training021.dat'
Detailed	Contents of log file 24-May-17 13:16:10: Start extract file 'D:\IBA\dat files\dat-training\pda_training021.dat' 24-May-17 13:16:10: Start extraction to file 'd:\dat\pda_training021_de.dat' 24-May-17 13:16:10: Start extract channel 18:1 GP: Rectifier 1 current with profile 100ms 24-May-17 13:16:10: Start extract channel 18:3 GP: Rectifier 2 current with profile 100ms 24-May-17 13:16:10: Start extract channel 18:5 GP: Rectifier 3 current with profile 100ms 24-May-17 13:16:10: Start extract channel 18:7 GP: Rectifier 4 current with profile 100ms 24-May-17 13:16:10: Extract completed 24-May-17 13:16:35: Start extract file 'D:\IBA\dat files\dat-training\pda_training021.dat' 24-May-17 13:16:35: Start extraction to file 'd:\dat\pda_training021_de_00.dat' 24-May-17 13:16:35: Start extract channel 18:1 GP: Rectifier 1 current with profile 100ms 24-May-17 13:16:35: Start extract channel 18:3 GP: Rectifier 2 current with profile 100ms 24-May-17 13:16:35: Start extract channel 18:5 GP: Rectifier 3 current with profile 100ms 24-May-17 13:16:35: Start extract channel 18:7 GP: Rectifier 4 current with profile 100ms 24-May-17 13:16:35: Extract completed

Filename


Enter name of diagnostic file. If daily log has not been selected this would be, e.g.:

 DataExtractorLog.txt

Browse the network if required (<...>).

Create logfile on day base

One log file is created for each day.

 DataExtractorLog_24_05_2017.txt

<Edit>

The selected log file can be opened in Notepad and changed as required.



Important information

If logging is activated permanently, a cleanup strategy for the log files has to be implemented externally (not part of ibaAnalyzer).

4.5.2 Notifications

The *Notification* tab provides 4 means of communication triggered by a selected status of the extraction process. The following statuses are available:

- On completion
- On success
- On failure
- On failure (1st. failure only)

Figure 13: Notifications tab

E-Mail address

Enter address and select extraction mode.

Net send computer name

Enter computer name and select extraction mode. Browse the network if required (<...>).

Command line

Enter command line script to be executed when extractor status achieved and select extraction mode.

- Write to Windows application event log
- Select extraction mode. View in Windows Event Viewer

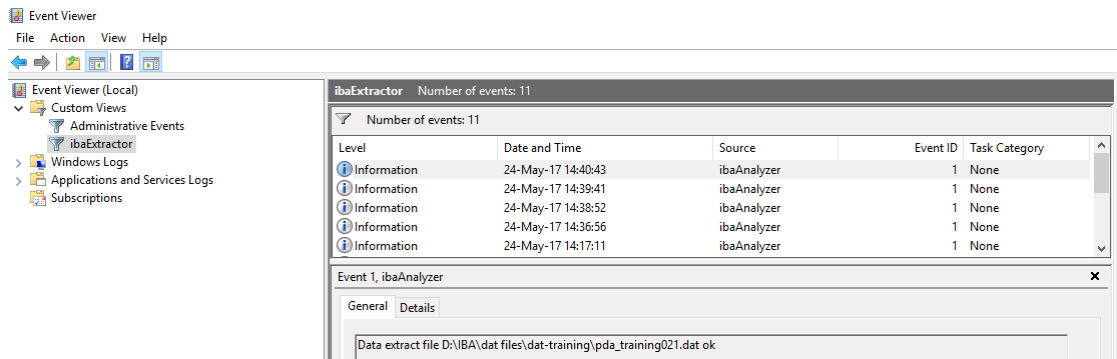


Figure 14: Example for DAT-Extractor notifications in Windows Event Viewer

4.6 Renumbering

If multiple files opened and several signals are to be extracted from several files, it is likely that multiple channels will have the same ID number and hence need to be renumbered or otherwise they will not be able to be uniquely identified in the exported media. *ibaAnalyzer* can do this renumbering automatically but will give a warning if it has to do so before proceeding with the extraction.

The channel IDs are comprised of a module number and a position within the module. The *Renumbering* tab allows the specification of an offset to the module numbers for each file, hence enabling the user to prevent ID collisions and avoid automatic renumbering.

Extractor output | Archive profile assignment | Info columns | Computed columns | Diagnostic log | Notifications | Renumbering

Global module offset for channel numbering:

Module offset per file:

	Active	File	Expression
1	<input checked="" type="checkbox"/>	D:\dat\pda_training021_de.dat	<input type="text" value="0"/>
2	<input checked="" type="checkbox"/>	D:\dat\pda_training021_de_02.dat	<input type="text" value="1000"/>
3	<input checked="" type="checkbox"/>	D:\dat\pda_training021_de_01.dat	<input type="text" value="2000"/>
4	<input checked="" type="checkbox"/>	D:\dat\pda_training021_de_00.dat	<input type="text" value="3000"/>
5	<input type="checkbox"/>		<input type="text" value=""/>

Suffix for expressions:

Figure 15: Renumbering tab

The open .dat files are listed automatically in the "File" column.

Global module offset for channel numbering

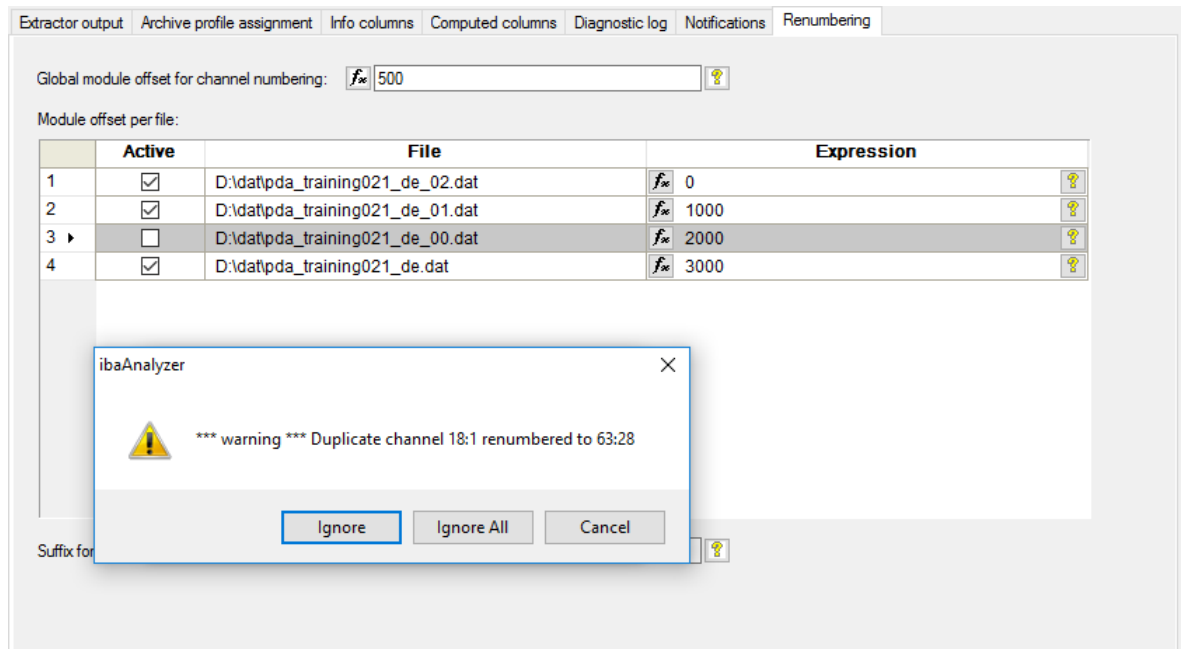
This number will be added to data file channel numbers.

"Expression" column

The offset for each data file is entered in this field.

"Active" column

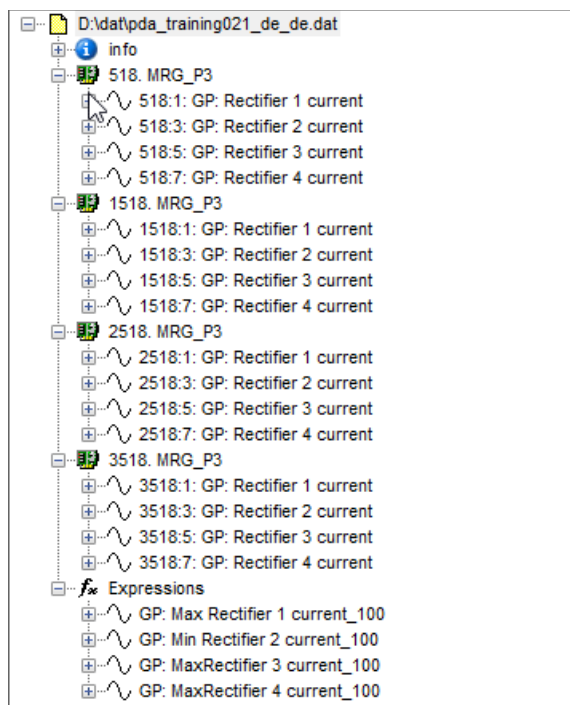
Channel offsets will only be made for active files. Extraction of channels in inactive files leads to the following message.



Suffix for expressions

This applies only to expressions created in *ibaAnalyzer*. The expression names are augmented by the specified suffix.

Example of extracted file based on above settings:



5 Command Line Options

Some of the command line options described in the *ibaAnalyzer* manual can also be used with the *ibaAnalyzer-DAT-Extractor*. This means that the program can also be started via batch-/Windows-scripts or from within other programs, such as *ibaDatCoordinator*, *ibaPDA*, *ibaLogic* or customer applications.

The behavior of *ibaAnalyzer* is configured by special parameters, so called "command line switches".

The switches are particularly important in conjunction with postprocessing because they can be used to automate complete analysis processes. It is, however, also possible to use the switches in conjunction with a manual program start.

5.1 Command line syntax

The command line syntax takes the following form

```
ibaAnalyzer.exe  datfilename1  [datfilename2]  ...[datfilenamen]  
[pdofilename]  [/switch]
```

One or more data files (datfilename), an analysis (pdofilename) and a switch parameter (switch) can be included in the call of the program. The complete path and file names must be entered for data files and analyses.

If there are blanks in file names or directories enclose them with " ".

5.2 Switches

The following switches are useful together with the *ibaAnalyzer-DAT-Extractor*

Switch `/extract[:filename]`

This switch is used to extract the data into a file using *ibaAnalyzer-DAT-Extractor*. The desired extracted file name `[:filename]` must be added as a parameter.

The `/extract` switch means that *ibaAnalyzer* starts and loads the specified data file. Thereafter, the measuring data is processed in accordance with the specified analysis and extracted into a file. During this process, no *ibaAnalyzer* window is opened on the screen, i.e. the extracting process takes place in the background. (An example is given below).

Switch `/append`

This switch enables the appending of several data files specified in the call. These files are then displayed in chronological order in the X direction. (An example is given below).

Switch `/print`

This switch ensures that the measuring data can be printed as a record or log in the format defined in the selected analysis. The Windows default printer is used.

When the printing process is completed or after the print job has been triggered, *ibaAnalyzer* is closed again. In the case of an error, however, *ibaAnalyzer* remains open in order to display the error message. (An example is given below).

Switch `/report[:filename]`

If the `[:filename]` option is not used with the switch, the integrated report generator is started and the data is printed to the Windows default printer using the report layout specified in the analysis.

If the `[:filename]` switch option is used, the report will be written into a file rather than being printed. The desired file type is determined by the file name extension. Many customary formats are supported, including, for example, `.pdf`, `.htm`, `.rtf`, `.tiff`, `.jpg`, `.xls`, etc. (an example is given below).

Possible combinations of the most important switches

Combination permissible or useful?	<code>/append</code>	<code>/print</code>	<code>/extract</code>	<code>/report</code>
<code>/append</code>				
<code>/print</code>	YES			
<code>/extract</code>	YES	YES		
<code>/report</code>	YES	YES	YES	

Table 1: Command line, key combinations

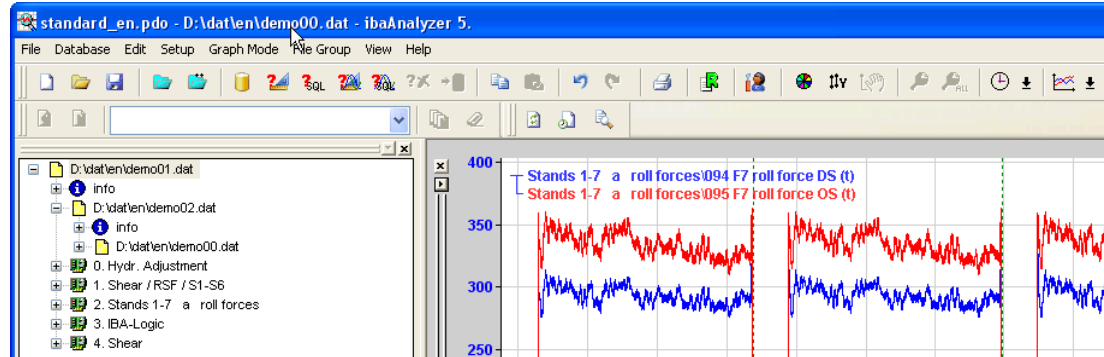


Examples

(Program path for ibaAnalyzer: c:\programs\iba\ibaAnalyzer\...)

1. Start with three data files which are then coherently shown one after another in the X direction. The analysis rule included in the call effects the immediate display of the desired data.

```
...\ibaanalyzer.exe demo00.dat demo01.dat demo02.dat analyse3.pdo  
/append
```



2. Start with one data file and one analysis with automatic print:

```
...\ibaanalyzer.exe datfile1.dat analyse2.pdo /print
```

3. Start with one data file and one analysis with data extraction:

```
...\ibaanalyzer.exe datfile1.dat Extract.pdo /extract
```

4. Start with one data file and one analysis with report output on the printer:

```
...\ibaanalyzer.exe c:\samples\reportsample.dat  
c:\samples\reportsample.pdo /report
```

5. Start with one data file and one analysis with report output as a pdf file:

```
...\ibaanalyzer.exe c:\samples\reportsample.dat  
c:\samples\reportsample.pdo /report:c:\report\pdf\test.pdf
```


6 Automatic Extraction using ibaDatCoordinator

The screenshot shows the configuration window for an extraction task. The following settings are highlighted with red circles:

- Extract analysis file:** A text input field for the analysis file path.
- Target:** The "Extract to file:" radio button is selected.
- File type:** The "Binary (.dat)" radio button is selected.
- Set "Date Modified" time of output file to match .dat file:** This checkbox is checked.
- Monitor ibaAnalyzer:** This section is expanded, showing memory and time limits.

Figure 16: Configuring an Extraction task

If you have a license for ibaAnalyzer, an extraction task can extract data from a .dat-file and store it in a database or another file. The extractions are done with an analysis file created using *ibaAnalyzer*. For more information, please see the *ibaAnalyzer-DB* manual.

In the following, we describe the extraction-specific settings, which have been highlighted in red in the previous figure.

Analysis file for the Extraction task

Enter the path- and file name of the .pdo-file in this field or select the file using the browser button. Click on the adjoining *ibaAnalyzer*-button for checking if *ibaAnalyzer* can open the .pdo-file.

Target

Extract to database/Extract to file

If you choose the option "Extract to database" all settings are not available (grey) as all relevant settings can only be done in *ibaAnalyzer-DB*. Only if you choose "Extract to file", you can do more settings.

File type

Select here the required type for the output file.

File type	Remark
Binary (.dat)	iba .dat-file
ASCII (.txt)	ASCII-file, tab-separated format
COMTRADE (.dat, .cfg)	ASCII-file especially for measurement purposes in energy technology
TDMS (.tdms, tdms_index)	National Instruments file format




Other documentation

For more notes about the file types, see the *ibaAnalyzer*-manual, chapter "Exporting files".

Configuration steps

If you want to extract the data automatically from the .dat-files, proceed as follows:

1. Select the analysis file for Extraction tasks, by entering the path or search for the file using the browser button.
2. Then, you can click on the *ibaAnalyzer*-symbol for checking if the right analysis file has been loaded. The analysis file is opened in the *ibaAnalyzer* and can also be edited here.
3. Configure the target of the extraction:
Select the type of the extraction (database or file) and leave out the following steps if "Extraction to database" has been enabled.
4. Define the target directory.
5. If the target directory is located on a remote server, enter a user name and a password for getting access to the remote server.
6. Check the access to the target directory by clicking on the  button.
7. Choose the file type of the exported file (Binary, ASCII, COMTRADE or TDMS). The selected file type has to correspond to the file type in the analysis file.
8. Define the organizational settings for the target directory.

7 Support and contact

Support

Phone: +49 911 97282-14
Fax: +49 911 97282-33
Email: support@iba-ag.com



Note

If you require support, indicate the serial number (iba-S/N) of the product.

Contact

Headquarters

iba AG
Koenigswarterstr. 44
90762 Fuerth
Germany

Phone: +49 911 97282-0
Fax: +49 911 97282-33
Email: iba@iba-ag.com
Contact: Mr Harald Opel

Regional and worldwide

For contact data of your regional iba office or representative please refer to our web site

www.iba-ag.com.