DEWETRON

OXYGEN TRAINING
> SETUP GENERATION

CONTENT

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SOFTWARE OVERVIEW

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①	Measurement screen Displays for data visualization can be placed here
②	Action Bar Contains all relevant control buttons
③	Menu bar Menus for General Software Settings, hardware channel access, recording mode, data export and others
④	Menu bar cont'd
⑤	Overview bar One data channel can be displayed here for general overview

SOFTWARE OVERVIEW

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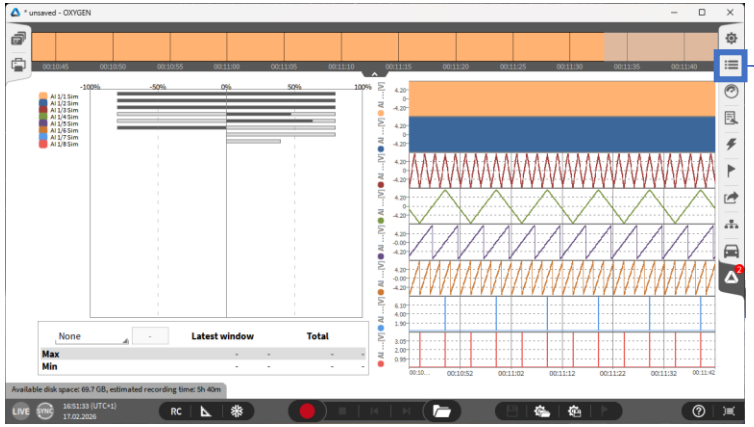
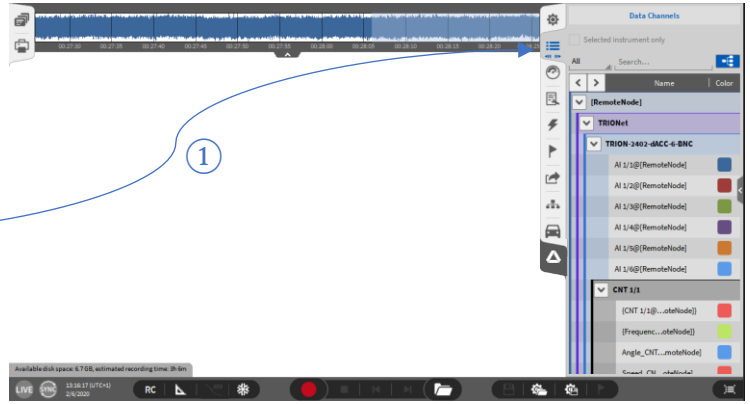
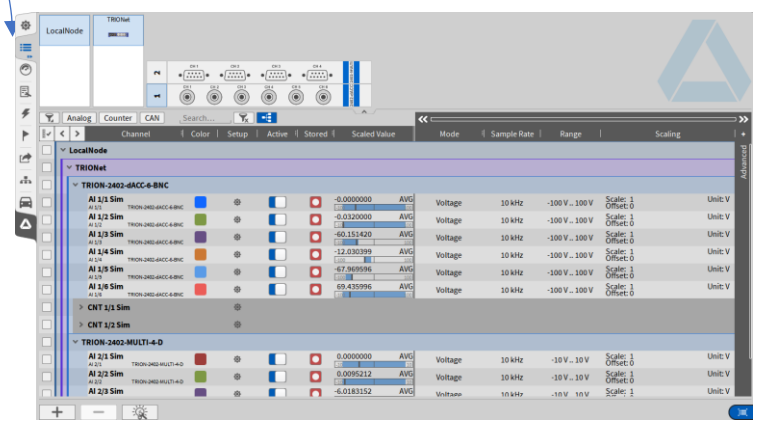
Software operation is inspired by touch operation of smart phones and tablets

➢ Touch and swipe gestures are applicable







① A touch (or single click) to a menu opens a small view of the respective menu

② A swipe to the other side of the software (or double click) opens the full screen menu

CHANNEL LIST - GENERAL

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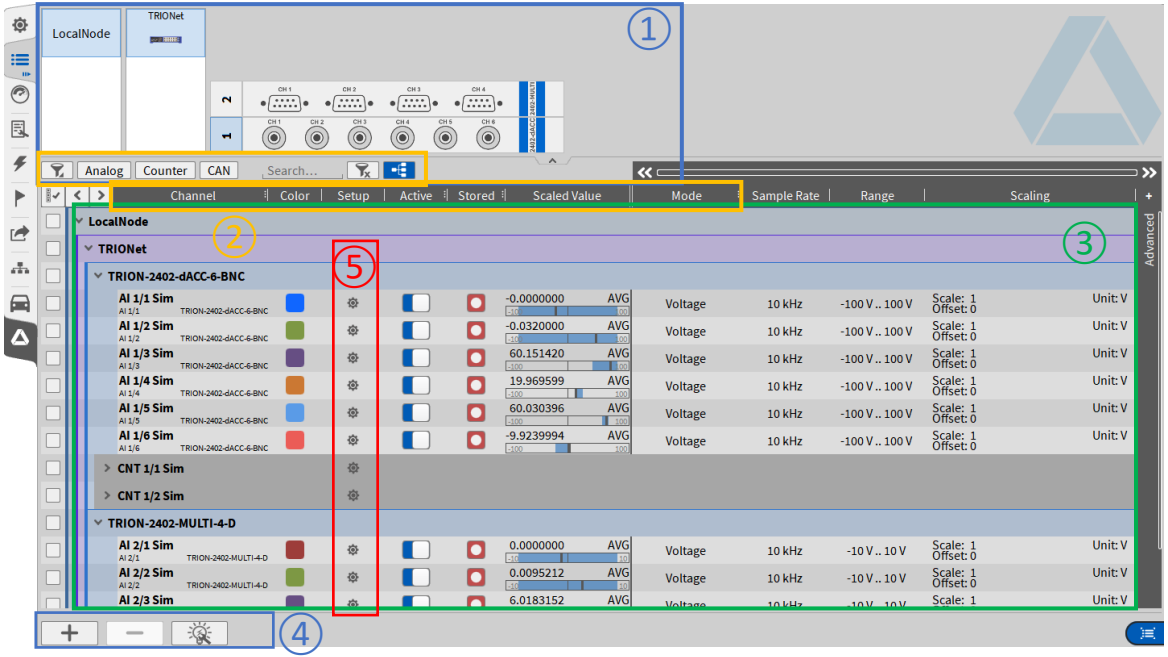
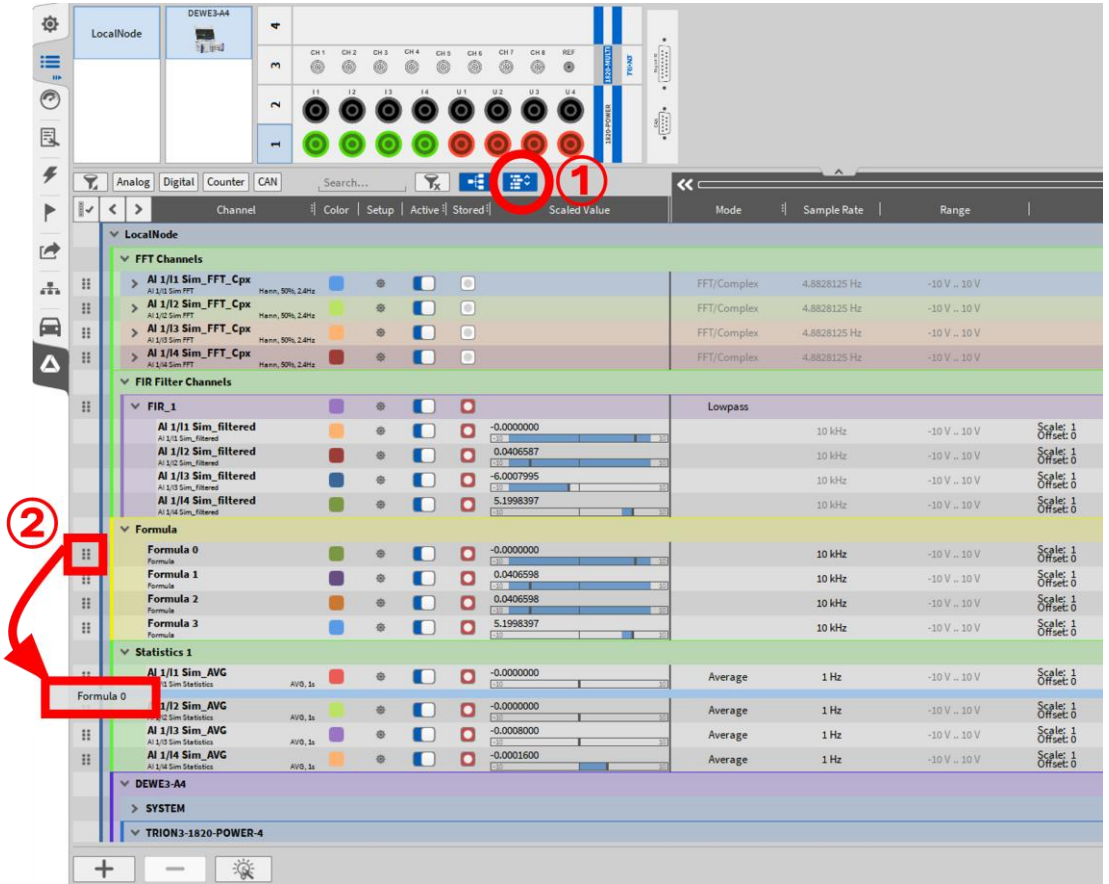
①	Schematic of the measurement hardware
②	Different Search and table filtering options
③	Hardware channels sorted in list view
④	Math section to add and delete channels like formulas, statistics, misc
⑤	Setup button to enter the channel setup of one specific channel



CHANNEL LIST – Change Order of math channels

①	By pressing the “Channel sorting” button, the channel selection boxes disappear and math channels such as formulas and statistics channels can be reorganized, also via groupings
②	Drag and Drop the channel to the desired location. Please mind, that an empty goruping will be removed.



CHANNEL LIST – HARDWARE CHANNEL CONFIGURATION

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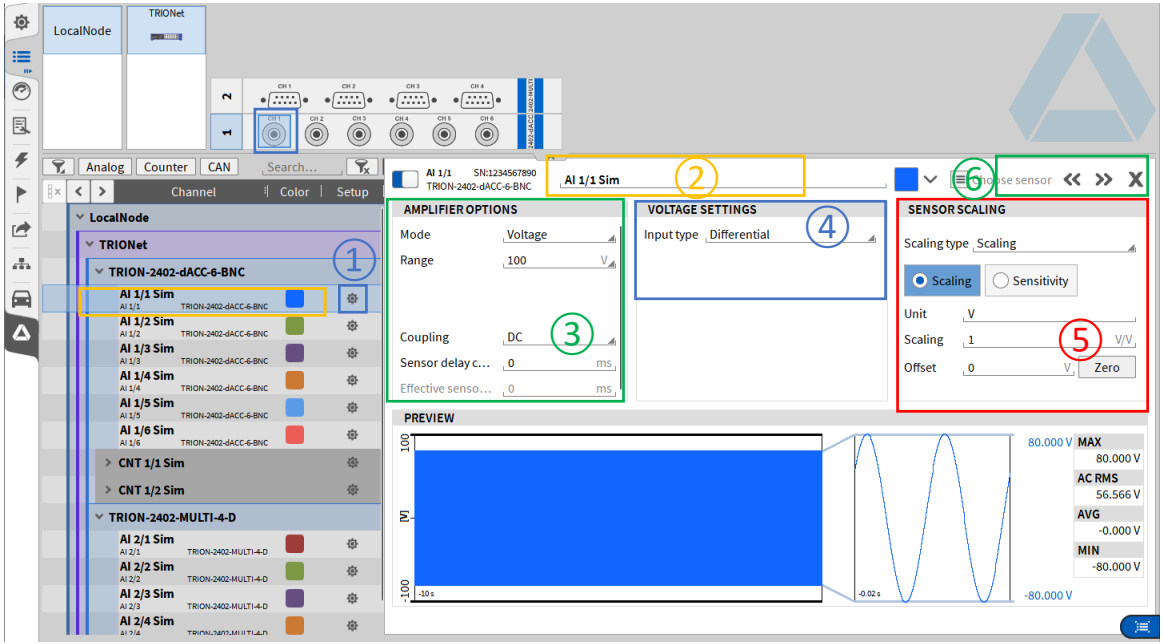
①	Select the channel to be configured either in the hardware schematic and double click on it or press the channels' gear button in the channel list
②	Change the channel name if desired
③	Channel dependent hardware settings (i.e. measurement mode, Input Range, Coupling/ HP-Filter or LP-Filter settings)
④	Depending on the input Mode settings, different settings will be available, i.e. for - Voltage: Single-ended or differential sensor connection - Current: Shunt selection - IEPE: Excitation current
⑤	Sensor specific scaling factor and engineering unit input as - Scaling factor or Sensitivity - 2-point scaling - Table scaling - Polynomial scaling
⑥	Close Channel setup or swap to the next one



CHANNEL LIST – Channel pin out & connections

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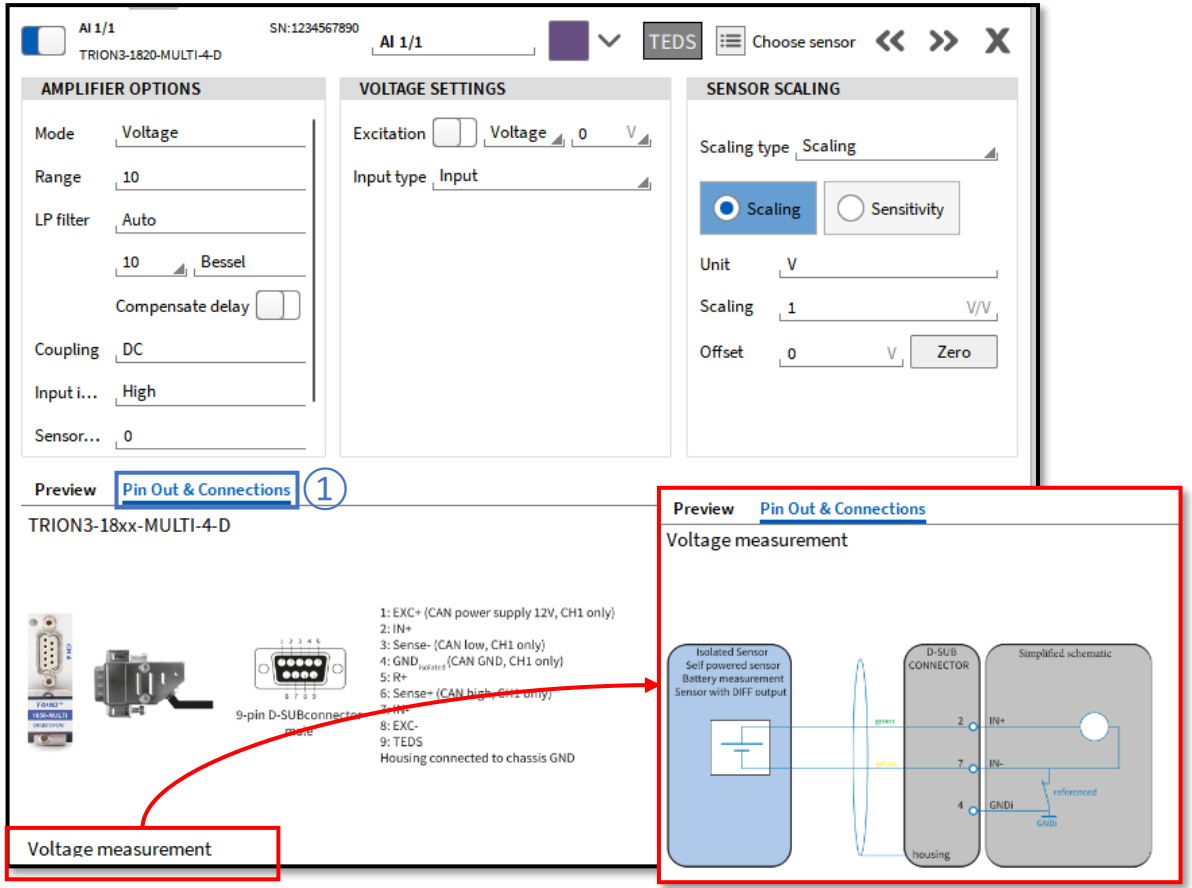
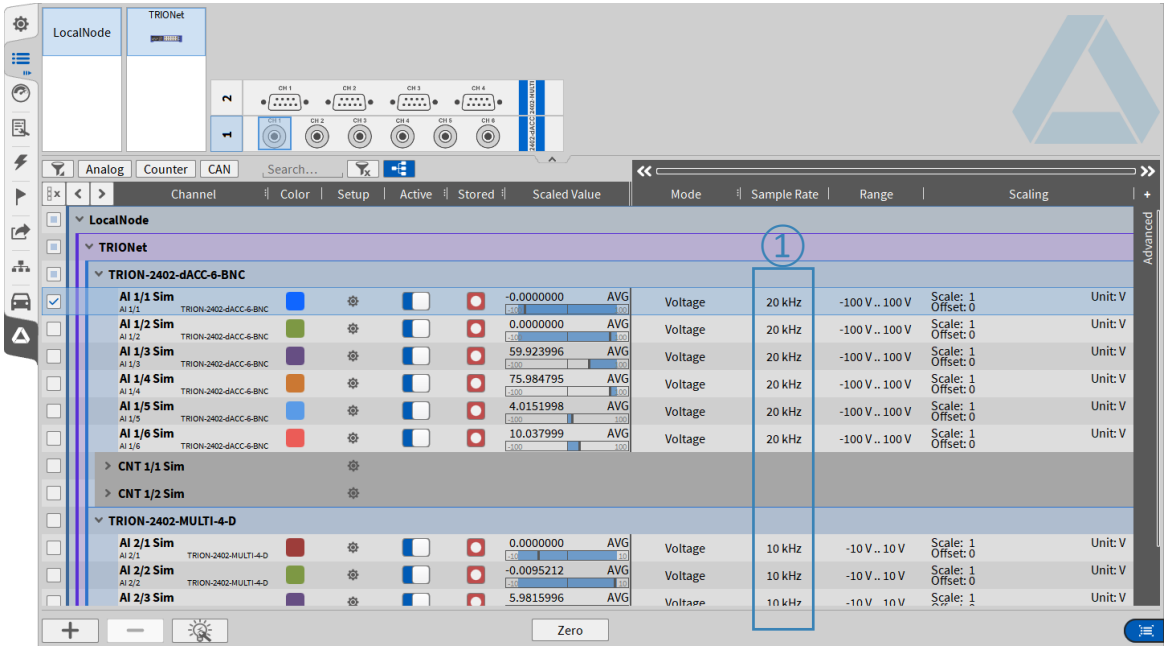
① Based on the selected Channel mode, the connector pinning is shown next to the preview tab.
The connection shematic is located under the pin out.



CHANNEL LIST – BOARD-WISE SAMPLE RATE SELECTION

- Sample Rate can be set in Channel List (①)
- Min. Sample Rate: 100 Hz
- Max. Sample Rate depending on TRION board
- In case of different board sample rates: lower sample rates must be integer multiple to the highest sample rate
- i.e.
  - Board 1: 10 kHz
  - Board 2: 50 kHz
  - Board 3: 100 kHz

  - Board 1: 10 kHz
  - Board 2: 20 kHz
  - Board 3: 50 kHz



CHANNEL LIST – CHANNEL-WISE SAMPLE RATE SELECTION

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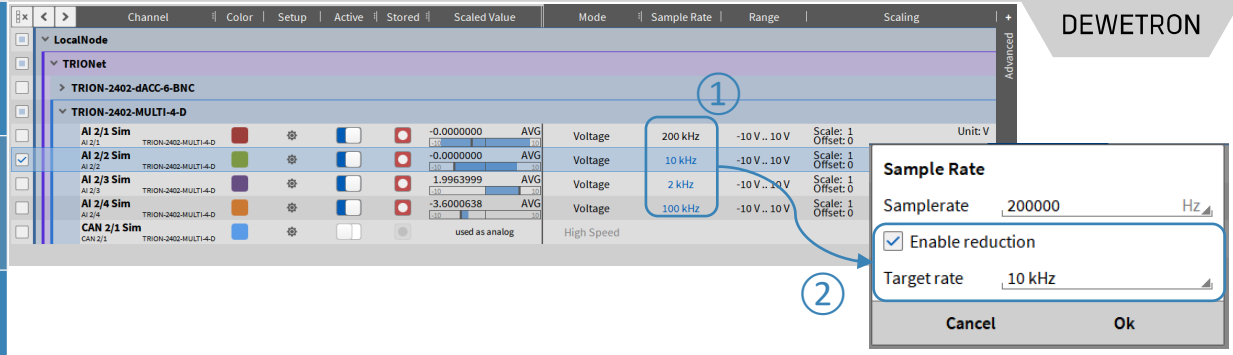
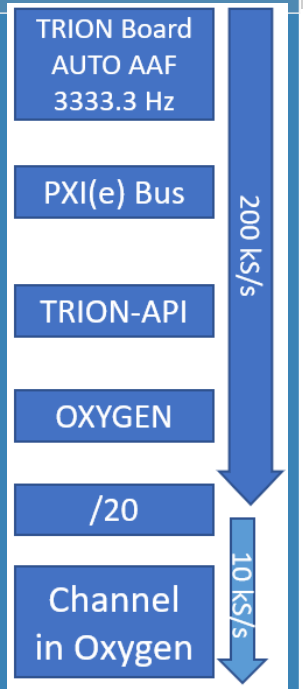
① Since OXYGEN R5.2, it's possible to select individual sample rates per channel

② This feature is simply activated with the "Reduction" when setting the sample rate of a channel





- Under the hood
  - The samples are physically sampled with the set sample rate
  - If the reduction is enabled, the user can set a reduced sample rate which is converted to an integer divider in background
  - The unnecessary samples are skipped
- Aliasing?!
  - No bothering, when using TRION-Boards with onboard filtering
  - The AUTO filters are adjusted according to the target sample rate
  - In this example, the AAF is AUTO-adjusted to 3333.3 Hz
  - BUT the user can override the filter setting if he wants to

CHANNEL LIST – CHANNEL-WISE SAMPLE RATE SELECTION

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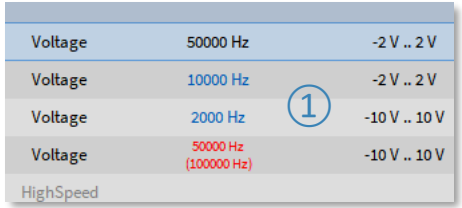
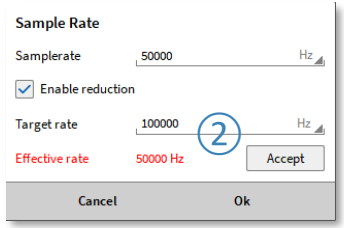
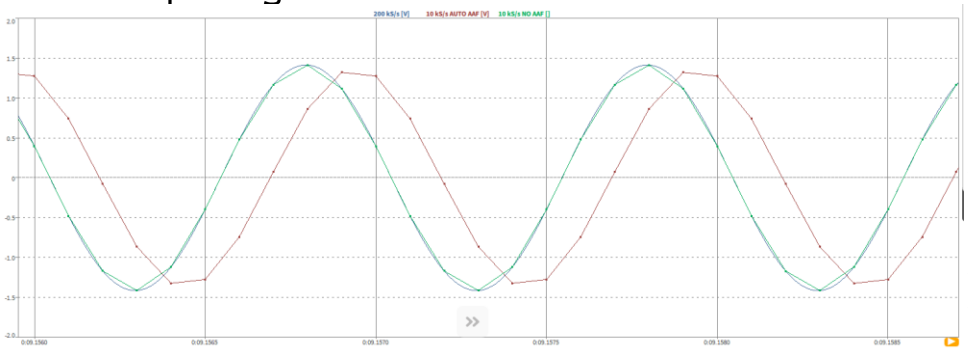
	All synchronous input channels in OXYGEN are now capable of this feature (except DI and CNT)
	Can also be used in formula (if synchronous)
①	If the (Board-)sample rate is set to another value, the internal integer divider gets re-adjusted to match the target sample rate
②	In case, this is not possible, the user gets a hint and can accept the adjustment (effective rate)





> Example Signals



BLUE:
- Sample rate: 200 kS/s
- AAF AUTO

RED:
- Reduced SR: 10 kS/s
- AAF AUTO

GREEN
- Reduced SR: 10 kS/s
- AAF 66666.6 Hz

> One can see, that the RED signal is phase shifted due to the AAF, but also AA-free

> If the user only wants the skipped samples without additional filtering, just rise up the AAF frequency

CHANNEL LIST – MULTI-CHANNEL CONFIGURATION

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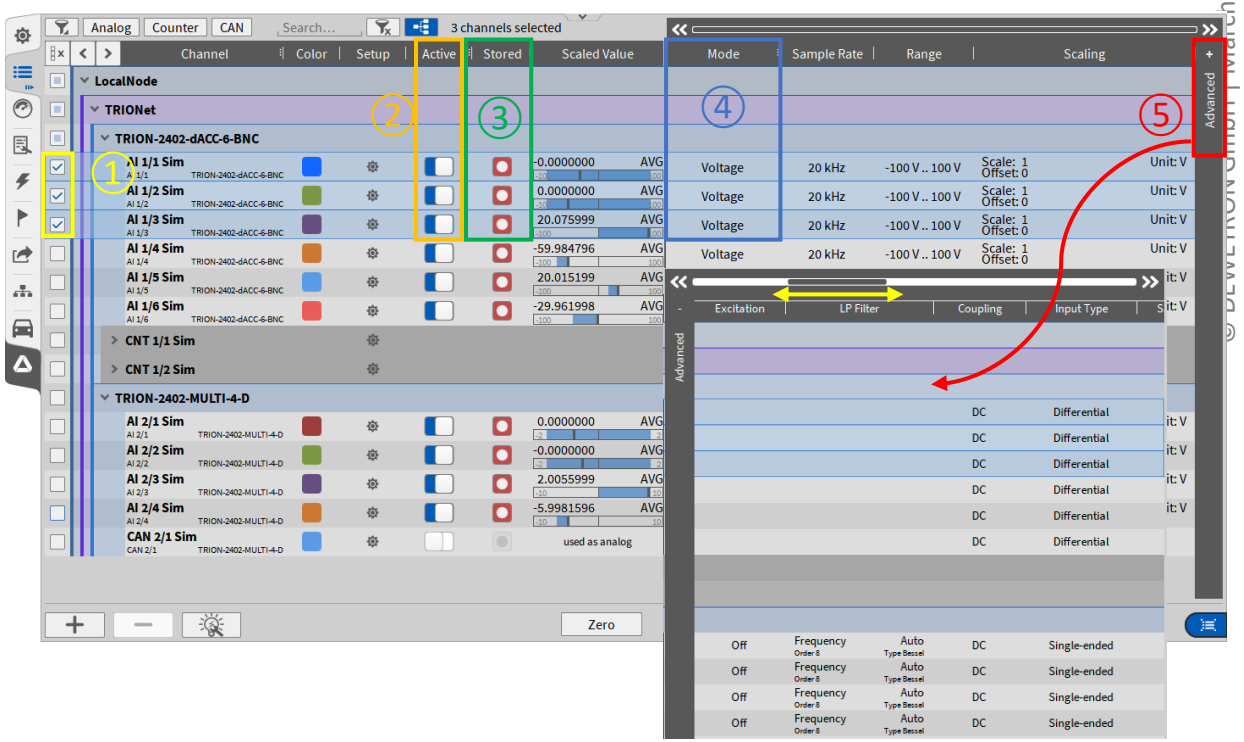
①	Select the check boxes of the channels to be configured
②	All selected channels can be (de-) activated at once (de-activated: data not transferred from TRION-board to PC)
③	All selected channels can be selected for storing Storing enabled: Data is written to HDD in case of recording Storing disabled: Data is transmitted from TIRON-board to PC and displayed and can be used for math operations but is not stored to HDD
④	All channel settings can be accessed and edited once for all selected channels
⑤	Open advanced setup for accessing the entire channel settings



CHANNEL LIST – COPY-PASTE CHANNEL SETTINGS

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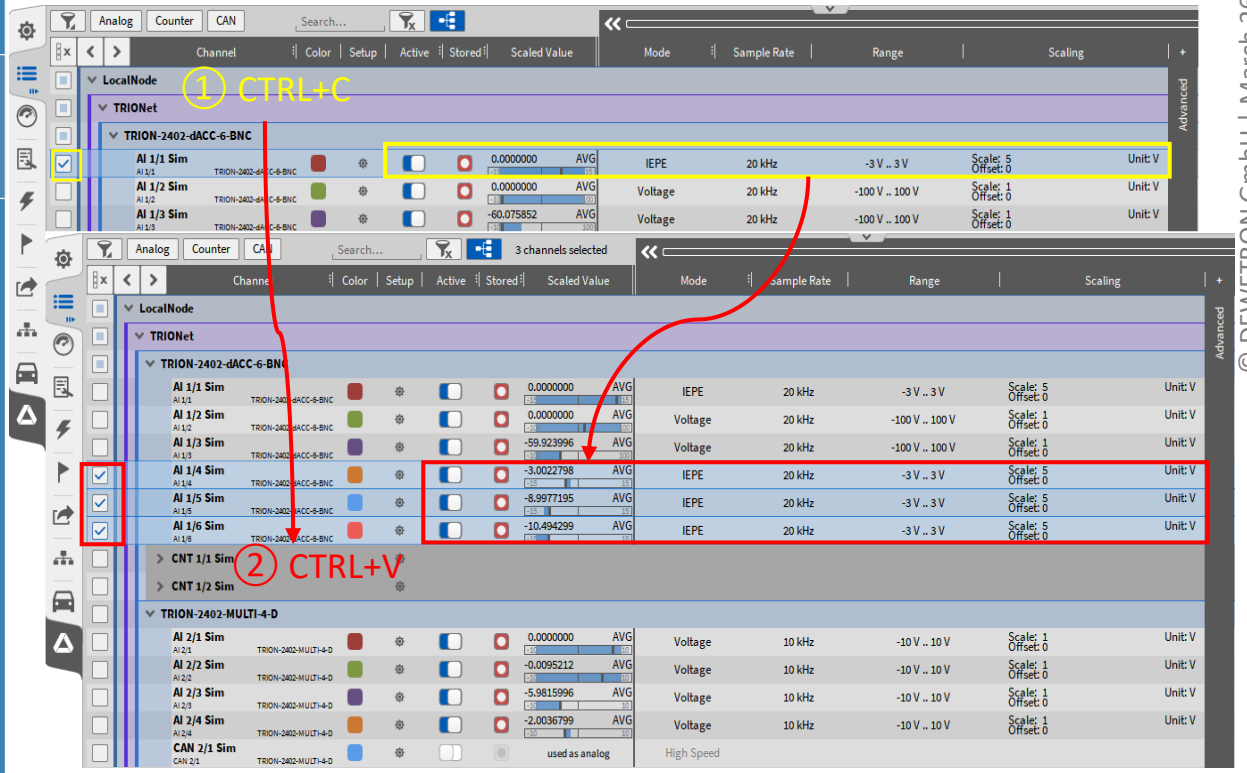
①	Select the check box of the channel whose settings shall be copied and press CTRL+C
②	Select the channel(s) the settings shall be pasted to by checking their boxes and press CTRL+V



CHANNEL LIST – EXAMPLE PCB ICP 352A71

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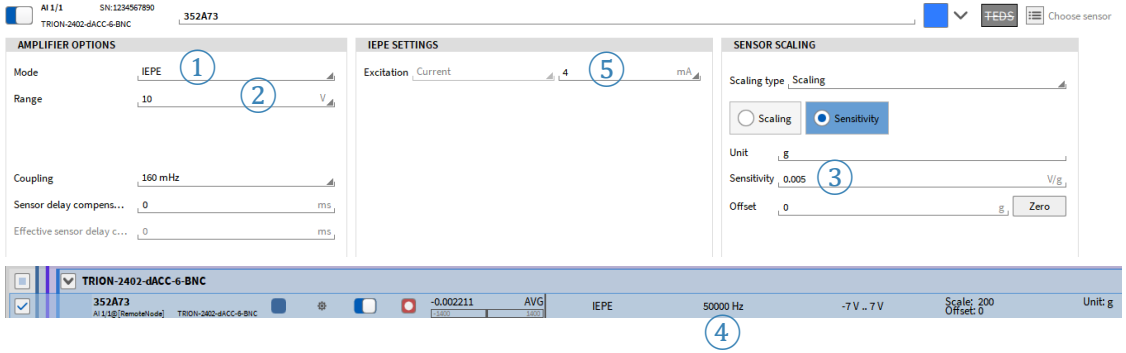
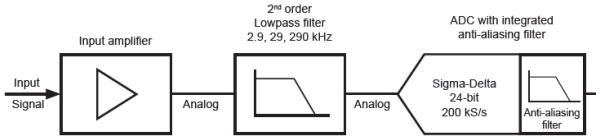
SPECIFICATIONS	
Model Number	**352A73**
Performance	
Sensitivity	5 mV/g (3)
Range	±1,000 g pk (2)
Frequency Range (±5%)	2.0 – 10,000 Hz (4)
Resonant Frequency	≥70 kHz
Electrical Filter (low pass)	No
Broadband Resolution (g rms)	0.002
Environmental	
Overload Limit	±10,000 g pk
Temperature Range (operating)	-65 to +250 °F
	-54 to +121 °C
Electrical	
Excitation Voltage	18-30 VDC
Constant Current Excitation	2-20 mA (5)
Physical	
Housing Material	Titanium
Weight	0.01 oz
	0.3 gm
Dimension A (see Outline Drawing)	0.16 in [4.1 mm]
Dimension B (see Outline Drawing)	0.27 in [6.8 mm]
Dimension C (see Outline Drawing)	0.11 in [2.8 mm]
Accessories - Supplied	
Removal Tool	039A26
Petro Wax	080A109



TRION-2402 sample system architecture



Sample rate	Max. analog filter bandwidth	Digital filter bandwidth	Oversampling
100 S/s to 1 kS/S	2.9 kHz	0.494 *fs	256 *fs
>1 k to 10 kS/S	29 kHz	0.494 *fs	256 *fs
>10 to 51.210 kS/S	290 kHz	0.494 *fs	256 *fs
>51.2 to 102.410 kS/S	290 kHz	0.5 *fs	128 *fs
>102.4 to 204.810 kS/S	290 kHz	0.38 *fs	64 *fs

CONFIGURATION OF MEASUREMENT SCREENS

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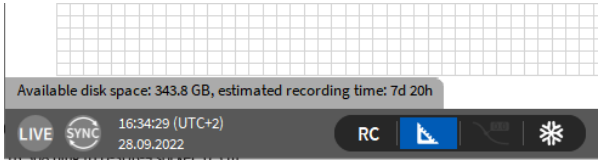
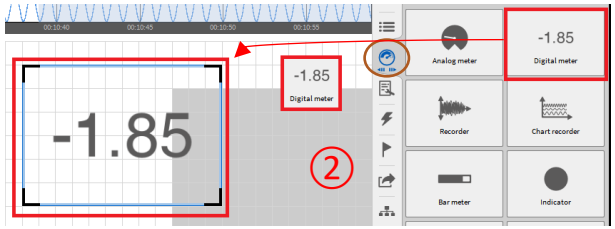
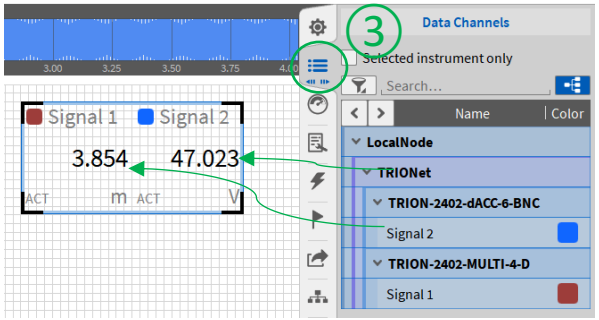
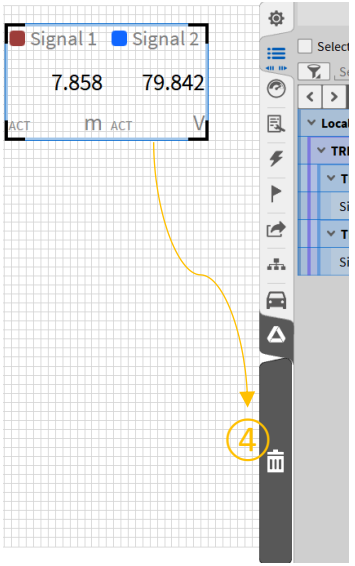
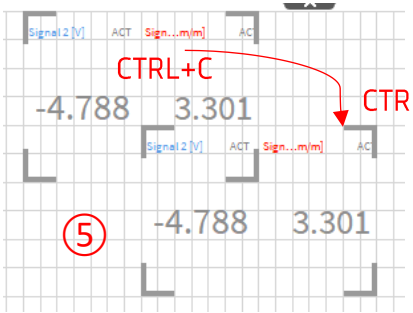
①	Activate the *Design Mode* to change the screen layout (Grey grid in background)
②	Go to the Instruments menu and place instruments via drag and drop on the screen (Design Mode is also activated automatically when instrument is dropped)
③	Go to the data channels menu and select the channels to be displays by clicking (If several instruments are on the screen, the one with the blue frame is the active one)
④	To delete instruments from the screen, drag and drop them into the rubbish bin (Only available when Design Mode is active)
	When finished deactivate the Design Mode again to work with the data in the instruments
⑤	Copy (CTRL+C) – Paste (CTRL+V) to duplicate instruments











INSTRUMENTS DISPLAYS - OVERVIEW

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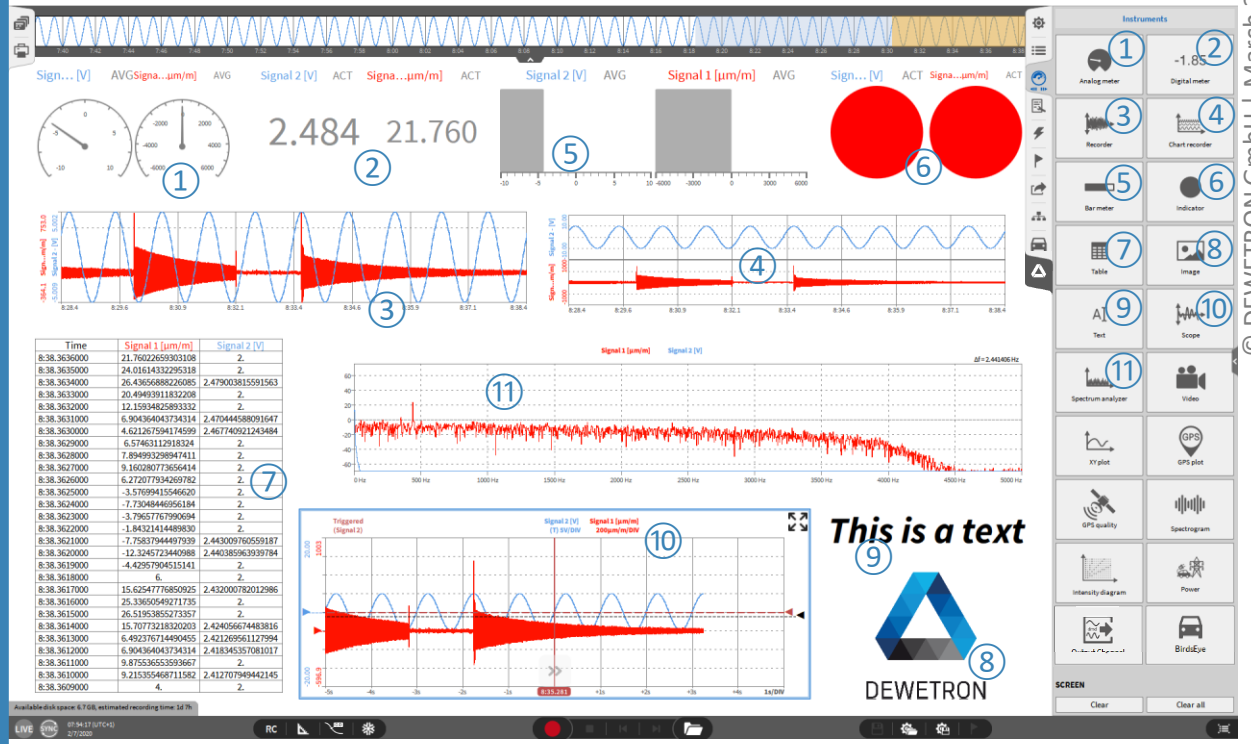

Time	Signal 1 [µm/m]	Signal 2 [V]
8:38.3636000	21.76022659303108	2.
8:38.3635000	24.01614332295318	2.
8:38.3634000	26.43656888226085	2.479003815591563
8:38.3633000	20.49493911832208	2.
8:38.3632000	12.15934825893332	2.
8:38.3631000	6.904364043734314	2.470444588091647
8:38.3630000	4.621267594174599	2.467740921243484
8:38.3629000	6.57463112918324	2.
8:38.3628000	7.894993298947411	2.
8:38.3627000	9.160280773656414	2.
8:38.3626000	6.272077934269782	2.
8:38.3625000	-3.576994155446620	2.
8:38.3624000	-7.730484469561184	2.
8:38.3623000	-3.796577679906940	2.
8:38.3622000	-1.843214144898300	2.
8:38.3621000	-7.758379444497939	2.443009760559187
8:38.3620000	-12.32457234409880	2.440385963939784
8:38.3619000	-4.429579045151410	2.
8:38.3618000	6.	2.
8:38.3617000	15.62547776850925	2.432000782012986
8:38.3616000	25.33650549271735	2.
8:38.3615000	26.51953855273357	2.
8:38.3614000	15.70773218320203	2.424056674483816
8:38.3613000	6.492376714490455	2.421269561127994
8:38.3612000	6.904364043734314	2.418345357081017
8:38.3611000	9.875536553593667	2.
8:38.3610000	9.215355468711582	2.412707949442145
8:38.3609000	4.	2.

SAVE/LOAD A SETUP FILE (DMS-FILE)

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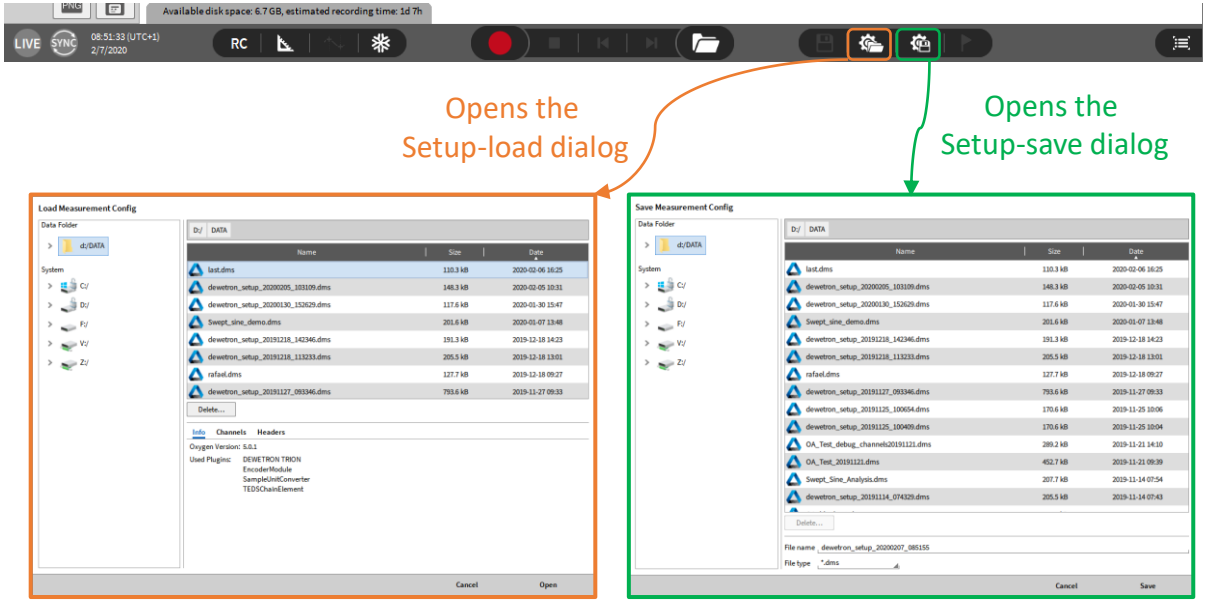

GENERATING AND ACCESSING MULTIPLE SCREENS

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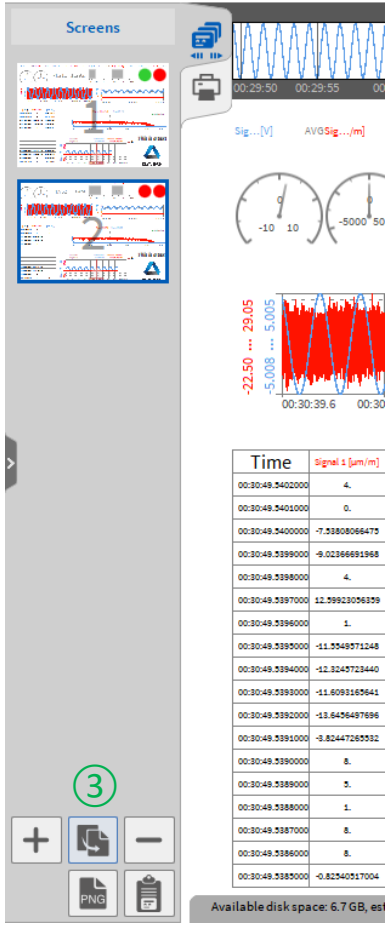
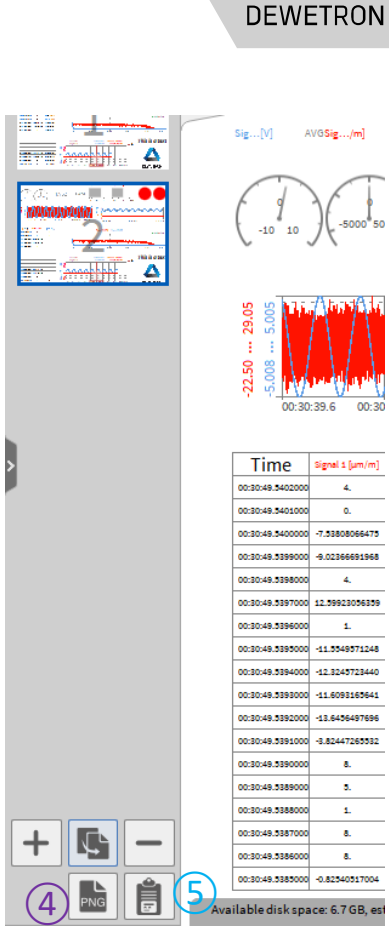
①	Generates a new blank screen
②	Deletes the currently selected /blue frame) screen
③	Duplicates the currently selected screen
④	Saves the currently selected screen as png or jpeg If an instrument is active (blue frame) only the selected instrument is saved as png or jpeg
⑤	Copies the currently selected screen to clipboard If an instrument is active (blue frame) only the selected instrument is copied





UNDOCKING SCREENS

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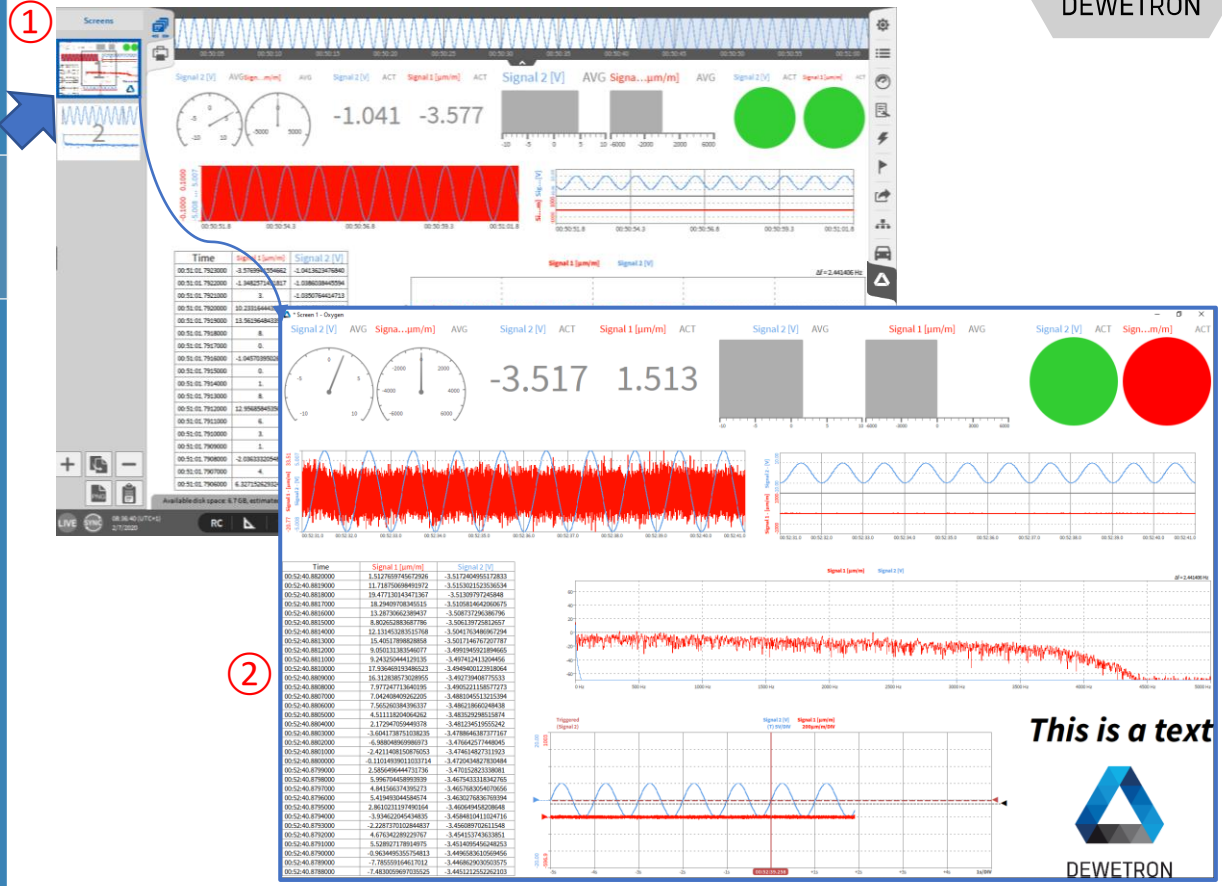
①	Select the respective screen and keep the left mouse button pressed for 2 seconds until the blue frame becomes bold
②	Keep the mouse button pressed and move it away from the software; Release the mouse button afterwards



DISPLAY TIME, DATE AND MEASUREMENT TIME ON THE SCREEN

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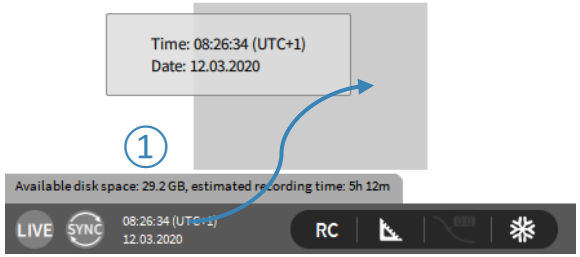
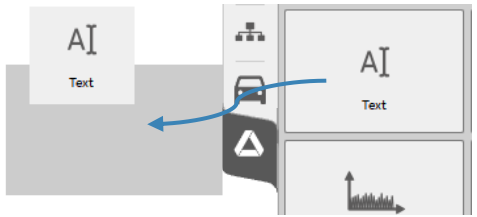
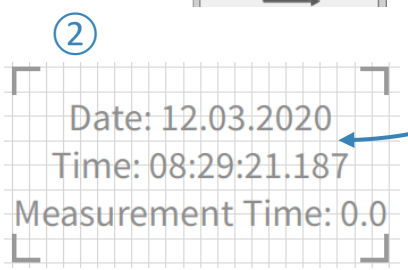
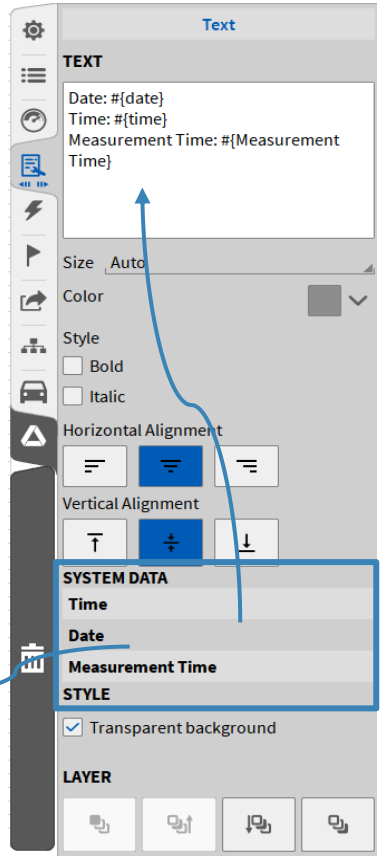
①	Drag and drop time and date from the Action bar to the screen Generates a text instrument
②	Drag and drop a text instrument to the screen, open ist properties and drag and drop time, date and measurement (recording) time to it



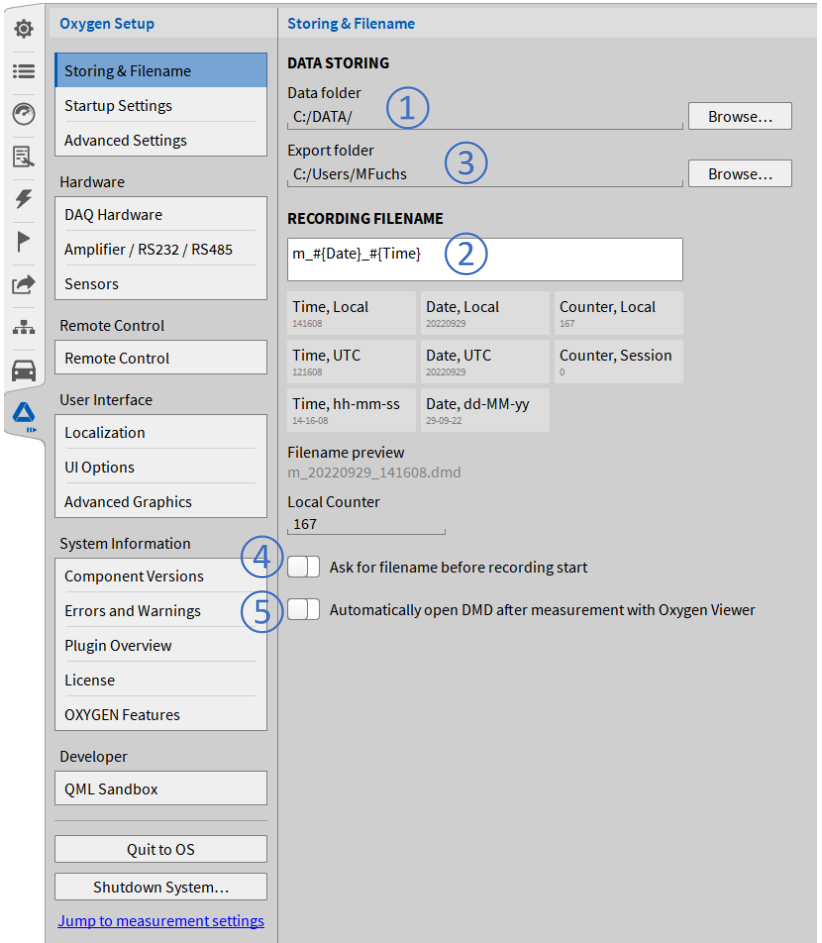






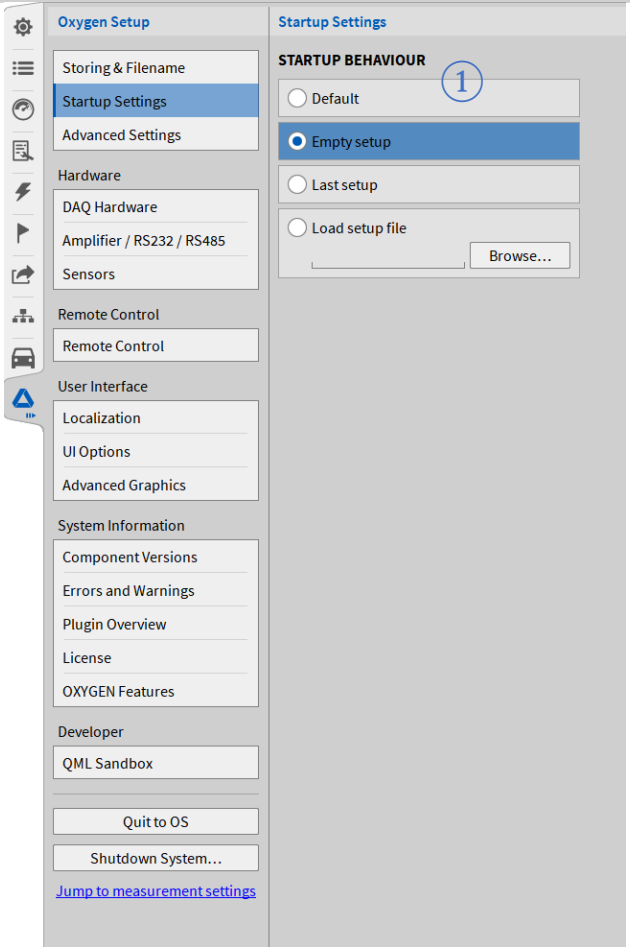
SYSTEM SETTINGS – STORING & FILENAME

①	Specify the default folder for data file storage
②	Specify a recording filename
③	Specify the default folder for data export
④	If enabled, a popup appears after pressing the Rec button to specify the file name
⑤	When a recording is finished, the created data file will be opened automatically in Oxygen Viewer



SYSTEM SETTINGS – STARTUP SETTINGS

①	Specify the startup behaviour of the software by selecting a certain setup to be loaded while startup



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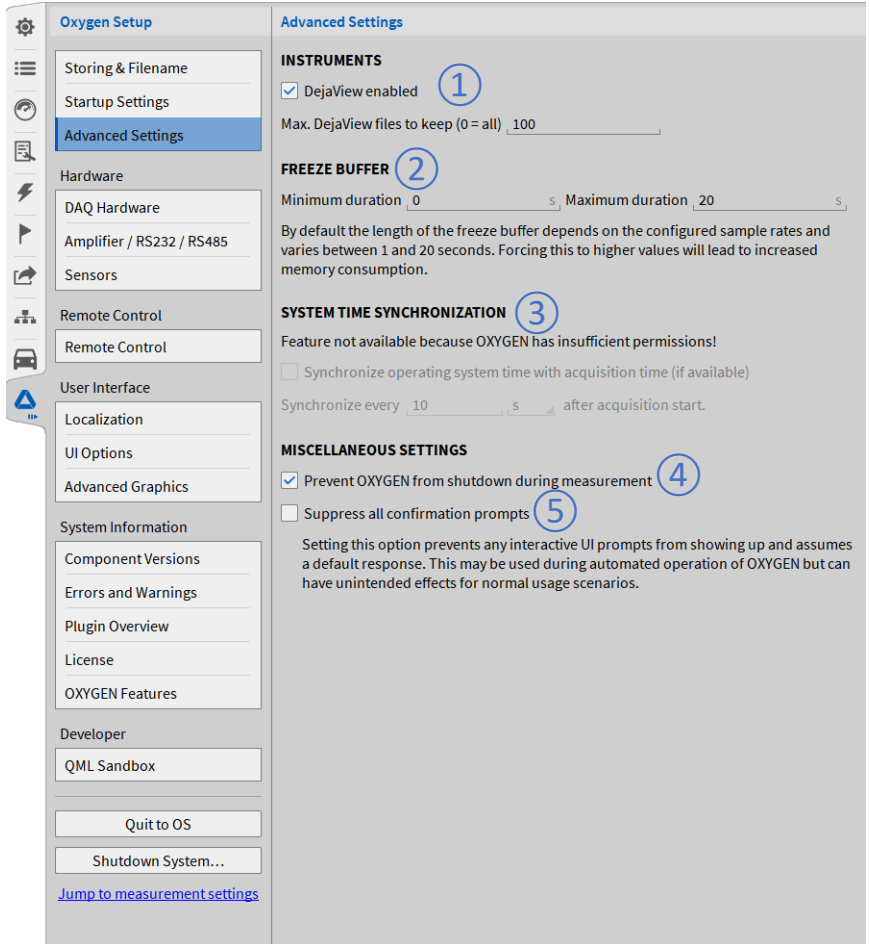
SYSTEM SETTINGS – ADVANCED SETTINGS

①	If enabled it is possible during recording to look into the past just by swiping to the right in the recording window
②	Defines the duration of the freeze buffer, a higher duration leads to a increased memory consumption
③	If an IRIG or GPS signal is received via a TRION-BASE, TRION-TIMING or TRION-VGPS module and will be used for synchronization, this option allows to set the system time of the PC Oxygen is running to this timing signal. (min. every 10 sec)
④	If enabled, it is not possible to shut down Oxygen during a recording.
⑤	If enabled any interactive UI prompts will not be shown and a default response will be assumed



SYSTEM SETTINGS – HEADER DATA

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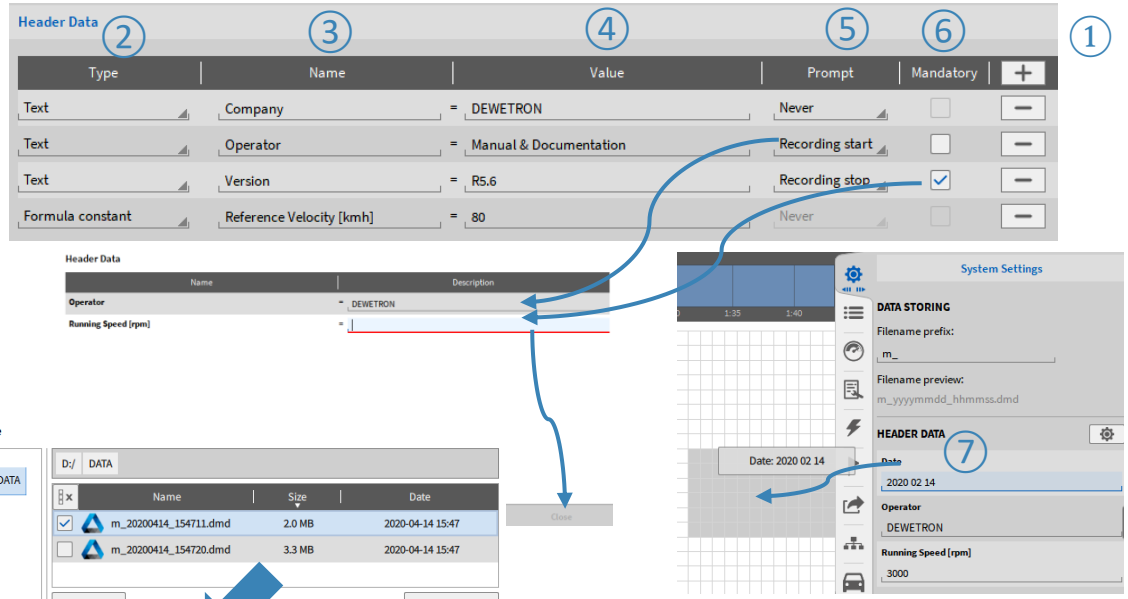
①	The +-button adds a Header input field consisting of Name and Description
②	Select between text header and numeric header that can be further processed in formulas
③	The name should include the general purpose of the header field and can be filled arbitrarily
④	The description should include the relevant information for each data recording
⑤	If *Prompt* at *Recording start/stop* is selected, a popup opens after pressing the *Record* button and requests the user to fill out the *Description* field (Recording is already running even if the popup is still open)
⑥	If *Mandatory* is selected as well, the popup can only be opened after entering a *Description*
⑦	Headers can be added to the screen by dragging and dropping them from the System Settings menu Text instrument is generated

Header (Meta) Data can be created in „System Settings → Header Data" to add test relevant information to the data file, like date of the test, the operator name, running speed of a DUT or other environmental conditions



Data files can be selected according to Header data while loading a data file from the OXYGEN file browser

SYSTEM SETTINGS – SETUP SECURITY

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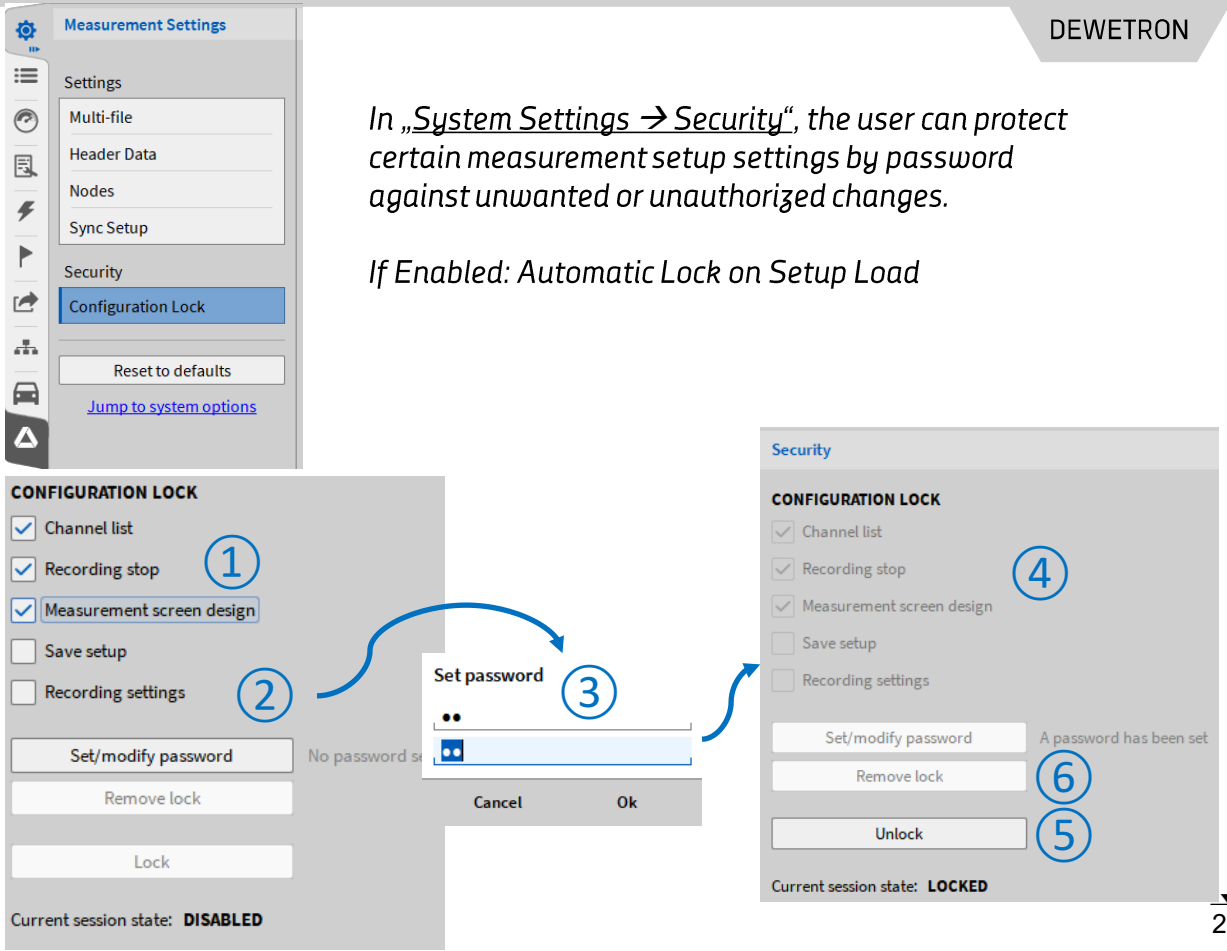
①	Select the settings that shall be locked
②	Press *Set/modify password*
③	Enter the password and confirm it
④	The selected settings will be locked afterwards
⑤	To unlock the settings again, press the *Unlock* button and enter the password
⑥	To remove the lock from the setup again, press *Remove lock* in the unlocked state

In „System Settings → Security“, the user can protect certain measurement setup settings by password against unwanted or unauthorized changes.

If Enabled: Automatic Lock on Setup Load



AUDIO REPLAY

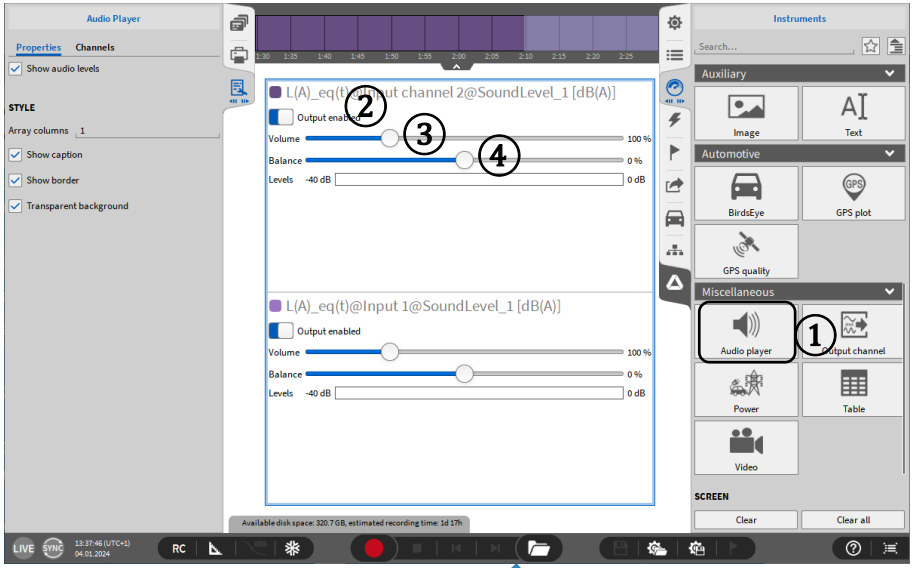
①	It's possible to replay channels via the default PC sound card by using the Audio Player Instrument
②	Possibility to Mute channels
③	Possibility to set the volume
④	Possbility to change the left-right Balance

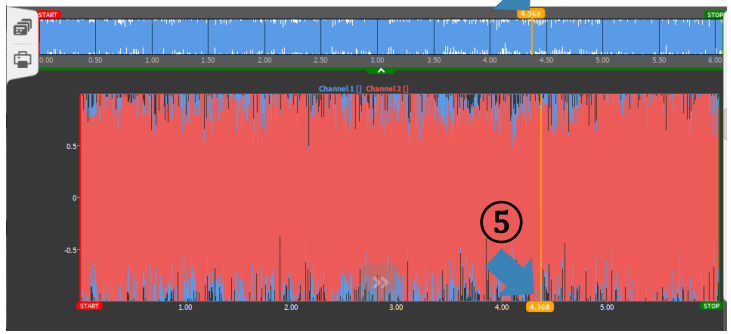
Maximum number of replay channels per instrument is 2.
Recommended sample rate of replay channels is from 1 kHz to 200 kHz

Replay is available in LIVE, REC and PLAY mode.

In LIVE and REC mode, the actual data is replayed.

In PLAY mode, replay is snapped to Orange cursor (⑤).





DEWETRON

TEDS SUPPORT

DEWETRON

- *TEDS data can be read out and applied to channel settings*
- *Template 25 … 33 according to IEEE1451.4 supported*

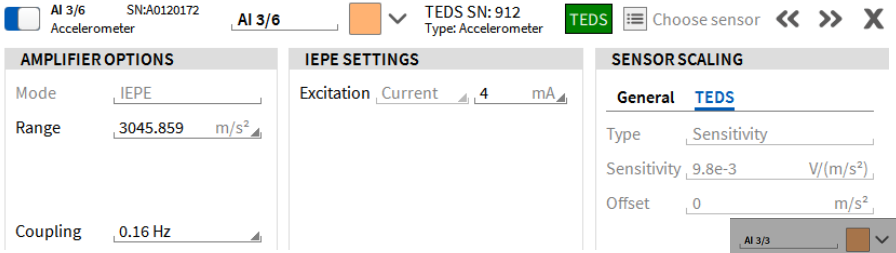
- *TEDS support for*
  TRION-2402-MULTI
  TRION(3)-18x0-MULTI
  TRION-2402-dACC (IEPE mode only)

Template ID	Name of template
25	Accelerometer/Force transducer w. const. curr. ampl.
26	Charge amplifier (incl. attached accelerometer)
27	Microphones w. built-in preamp.
28	Microphone preamps. w. attached micr. or system
29	Microphones (capacitive)
30	High-level voltage output sensors
31	Current loop output sensors
32	Resistance sensors
33	Bridge sensors

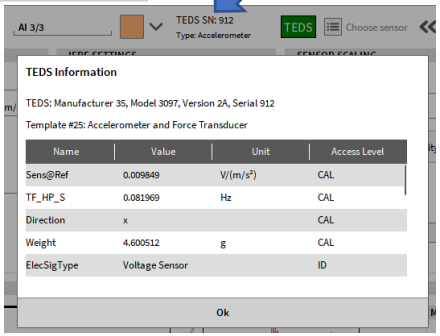
> For TRION-MULTI:
  > TEDS scan is always active when Channel List is open
  > TEDS is automatically recognized when connected

> For TRION-2402-dACC
  > Open Channel Setup and select IEPE mode
  > Click on the TEDS icon to activate TEDS scan

> If TEDS is recognized, the icon will become green and the settings will be applied to the channel

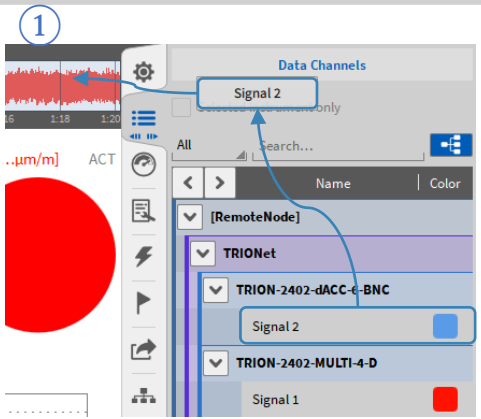


Detailed TEDS info can be displayed



MISC

DEWETRON



Change the signal displayed in the overview bar by dragging and dropping it from the Channel List

Software State *Live*: Data is acquired but not stored to HDD

(Un-)locks the screen

Start data storing

Open data file

Swap between current screen/menu and Channel List

SYNC: Indicates the sync Status in case of external synchronization

(De-)Activate Design Mode

Holds the time for instruments

Load Setup file

Store Setup file