DEWETRON

OXYGEN TRAINING
> MATRIX SAMPLER

CONTENT

CREATING A MATRIX SAMPLER

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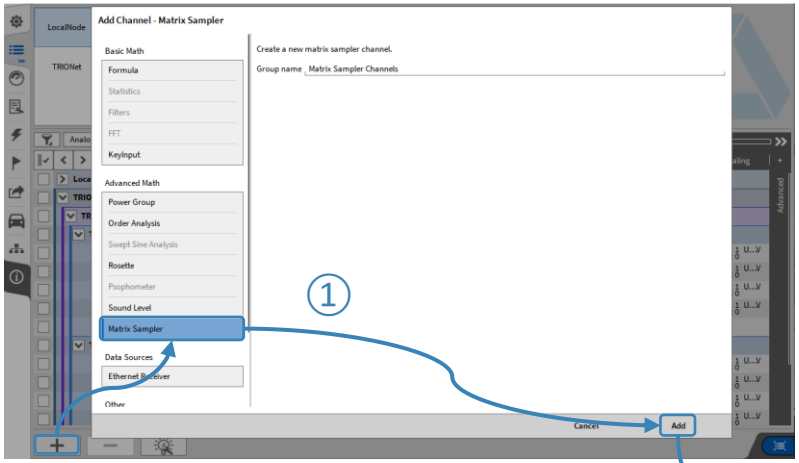
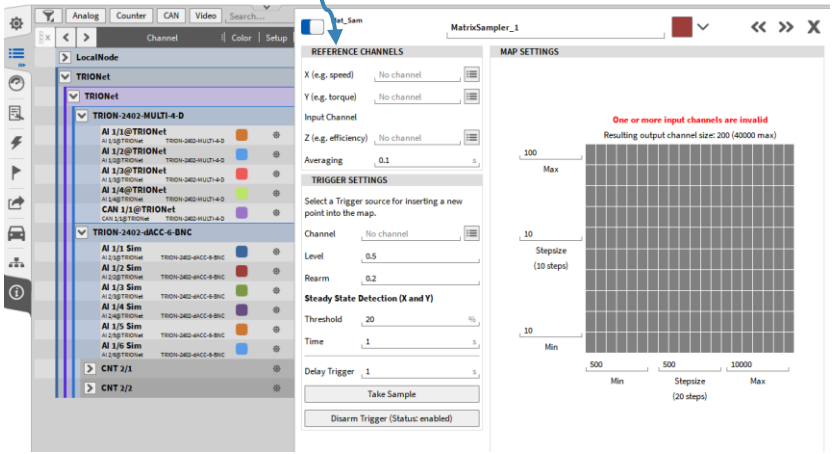
① Either:
Press the + button, select *Matrix Sampler* and press *Add*
Settings will open afterwards





The matrix sampler displays the relation between two channels and an input channel in form of a color-coded matrix which is displayed in the Intensity Diagram instrument.

This feature can be used to create an Efficiency Map which shows the mechanical efficiency of a drive train in the dependency of torque and speed.

CREATING A MATRIX SAMPLER CONT'D

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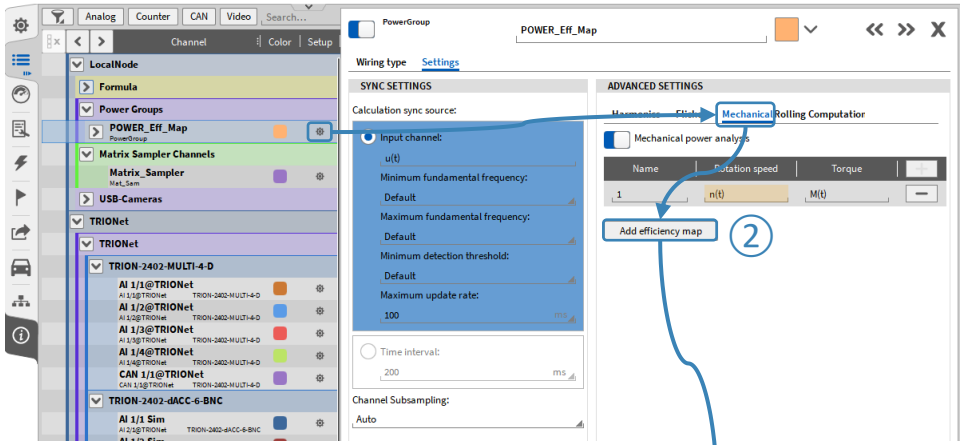
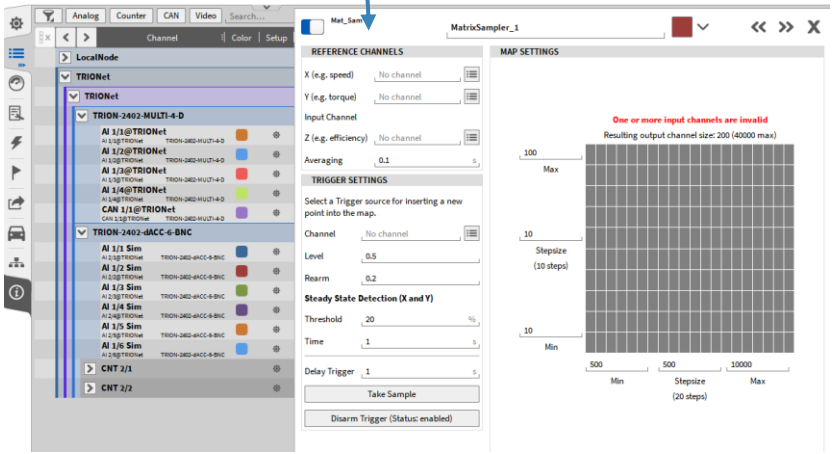
② Or:
Press the *Add efficiency map* button in the *Mechanical power group* settings if a power group is already existing

The matrix sampler displays the relation between two channels and an input channel in form of a color-coded matrix which is displayed in the Intensity Diagram instrument.

This feature can be used to create an Efficiency Map which shows the mechanical efficiency of a drive train in the dependency of torque and speed.





MATRIX SAMPLER SETTINGS

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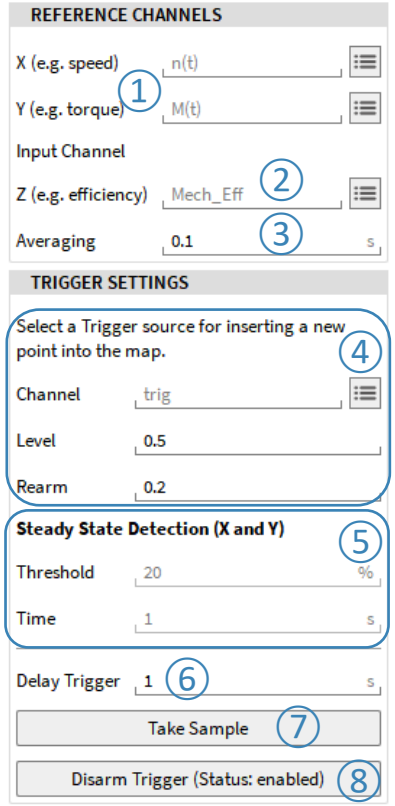
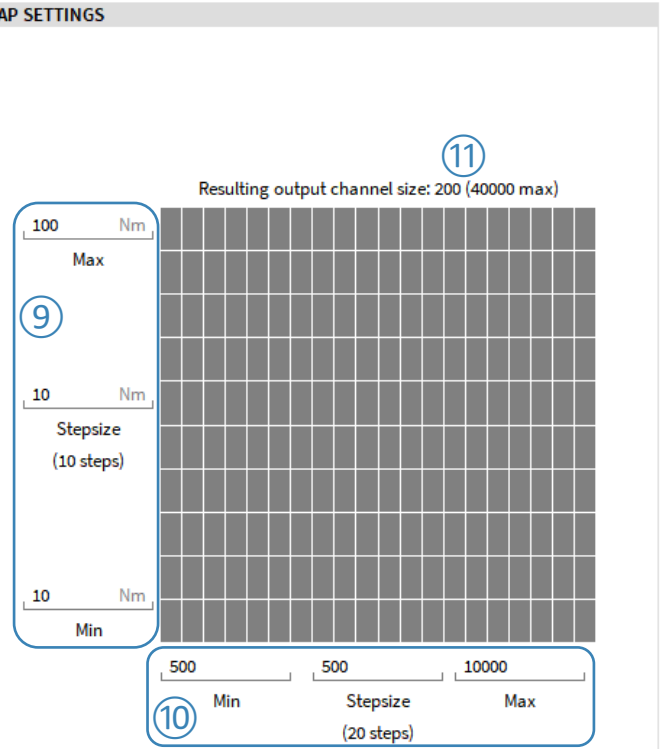
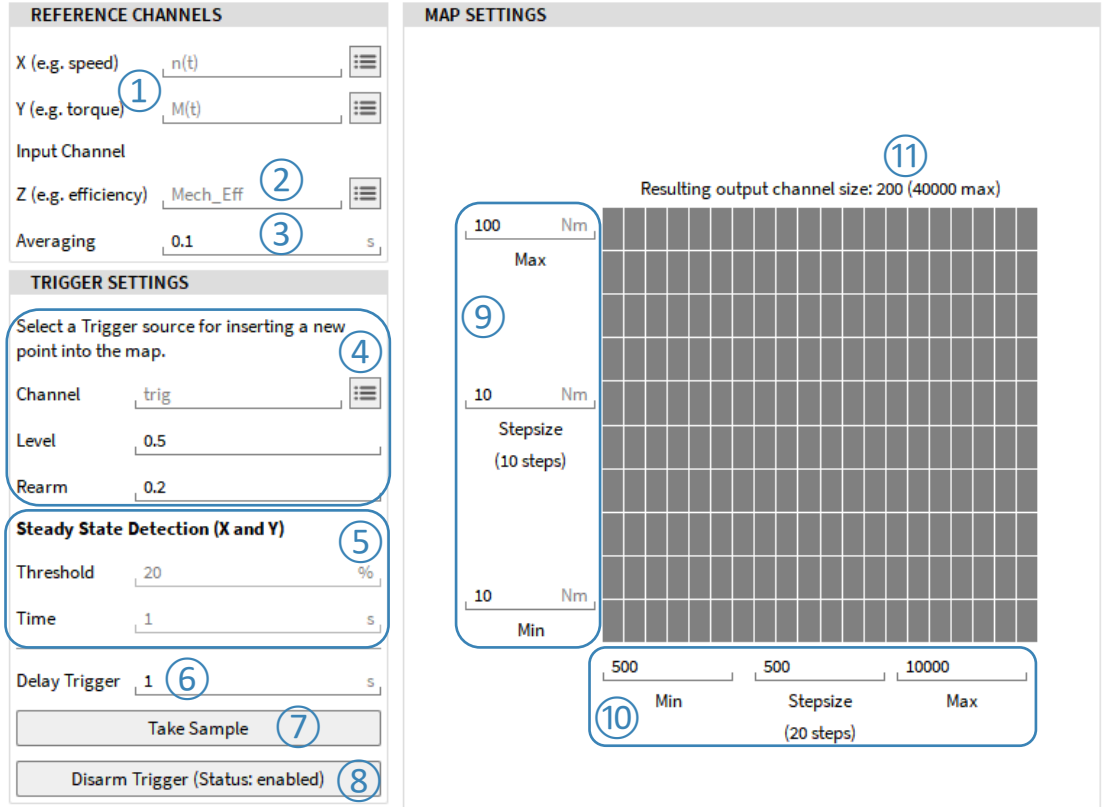
①	Enter the reference channel to be displayed on the X- and Y-Axes
②	Enter the Input channel which shall be visualized in the dependency of X and Y
③	Enter an averaging time to calculate the average of Z which is added to the matrix (0.01 … 1 s)
④	Select a trigger channel which is used as trigger to fill the matrix with data and define a trigger & rearm level
⑤	Instead of using a trigger channel to fill the matrix, a steady state detection of X and Y can be used as well. Define the threshold and the steady state time
⑥	Enter a time delay after which a sample will be put into the matrix after the trigger is activated from 0 … 10 s
⑦	Fills the matrix manually with data
⑧	Disables channel trigger and Steady State detection



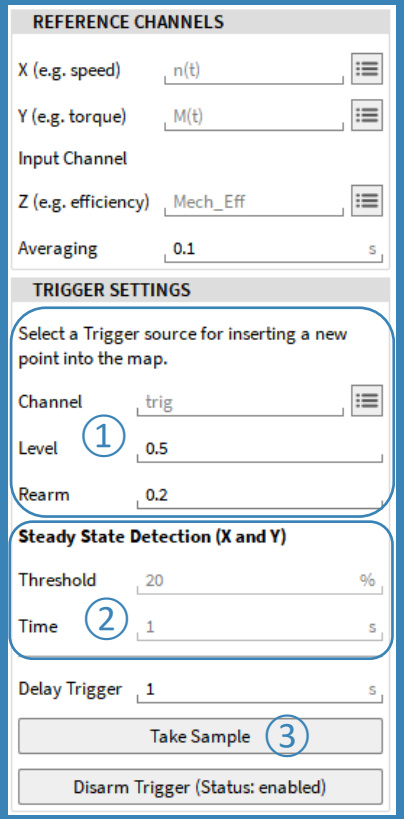


MATRIX SAMPLER SETTINGS CONT'D

⑨	Defines the number of matrix lines as minimum and maximum value and stepsize
⑩	Defines the number of matrix columns as minimum and maximum value and stepsize
⑪	Displays the resulting matrix size as cell numbers



OPERATING MODES



- Testbed Controlled -> *Channel* Trigger ①
  - Use a channel for triggering the sampling of the Map
  - E.g. AI, DI, CAN or Ethernet Receiver
- Semi-Automatic -> *Steady State Detection* ②
  - If no external triggering is possible, one can use the build in stead state detection for semi-automatic operation
- Manual -> Use *Take Sample* Button ③
  - To manually sample a new value, the button can be used e.g. to correct a wrong measurement
- Notes:
  - If a channel is selected as trigger channel, the Steady State Detection is disabled. To use the Steady State Detection no channel can be selected as trigger channel or must be deleted
  - The *Disarm/Arm Trigger* button is very useful if a specific measurement point needs to be repeated. In order not to overwrite the whole matrix, the trigger can be disarmed. Therefore, the matrix will not be updated for each trigger, and samples are not saved

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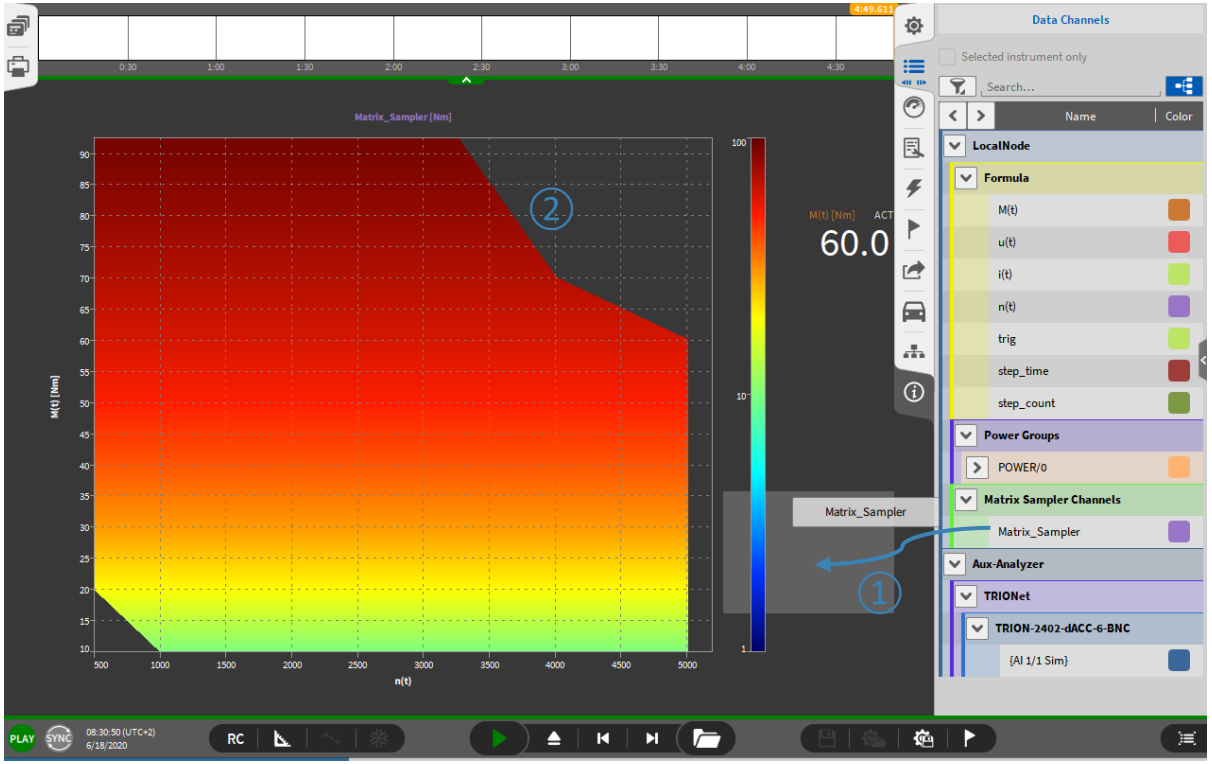
DATA VISUALIZATION

①	Drag and drop the Matrix Sampler channel to the screen
②	Data will be displayed in an intensity diagram



DATA VISUALIZATION OPTIONS

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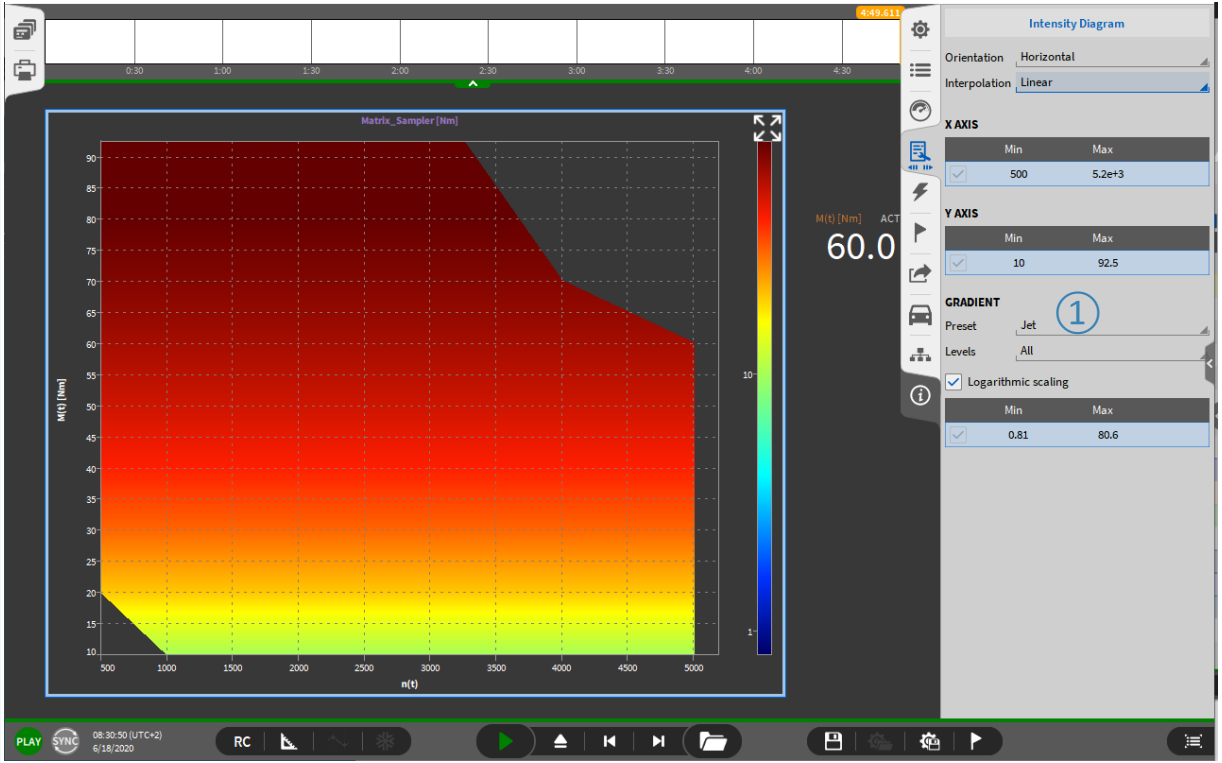
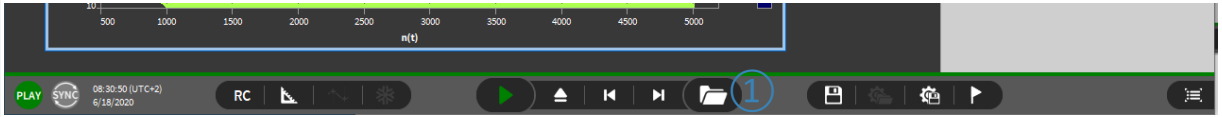
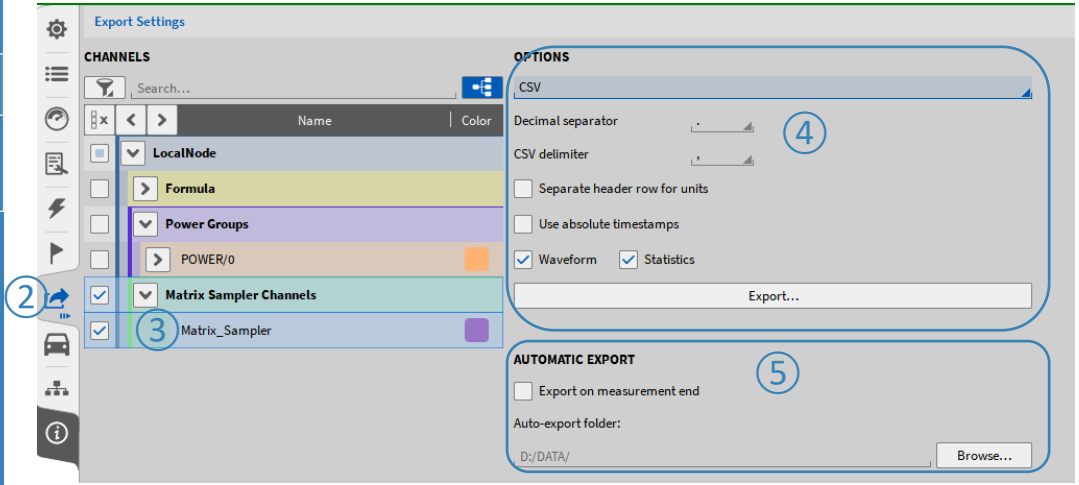
① Visualization options can be found in the instrument properties that can be entered by double clicking on the intensity diagram



DATA EXPORT

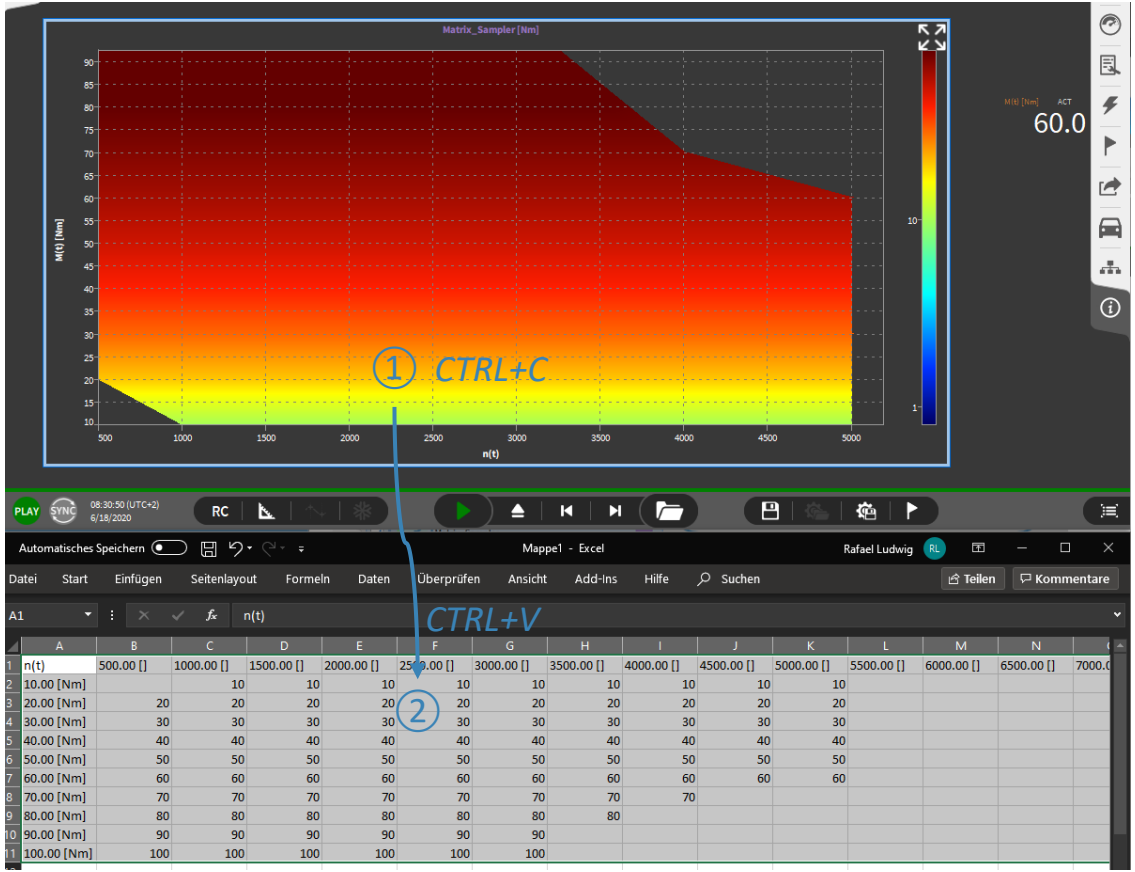
①	Open the correct data file
②	For data export (*.txt, *.csv, *.xlsx, *.mat and *.mdf4.0/4.1), open the export menu
③	Select the channels to be exported
④	Set additional options and press *Export…*
⑤	It is also possible to automatically export the data after measurement end





COPY AND PASTE DATA

	It is possible to copy and paste the order spectrum and frequency spectrum data displayed in an intensity diagram into another software package, like Excel
①	Select the intensity diagram of the data you want to copy and press CTRL+C
②	Open the software package, like Excel, to which the data shall be pasted and press CTRL+V
	As the data is stored to the clipboard, it can also be pasted into other software packages but Excel



SAVE DATA AS IMAGE

	It is possible to save the order analysis data as an image file
①	Highlight instrument
②	Save as png
③	Copy to clipboard