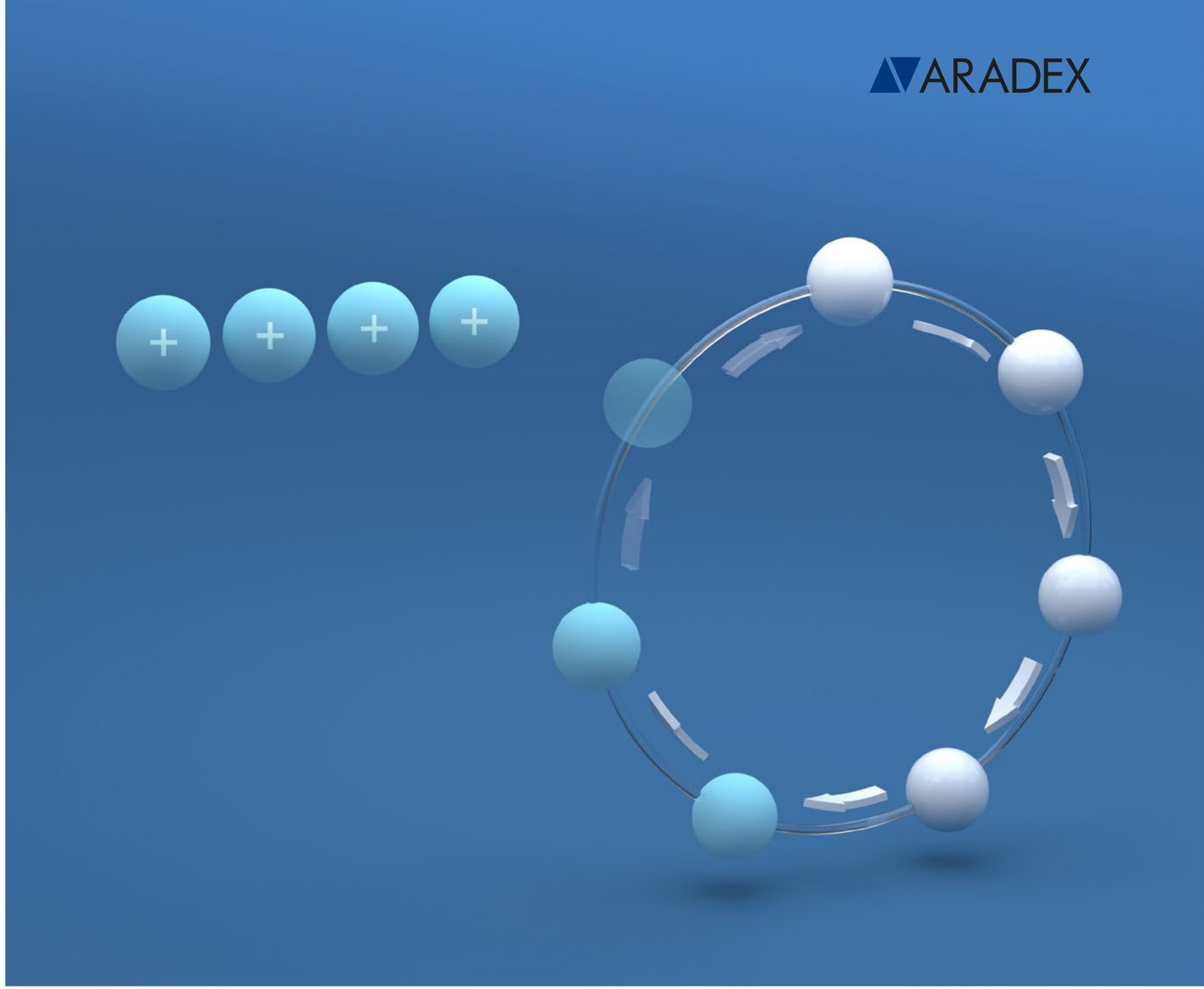

e-Facts:

Powerful tools: Analyser and VEConfig

We drive new energy for a greener future

LAST EDITED: 2021-12-08

/ Analyser and VEConfig

Introduction

Analyser:

Display and analyse recorded oscilloscope files from VECTOPOWER inverters and DC/DC converters

- The Analyser makes measured date visible like a modern oscilloscope viewer
- Analyser can post-process the data for deeper analysis
- Analyser can import data from third-party products to be your **one-for-all-tool**

VEConfig:

Tool for connection to our VECTOPOWER inverters and DC/DC converters

- For configuration, parametrization, diagnostics…
- For commissioning, maintenance and any kind of testing
- Can be used for automated sequences to operate inverter and DC/DC directly
- And even can be used to co-work with third-party products to be your **one-for-all-companion**

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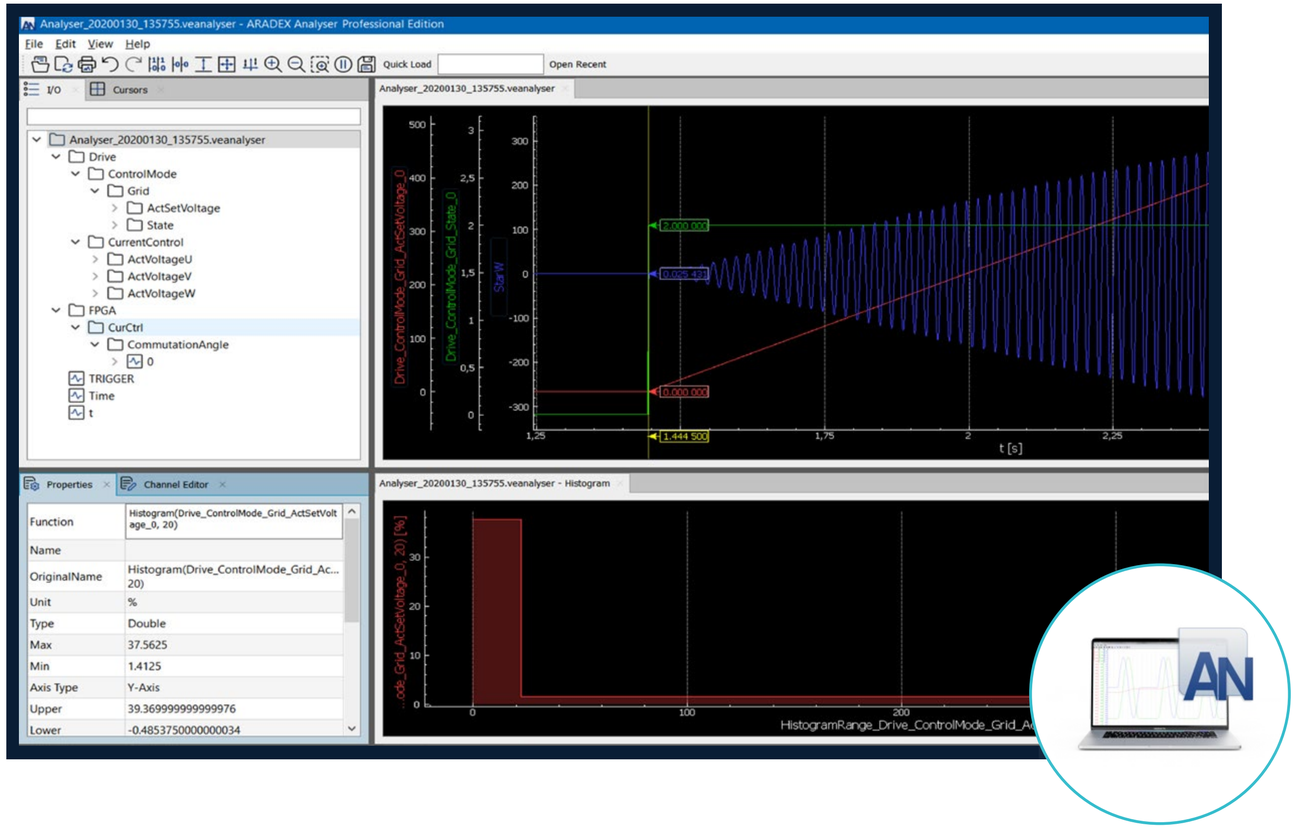
ANALYSER

Strengths, main functions
and your benefits

ARADEX

/ Analyser

Main strengths and benefits



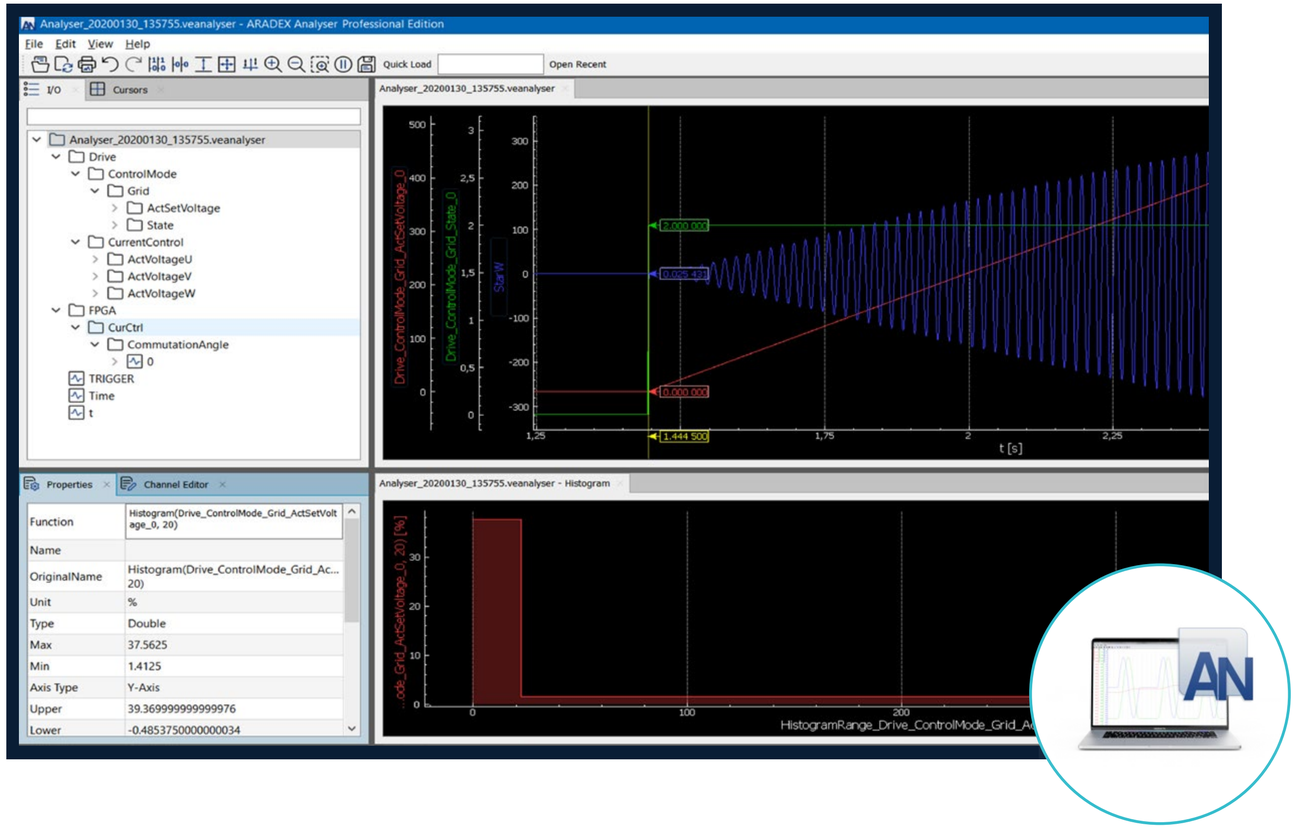
Main benefits:

- Mixed visualization of analogue and digital signals
- Perfectly matched to co-work with VECTOPOWER inverters and DC/DC and VECTOSTUDIO software
- Efficient optimization and fine tuning of VECTOPOWER based drivetrains
- One-for-All-Tool: commissioning, maintenance, after-sales-support, analysis, documentation…
- Powerful library of mathematical functions, integrated for postprocessing of the recorded data. Functions like differentiation, integration, Fourier-Analysis, histograms…

ARADEX

/ Analyser

Main strengths and benefits



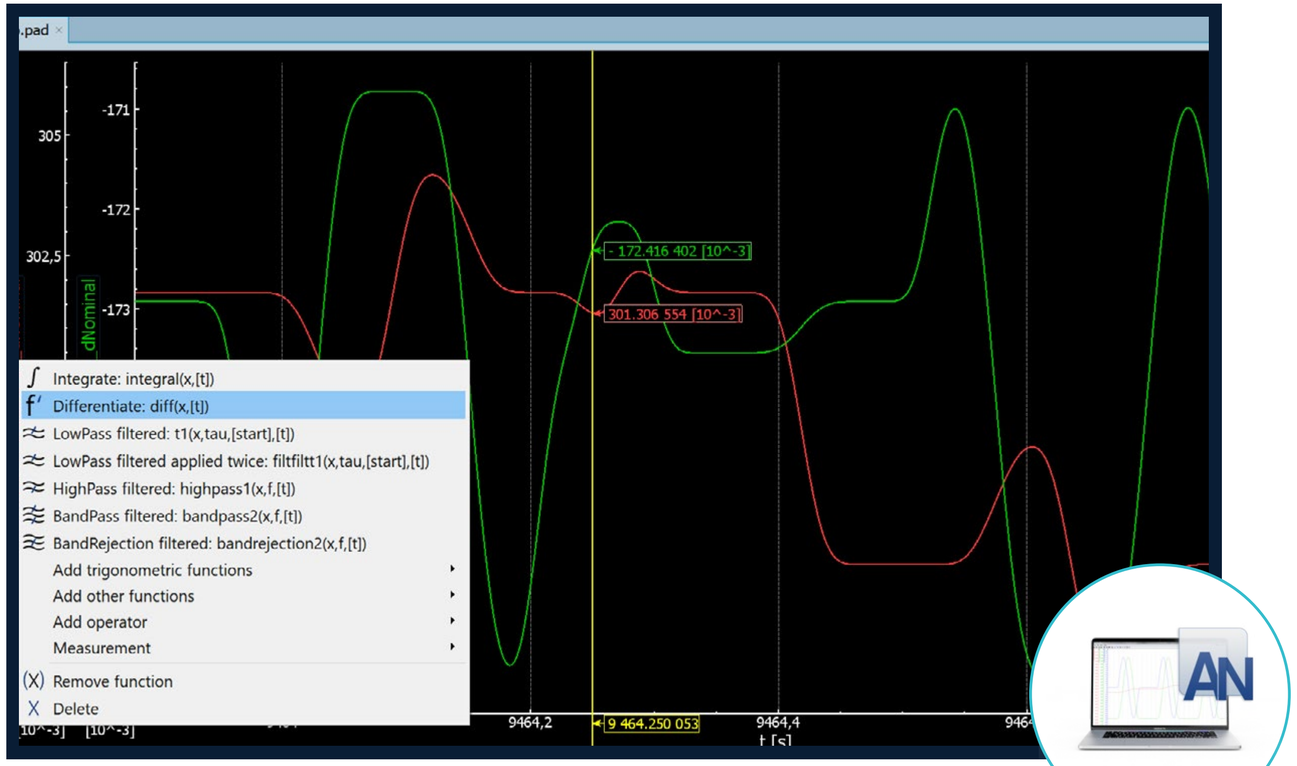
Main benefits:

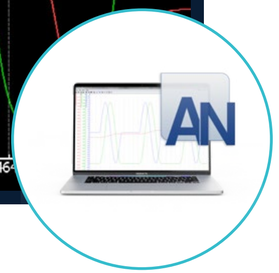
- You can combine several data-channels with formulas, such as calculating power by speed and torque
- Even large recorded files can be displayed and processed in short time
- In addition to other variables, you can make CAN-traces visible as time-synchronous signals
- Documentation made easy by export-functions

ARADEX

/ Analyser

Main strengths and benefits





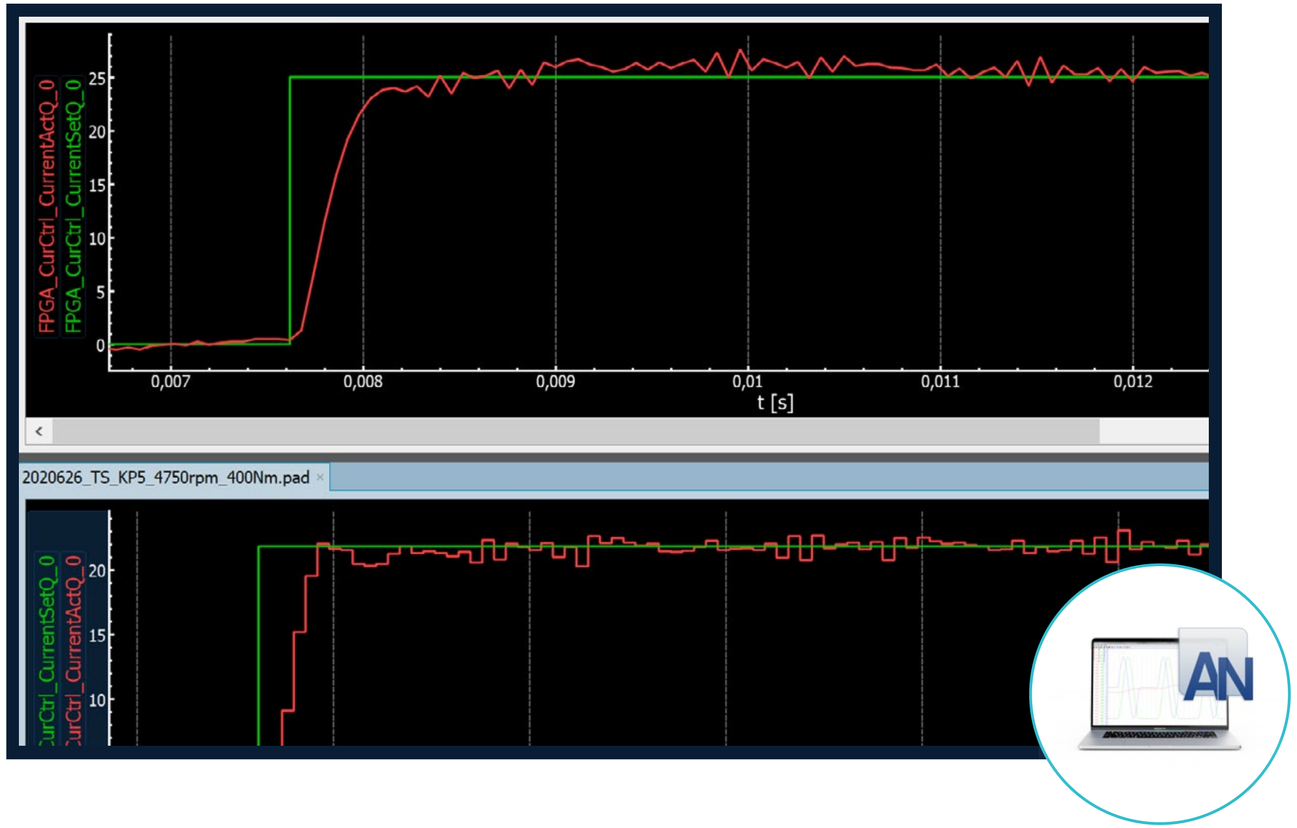
Powerful and intuitive post-processing of recorded data

- Various filters like low-pass, high-pass, band-pass
- Differentiation to derive speed from position
- Integration of external acceleration sensors
- Various Fourier analysis
- Statistical values like histogram functions

ARADEX

/ Analyser

Main strengths and benefits



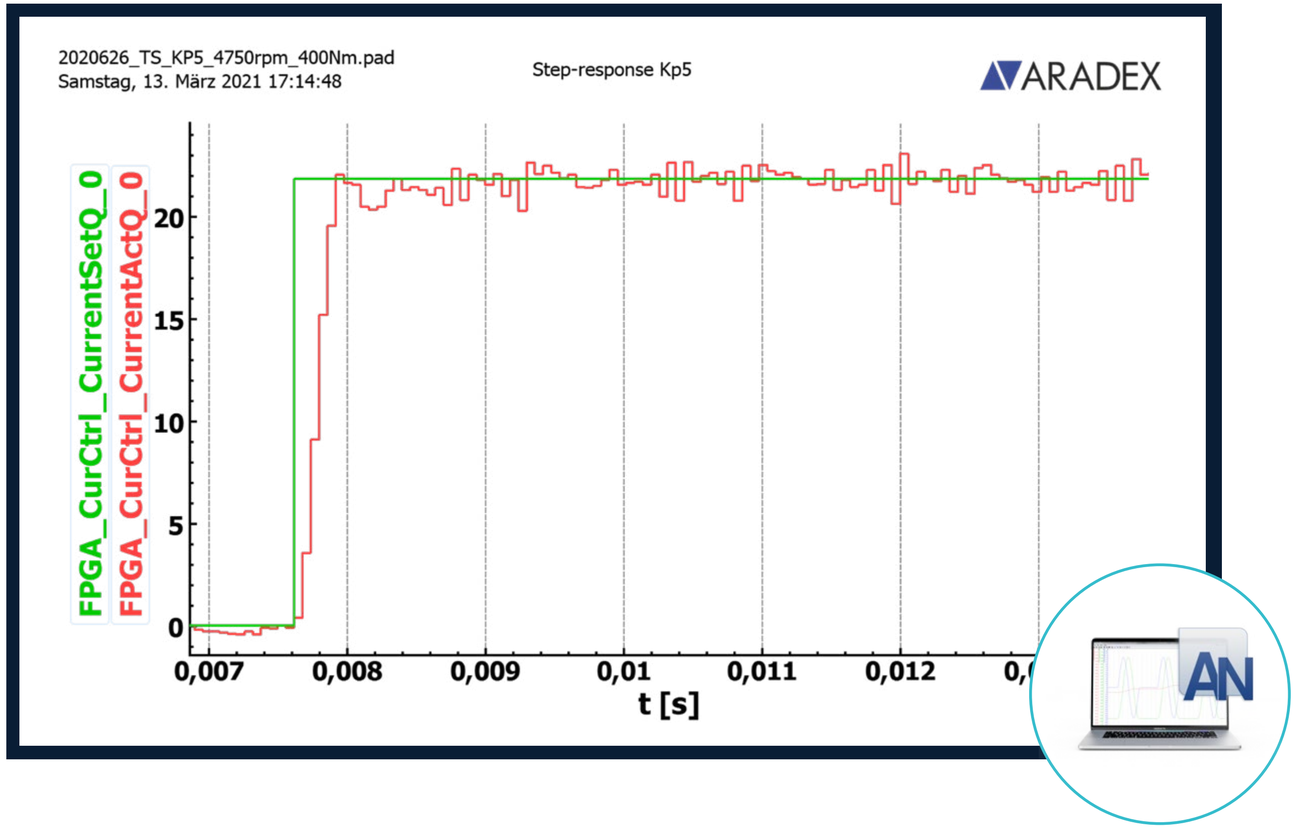
Multi-channel view

- You can analyse 2, 3 or more files in parallel
- And many different coloured curves in one graphic
- For example, to compare drivetrain behaviour with different parameter settings
- You can set graphics size, colours and more
- The horizontal axis can be time (as shown here) or any other variable, like position, speed,.....

ARADEX

/ Analyser

Main strengths and benefits



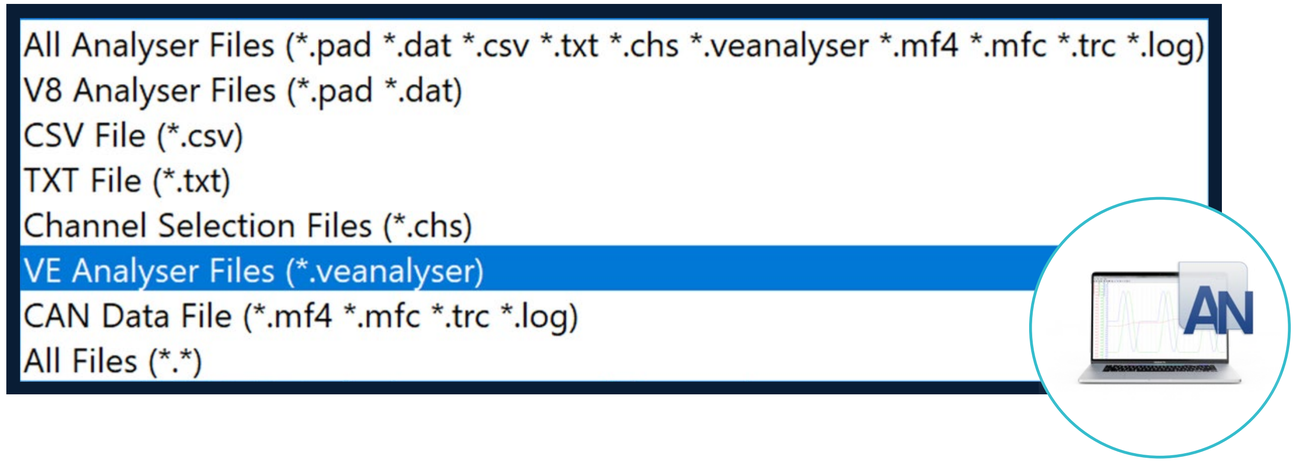
Comfortable export and print functions

- Export for example as data for EXCEL
- Print as PNG, SVG

ARADEX

/ Analyser

Main strengths and benefits



ANALYSER, the One-for-All-Tool

- Reads data of all oscilloscope-versions of ARADEX products
- Reads many other data formats

II

ANALYSER

Main functions
and versions

/ Analyser
Versions and functions

Function	Lite	Professional
Open and view of recorded data	X	X
Graphical diagnosis of data	X	X
Online-connection to VEConfig	X	X
Mathematical functions		X
Export and print of graphics		X
Import of non-analyser data		X
Save and export of data		X
Direct reading of CAN data		X

How to get it?
Download from our website
or contact us!

III

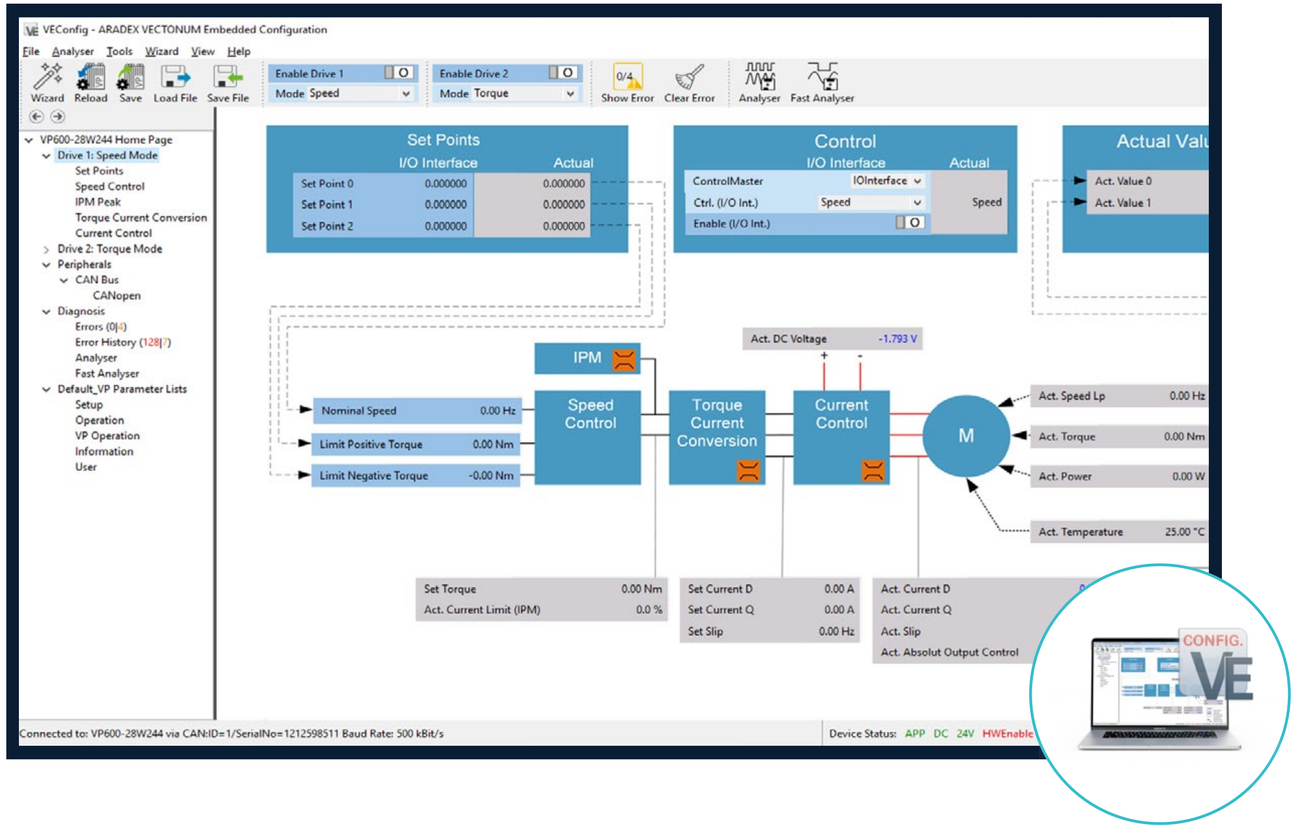
VEConfig

Strengths, main functions
and your benefits

ARADEX

/ VEConfig

Main strengths and benefits



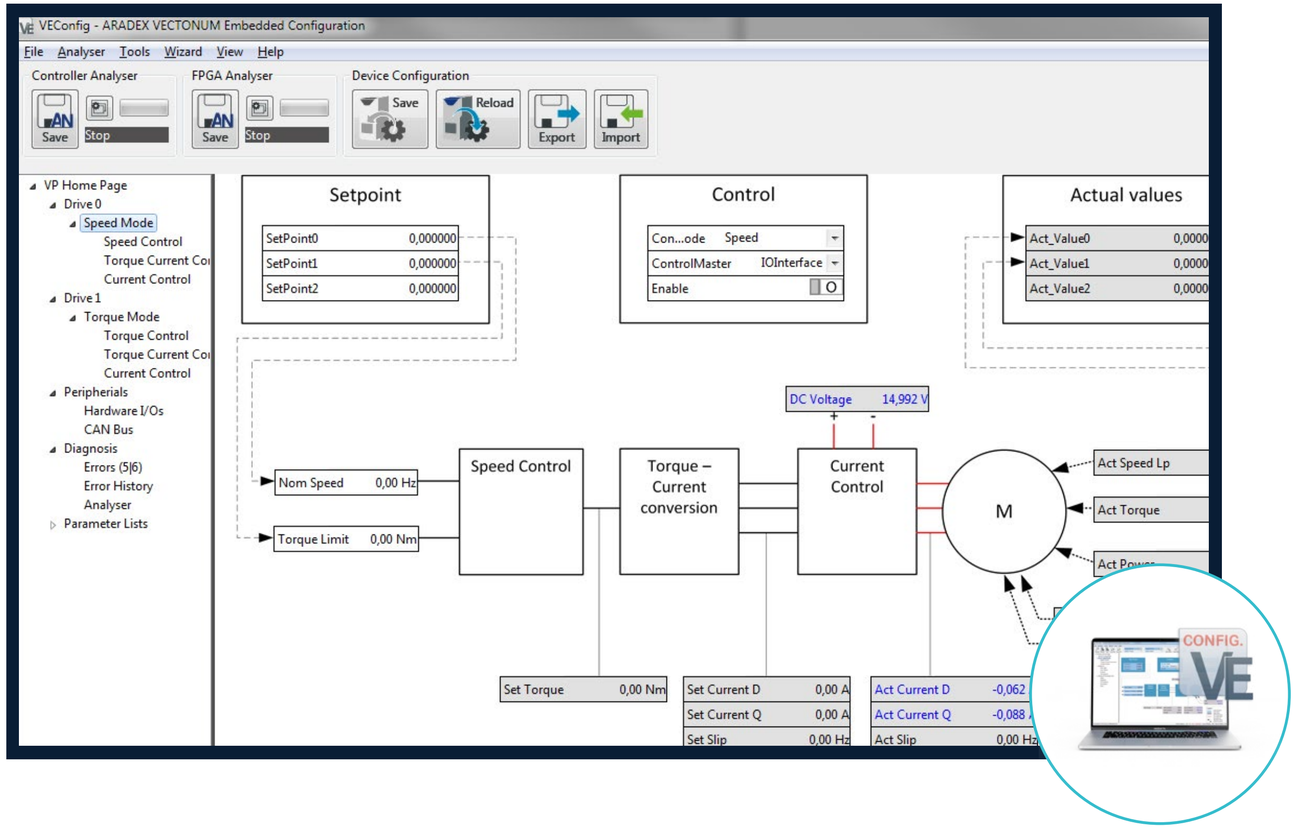
Main benefits

- Made for VP600 inverters, VP5000 DC/DC and more
- Fast commissioning by guiding wizards
- Perfect for commissioning, diagnostics, maintenance
- You can operate inverter or DC/DC directly and see all variables as values and/or as rolling curves

ARADEX

/ VEConfig

Main strengths and benefits



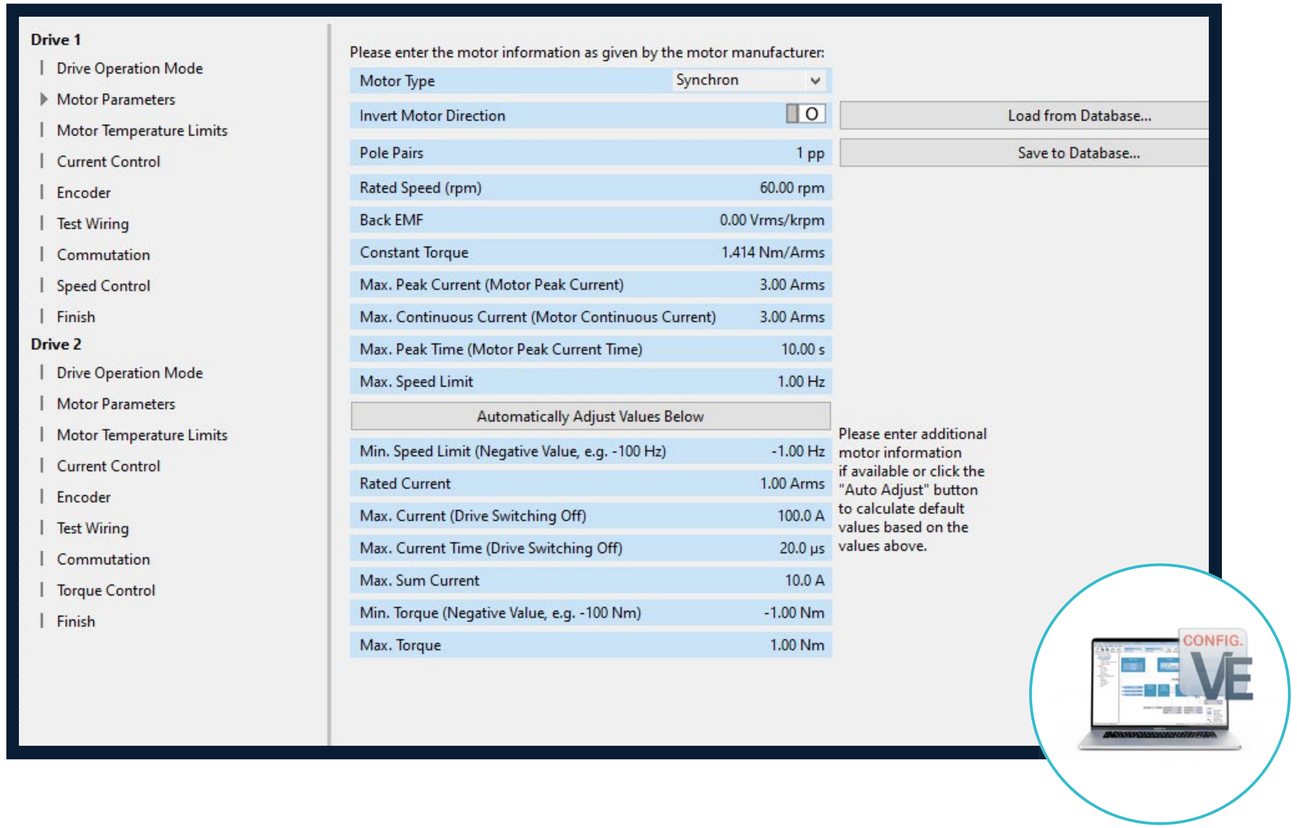
Main benefits

- You can write parameters, new software or firmware to the inverter or DC/DC
- You can read out and save parameters, all settings, oscilloscope files and logbook files from inverter and DC/DC
- And you have access to device manuals

ARADEX

/ VEConfig

Main strengths and benefits



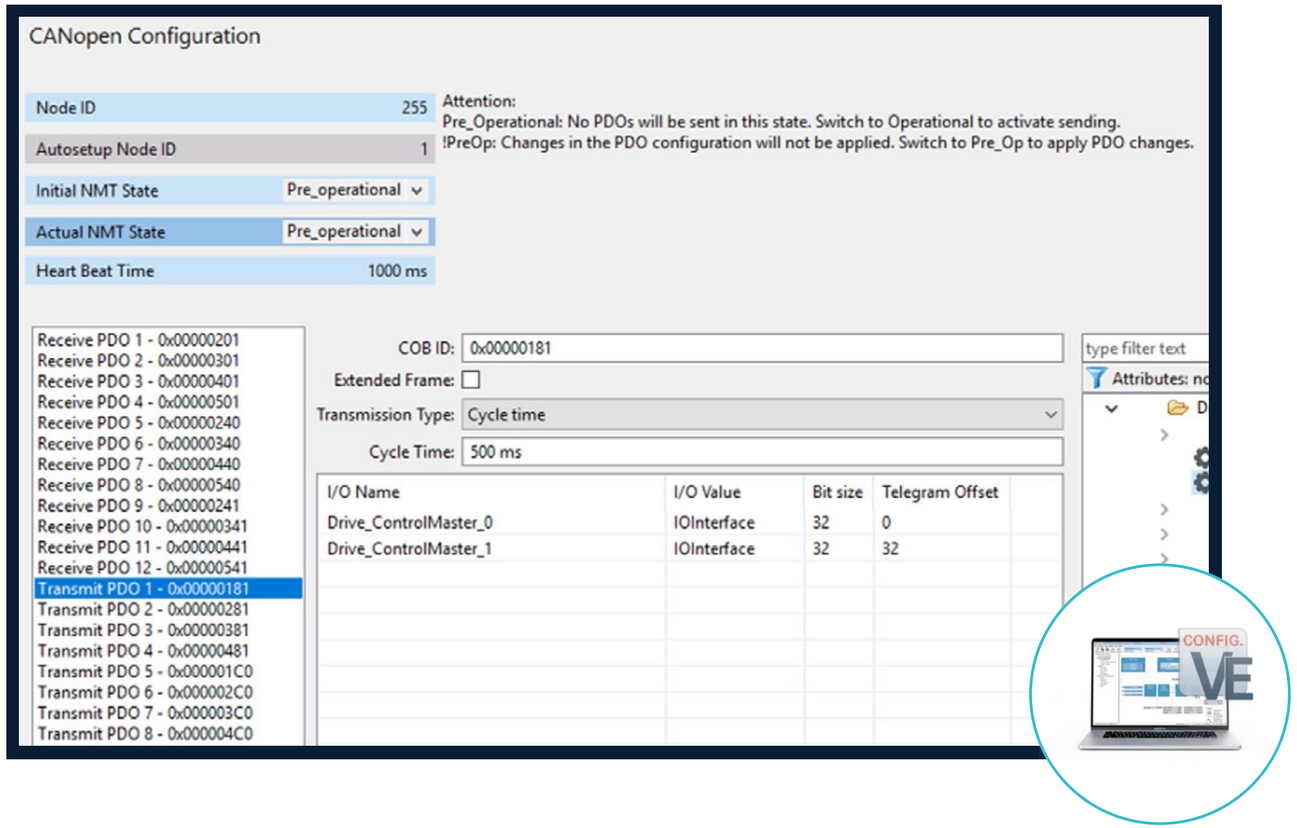
Wizard guided commissioning

- Guides you step-by-step through commissioning of VECTOPOWER inverter or DC/DC converter
- Allows fine-tuning of all parameters with same wizard
- Integrated library of inverter and motors

ARADEX

/ VEConfig

Main strengths and benefits



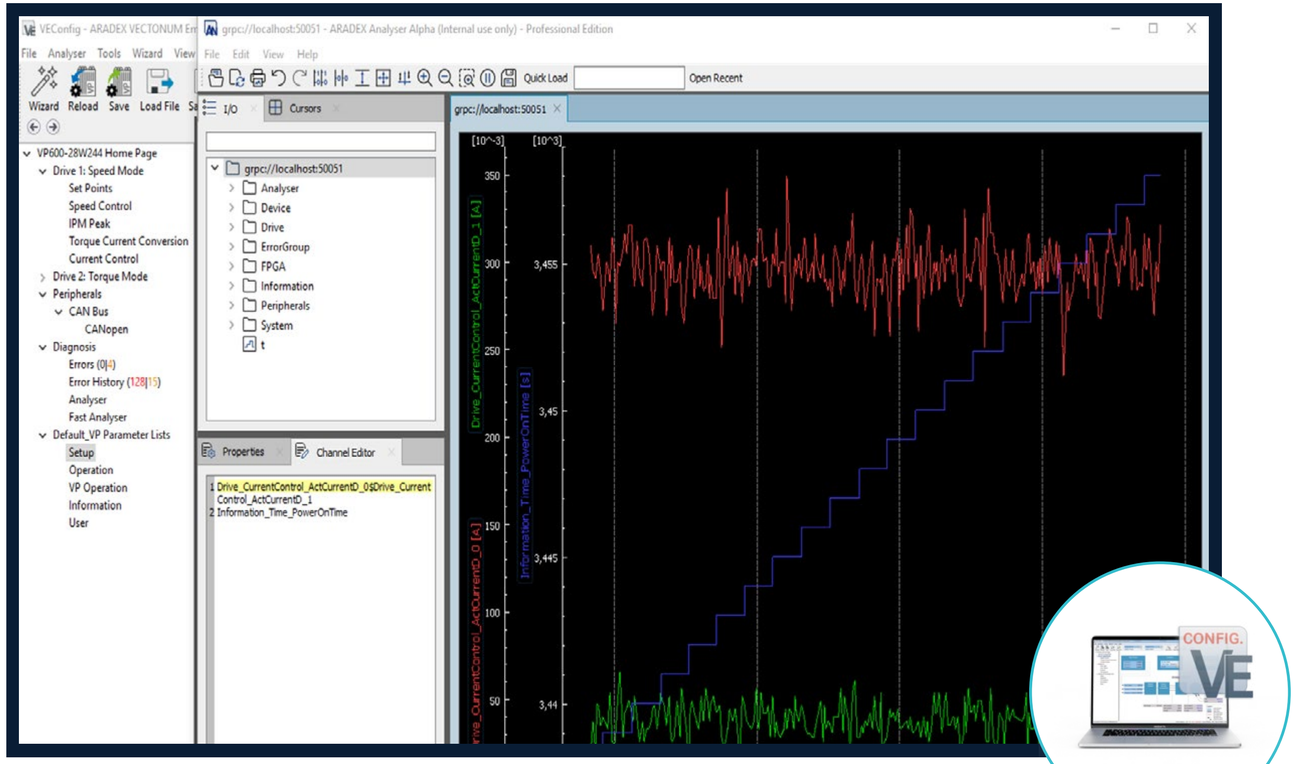
CANplus

- Parameterize and communicate with third-party **CAN-open** devices
- Parameters can be set without higher software knowledge
- To see which data are received and sent by the device

ARADEX

/ VEConfig

Main strengths and benefits



Analyser integrated

- Offline to show stored data
- Online as rolling curves
- Option: expand online-analyser to a big data logger for more than 10 channels and more than 100 000 recorded points

ARADEX

/ VEConfig

Main strengths and benefits

```
# Setup ramp up parameter: parameterize ramp with max torque 200Nm
ve.ios.Drive_ControlMode_Torque_MaxPos = 200
ve.ios.Drive_ControlMode_Torque_MaxNeg = -190
ve.ios.Drive_ControlMode_Torque_EnableRamp = True
ve.ios.Drive_ControlMode_Torque_RampUp = true
ve.ios.Drive_ControlMaster_Io_SetPoint0_0 = 0

# Setup and start analyser: configuration of integrated oscilloscope
ve.mcu_analyser.setChannels(["Drive_ControlMode_Torque_Set_0", "Drive_Motor_ActTorque"])
ve.mcu_analyser.setSamples(8000)
ve.mcu_analyser.setUpdatePeriod(1)
ve.mcu_analyser.setTrigger(TriggerType.Above_Level, "Drive_ControlMode_Torque_Set_0", 0, 5.0)
ve.mcu_analyser.startAndWaitPreBufferFilled()

# Start torque ramp up and wait 20 seconds: starts the process
with ve.managedIo("Drive_ControlMaster_Io_Enable_0", True, False):
ve.ios.Drive_ControlMaster_Io_SetPoint0_0 = self.maxTorqueValue
ve.mcu_analyser.waitAnalyserStop(timeout=20)

# Get Analyser data of ramp: downloads oscilloscope-data from inverter
measuredData = ve.mcu_analyser.getData()

# Compare ramp: compare set values and nominal values
analyser.compare(measuredData, atol=0.01
```

Create your own plc-like sequence by using the automation interface

- You can use your Windows-based Notebook on which you run VEConfig to create automated sequences and directly connect with VEConfig
- For example you can use Python, as shown, or Java, C, C++, Dart, Go, Node, Kotlin, Ruby..... It's your choice
- Example shows Phyton code for a small sequence for some automated first tests of a drivetrain

IV

VEConfig

Main functions and versions

/ VEConfig

Main functions and versions

Function	Standard	XL	CANplus
All VP devices connectable via CAN or RS232	X	X	
Read and write parameters	X	X	
Download firmware and functions	X	X	
Read log files, analyzer data, error messages; including export	X	X	
“Snapshot”; complete readout of all data with one click	X	X	
CANopen EDS Export	X	X	
Macros: Create and execute your own software modules as a sequence		X	
Big Data Logger: Use the online analyzer (rolling mode) as an almost unlimited oscilloscope log file		X	
Enables connection establishment to third-party CANopen devices as well as to Analyser			X
Displaying and limiting CAN traffic so as not to interfere with elementary communication			X
Display, change, load and save CAN data from VP (CANopen PDO) Displaying and limiting CAN traffic so as not to interfere with elementary communication			X

/ Challenge us

Review of your application

Challenge us with your application, your demands and your ideas!

+ Our engineers can work out or support the project planning for your application.
+ You receive the result as an electronic document: cornerstones of your project regarding electrification or hybridization including dimensioning done by our experienced project engineers.
+ Contact our sales team for more information.

Thanks for your attention!

Optimized usability and performance for the best e-mobility

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