KiRoad Plugin Manual ▲ **DEWE**Soft®

APPLICATION USER MANUAL

KiRoad Plugin V23-1

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2. General information

The KiRoad plugin enables DEWESoft to acquire data from the Kistler KiRoad Performance measurement system. There are four operation modes:

a) **No DEWESoft** hardware: KiRoad is running as stand-alone.
b) **Master clock**: KiRoad acts as clock provider for DEWESoft hardware.
c) **Soft sync**: KiRoad and DEWESoft hardware each run with their own internal clock.

Current plugin version: 4.0.3

Minimum DEWESoft version: DewesoftX 2022.4

Important

For plugin version 1.x.x at least DEWESoft X3 SP2 must be used!
For plugin version 2.x.x at least DEWESoft X3 SP3 must be used!
For plugin version 3.x.x at least DEWESoft X3 SP4 must be used!

Latest supported Visual C++ redistributable packages for Visual Studio 2017 is required before registering the addon:

https://support.microsoft.com/bn-bd/help/2977003/the-latest-supported-visual-cdownloads

3. Licensing

The KiRoad plugin in DewesoftX is licensed based on a unique device ID. The plugin will only function when the device with the corresponding ID is connected to the computer. The license can be distributed on more than one computer, but will be activated only if the device is connected. It can also be used with an Evaluation license.

3.1 Requesting an Evaluation license

You can request an Evaluation license from our homepage on the following LINK.

1. Click on Evaluation license
2. Fill out all the required fields
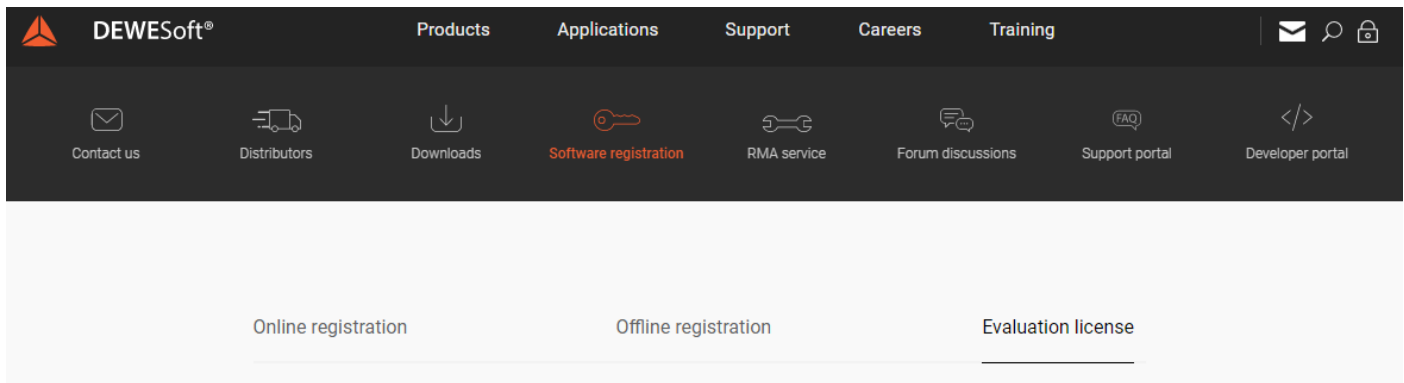3. Click the Request license button

Figure 1 - Evaluation license

3.2 Activating the Evaluation license

When you have received your trial licence key, open DEWESoft®, go to **Options → Settings**, select **Licensing** and expand the **Create new license** section. Enter the license code (3) and click the Register online (4) button. Then your new license key will show up in the list and have the *Status Valid.*
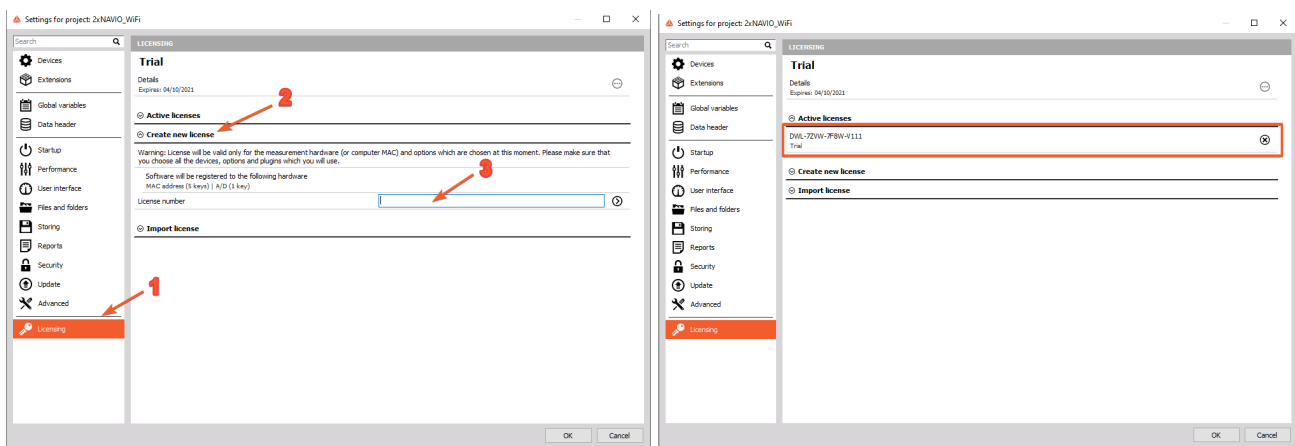

Figure 2 - Enter license key & Figure 3 - Valid trail license

3.3 Plug-in Installation

Simply extract the contents of KiRoad_v10.0.2.zip[1] archive into the Addons folder of your DEWESoft® installation. (e.g., C:\DEWESoftX\Bin\Addons\).

Then you can start **DEWESoft® as an administrator** and register the plugin (aka. extension). Click *Options → Settings*, select *Extensions* and click the *plus sign*. Then find the Kistler KiRoad plugin in the list and activate it (i.e. click the check-box in Illustration 4) - when the plugin does not show up in the list, you may need to register it first.

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[1] The name may be slightly different (i.e. it may have a different version number: KiRoad_v1.2.3.zip)
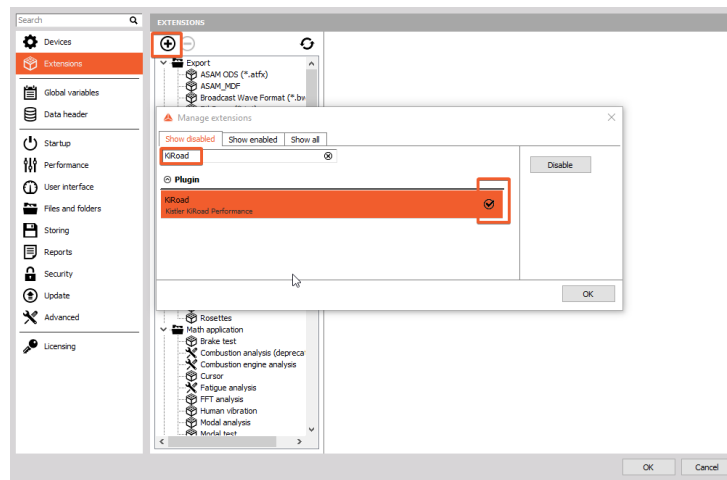
Figure 4 - Add KiRoad extension

3.4 Registering the plugin

Before you can use Plugins in DEWESoft®, they must be registered once. When DEWESoft® is started it will try to register all plugins (*.dll files) that it finds in the Addons folder. In order to do that, DEWESoft® requires administrator permissions (because it must write to the Windows® registry). When DEWESoft® is not run with administrator permissions, the registration cannot be done automatically. KiRoad plugin is added under Devices, more specifically, Sensors.
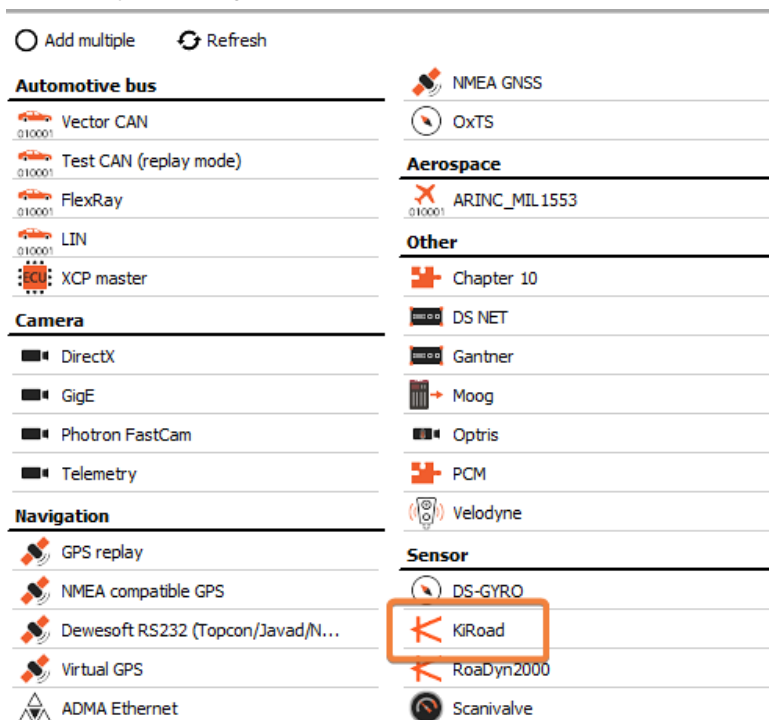

Figure 5 - Update extensions list

4. Hardware connection

The sensors are connected to the measurement PC (e.g. S-BOX) via the LAN port (TCP/IP for data transfer). The clock and trigger lines of the sensor are connected to the corresponding clock and trigger pins of the sync connector on the DEWE-43 or SIRIUS measurement slice. If more than one KiRoad system is connected, it is recommended to use an Ethernet Switch. Clock and trigger are daisy-chained between KiRoad systems.
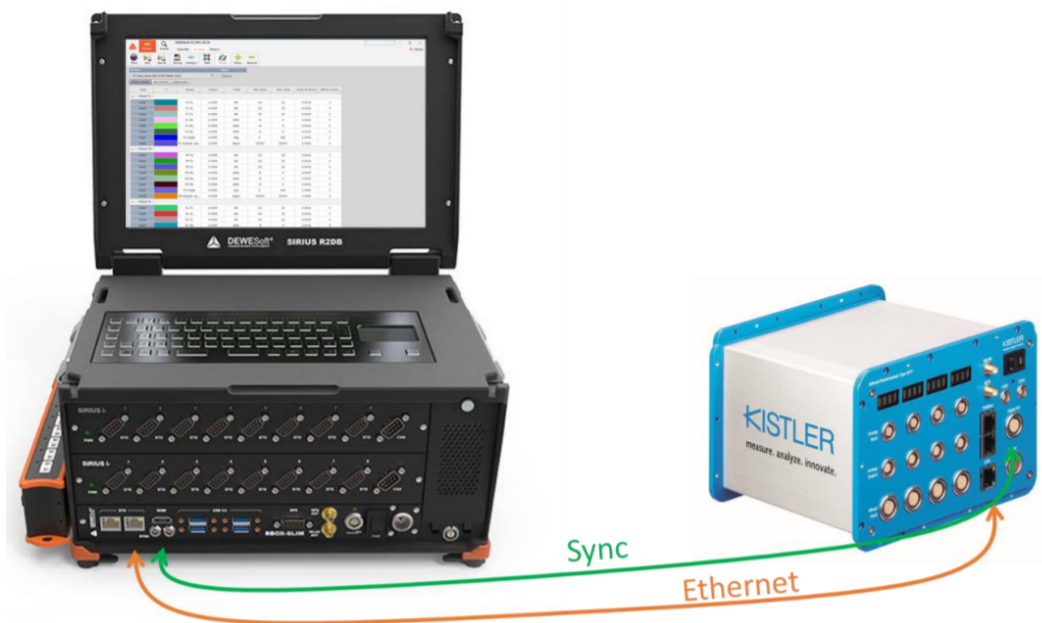
Figure 7 - Hardware connection

4.1 Sync Connector

KiRoad synchronization wires (clock and trigger) must be connected to Sync connector of the DEWESoft® measurement device (i.e. SIRIUS, DEWE-43): The clock output of the KiRoad is connected to CLK (Pin 1) on the DEWESoft® Sync connector. The trigger output of KiRoad is connected to Trigger (Pin 2) on the DEWESoft® Sync connector. Ground is connected to GND (Pin 4) of the DEWESoft® Sync connector.

Pin Assignment
1: CLK
2: Trigg
3: RES
4: DGND

Figure 8 - DEWESoft® 4pin Sync connector

5. Ethernet configuration

KiRoad is connected to the measurement unit via ethernet cable for data exchange. To establish a communication between KiRoad and the measurement system, the ethernet interface on the PC and the ethernet interface/s on KiRoad/s must be configured to use the same IP address range (i.e. the subnet mask must match).

Configuration of the measurement units Ethernet interface:

- Define the IP address (here 192.168.160.1)
- Define the Subnet mask (here 255.255.255.0)
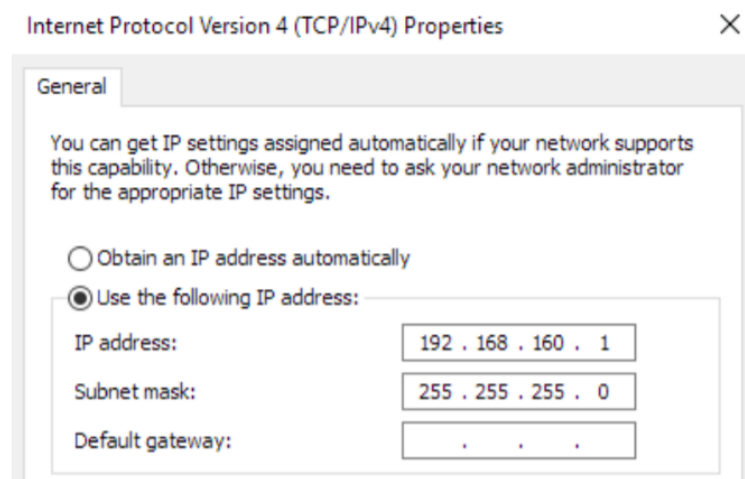- Click OK to confirm the settings

Figure 9 - Fixed IP settings

Configuration of the sensors Ethernet interface:

- Once the network connection is working, open the plugin in Dewesoft and go to the setup tab. After an initialization screen (loader), the KiRoad Performance GUI will appear showing the System Status window.
- The IP address of KiRoad is shown on the device display when it is powered up.
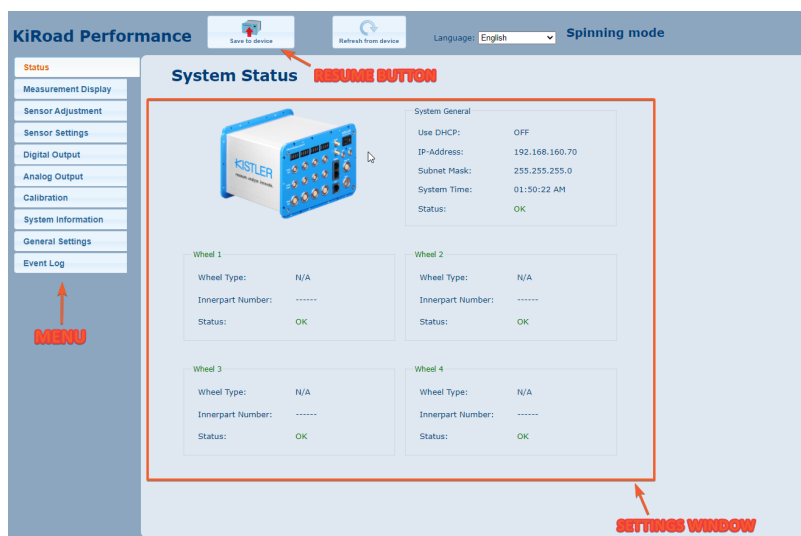
Figure 10 - KiRoad web GUI

For more information please refer to the Kistler KiRoad Performance quick start installation guide.

Important

KiRoad needs to be configured to send data through the Ethernet data interface. In GUI go to **Digital output** settings and select interface Ethernet.
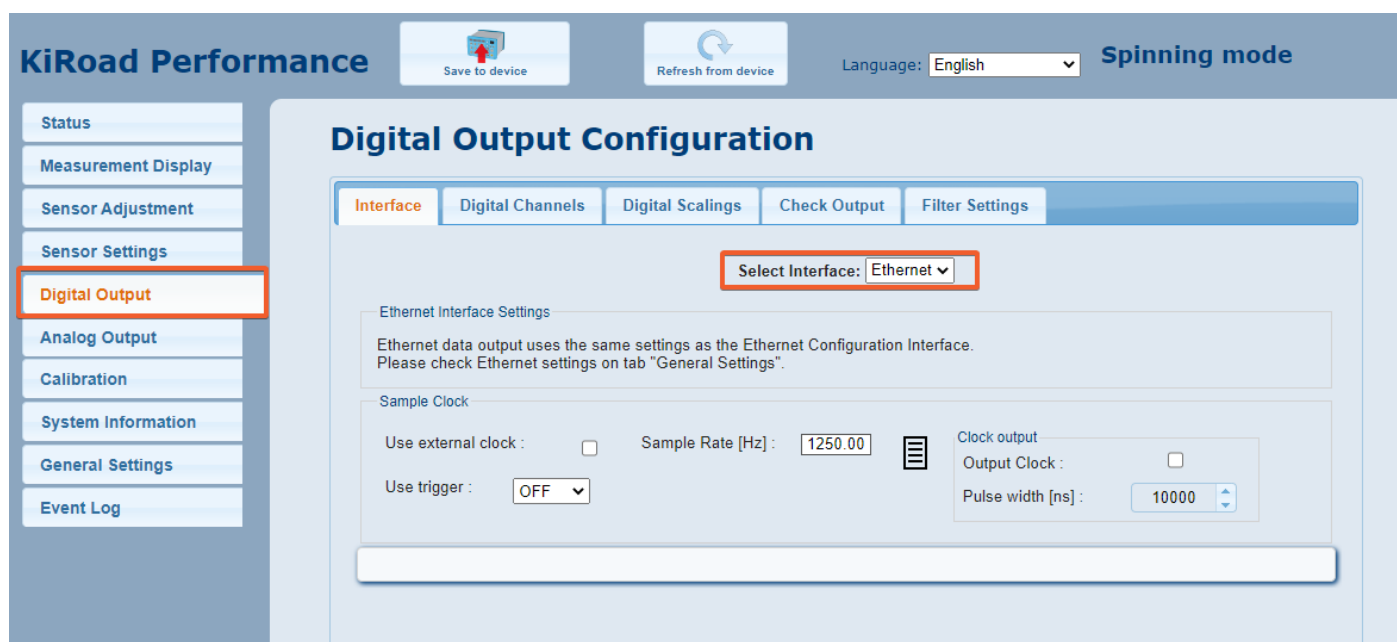

Figure 11 - Digital output setup

It is important that in General settings (Work mode window) you have a Non-spinning mode box unchecked (in the top right corner it says 'Spinning mode'). If you have checked, you won't be able to set up the Digital output window.
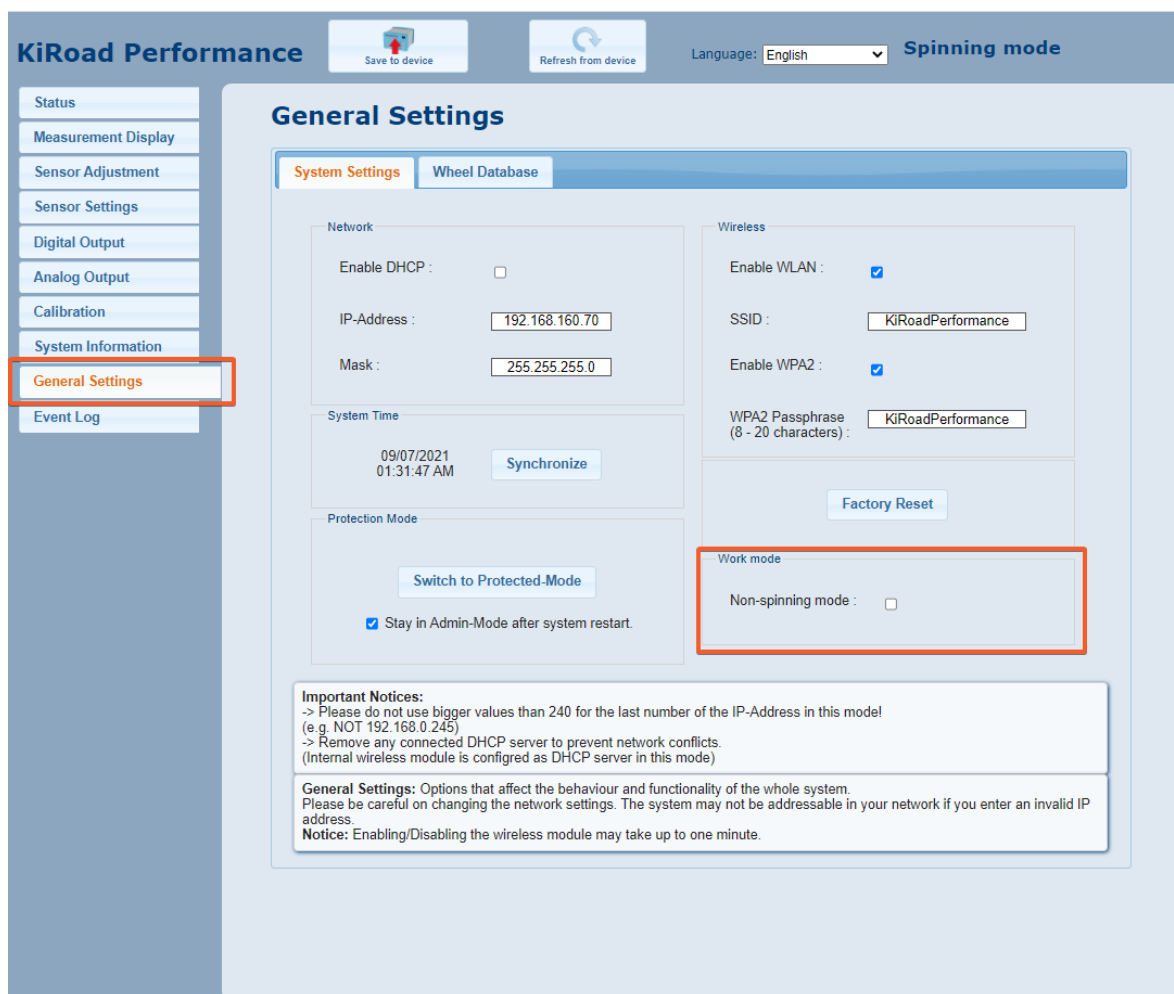
Figure 12 - General settings, Work mode box

6. Hardware setup

After you have established connection with the device, go to the Hardware Setup in DewesoftX:
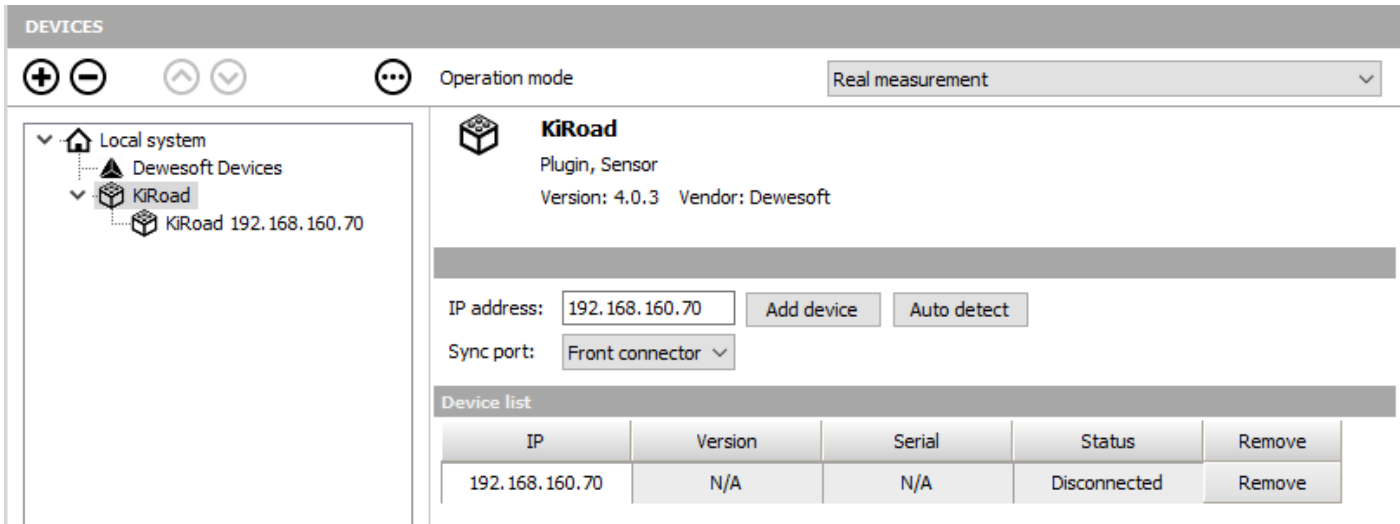
Figure 13 - hardware setup

6.1 Master clock mode

In Master clock mode, KiRoad system acts as the clock master, providing clock and trigger for DEWESoft® measurement units.

In *Master Mode* it is important to set the DEWESoft® synchronization settings to *Kiroad – Clock/Trigger*:
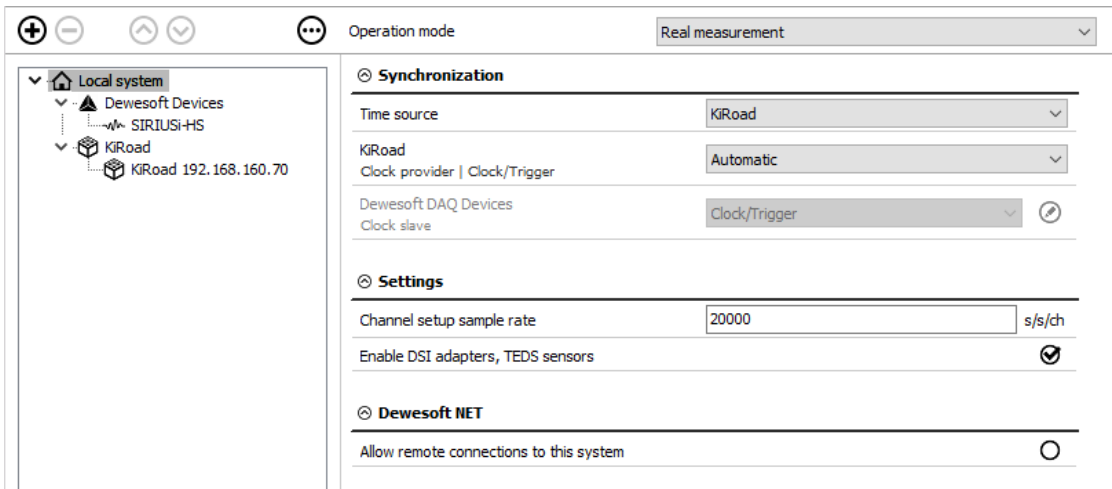
Figure 14 - Synchronization setup

6.2 Soft sync mode

KiRoad can also be used without hardware synchronization between devices. In this case synchronized data cannot be guaranteed and will be in the in the range of: * EtherCAT device: 4 ms * USB device (+ EtherCAT): 1 ms.

7. Channel setup

In the channel setup of the Kistler KiRoad plugin, you can activate/deactivate channels of the connected sensors.

Figure 15 - Channel list

- Dynamic acquisition rate: This is the sample rate and can be chosen between 100 Hz and 1250 Hz. Please note that the set sample rate will be valid after switching to measurement mode (e.g. overview).
- IP:192.168.xxx.xxx: If more than one KiRoad system is connected, you can switch between the channel lists of each system.
- Channel list: The channel list of each system is divided into sub-groups (Wheel channels, Hub channels and Analog input) for easier navigation. It is possible to choose units in which the user wants to make a measurement.
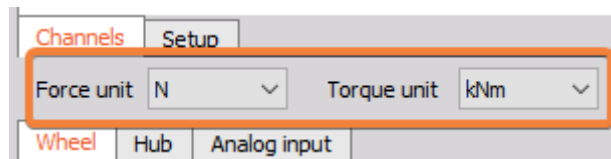
About this document

This is the users manual for the Kistler KiRoad plugin.

Legend

The following symbols and formats will be used throughout the document.

Important
It gives you important information about the subject.
Please read carefully!

Hint
It gives you a hint or provides additional information about a subject.

Example
Gives you an example of a specific subject.

Warranty information

Notice
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Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your Dewesoft data acquisition system is delivered, it is calibrated. Detailed calibration reports for your Dewesoft system can be requested. We retain them for at least one year, after system delivery.

Support

Dewesoft has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or Dewesoft directly.

Dewesoft d.o.o.
Gabrsko 11a
1420 Trbovlje Slovenia

Europe Tel.: +386 356 25 300
Web: http://www.dewesoft.com
Email: Support@dewesoft.com
The telephone hotline is available Monday to Friday from 07:00 to 16:00 CET (GMT +1:00)

Service/repair

The team of Dewesoft also performs any kinds of repairs to your system to assure a safe and proper operation in the future. For information regarding service and repairs please contact your local distributor first or Dewesoft directly on https://dewesoft.com/support/rma-service.

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Printing History

Version 2.0.0, Revision 217 Released 2015 Last changed: 23. July 2018 at 16:54.

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Safety instructions

Your safety is our primary concern! Please be safe!

Safety symbols in the manual

! Warning
Calls attention to a procedure, practice, or condition that could cause the body injury or death

Caution
Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

General Safety Instructions

! Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

Environmental Considerations

Information about the environmental impact of the product.

Product End-of-Life Handling

Observe the following guidelines when recycling a Dewesoft system:

System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at its end of life! Please recycle this product in an appropriate way to avoid unnecessary pollution of the environment and to keep natural resources.

This symbol indicates that this system complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further information about recycling on the Dewesoft web site www.dewesoft.com

Restriction of Hazardous Substances
This product has been classified as Monitoring and Control equipment and is outside the scope of the 2002/95/EC RoHS Directive. However, we take care of our environment and the product is lead-free.

General safety and hazard warnings for all Dewesoft systems

Safety of the operator and the unit depend on following these rules.

- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!
- DO NOT use higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
- Maintenance must be executed by qualified staff only.
- During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals.
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.
- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are Moisture or high humidity Dust, flammable gases, fumes or dissolver Thunderstorm or thunderstorm conditions (except assembly PNA) Electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is attended with dangers like short-circuiting, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore if the system is damaged obviously or causes strange noises. The system does not work anymore. The system has been exposed to long storage in adverse environments. The system has been exposed to heavy shipment strain.

- Warranty void if damages caused by disregarding this manual. For consequential damages, NO liability will be assumed!
- Warranty void if damage to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
- DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!
- Lithium ion batteries are classified as not hazardous when used according to the recommendations of the manufacturer described in Battery Safety Data Sheet, which is available for download from this link.
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
- The measuring systems are not designed for use in humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already- lower level may damage your system.
- Please also consider the detailed technical reference manual as well as the security advice of the connected systems.
- This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

EN 61326-3-1:2008

IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as "operationally well-tried", are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for the protection of buildings, are excluded from the scope of IEC 61326-3-1.

Documentation version history

Version	Plugin Version	Date	Notes
1.1	0.0.2	17.11.2017	Initial document
1.2	1.0.0	15.01.2018	KiRoad settings
1.3	2.0.0	16.03.2018	Version info.
1.4	3.0.0	05.09.2018	Version info.
V21-1	3.3.2	10.09.2021	New template, added details about spinning and non-spinning mode
V23-1	4.0.3	17.5.2023	Major update of plugin