



DEWESoft®
measurement innovation

KiRoad plugin manual

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1. Revision history

Table 1: revision history

Revision	Plugin Version	Author	Date	Comment
1.0	0.0.2	PG	17.11.2017	Initial document
1.1	1.0.0	PG	15.1.2018	KiRoad settings
1.2	2.0.0	PG	16.3.2018	Version info.
1.3	3.0.0	PG	5.9.2018	Version info.



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.
- d) **Demo mode:** When no KiRoad system is connected, DEWESoft will create a virtual one.

Current plugin version: 3.0.0

Minimum DEWESoft version: X3 SP4

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-c-downloads>



3. Licensing

The plugin requires a valid DEWESoft® license. To test the plugin, you can use 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

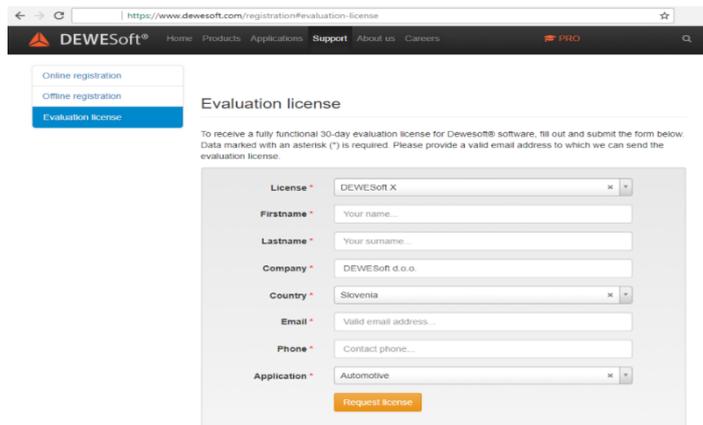


Figure 1 - Evaluation license

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*.

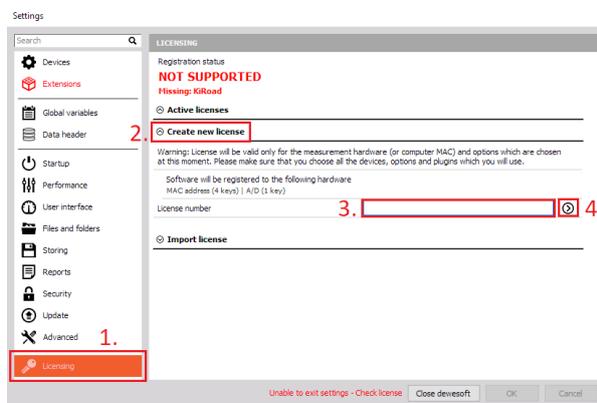


Figure 3 - Enter license key

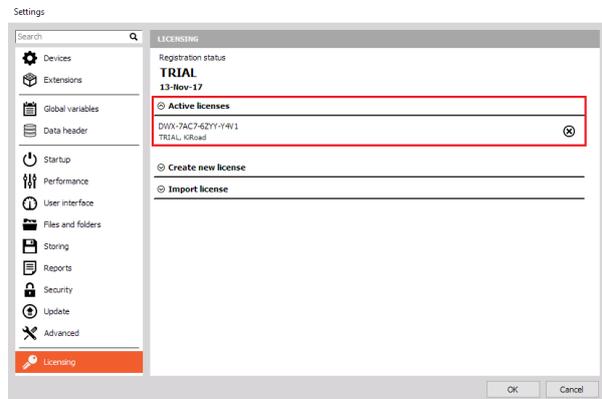


Figure 3 - Valid trail license



3.3. Plug-in Installation

Simply extract the contents of KiRoad_v10.0.2.zip¹ archive into the Addons folder of your DEWESoft® installation. (e.g., C:\DEWESoft\Bin\X3\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 5) - when the plugin does not show up in the list, you may need to register it first.

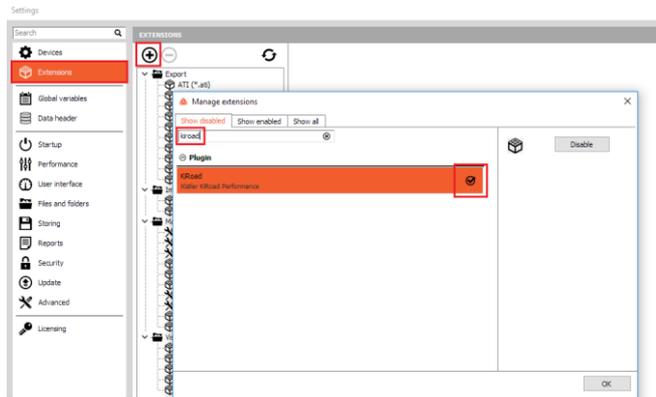


Figure 4 - Add KiRoad extension

¹ The name may be slightly different (i.e. it may have a different version number: KiRoad_v1.2.3.zip)



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.

When the plugin does not show up in the Extensions list, you must press the Refresh button (Figure 6 - Update extensions list). Note: you may need to start DEWESoft® as administrator (depending on the UAC settings of your Windows user/installation). When you have pressed the Refresh button, the registration Window will be shown for a short time (Figure 6). After that, you must restart DEWESoft®

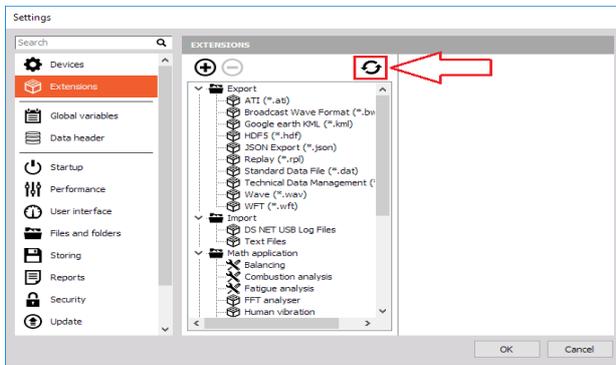


Figure 6 - Update extensions list

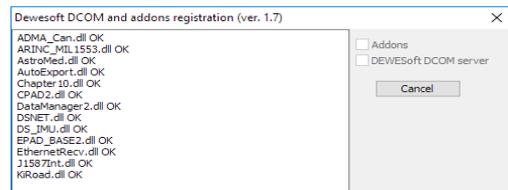


Figure 6 - addons registration



4. Hardware connection

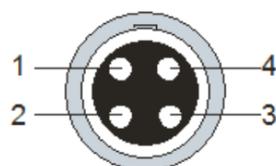
The sensors are connected to the measurement PC (e.g. S-BOX) via the LAN port (TCP/IP for data transfer). The clock and trigger lines of the sensor are connected to the corresponding clock and trigger pins of the sync connector on the DEWE-43 or SIRIUS measurement slice. If more than one KiRoad system 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 synchronisation 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 Trigg (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

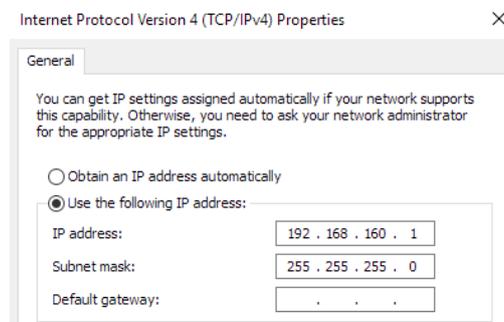


Figure 9 - Fixed IP settings

Configuration of the sensors Ethernet interface:

- ⚠ Once the network connection is working, open the web browser and enter the IP address of your KiRoad Performance into the URL command line, for example <http://192.168.160.70>. After an initialization screen (loader), the KiRoad Performance GUI will appear showing the System Status window.
- ⚠ The KiRoad Performance GUI is optimized for the Google Chrome web browser. The usage of other web browsers can lead to minor differences in appearance
- ⚠ 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. On the web interface, go to **Digital output** settings and select interface Ethernet.

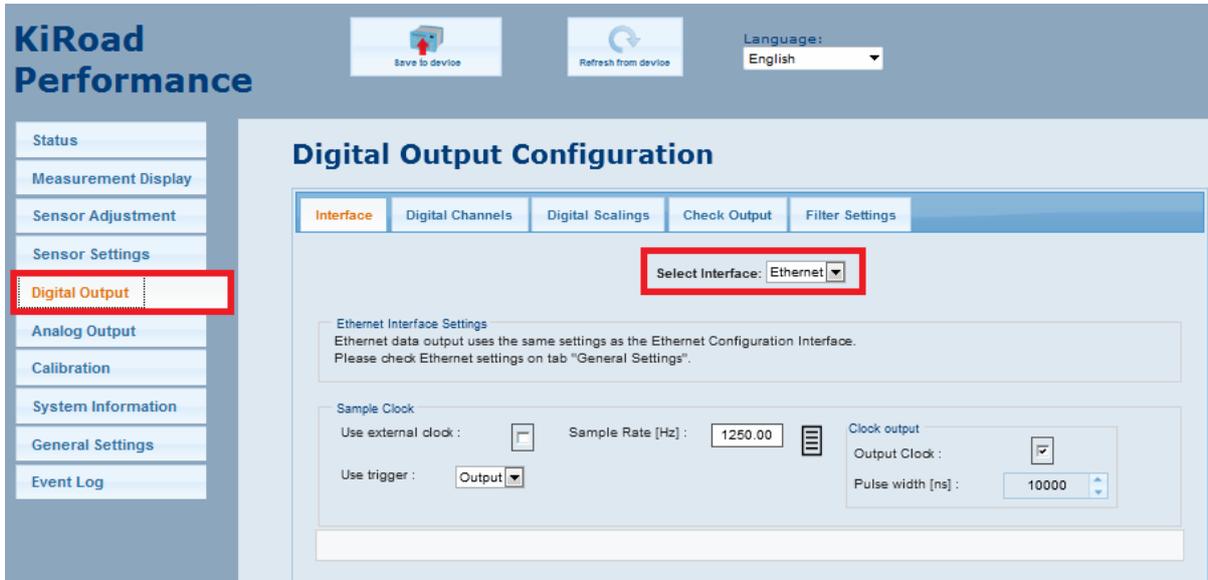


Figure 11 - Digital output setup

6. Hardware setup

After you have installed and enabled the plugin, start DEWESoft® and go to the Hardware Setup:

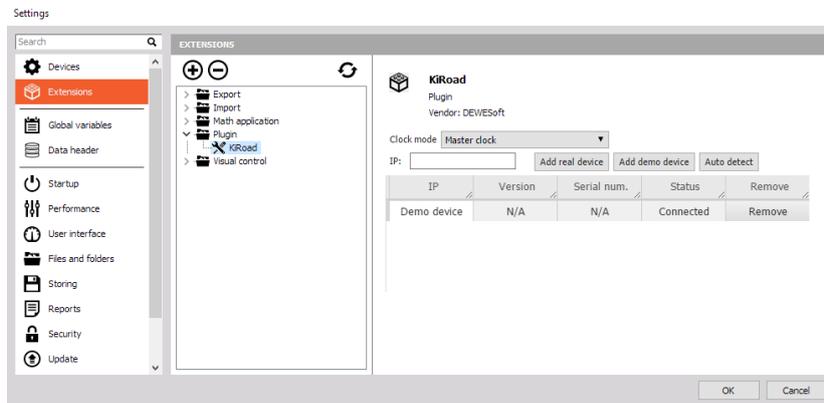


Figure 12 - hardware setup



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 *External – Clock/Trigger*:

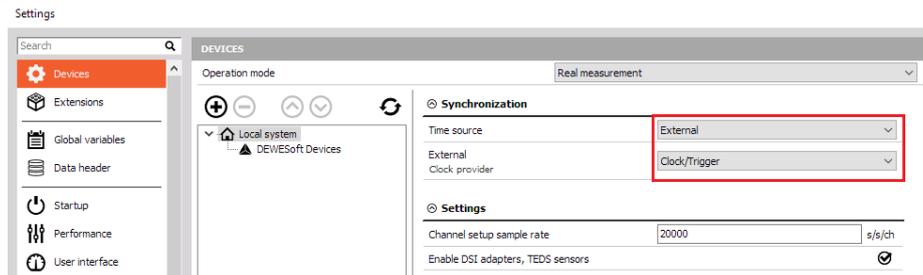


Figure 13 - Synchronization setup

6.2. Soft sync mode

KiRoad can also be used without hardware synchronisation between devices. In this case synchronized data cannot be guaranteed and will be in the range of <10ms.

6.3. Demo mode

When no KiRoad system is found, DEWESoft® will create a virtual system denoted as “Demo device”. This is only to show the basic plugin functionality. A sine signal is simulated on every channel.



7. Channel setup

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

Used	C	Name	Name ID	Values	Units	Min value	Max value	Scale (k factor)	Offset (n factor)	channelIndex
-- Wheel FL --										
Used		FL Fx		0.0007	kN	-20	20	0.00	0	24
Used		FL Fy		0.0007	kN	-15	15	0.00	0	25
Used		FL Fz		0.0007	kN	-20	20	0.00	0	26
Used		FL Mx		0.0007	kNm	-4	4	0.00	0	27
Used		FL My		0.0007	kNm	-4	4	0.00	0	28
Used		FL Mz		0.0007	kNm	-4	4	0.00	0	29
Used		FL Angle		0.6743	deg	0	360	1.00	0	30
Used		FL Angular speed		0.6743	deg/s	-20000	20000	1.00	0	31
-- Wheel FR --										
Used		FR Fx		0.0007	kN	-20	20	0.00	0	152
Used		FR Fy		0.0007	kN	-15	15	0.00	0	153
Used		FR Fz		0.0007	kN	-20	20	0.00	0	154
Used		FR Mx		0.0007	kNm	-4	4	0.00	0	155
Used		FR My		0.0007	kNm	-4	4	0.00	0	156

Figure 14 - 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 alter each channels name, colour, unit and scaling directly in the channel list.
- ⚠ Load setting from device – channel properties (unit, min and max value) can be read from the device.