



Automotive
Energy & Power Analysis
Aerospace & Defense
Transportation
General Test & Measurement

DEWESoft 7

Quickstart Manual



ISO9001

Re-inventing Data Acquisition



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General Information

Copyright notice

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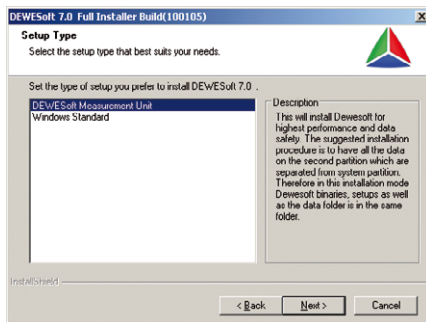
Warranty agreement

For warranty information please refer to the *DEWESoft Software Users Manual*, which is shipped together with the software.

1. Installation

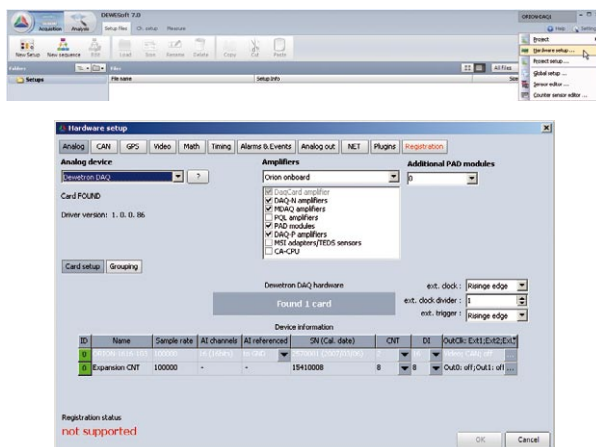
For detailed installation instruction please refer to the DEWESoft Software Users Manual. Make sure that your acquisition hardware (A/D board) is already installed on your system and running properly!

When you install DEWESoft 7 for the first time, please follow the instructions of the InstallShield Wizard. Install only components you have ordered or - in case of a demo version - you are interested in.



DEWESOFT INSTALLATION EXAMPLE

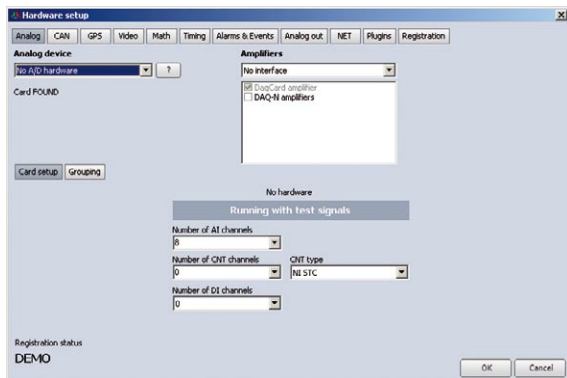
After the installation has been finished, you can start DEWESoft for the first time using the desktop icon or start it from the Programs / DEWESoft 7 folder. Click on **Settings** on the top right and the **Hardware Setup** screen will appear:



SELECT THE INSTALLED HARDWARE

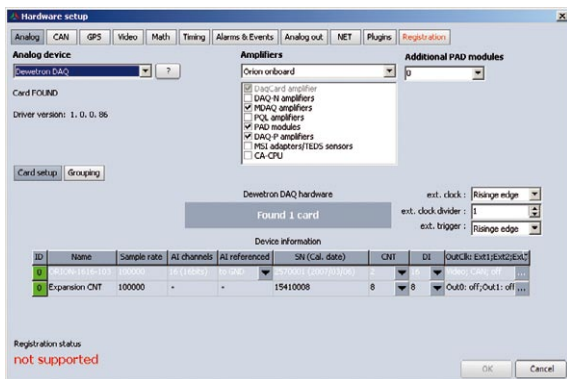
1.1 Licensing for Demo Mode

If you run the software without attached hardware (e.g. Demo mode), select **No A/D** in the **Analog** setup and deselect all checkboxes (**Use MDAQ/DAQP modules**, **Use PAD modules**, **Use DAQN modules**). The registration state at the left bottom of the window will change to DEMO. Now press **OK** to start DEWESoft.



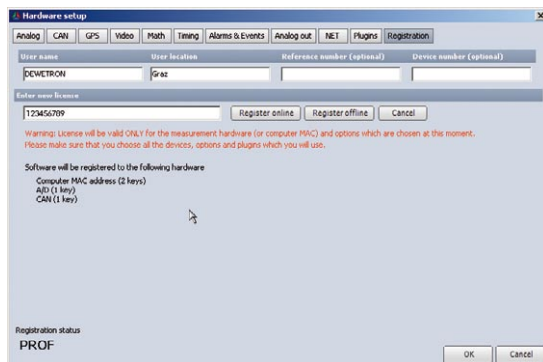
1.2 Licensing for Real Mode

Select the desired hardware, for example **DEWETRON DAQ** in the **Analog** tab, a GPS device, etc. If the hardware has been installed properly before, it will be recognized automatically and mentioned in a list:



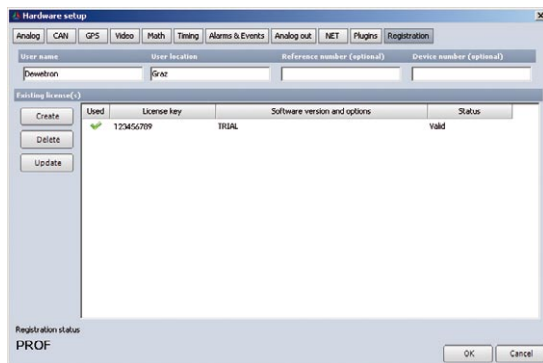
DEWETRON DAQ HARDWARE FOUND

Now select the Licensing tab and enter your DEWESoft **License key**, **User name** and **User location**:



CORRECT LICENSING FOR OUR DAQ HARDWARE

If the license key is correct, the red cross in Status will be replaced by a **green check mark** and the registration status displays the version: LT (Lite Version), SE (Standard Edition), PROF (Professional Edition).



Press **OK** to finish the installation. If you have everything correctly you are now ready to measure.

1.2.1 Online registration procedure

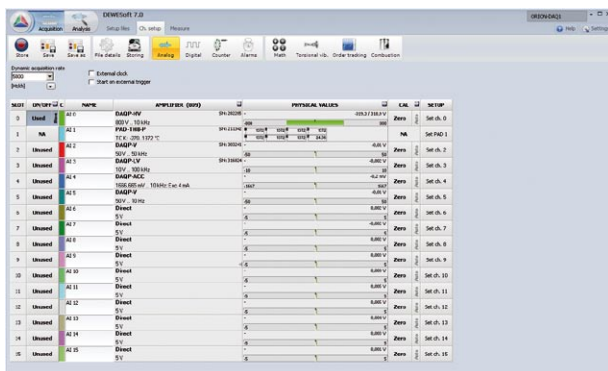
To register DEWESoft 7 software online, please connect your instrument PC to the internet (web browser should be able to see www.dewesoft.org). Press the **"Register online"** button.

1.2.2 Offline registration procedure

If your instrument PC can not be connected to the internet, please use any other computer with internet connection, and navigate to <http://www.dewesoft.org/registration> and follow the registration instructions there. This web site requires you to take the license file »License ID«.lic from the System/V7_0 folder (for example D:\Dewesoft\System\V7_0) and register it on the web page.

2. Input setup

Before you can start your first measurement, you have to define the input channels and A/D settings. Click **Acquisition** and then the **new Setup** icon to enter the input setup.



INPUT SETUP SCREEN

2.1 A/D sampling settings

The A/D sampling speed mainly depends on your application. To display your signal in time domain with a good time resolution, you should sample 10 to 20 times faster than your signal frequency is (for example 1 kS/s for a 50 Hz sine wave). If you have a lot of high frequency components, it may be necessary to sample 100 times faster (e.g. 5 kS/s for the 50 Hz sine wave) or even more. If you display only the frequency domain (FFT analysis), a 2.5 times faster sampling would be sufficient (125 S/s for the 50 Hz sine wave). The higher the sampling rate, the better the time resolution. But also the file size will explode!

For the **Storing Options**, please refer to the DEWEsoft Software Users Manual.

2.2 Input channel setup

The channels are displayed in a table, where the rows are the channels and the columns define the channel settings.

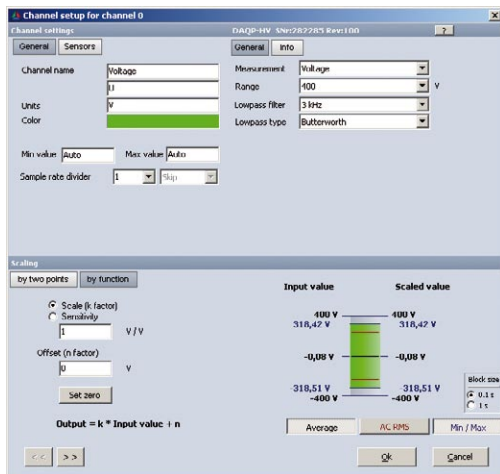
The leading number in the first column corresponds with the slot number of the amplifiers and/or the channel number of the A/D board. Press the **Unused** button in the second row to activate a channel for measurement (changes now to **Used**). Press it again to deactivate it. The third row shows the channel color, the fourth the channel name, next there are - if available - the amplifier names, serial numbers and settings.

The sixth row may already display a signal: this is a nice feature to get an impression of your signals. Is everything connected? Are the signals ok? Is there an overflow? ...

Next important part is the **Setup** in the last column. In our example we want to measure a 230 V 50 Hz signal with the DAQHV module in slot 0 and a temperature with the PAD module in slot 8. As the configuration is a bit different for DAQ and PAD modules, we have separated it in to parts.

2.2.1 Configure a DAQx/MDAQ module or direct input

Press the Set ch. 0 button for the desired channel - in our case for slot 0. A new window will open:



CONFIGURATION FOR DAQ/MDAQ MODULES OR DIRECT INPUT

The upper left area can be used to define the channel name, its units and the color.

The upper right area displays the currently selected amplifier (automatically for DAQP and MDAQ modules). Here you may also change the input and filter range, for our example 400 V and a 3 kHz filter.

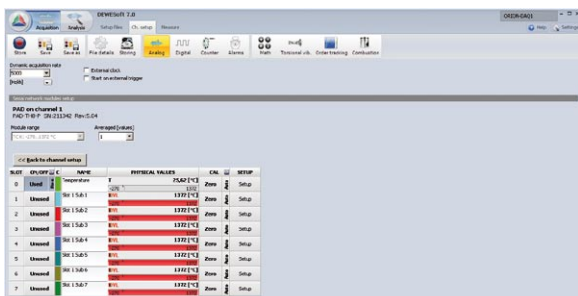
The lower left area can be used for sensor scaling, in our case unused. The lower right area displays the currently measured values. To make a short try: if you change the Lowpass filter of DAQP-DMM module to 10 Hz, the displayed voltage will drop from approx. ± 320 V to ± 14 V. The change is displayed immediately.

If you have changed the settings, confirm them with the **OK** button.

More input channel setup information is available in the DEWESoft Software Users Manual.

2.2.2 Configure a PAD module

PAD modules have 8 input channels available on one hardware slot. Therefore when you press the **Set PAD 1** button, the setup window will look different:



PAD MODULES CONFIGURATION

The first column displays now the channel number within the PAD module. The second column is again to activate or deactivate channels of the selected module. The third column shows the channel name, the fourth the currently measured values.

Main module settings can be done with the drop-down selections above the table (e.g. changing the input range or resolution). Be aware that this function is not available with intelligent connector blocks like the PAD-CB8-K-P: these connector blocks select the required input by themselves.

To setup each channel with different settings, you may enter the channel setup by pressing the **Setup** button. It works in the same way than the DAQx/MDAQ modules input setup described before.

More input channel setup information is available in the DEWESoft Software Users Manual.

2.3 Data file name

The last part before starting the measurement is to define the file name for data storage. Click the icon **Storing** and just enter it in the text field or press the **File details** button to select the storage path and comments.



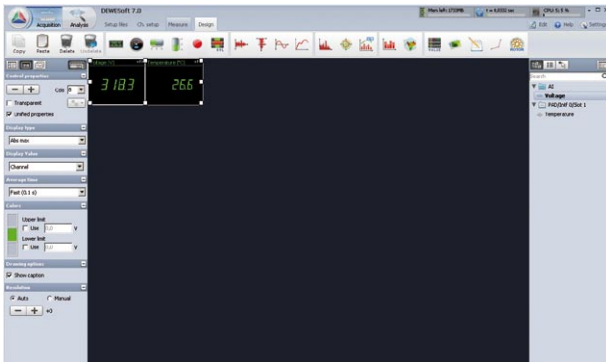
STANDARD FILE NAME: TEST

2.4 Storing the setup

After you have done all settings, you can store them for future usage. To store the setup, click on the icon with the DEWESoft logo and then **Save Setup** (or **Save Setup as**) from the menu. To reload your setup, select **Load Setup** from the menu.

3. The first measurement

After you have done the input settings, you may start your first measurement. To keep it simple, just click on the **Measure** tab to get the following screen:



OVERVIEW SCREEN IN DESIGN MODE

The two selected voltage and temperature channels are already displayed in a digital meter. You are now in **Measure mode**. To change to **Design mode**, click the **Design** tab. You can now add additional instruments. Simply click on the icons above the digital meter to get for example recorder, FFT or scope instruments. Each instrument will be placed at the left top with our two channels already active. Move it to the desired position and click on the corners to enlarge or scale down the instruments.

If you have arranged all desired instruments click on the **Measure** tab on top. Now you can change the instruments properties. This can be number of digits, type of signal, ... and also the channel selection.

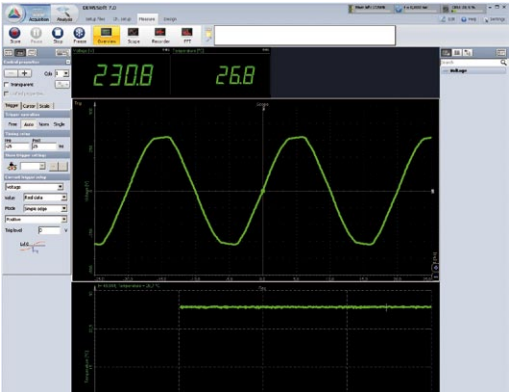
3.1 Channel selection

As mentioned before, the channels will be assigned automatically to the instruments. But what if you want to change them? Use the Channel Selector to the right to do that. First click on the instrument you want to change. Then click on the Group within the Channel Selector (for example AI) if it is not already opened and then select the required channel (for example Voltage).



CHANGE BETWEEN TREEVIEW, LISTVIEW OR SELECTED CHANNELS

After you have done that you'll get your individual visualisation.

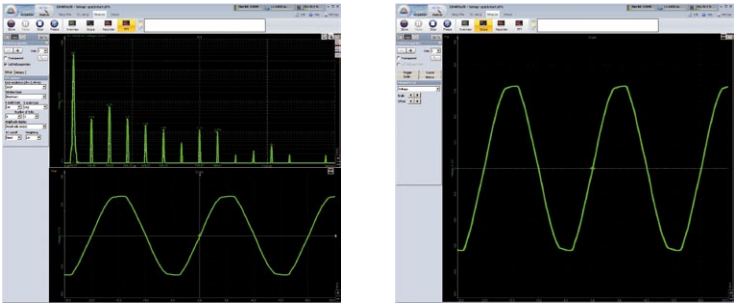


INDIVIDUAL DESIGNED OVERVIEW SCREEN

3.2 Other instruments

There are also other pre-defined instrument screens available similar to the **Overview** screen. You can select them directly by pressing the appropriate icon or from the **Displays** menu. Available pre-defined instruments are: **Overview**, **Scope**, **Recorder**, **Vertical Recorder**, **FFT**, **Video**, **GPS** and **Power**.

Here are some examples:



EXAMPLES FOR PRE-DEFINED INSTRUMENTS

In most cases, these instruments can give you a fast overview of your signal. As we have seen in the Overview screen, they can be adapted easily using the **Design Mode**.

4. Data Recording

4.1 Start / Stop recording manually

Up to now, we did only display our signals, but they are not stored. In section 2 we have defined a filename for storage. This name will be used when we press now the **Store** icon.



You can press **Pause** if you want to suppress the data storage for a while. If you want to stop the storage, press the **Stop** button. With the **Freeze** function the displays freeze while storing continues in the background. So you can zoom in the instruments like in **Analysis mode**. Press Freeze again and you see the actual data.



In the white field, you can see some remarks. That can be start or stop time of recording, trigger or other events, ... The top right area shows the current file size (in the example above 0.54 MB). This is a very nice indicator and helps to get a feeling of the amount of data collected.

4.2 Use trigger events for storage

To define trigger events, we have to change back to **Acquisition** and the **Storing** screen. Select **Fast on trigger** (or **Fast on trigger, slow otherwise**) to enable the trigger function in DEWESoft.



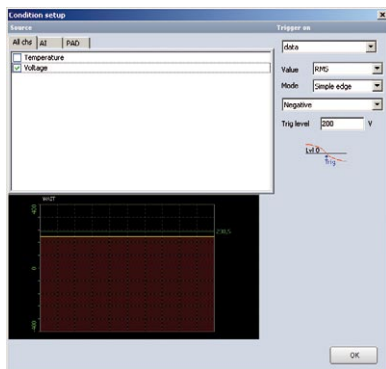
ACTIVATE THE TRIGGER FUNCTION BY SELECTING FAST ON TRIGGER

As a result the **Trigger** setup options appear. Press the **+** button to define a **Start storing condition** and **Setup** to change the trigger condition.



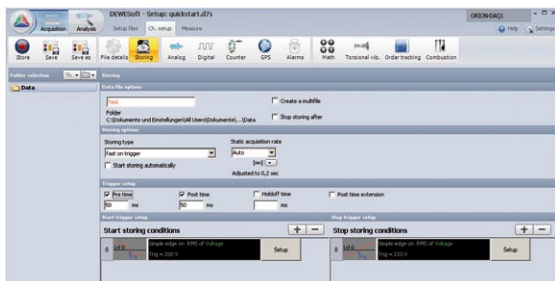
DEFINE START AND STOP CONDITIONS

The trigger setup offers different settings. First you can choose between **Trigger on data, time or FFT**. For the **Trigger value** you can select **Real data, Min, Max, Average** (static signals) or **RMS** (dynamic signals). The **Trigger mode** offers **Simple edge, Filtered edge, Window, Pulswidth** or **Window** and **pulswidth, Slope and Delta amplitude**; the **Level** settings depend on the selected Trigger mode. For our example we stay with the data trigger on a drop below 200 V_{RMS}.



TRIGGER SETTINGS FOR THE VOLTAGE CHANNEL

After the **Start storing condition** has been defined, we take care about stopping the acquisition. Therefore we define the **Stop storing condition**. In our example it looks similar to the start condition, but with positive edge. That means that the trigger is released when the RMS voltage grows below 210 V_{RMS} and stopped when it grows back above 210 V_{RMS}.



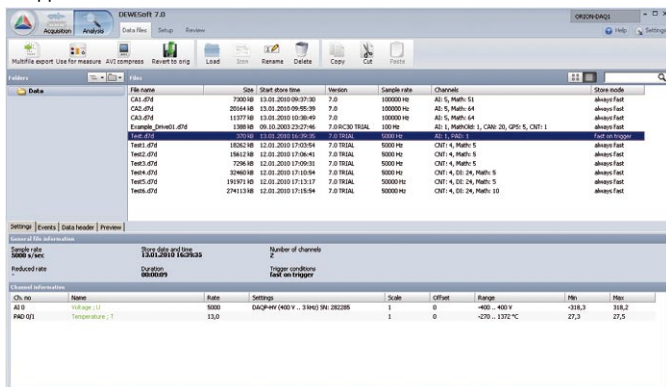
START AND STOP CONDITIONS ALREADY DEFINED

In addition, you can select a pre- and a post trigger time to enlarge the acquisition duration.

Maybe you have already recognized that the **Start** button has changed the appearance to **Arm**. Press **Arm** to 'start' the acquisition. As soon as the trigger condition becomes true, the data will be stored. Press **Stop** to finish the acquisition or the **Trig** button to force a trigger event.

5. Offline data analysis

To analyse your acquired data click on the **Analysis** button. If you have just stopped your data recording, you will enter automatically the instruments in **Analysis mode**. Otherwise the following window will appear:

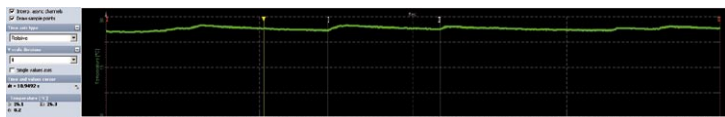


DATA FILE SELECTION

Choose from the file list and double-click the desired file. DEWESoft will now read back the data and display the whole acquired data, even when you have stored for several days. Most of the time you'll measure, zoom for details and make a printout for documentation.

5.1 Cursor readout

The easiest way to measure is to click on the desired instrument (for example the recorder) at the first point of interest. A white cursor line marked with a **I** appears. Keep the left mouse button pressed and move the cursor to the second point of interest - a second white cursor line marked with a **II** will follow the mouse cursor. Now release the mouse button.



DEFINE THE CURSOR POSITION FOR READOUT

The **Channel properties** area displays a field called **Time and value cursors**. It shows the amplitude and time information for the selected graph. To change the measurement cursor position, you can now also move each cursor separately. When you move the mouse cursor over the measurement cursor, you will recognize that it changes its appearance to a horizontal arrow. Now press the mouse button and move the cursor to the desired new position.

5.2 Zoom

Maybe you have already recognized that the mouse cursor changes its appearance also when you are in between the cursors. A **+** symbol will be added. If you see that symbol and press the left mouse button, you will zoom in between the two cursors. This can be repeated until you reach the desired display area. To undo the zoom, simply right-click on the instrument. The zoom out will be done exactly in the same steps you have zoomed in.



MOVE THE MOUSE CURSOR BETWEEN THE TWO MEASUREMENT CURSORS AND LEFT-CLICK TO ZOOM IN

5.3 Scroll the selection

To scroll the zoomed area within the whole acquired data, you have two possibilities: move the mouse to the timeline of the graph, when the hand symbol appears press the left mouse button and move in the desired direction. The second way is to click on the highlighted area at the top graph and move it.



MOVE SELECTED AREA TO THE DESIRED POSITION

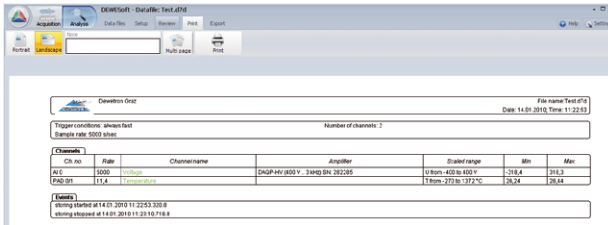
5.4 Printout

A printed report is required? Quite simple with DEWESoft. Just press the **Print** button to get the printout preview:



PRINTOUT PREVIEW

Now you can enter some comments (**Notes on measurement**), change between **Landscape** and **Portrait** and press **Print** to start printing. A standard Windows window will appear asking for the printer and it's settings as you know it from other Windows applications.



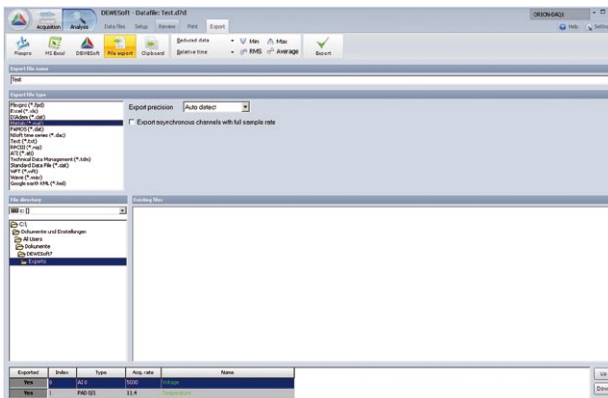
PRINTING CHANNEL LIST

If you click on **Setup** in **Analysis** and then on **Print** you can also print out the channel list for documentation.

Tip: Enter General Settings in the System menu and select the Print tab; now you can select the path for your company's logo (has to be .bmp format)

6. Data export

It may be necessary to do deeper analysis of your acquired data. Therefore DEWESoft offers powerful export functions. To export data press the **Export** button in **Analysis mode**. This will export exactly that area you have currently selected (see also 5.2 Zoom). The following export window appears:



EXPORT SELECTION WINDOW

On the top left you can decide between **FlexPro**, **MS Excel**, **DEWETRON**, **File export** and **Clipboard**.

Select if you want to export full speed data or reduced data (**Min/Max**, **Average** and **RMS**), and **Relative**, **Absolute** or **Trigger time** base.

In the center area you can now choose some options, for example pre-defined analysis templates or file locations. Then press **Export data** to start the export procedure.

Currently supported file types for File export: FlexPro, Excel, DIAdem, Matlab, Famos, NSoft, Text, RPCIII, ATI, Technical Data Management, Standard Data File, WFT, Wave, Google earth KML.

Tip: Use the DEWESoft export to copy the area of interest into a new DEWESoft file. This feature may save a lot of hard disk space.

7. Versions

DEWESoft is available in different versions:

- | | |
|-------------------|--|
| ■ DEWESoft-7-LT | Lite version for PAD/EPAD, A/D boards and GPS sensors only |
| ■ DEWESoft-7-SE | Standard Edition for most applications |
| ■ DEWESoft-7-PROF | For multiscard applications, synchronized video, ... |
| ■ DEWESoft-7-DSA | Additional measurements for Industrial Acoustic, Structural Analysis and Machinery Diagnosis. |
| ■ DEWESoft-7-EE | Enterprise edition includes DSA package with additional options POWER and NET, including 5 years maintenance agreement (free software updates) |

Most popular options:

- | | |
|------------------------|--------------------------------------|
| ■ DEWESoft-7-OPT-CAN | CAN-bus support |
| ■ DEWESoft-7-OPT-POWER | Power module option |
| ■ DEWESoft-7-OPT-NET | Remote Control and Network Extension |

8. Summary

DEWESoft is an easy to use software, but offers also a lot of features. Therefore we would recommend to study the *DEWESoft Software Users Manual*, which is included with the shipment.

Free software updates within Version 7 are available on <http://download.dewetron.com/dl/software>