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1. Kilog RF software Installation

1.1. Minimum configuration required

- Minimum configuration: Windows, XP, VISTA, 7
- Communication port: USB 2.0
- DVD player
- RAM memory: 1 Go
- Free disk space: 10 Go

1.2. Application installation

- Put the installation DVD in the DVD player of the computer
  *The installation program runs automatically.*
- Follow the installation steps.

| The installation of the database can take a few minutes. You must have administrator rights to install software. |

If the program does not run automatically:

- Go to "My computer" or "Computer".
- Open the DVD.
- Double click on "SetupKilog-RF.exe".

When the software is properly installed, a launching icon is created on the computer desktop:

Before run the application, it is necessary to install the BK-RF communication on first use.
See following page to install the base.
2. Install BK-RF communication base Kilog RF software

2.1. Communication base installation
On the first connection of the base on the PC, it is necessary to install the drivers included on the installation DVD. This installation will be different according computer operating system (Windows XP and Windows Vista/7).

2.1.1. Installation on Windows XP
➢ Put the DVD in the DVD player of the computer.
➢ Power on the communication base.
➢ Connect the communication base on the USB port of the computer.

The following window appears.

➢ Select “No, not this time” then click on “Next”.

The following window appears.

➢ Select “Install from a list or a specific location (Advanced)” then click on “Next”.

The following window appears.

➢ Select “Search for the best driver in these locations”.

7
➢ Tick the box “Include this location in the search”.
➢ Click on browse then select “Drivers BK-RF” folder on the installation DVD (ex : E:\Drivers BK-RF).
➢ Click on “Next”.
   The driver installs then the window “Completing the Found New Hardware Wizard” opens.
➢ Click on “Finish”.

So the driver is installed and the communication base must now appears correctly in the device manager, in the group “Libusb-Win32 Devices”.

Reach device manager :
➢ Click on “Start”, “Control Panel” then select “System” (if the view is in “Category” mode, click first on “Performances and Maintenance” then on “System”)
or
➢ Right click on “My computer”, then click on “Properties” menu.
   The “System properties” window opens.

➢ Click on “Hardware” tab then on “Device Manager” button.
   The “Device Manager” window opens.
If the driver is not properly installed or if it is not updated, the “Device manager” window will be displayed in the following manner:

➢ Right click on “Kistock Base 2010 www.kimo.fr” or “Kimo USB Device” line.
➢ Click on “Update Driver Software…”.
➢ Follow the installation procedure from the beginning.

2.1.2. Installation on Windows Vista / 7
➢ Put the DVD in the DVD player of the computer.
➢ Power on the communication base.
➢ Connect the communication base on the USB port of the computer.

Windows says the device driver could not be installed. Therefore, install it from Device Manager.

Reach device manager:
➢ Click on “Start” then on “Control Panel”.
➢ Select “Device Manager” (if the view is in “Category” mode, click first on “Hardware and sound” then on “Device manager”).
➢ Right click on “Computer” then click on “Properties”.

A link towers “Device Manager” is at left of the window.

➢ Click on this link.
The “Device manager” window opens.

➢ Right click on “Kistock Base 2010 www.kimo.fr” or “Kimo USB Device” line.
➢ Click on “Update Driver Software...”.

The following window opens.

➢ Select “Browse my computer for driver software” option.

The following window opens.

➢ Click on “Browse” then select “Drivers BK-RF” folder on the installation DVD (ex : E:\Drivers BK-RF).
The driver of the BK-RF base is not digitally signed, the following window security can be displayed.

➢ Click on “Install this driver software anyway”.
The driver is installed and then a window opens indicating that the driver was properly installed.
3. Presentation

3.1. Communication base
Kilog software is supplied with its BK-RF communication base. This communication base is USB connected on the computer and has a light signal.

3.1.1. Base description

3.1.2. Kistock connection on communication base

3.1.3. Meaning of the different signals
- **Sleep mode**: Multicolor signal
- **RF receiving of data in progress**: blinking blue signal
- **RF sending of data in progress**: blinking blue signal
- **RF busy canal, impossible sending**: blinking orange signal
- **Receiving of Kistock alarm**: red signal
- **Receiving of a stop alarm**: red signal
- **Data sending when kilog RF is connected to the base**: purple signal
- **Data receiving when kilog RF is connected to the base**: purple signal
- **RF communication error**: fixed orange signal
- **Wired communication error**: fixed orange signal
3.2. Kilog RF software

KILOG-RF software offers two separate operating modes, “Data loggers” mode “Network Recorder” mode. The user must select one of the two running modes on the home page when the software is launched:

> **Data loggers mode**: running mode in which each Kistock is managed independently: they are configured to perform measurement datasets in which no action is necessary until data downloading. For each data downloading of kistock in data logger mode, a file with the measurement dataset is created.

> **Network recorder mode**: in this running mode, all of the Kistocks forms a “Network” or a cartography in order to supervise a or several installations in real-time. Measurements performed by the data loggers of the network are retrieved at regular intervals and all recordings are saved in database and restored as a global visualization. This visualization is composed by a graphic and a table of values with all the measured channels, a network drafting, an alarms log and an events log.

Once the application is launched, it is possible to go from a mode to another thanks to the button located at the top right.
4. Beginning with data loggers RF

Each RF instrument that must be used with the software must be recognized and matched with the Kilog-RF and its BK-RF communication base. To do that, it is recommended to open the general configuration window with the button and to display the panel of management device park:

- Put the instrument to match (data logger, alarm or extender) on the communication base.
- Click on the button at the bottom of the panel.

A number is automatically attributed to the instrument and this one is added to the list. After this operation, the instrument could be configured either by the communication base or directly in radio-frequency.
5. Data logger mode

5.1. Interface
The interface is made up of:

- a menu
- a tools bar
- an area of data visualization
- a status bar
<table>
<thead>
<tr>
<th><strong>5.2. Tools bar</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>![folder] <strong>Data logger mode</strong>: open a data file.</td>
</tr>
<tr>
<td>![server] <strong>Network data loggers mode</strong>: open an archive file.</td>
</tr>
<tr>
<td>![folder] <strong>Data logger mode</strong>: save data file.</td>
</tr>
<tr>
<td>![server] <strong>Network data loggers mode</strong>: save an archive file.</td>
</tr>
<tr>
<td>![folder] <strong>Export data</strong>: Graph in image format, Table of values and logs in csv file, full report in pdf file.</td>
</tr>
<tr>
<td>![print] <strong>Print preview</strong>.</td>
</tr>
<tr>
<td>![print] <strong>Print</strong>.</td>
</tr>
<tr>
<td>![settings] <strong>General configuration of the application (mainly for network dataloggers mode)</strong>.</td>
</tr>
<tr>
<td>![settings] <strong>Configuration and instrument downloading</strong>.</td>
</tr>
<tr>
<td><strong>Only for network data loggers Mode</strong>.</td>
</tr>
<tr>
<td>![fa fa-bell-o] <strong>Force the data downloading of one or several instruments of the network</strong>.</td>
</tr>
<tr>
<td>![fa fa-bolt] <strong>Visualize all the tasks in progress in “Network dataloggers” mode</strong></td>
</tr>
<tr>
<td><strong>Animation when a task is in progress</strong>.</td>
</tr>
<tr>
<td>![fa fa-bell] <strong>Visualize the unacknowledged alarms of “Network dataloggers” mode</strong>.</td>
</tr>
<tr>
<td><strong>Blinks when one or several alarms must be acknowledged</strong>.</td>
</tr>
<tr>
<td>![fa fa-refresh] <strong>Go from one running mode to another</strong>.</td>
</tr>
</tbody>
</table>
6. Using a datalogger in autonomous mode

After having matched a RF data logger, no further action is necessary in the general configuration window. Then simply set the Kistock with the button in order to perform the required recording dataset.

6.1. Set the datalogger

➢ Click on the button.
➢ The following window opens:
➢ Select the device to set.
➢ Click on OK.
  A general description window opens:

➢ Click on “New configuration” button.
  The opposite window opens:
➢ Fill in the different fields: Designation, Operating mode, Display et LEDs.
  • Designation: fill in with a name
  • Operating mode: select “Data logger mode” if the Kistock is used as a usual Kistock, independently of one another or “Kistock network mode” if the Kistock is used in a network of several Kistocks.
  • Display ON: values are displayed on the Kistock screen
  • Display OFF: values are not displayed on the Kistock screen
  • Protected display: press 3 times on Select key of the Kistock to display measured values
  • LEDs: tick the box “LED ON” and tick the box LED Alarm so that the alarm LED lights on in case of
alarm.

- Click on “Next” button.

The following window opens on the channel 1 tab.

This configuration window presents as many tabs as available channels on the Kistock. The user selects the one(s) he wants to record ticking/unticking the corresponding boxes.

If the “Record channel” box is ticked, the other parameters are so available.

In “Channel” part:

- Tick the box “Record channel” to record the measured values by the Kistock.

  ![Warning]

  If the box is unticked, all the other parameters will be inaccessible.

- Tick the box “Display channel” to display the measured values if the Kistock to set has a screen.

In “Measurement” part:

- Select the type of used probe on the channel and its corresponding unit.

- If the user wants to convert an analog input, he must enter minimum and maximum values of the corresponding range and the conversion will be performed automatically at the Kistock downloading.

In “Alarm limits” part:

- Tick the box “Alarm limit activation” to set high and low limits of alarm activation. Minimum and maximum values that may be entered are compatible with the range of the used probe or, possibly with a range of conversion, if it is specified, for current/voltage inputs.

The “Channel recap” give a global view of the available channels on the Kistock. There is also the configuration of each one. This table can not be edited.
Once each channel is set, click on “Next” button. The following window opens and allows to select when and how is the recording going.

In “Dataset” part:
- Enter the dataset name (until 20 characters).
- Enter potential comments (until 50 characters).

The “Configuration” part allows to specify the logging mode, the start and stop types of the dataset.
- **Logging mode**: there are 5.
  - **Instantaneous**: values are logged at defined recording interval.
  - **Minimum**: the configuration of this mode needs 2 intervals, one measurement interval and one recording interval. The logged value is the minimum of all the measurement carried out during the defined recording interval.
    - Ex: Recording interval = 10 minutes
      - Measuring interval = 1 minute
      - The instrument performs a measurement every minutes but records after 10 minutes the minimum value among the 10 measured points:

    | 1 min. | 2 min. | 3 min. | 4 min. | 5 min. | 6 min. | 7 min. | 8 min. | 9 min. | 10 min |
    |-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
    | 26.5°C | 26.5°C | 26.4°C | 26.5°C | 26.6°C | 26.7°C | 26.7°C | 26.5°C | 26.6°C | 26.6°C |

    Among the 10 measured points, 26.4 will be the minimum measured recorded.
  - **Maximum**: it is the same running as Minimum mode but it is the maximum measured values that is recorded.
  - **Average**: it is the same running as Minimum and Maximum modes, but the recorded value is the average of all the performed measurements during the defined recording interval.
  - **Monitoring**: this mode requires one recording interval “normal” and one recording interval “alarm”. The instrument performs a measurement every seconds and stores these values at “normal” interval time when measurements are between 2 predefined thresholds, or at “alarm” interval time when measurements are out of thresholds.
  - **Detection of pulses**: this mode is automatically selected if a channel is configured in “Counter or detection of pulses” mode.
• 3 start conditions are available:
  – **By date/time**: the user defines date and time of dataset start.
  – **By button**: the dataset will start by a long press on “OK” of the Kistock.
  – **Par PC**: the dataset can be only launched with the software via “Start” button present on the status window of the Kistock.

• 6 stop conditions are available:
  – **By button**: tick the box “Stop with button”. This stop type predominates on the other stop types.
  – **By date**: available only if a start date has been selected.
  – **Number of records**: the user defines the number of values that the instrument must record. This number is limited to the storage capacity of the instrument.
  – **Whole memory**: recording will be stopped when the number of recorded values corresponds to the capacity storage of the instrument.
  – **Recording duration**: the user defines a recording duration in day(s), hour(s), minute(s) and second(s).
  – **Rollover**: in this case, there is no stop condition, the instrument will continue its dataset, if necessary by overwriting the oldest values.

Stop types by date/hour or by recording duration and the rollover storage mode are not available with “Survey” operating mode.

• **Intervals**: this part allows to define the recording interval and, eventually, a second interval with a variable role according to selected running type.
  – **Instantaneous mode**: the first interval is the recording interval of values, the second one is available only if the Kistock has a display and allows to define an refreshing interval of the displayed value.
  – **Minimum, maximum, average mode**: both intervals are mandatory, one recording interval and one measurement interval.
  – **Survey mode**: both intervals are mandatory, one “normal” recording interval and one “alarm” recording interval.
  – **Detection mode**: recording interval and et display interval.

• **Recording duration**: this part sums up the dataset expected duration and the theoretical battery life in order to check if it is enough for the required configuration.

Once recording parameters are set, click on “Next” button to go to the configuration recap window.

![Recap window](image)

This last window is a summary of the programmed recording dataset.
It is possible to save this configuration in the database clicking on “Save config.” button. In this case, a configuration name must be specify (by default, the software gives the dataset name).

- Click on “Valid” button to send the configuration on the instrument.

### 6.2. Adjust a datalogger

- Click on “Device” menu then on “Instrument adjustment”. The window of access to adjustment opens and asks an access code according to the installation code. It is necessary to contact Kimo to get this adjustment code.
- Enter the code then click on OK.
- Select the datalogger to adjust.

*The following message is displayed : modification of factory configuration / settings can affect accuracy of measurements and/or traceability to the calibration certificate.*

- Click on YES.
- The opposite window opens.
- Select the channel to adjust.

For wireless dataloggers, the following measurements can be adjusted:

<table>
<thead>
<tr>
<th>Type of device</th>
<th>Adjustable measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>KH</td>
<td>Temperature Ch 1 / Hygrometry Ch 2 / Temperature Ch 3 / Current Ch 3 / Voltage Ch 3</td>
</tr>
<tr>
<td>KT</td>
<td>Temperature Ch 1 / Temperature Ch 2 / Current Voie 3 / Voltage Ch 3</td>
</tr>
<tr>
<td>KP</td>
<td>Pressure Ch 1</td>
</tr>
<tr>
<td>KTT</td>
<td>Thermocouple K Ch 1 / Thermocouple K Ch 2 / Thermocouple T Ch 1 / Thermocouple T Ch 2 / Thermocouple J Ch 1 / Thermocouple J Ch 2 / Thermocouple S Ch 1 / Thermocouple S Ch 2</td>
</tr>
<tr>
<td>KTR</td>
<td>Temperature Ch 1 / Temperature Ch 3</td>
</tr>
<tr>
<td>KTU</td>
<td>Current Ch 1 / Current Ch 3 / Voltage Ch 1 / Voltage Ch 3</td>
</tr>
</tbody>
</table>

For wired dataloggers, the following measurements can be adjusted:

<table>
<thead>
<tr>
<th>Type of device</th>
<th>Adjustable measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>KH</td>
<td>Temperature Ch 1 / Hygrometry Ch 2 / NTC Temperature Ch 3 / NTC Temperature Ch 4 / Light Ch 5</td>
</tr>
<tr>
<td>KT</td>
<td>Internal temperature / NTC Temperature Ch 1 / NTC Temperature Ch 2 / NTC Temperature Ch 3 / NTC Temperature Ch 4</td>
</tr>
<tr>
<td>KTT</td>
<td>Thermocouple K Ch 1 / Thermocouple K Ch 2 / Thermocouple T Ch 1 / Thermocouple T Ch 2 / Thermocouple J Ch 1 / Thermocouple J Ch 2</td>
</tr>
<tr>
<td>KTH</td>
<td>Temperature Ch 1 / Hygrometry Ch 2 / Temperature Ch 3 / Voltage 0-10V Ch 3 / Current Ch 3 / Voltage 0-2.5V Ch 3</td>
</tr>
<tr>
<td>KTR</td>
<td>Temperature Ch 1 / Temperature Ch 3 / Voltage 0-10V Ch 3 / Current Ch 3 / Voltage 0-2.5V Ch 3</td>
</tr>
</tbody>
</table>

- Select the adjustment method : 1 point or 2 points
- **Single point adjustment** : Only the offset value is changed when the adjustment is done using the single point method except for the light measurement for which a coefficient is applied.
- **Two points adjustment** : Input high and low calibration values and the measured values by the KISTOCK, a new slope and an new offset will be automatically calculated. Press the “Confirm calibration” button to send the new parameters to the logger.
➢ Enter the adjustment values.
➢ Click on “Confirm calibration” button.

6.3. Launching of a recording dataset

When a Kistock is configured and is waiting for its start condition, “LOG” segments blinks on its display unit. In this case, a short press on “SELECT” key allows to display values which will be recorded. A long press of 5 seconds on “OK” key allows to start the recording, only if a start by button has been selected. The launching of the dataset is validated by the green LED which blinks 5 times. If the recording dataset is automatically launched for a start date, “OK” key is not used.

6.3.1. LEDs assignment

- If the green LED “ON” is enabled, it will blink every 15 seconds over the whole recording period.
- If the red LED “Alarm” is enabled, 3 states are possible:
  - Off : no alarm condition raised
  - Fast blinking (5 seconds) : one threshold is is currently exceeded on at least one channel.
  - Slow blinking (15 seconds) : at least one alarm threshold has been exceeded during the dataset.

6.3.2. Key function

If the display function is on protected mode, a long press on “SELECT” key allows to visualize values (change over 3 seconds by recorded channels).

- “Select” key : it allows to display, through successive presses, informations about the dataset:
  - 1 time to display the number of values above/below thresholds.
  - 2 times to display the minimum and maximum values for each channels.
  - 3 times to display values of high and low thresholds of each channels alternating.
  - 4 times to display recording intervals in survey mode or to display recording and measurement intervals for the other channels.
  - 5 times to back to recording mode.
- OK key: it allows to exit from the menu at any time.

Other functions of the “OK” button in thermometer and thermo-hygrometer modes (regarding wired class 310 and 350 Kistocks):

- A short press on “OK” key allows to enable Thermometer mode, during the auto shut-off duration that has been configured. The two temperature channels are displayed.

When Thermometer mode is active, “SELECT» key allows to go to, with successive presses, to different actions and informations:

- 1x : Action HOLD : the last measured values are hold and units blinks.
- 2x : Min/Max : alternating displaying of minimum and maximum values of each channels.
- 3x : Delta T: displaying of “dt” on the first line and displaying of the difference measured between two temperature sensor on the second line.
- 4x: Exit menu : back to measurement in progress for thermometer mode.

“OK” key allows to exit from the menu at any time.

When Thermometer is active, “OK” key allows to go to its configuration:

- KTH 350 and KTR 350 references:
  - 1 : Unit selection : “Unit” on the first line. °C or °F on the second line. Changing of unit with “SELECT” key and validation with OK key.
  - 2 : Auto shut-off duration : “OFF” on the first line. From 1 to 30 mn on the second line. Changing of the duration with “SELECT” key and validation with “OK” key.
  - 3 : Exit from the menu : back to measurement in progress for thermometer mode.

- KTT 310 reference:
- **1: Unit selection**: “Unit” on the first line. °C or °F on the second line. Changing of unit with “SELECT” key and validation with OK key.
- **2: Thermocouple type**: “K, J, or T type” is for 0, 1 or 2 respectively. Changing with “SELECT” key and validation with OK key.
- **3: Auto shut-off duration**: “OFF” on the first line. From 1 to 30 mn on the second line. Changing of the duration with “SELECT” key and validation with “OK” key.
- **4: Exit from the menu**: back to measurement in progress for thermometer mode.

*For the whole ranges of dataloggers, during a measurement campaign:*
- Press « Select » et « OK » at the same time for 5 s to deactivate both buttons : red led flashes twice quickly.
- Press « Select » et « OK » at the same time for 5 s to reactivate them : green led flashes twice quickly.
7. Downloading and data processing of recordings

7.1. Instrument downloading

➢ Click on the button.
➢ Select the instrument to download then click OK. The opposite description window appears.
➢ Click on “Downloading” button in the lower left window. A window to save the dataset opens.
➢ Define the dataset name and the recording location.

➢ Click on OK when the message of downloading finished appears (see opposite). You can open the file or backs to description window.

7.2. Data recorder and data reader downloading

➢ Connect the data recorder and reader to the communication base with the Jack cable.
➢ Click on “Device configuration” button.
➢ Select “Wired by Jack” then the device to download in the drop-down list box then click on OK.

“Transmit data” button: it allows to select the required dataset to retrieve on the computer defining a target folder. It is possible to know the dataset sum up by selecting the corresponding line in the list. When the datasets to download are selected (they are all ticked by default) and the target folder is defined, just click on “Finish” button.

A progress download window is displayed.

“Datalogger list” button: it allows to save RF devices compatible with the shuttle.

“Erase memory” button: it allows to delete all the datasets inside the shuttle and not only the ones that are ticked in the list of this window.

“Synchronize clock” button: it allows to update shuttle clock by sending the computer clock.
7.2.1. Data transfer
➢ Click on “Transmit data” button.
➢ Select the datasets to download.
➢ Click on “Next”.
➢ Add an operator form or a customer form to the datasets to download:
  • Fill in the following fields: Name, Society, Address, fax and phone numbers, e-mail address.
  • Click on “Save form”. Form is saved in the database.
  • Click on “Add to dataset” to assign the dataset to the operator or the created client.
  • Click on “Add a form” to create a new operator or client or “Delete a form” to delete an operator or a client.
➢ Click on “Next”.
➢ Select the location in which the created file will be saved.
➢ Select the option for files that already exist.
➢ Click on “Finish”.
   Downloading starts. When it is finished, the following message is displayed: “Download of all selected datasets completed”.
➢ Click on “OK”.

7.2.2. Datalogger list
RF dataloggers must be recorded into the shuttle to download datasets.
➢ Click on “Datalogger list”.
   The paired dataloggers list appears.
➢ Tick the dataloggers to send to the shuttle.
➢ Click on “Send list to shuttle”.
   The message “Datalogger list sent successively” is displayed.
➢ Click on OK.

7.3. Processing of the saved datasets
➢ Click on “File” then on “Open a file” for an autonomous kilog in the menu bar or “Open an archive” for the network recorder mode.
   The window containing the saved datasets opens.
➢ Click on the required dataset then click on “Open”.
   The datasets is displayed.
This panel is divided into several parts:

- **Global view**: allows a general view of the curves.
- **Legend and statistics**: displays maximum and minimum values, the average, the standard deviation and the MKT temperature (this temperature allows to express in a simplified way the global effect of temperature variations during storage or transport of perishable goods).
- **Graph and table**: displays temperature curves and all the points in a table.

It is possible to display the graph and the table together, only the graph or only the table thanks to the buttons up right on the panel.

### 7.3.1. Step in the graph

A **tools bar** allows to perform different actions on the graph:

<table>
<thead>
<tr>
<th>Action</th>
<th>Icon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update or reset the zoom</td>
<td><img src="image" alt="Update or reset" /></td>
</tr>
<tr>
<td>Zoom in</td>
<td><img src="image" alt="Zoom in" /></td>
</tr>
<tr>
<td>Display curves</td>
<td><img src="image" alt="Display curves" /></td>
</tr>
<tr>
<td>Zoom out</td>
<td><img src="image" alt="Zoom out" /></td>
</tr>
<tr>
<td>Display points</td>
<td><img src="image" alt="Display points" /></td>
</tr>
<tr>
<td>Dynamic zoom</td>
<td><img src="image" alt="Dynamic zoom" /></td>
</tr>
<tr>
<td>Selection pointer</td>
<td><img src="image" alt="Selection pointer" /></td>
</tr>
<tr>
<td>Move display area</td>
<td><img src="image" alt="Move display area" /></td>
</tr>
<tr>
<td>Cursor to browse points</td>
<td><img src="image" alt="Cursor to browse points" /></td>
</tr>
<tr>
<td>Draw 3D curves</td>
<td><img src="image" alt="Draw 3D curves" /></td>
</tr>
</tbody>
</table>

**Graph contextual menu**: this menu appears after a right click in the visualization window. The menu features the following items:

- **Tools**: selection of tools (the same as those of the tool bar)
- **Channel properties**: open the window of channels properties
- **Scales properties**: open the window of scales properties
- **Time axis properties**: open the window of time axis properties
- **Background properties**: open the window of background properties
- **Add comment**: allows to add a comment on the graph
“Channel properties” window:
User can access to the properties of a channel by selecting it the graph menu or by double clicking on the channel.

- **Curve**: set the channel name, curve color, style and curve thickness, make a shadow or the bar graph appear.
- **Points**: selection point style and setting of the spacing between the marks in number of points (ex: if spacing is 5, only 1 point out of 5 will be indicated on the line).
- **Limits**: tick the corresponding box to display high and low limits (this part will be gray-colored if channel limits have not been set).
- **Unit**: select unit
- **Scale**: Common or separated from channel scale (Single : channel will have its own scale / Common : channel “will share” the scale with one or several channels having the same unit).

“Scale properties” window:
User can access to the properties of a scale by selecting it the graph menu or by double clicking on the scale.

- **Range**: Enter the minimum and maximum scales (default values correspond to current values of the scale). Resetting of values automatic calculation button.
- **Marking**: Choice between an automatic scale or a predefined. The “subdivisions” value indicates the number of submarkings (without value) between two main markings (with values). Ex: a 0.5 step with 5 subdivisions.
- **Display**: Tick the box to display/mask lines of the gridlines of this scale. Set axis color.

“Time axis properties » window:
User can access to the properties of the time axis by selecting it the graph menu or by double clicking on the time axis.

- **Displayed period**: choice between an absolute representation (date and time) or relative (beginning of the recording at 0) of time. If the second second representation is selected, the relative period corresponding to the absolute period is displayed. Set date and time of the beginning and end.
- **Marking**: Choice between a marking automatically calculated or fixed by the user.
- **Display**: Tick the box to display/mask lines of the gridlines of this scale. Set axis color.

“Background properties » window:
User can access to the properties of the background by selecting it the graph menu or by double clicking on the background.

- **Background color**: selection of background color gradient and of gradient angle
- **Gridlines**: selection of the color or of use of the axis color.

Add a comment:
- ➢ Right click then go to “Add a comment”.
- ➢ Enter the comment.
- ➢ Click on OK to validate.
A white pointer appears on the graph indicating that a comment present.
7.3.2. Table representation

The table of point displays respectively in columns, the point number, date, time of point recording, and value of each channel. Values higher to high threshold are displayed in red color and values lower to low threshold displayed in blue color.
8. Create a network datalogger

To use a device in network datalogger mode, Kistock must be set in “Network datalogger” mode (see “Device configuration” p 16) to place it later in a network, that is to say either directly behind the communication base, or behind one or two instrument to extend radio signal.

➢ Start Kilog software in “Network datalogger” mode.
   The window below opens.

➢ Click on “Network” on the left of the window.
   The window below opens.

➢ Click on “Network configuration” button then on “Network configuration” tab.
   The “Manage device park” window opens.
Click on the button situated under the communication base or under instrument to extend radio signal to position a datalogger behind this one.

When a datalogger is positioned on the network, a downloading task is automatically created for this device. It is possible to modify the tasks planning in the “Manage data” panel.
9. Modify the tasks planning

This window allows to plan the clearing of the dataloggers and to create archive files at regular intervals.

9.1. Plan the clearings

➢ Click on “Network configuration” button.
➢ Click on “Manage data” button.
   The following window opens and gives details about the downloading planning and reading planning of measurement reading for each device of the network.

➢ Click on the line of the device to modify.
➢ Click on “Modify planning” button.
   The planned task window opens the clearing measurement task:
➢ Untick “Active task” box to deactivate the task.
   or
➢ Modify the starting date of the task or its periodicity.
➢ Click on OK to validate.

9.2. Plan the archive files

On the “Manage data” window:
➢ Select the frequency of creation of archive files: between 1 and 56 days.

⚠️ If 0 day is selected, there will be not archive file created.
➢ Tick the box “Create a CSV file copy” to create a file readable by a spreadsheet software.
10. Manage the alarms

This window allows to set the reported alarms either towards alarm devices (KAL-RF or BK-RF type), or by e-mail. For this second option, it is necessary to fill in mailing settings in “Mailing settings” tab. It is possible to select a technical alarm that will warn when the datalogger has a low battery level and/or a communication default.

10.1. Reported alarms towards alarm devices

➢ Click on “Manage alarms”.

The window below opens.

➢ Click on “Add » button.

The “Alarm report settings» window opens.

➢ Fill in the different criterions: alarm name, type of alarm device (KAL-RF or BK-RF) and type of alarm: technical or on threshold.

➢ For an alarm on threshold, select the dataloggers then the channels concerned by the alarm.

➢ For a technical alarm: select the concerned dataloggers then the number of consecutive communication failures before the alarm trigger.

➢ Click on OK to validate.

The alarm created like this appears in the list of reported alarms towards BK-RF communication base and KAL-RF relay alarms.

10.2. Alarms reported by e-mail

Before creating or activating e-mail alarms, the mail must be set:

➢ Click on “Manage alarms” button, then on “Mailing settings” tab.

➢ Fill in the different fields:

  ➢ Sender email address: email address used to send messages.
  ➢ Mail server address: name of the SMTP server used to send messages.
  ➢ Messages format: plain text or html.
  ➢ “Send an email for test” button allows to test the mailing settings by sending an email to a contact selected in the list or entered in the displayed dialog box.
– **Advanced settings** : by click on this button, the settings window of the email server opens and allows to set the SMTP outgoing server.

– **Contact list** : allows to add, modify or delete contacts and distribution lists (e-mail address groups).

To add a contact :

➢ Click “Add a contact” button.
➢ Enter the contact name and its email.
➢ Click on OK to validate.

To create a contact group :

➢ Click on “Add group” button.
➢ Enter name for the contact group.
➢ Click on a name of the contact list then on “add contact”

or

➢ Edit a new contact clicking on “New contact” button.

When the mailing has been set :

➢ Back to “Alarm reports” tab.
➢ Click on “Add” button in the “Alarms reported by email” panel.
➢ Follow the procedure described for reported alarms towards alarm devices.

**The activation planning is available** : it allows to define activation periods of email sending, in increments of 30 minutes.
11. User management

This window allows to set the user management of the Kilog-RF software. If the user management is activated, each action will require that a user is logged on and it will be possible to allow or prohibit access to different functionalities. Each user must belong to a group of users for which different access rights could be configured.

By default, two groups of users are pre-created: the administrators with all of the rights and users with limited access.

- Required rights are compulsory to have access to administration of groups and users.
- When installing, two accounts are automatically created: one user account with “user” as username and password and one administrator with “admin” as username and password.

➢ Click on “User management”.
➢ Tick the box “Enable user management”.
➢ If the user wants to, click on “Browse” to modify the saving location of the user database (default location is: C:\Users\Public\Documents\KIMO Instruments\KLOG-RF\Config\KLOG-RF.sdf)
➢ Adjust the duration of passwords validity in days and the automatic disconnection time in minute.

11.1. Create a group

➢ Click on “New group” button.
➢ Fill in “Group name” and “Group description” fields.
➢ Tick the boxes to give rights to the group.

Rights are divided into several categories:

- **General**:
  - User management
  - Changing password
  - Access to general configurations

- **Devices**:
  - Read configuration
  - Configure device
  - Download devices datasets
  - Control by computer
  - Calibrate device

- **Equipment**:
  - Pair a device
  - Delete a device
  - Disable a device
  - Modify network
  - Product database management

- **Tasks**:
  - Modify downloading planning
  - Remove a waiting task
  - Add a forced task

- **Alarm**:
  - Acknowledge alarms
- Manage report on relay
- Manage report by email

• **Files:**
  - Open a file
  - Add a file
  - Save file
  - Overwrite file
  - Save a period
  - Reset file
  - Export
  - Print
  - Modify dataset information
  - Manage calculated channels
  - Manage annotations

• **Tool and options :**
  - Manage acquisition service
  - Communication base
  - Manage customers and operators files
  - Modify preferences

➢ Click on OK to validate: the created group appears in the “Group” column.

To modify a group, just click on “Modify” button then modify it.

### 11.2. Create a user

➢ Click on “New user” button.
➢ Fill in information fields about the user: name and first name
➢ Fill in the identification fields: ID, assign a group to the user, create a password and confirm it.
➢ Click on OK to validate.

❗️ **A user being part of any group could not be connected.**

### 11.3. Modify a user

➢ Click on the user to modify.
➢ Click on “Modify” button.
➢ Modify it:

To change password, click on “Change the password” button, the old password will then be asked for verification.
To reset password, click on “Reset password” button. The password will be the same as the identifier.
12. Network mode: visualization of data

In network mode, 4 panels allow to have a global view on the activity of the devices park:

- **Graph panel**: displays the graph table of value for all the measured channels.
- **Network panel**: displays a scheme of the network with the location of the different devices.
- **Alarm panel**: displays the alarms history triggered by the dataloggers.
- **Log panel**: displays the event log.

### 12.1. Graph panel

![Graph panel example](image)

#### 12.1.1. Devices list

All the dataloggers of the network are listed in this panel. Boxes to tick allow to choose channels to display on the graph and in the table.

#### 12.1.2. Graph and table

This panel allows to display measurement curves table of corresponding values. It is possible to display the graph and the table together, only the graph or only the table thanks to the buttons ![Update or reset the zoom.](image) | ![Zoom in.](image)
| ![Display the curves.](image) | ![Zoom out.](image)
| ![Display the points.](image) | ![Make a dynamic zoom.](image)
| ![Selection pointer.](image) | ![Move the display area.](image)
| ![Cursor to browse the points.](image)
### 12.1.3. Network panel

The “Network” panel allows to have a global view of the devices on the network, in schematic form or in table form. Select the type of visualization with the buttons. When a device is selected, a sum up of its setting is displayed in the “Device details” panel.

### 12.1.4. Alarm panel

The “Alarm” panel is composed by a table that makes a list off all the alarms triggered on the dataloggers of the network (triggering and back to normal state). Following information are displayed:

- Triggering or alarm stop date
- Concerned device
- Measurement channel
- Alarm state
- Alarm mode (rising/falling edge)
- Channel value
- Acknowledgement date and user who had acknowledged the alarm
- Comments added during the acknowledgement

The period of alarm history can be modified using the “Period” frame under the table.
The “Log” panel displays, as a table, the dated events list that took place during the use of the software. Following information are displayed:

- Event date
- Log on user
- Event source
- Event category
- Event source description
- Comments or details about the event

The period of event history can be modified using the “Period” frame under the table. In addition, a filter can be applied on different columns thanks to drop-down lists situated above the table.
13. General options

This window allows to modify the general options of the software.

➢ Click on “General options” in the “General configuration of the software” window.

13.1. BK-RF communication base options

• Communication base number: assign a number to the BK-RF communication base

If the base communication number is modified, it will be necessary to repaired all the devices already paired. If a network datalogger is in place, a full check of the network allows to update the routing tables automatically. To do this, please use the button “Check and reconfigure the network” from the park manager.

• Tick the box “Enable search on Jack plug”: the base will do a search to detect a wire datalogger.
• Tick the box “Enable shuttle searching”: the base will do a search to detect a shuttle.
• Tick the box “Enable search on stand”: the base will do a search to detect a datalogger on the stand.

13.2. Options on relay alarms

➢ Tick the box “Reset alarms on startup” to restart the alarms.

13.3. Management of the acquisition service

This part is about the program that allows to retrieve data from the dataloggers and is useful only if the software in malfunctioning. The acquisition service state of data must always be on «Started».
13.4. **Delete measured data from the database**

It is possible to delete some measurements recorded in the database. In “**Database management**” panel:

➢ Select a date and time then click on “**Delete data**” : recordings performed before these date and time will be deleted.

This action is irreversible, it is not possible to recover deleted data.
14. Update a device

Kilog RF allows to update devices firmware (software allowing to devices to run properly) for communication base, Kistock RF, KTC tester, KPR extender or KAL alarm.

➢ Click on “Tools”.
➢ Click on “Kistock-RF Bootloader”.

*The following window opens.*

➢ Select the type of device (Communication base, Kistock-RF/KTC tester or KPR extender/KAL alarm).
➢ Click on “Browse” button to obtain the programming file (.hex) supplied by Kimo.
➢ Click on “Launch device update” button.

*When the “Progress of the update” bar is full, a “Update is completed” window is displayed : device is updated.*
➢ Click on “Close” button to exit Bootloader window.
15. Preference : software settings

➢ Click on “Tools” then on “Preferences”.

The preference window opens. This window allows to set general parameters of the software:

- management of data files locations
- management of the prints customization
- management of curves color and background color of graphs

15.1. Data

This window allows to manage data files locations on the computer:

- Let this box ticked to save documents at this location (default location)
- Tick this box then click on « Browse » to define another location.

15.2. Prints

This window allows to manage the prints customization: choice of logo to print and printing or not of the background color of the graph.

- Click on « Browse » to change the logo.
- Tick the box to print the background color of the graph.

15.3. Graph

This window allows to manage features of the graph curves, time axis and background.

- Click on the square of color to define the color of each curve. Also choose line thickness and tick the box to display the curve shadow.
- Click on the square of color to define the color of the time axis. Tock the box to display the gridliness.
- Click on the drop-down list to choose the type of gradient (vertical, horizontal or diagonal) then choose the two colors clicking on the squares of color.