RnView 3

User Manual

B	07/2013	HRE-Spectro and update V3.1.1	J.D. GUICHARD	C. BERTRAND
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Ind.	**Date**	**Designation**	**Author**	**Verified by**

CONTENTS

1. PREPARATION

RnView 3 is the operating software for use with the instruments of measure **eDPRW**, **Radhome HR3** and **Radhome HRE-Spectro** developed by ALGADE.
RnView 3 monitors and configures the measuring instruments. It reads displays and converts the data recorded by the devices.

This software operates under: Microsoft Windows XP/Vista/7/8

1.1. Installing RnView 3

Caution: Administrator rights are required to install the software. Get in touch with your systems administrator if necessary.
In addition, write permission will be required on the directory of installation.

Run the installation program *Setup_RnView3_VXX.exe.*
Follow the instructions on the screen to choose the language and the installation directory. The end user must have write permission on the chosen installation directory.

The installation program copies the necessary files on the hard drive. On completion, a shortcut to *RnView3.exe* is available from the Windows *Start* menu.

1.2. Installing USB drivers

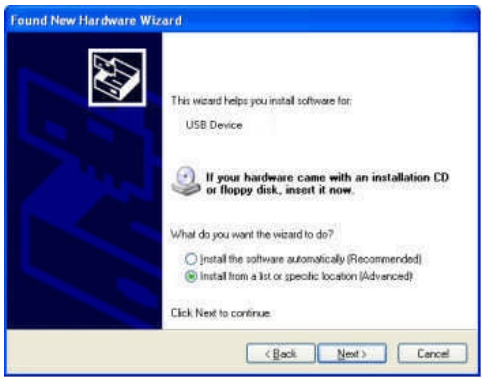
Caution: Administrator rights are required to install the software. Get in touch with your systems administrator if necessary.

Windows will request USB drivers on the very first connection with a Radhome HR3, a Radhome HRE-spectro or the USB-IR reader used with an exposure meter eDPRW. The installation procedure will have to be repeated for any new connection on different USB port.

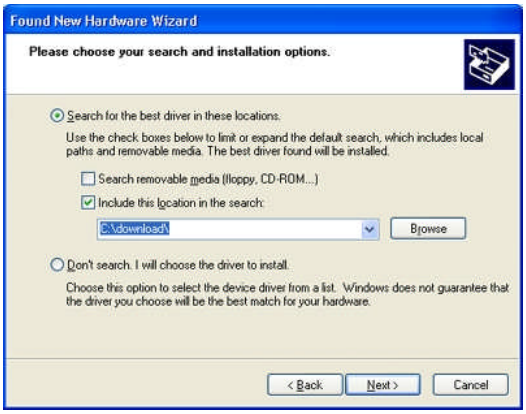
Installation under Windows XP

a. Upon connection with the instrument or the USB-IR reader, the found new hardware window will come up. Select « No, not this time » and click on « Next ».

b. Select « Install from a list or specific location » and click on « Next ».

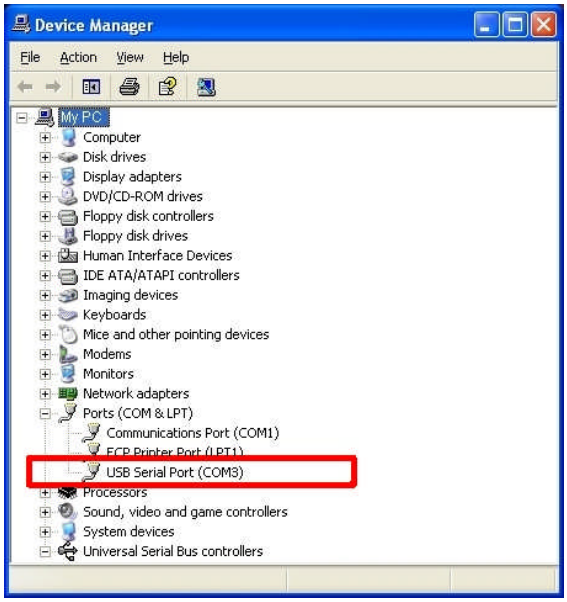


c. Tick the option « Include this location in the search » and click on « Browse » to select the directory where **RnView3** has been installed. Validate by clicking on « Next ».



d. The installation might have to be repeated a second time.

e. Upon completion, the instrument or the USB-IR reader should appear in Windows Device Manager (Right click > « properties » on My Computer, « Hardware » tab) under « Ports » as « USB Serial Port ».

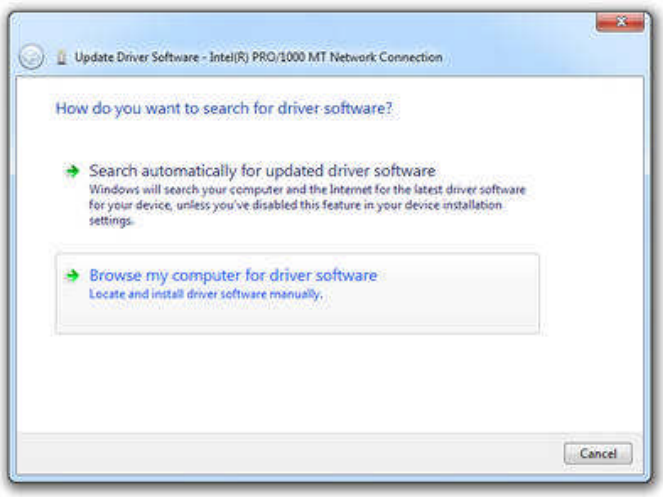


f. Make a note of the corresponding port number, as it will be needed for the configuration of **RnView 3** on first use.

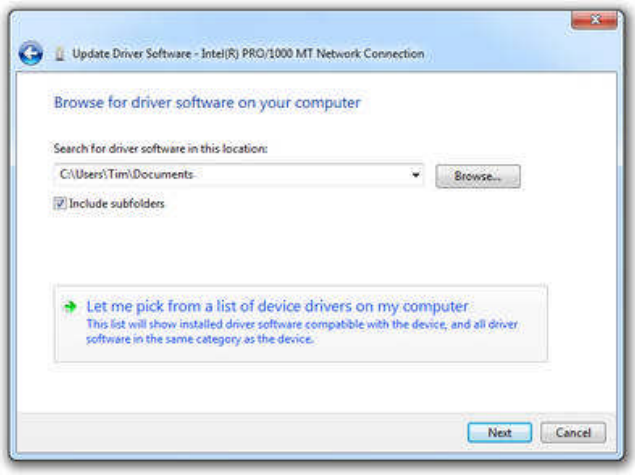
Installation under Windows 7

If Windows is not configured to search for drivers automatically on the internet, the installation must be carried out manually from the device manager (Access from Windows Control Panel)

Find the device from the list of devices (a yellow exclamation mark indicates the devices not yet installed), right click > « Update the driver ». Windows will display the following screen:

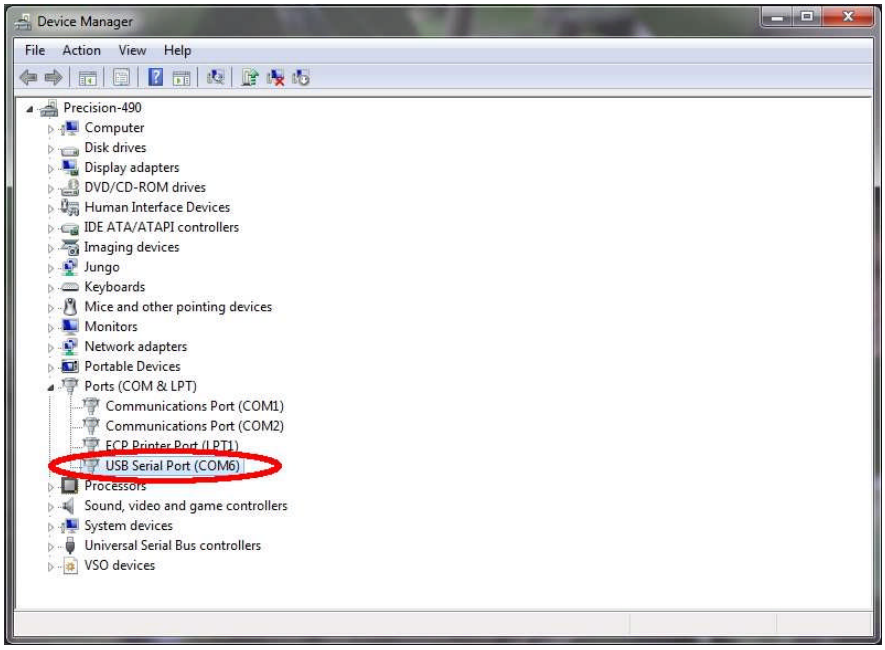


Select « Browse my computer for driver software ».



Use « Browse » to find the directory where the USB/RS485 drivers are located (By default, this directory will be where **RnView3** was installed) and tick « Include subfolders ». Click on « Next ».

Upon completion, the instrument or the USB-IR reader should appear in Windows Device Manager as « USB Serial Port ».



Make a note of the corresponding port number, as it will be required to configure **RnView 3** on first use.

2. GENERAL INSTRUCTIONS

2.1. Menu structure

Upon starting the software, the main screen appears. The various functions are accessible from the toolbar:

File		Instrument	Parameters	Volumic Activity	Maintenance	?
>> Default directory		>> Read				
Language	>>English	Initialization				
	French	Start				
Open		Stop				
Close		Configuration				
Save as		Communications				
Export >>	Spectrums (Lines)					
	Spectrums (Columns)					
	Raw data					
	Calculated data					
	Screen capture					
Print						
Exit						

2.2. Regional Settings

RnView 3 uses the following regional settings:

- Decimal point separator « . »
- Date format DD/MM/YYYY
- Hour format: hh:min

2.3. Connecting an instrument

A USB link is used for communication with an instrument such as Radhome HR3 or Radhome HRE-Spectro.

Communication with an instrument such as eDPRW is made via an infra red connection with a USB-IR reader (supplied by ALGADE with the eDPRW). The exposure meter must be positioned within view of the USB-IR reader, within 30 cm at the most.

RnView 3 communicates with the device via a virtual COM port, created during the installation of the USB drivers.

3. USING THE SOFTWARE

The various functions available are indicated in **bold**. Paths will be given in the following pattern: **command1 >> command2 >> command3**.
Example: **File >> Export >> Calculated Measures**.

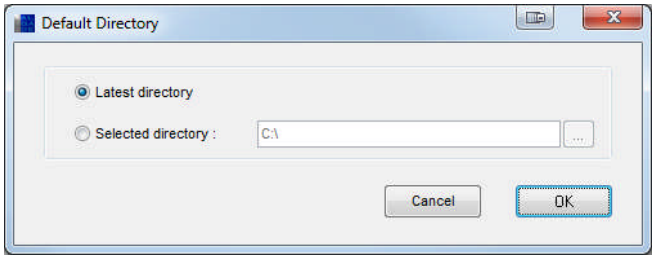
3.1. Configuration

3.1.1. Choosing the language

Choice of English or French, via the menu **File >> Language**

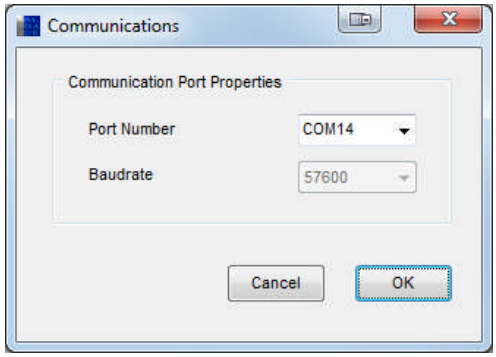
3.1.2. Default directory

The menu **File >> Default directory** will allow the definition of the working directory. Selecting « Latest directory » will keep the directory used in memory from one session to the next.



3.1.3. Communication ports

Go to **Probe >> Communications** to select the port number allowing communication with the instrument. This information should have been noted down during step 1.2.



NB : To find out the port number, open Windows Device Manager (Right Click> « Properties » on My Computer, « Hardware » tab). In the « Ports » section, make a note of the element appearing under « USB Serial Port » followed by its port number ***COMn****.*

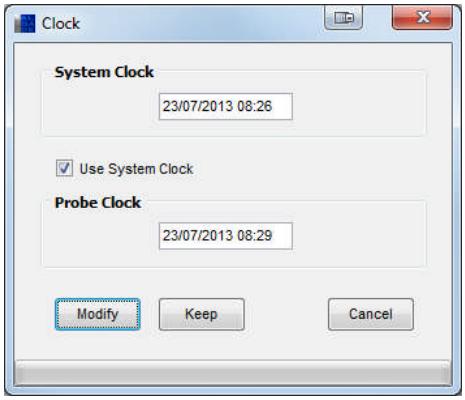
3.2. Controlling an instrument

3.2.1. Complete initialization

Initializing an instrument will allow:

- Setting of the internal clock
- Modification of the operating parameters such as the integration period
- Memory reset
- Start of a new acquisition

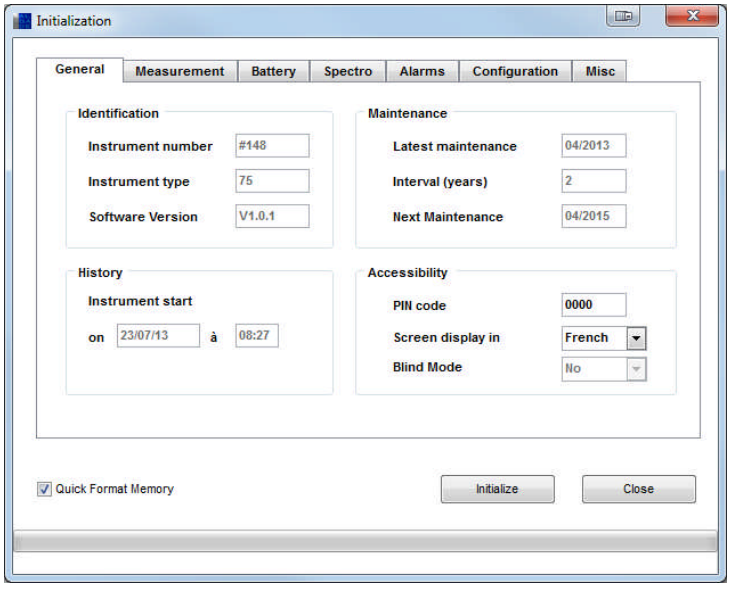
Click on the menu **Instrument >> Initialization**. The clock setting panel will appear.



To leave the instrument internal clock unchanged, click on « Keep ».
To synchronize the instrument clock on the PC clock, tick « Use System Clock » and click on « Modify ».
To set the instrument clock manually, uncheck the box « Use System Clock », enter the date and time and click on « Modify ».

The Initialization panel is made up of 7 tabs, and displays the instrument current parameters.

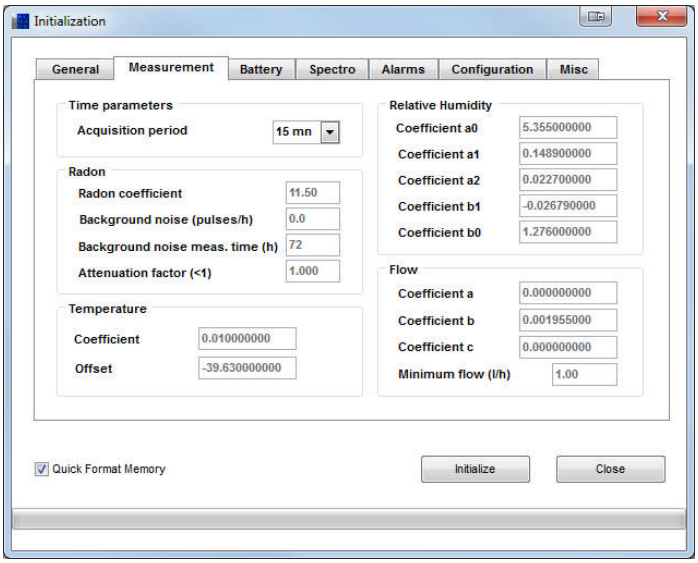
« General » Tab:



This tab displays information on the identification of the instrument (non modifiable):
Number, type, internal software version, maintenance information.

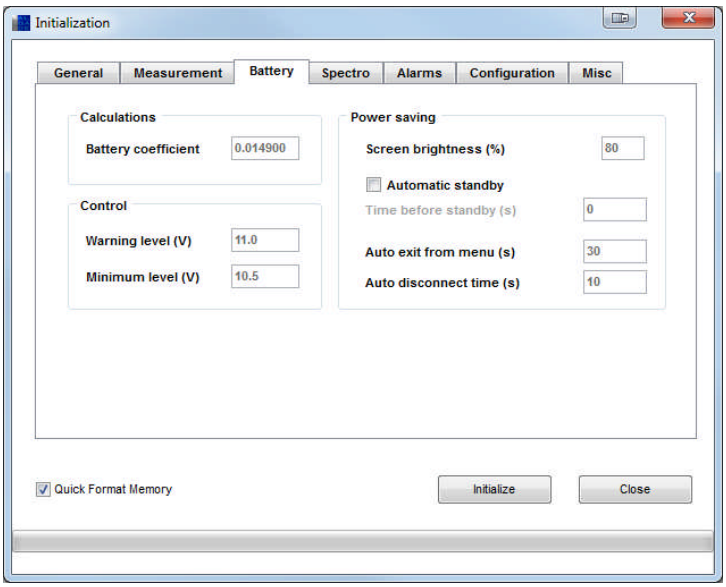
The language used for the instrument display screen can be chosen from this tab.
For Radhome HR3 and Radhome HRE-Spectro, a PIN code can be chosen to restrict access to the instrument menus.
The « Blind » mode can be activated from this tab. While in this mode, the message “measure in progress” will appear instead of the values measured.

« Measurement »



Choose the measuring period (acquisition period) with the down arrow.
The coefficients determined during calibration are displayed, but cannot be modified.

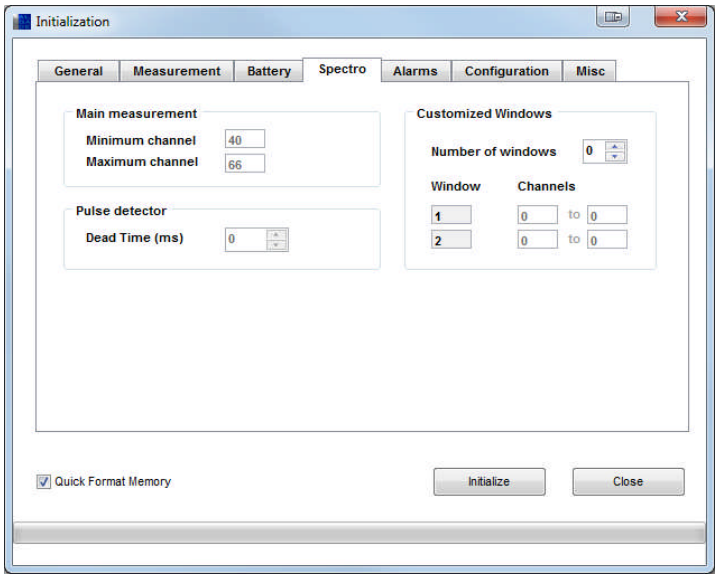
« Battery » tab



Displays information relative to the instrument power monitoring.

For eDPRW and Radhome HR3, automatic standby can be activated from this tab. Standby will automatically switch the screen off after a pre-selected time of idleness, while operating on battery and no action is carried out, allowing considerable battery energy saving.
Standby does not interrupt data acquisition and measure recording.
Other parameters are factory set and cannot be modified.

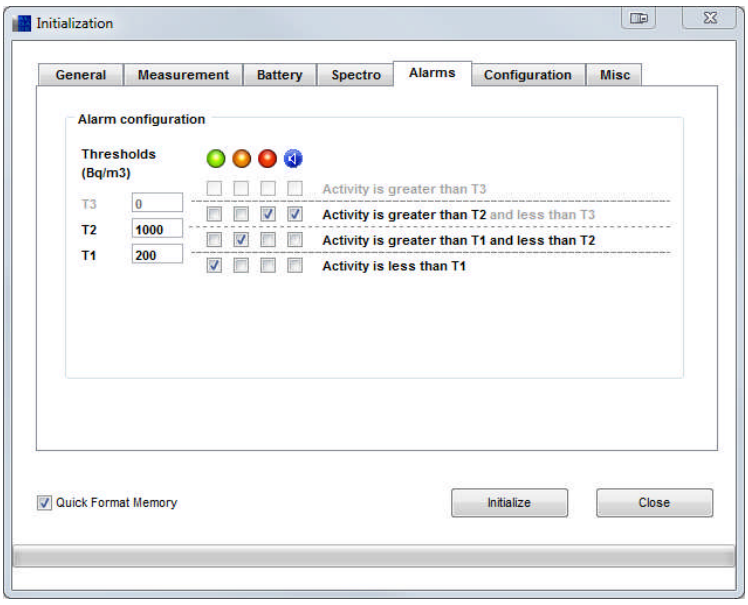
« Spectro » Tab



The measure of radon is carried out by a 128 channel spectrometry. The « Radon Calculation » zone gives information on the spectral window determined during calibration of the instrument, and used by the latter for the calculation of volume activity during the integration period. Up to 3 customized windows can be defined in addition to the Radon window.

« Alarms » Tab

If volumic activity reaches predefined thresholds, the visual and audible alarms of the Radhome HRE-Spectro can be activated on this tab. For example, on the following screen capture :



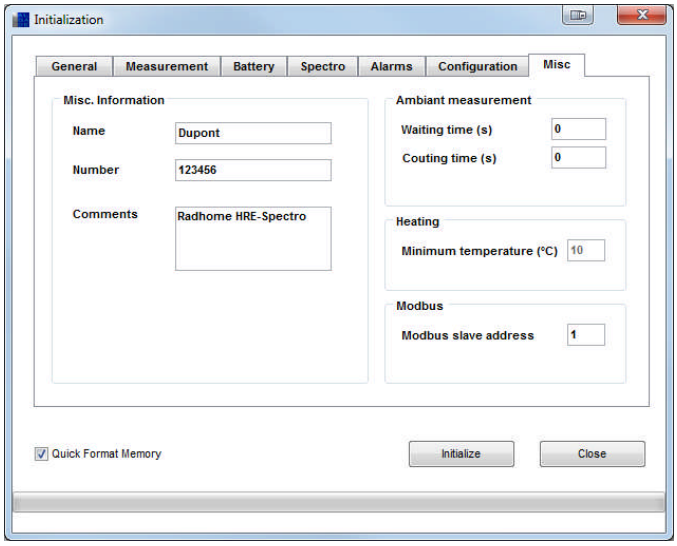
Threshold #1 is set to 200 $Bq.m^{-3}$ and threshold #2 is set to 1000 $Bq.m^{-3}$.

When volumic activity is below 200 Bq.m^{-3}, the green led is activated.
When volumic activity is between 200 Bq.m^{-3} and 1000 Bq.m^{-3} the orange led is activated.
When volumic activity is above 1000 Bq.m^{-3}, the red led and the buzzer are activated.

« Configuration » tab

This tab is used when the instrument is configured in our premises, and is not modifiable by the end user.

« Misc » tab



Information relative to the end user can be entered on this tab:

- Name
- Identification number
- Comments

For Modbus enabled devices, the modbus slave address is also entered on this tab.

To sum up, according to the instrument (eDPRW, Radhome HR3, or Radhome HRE-Spectro), the end user can change the following parameters:

- General tab: Language, PIN code, blind mode
- Measure tab: Acquisition period
- Battery tab: Automatic standby
- Spectro tab: Custom windows
- Alarms tab : Alarm thresholds / Leds and buzzer activation
- Misc tab: User information and Modbus address

Once the parameters have been modified, click on « Initialize »:

- The new parameters are sent to the instrument and checked
- The memory is reset
- Acquisition starts

The instrument is paused pending acquisition start. Exit **RnView 3**.

Acquisition will start at the nearest multiple of the chosen integration period. For example, for a start initiated at 15:24 with an integration period of 15 min, acquisition will start at 15:30 and the first measure will be available at 15:45.

3.2.2. Stop and Start

The menus **Instrument >> Start** and **Instrument >> Stop** enable the user to stop or start an acquisition without re-initializing the instrument. This must only be used if:

- The instrument clock does not need to be modified
- The memory does not need a reset
- Parameters do not need to be modified

NB: Acquisition stop and start are also accessible from the instrument keypad.

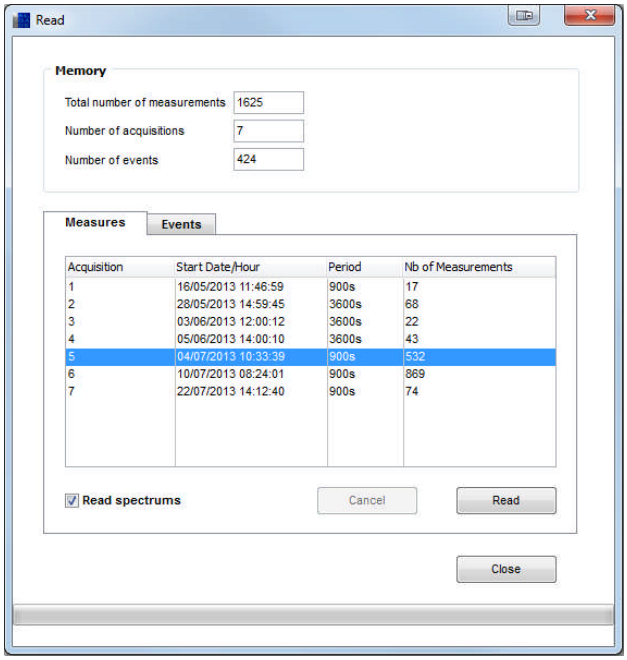
3.3. Measurement results

Click on the menu **Instrument >> Read**.

The memory panel appears:

The « Measures » tab gives a list of the acquisitions recorded, along with:

- Start date and time
- The acquisition period selected
- The number of measures recorded



The « Events » tab gives a list of the radon alarm set off since initialization of the instrument. Click on « Erase » to erase the list from the memory.

From the « Measures » tab, select an acquisition and click on « Read » to transfer the corresponding measures to the PC. The curves obtained will be displayed once transfer is complete.
Uncheck « Read spectrums » if spectrum read out is not necessary. This will reduce transfer time by 30%.

3.4. Exploiting measurement results

3.4.1. Graph display

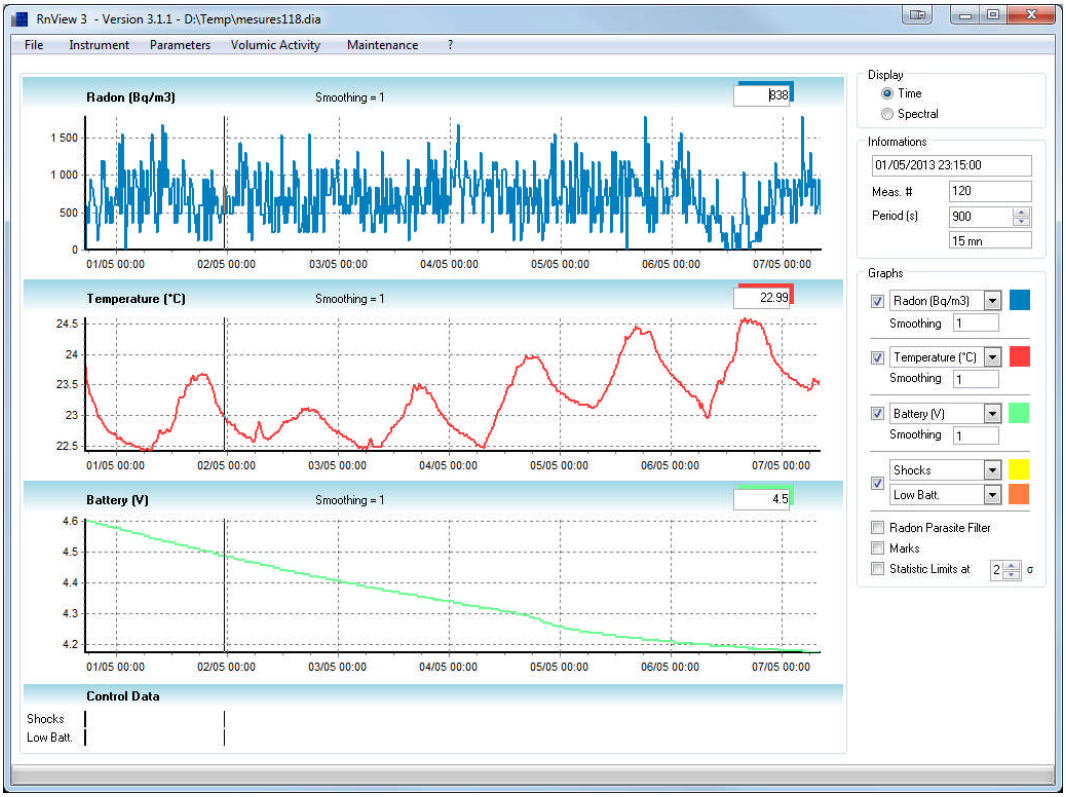
Display parameters are located on the far right of the screen.
Two display modes are available:

Time Mode

Up to 3 time graphs can be displayed simultaneously. Select the signal to be displayed for each graph with the down arrow.

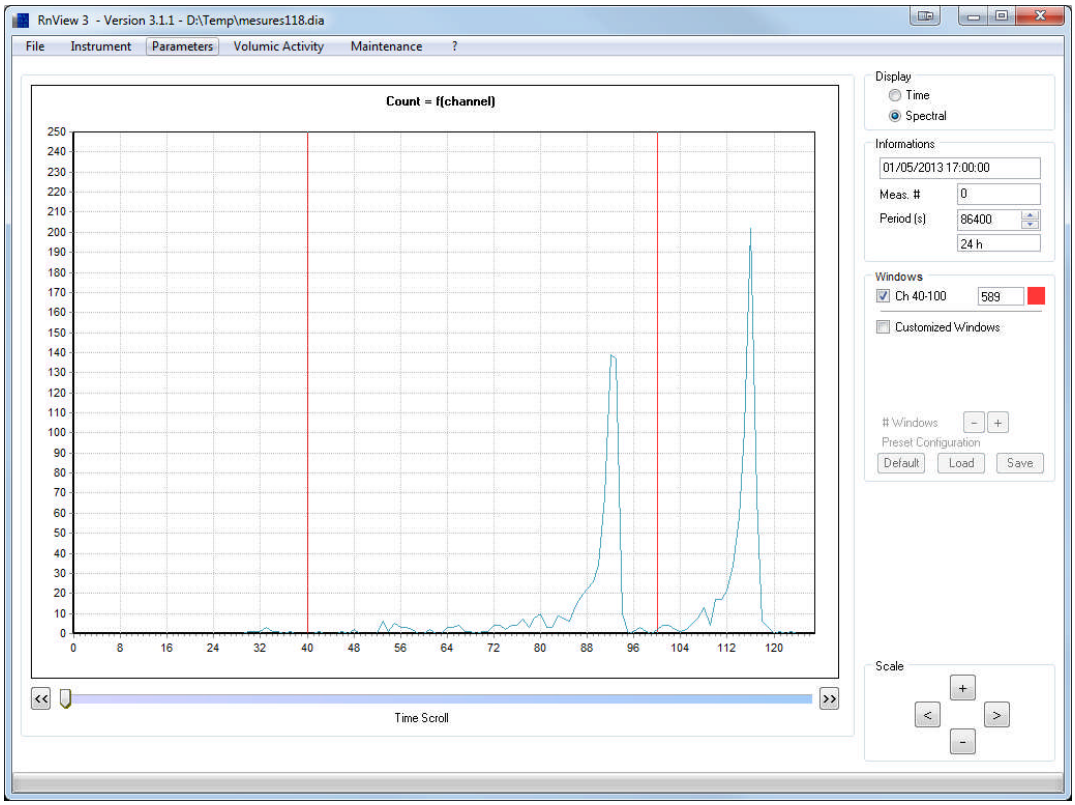
The following display options are available:

- Smoothing: facilitates the visualization of signals. Choose a value between 1 and 10 for curve smoothing.
- Colour: Click on the coloured boxes to change curve colour.
- Radon Parasite Filter: A filter can be applied to suppress possible abnormal peaks not issued from a radon signal (significant mechanical impact, electromagnetic disturbance…)
- Marker: Markers are displayed on the curves to highlight measurement points.
- Statistical Limits: A statistical envelope is displayed around the radon curve, from 1 to 5 σ.
- Period(s): The integration period can be increased by combining several subsequent periods. Click on up or down arrows to set the total period.



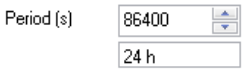
Spectrum Mode

Each integration period has a corresponding spectrum. The spectrum obtained during the acquisition can be visualized in this mode.

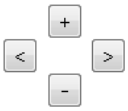


Scroll through time with the cursor located below the graph.

As in time mode, a « Combination » option is available to increase the integration period so as to obtain a spectrum over a longer period of time.



Use navigation controls to adjust the graph scale horizontally or vertically.



Use the « Windows » area to display the various windows:

- The default window, factory set and used for the calculation of radon volume activity.
- Up to 3 customised windows.

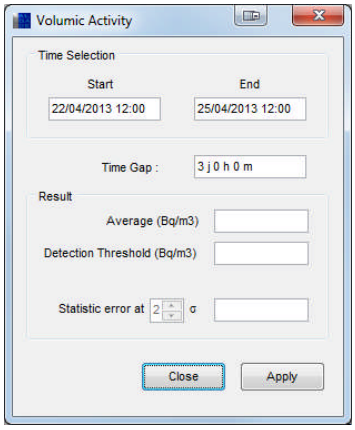
To add a customised window:

- Tick « Customized Windows »
- Click on + to create a new window.
- The corresponding cursors are created by default on channels 0 and 127.
- Drag each cursor to the desired location.

Click on « Save» to save your window settings, and « Load » to restore the same settings for later use.
« Default » restores factory window settings.

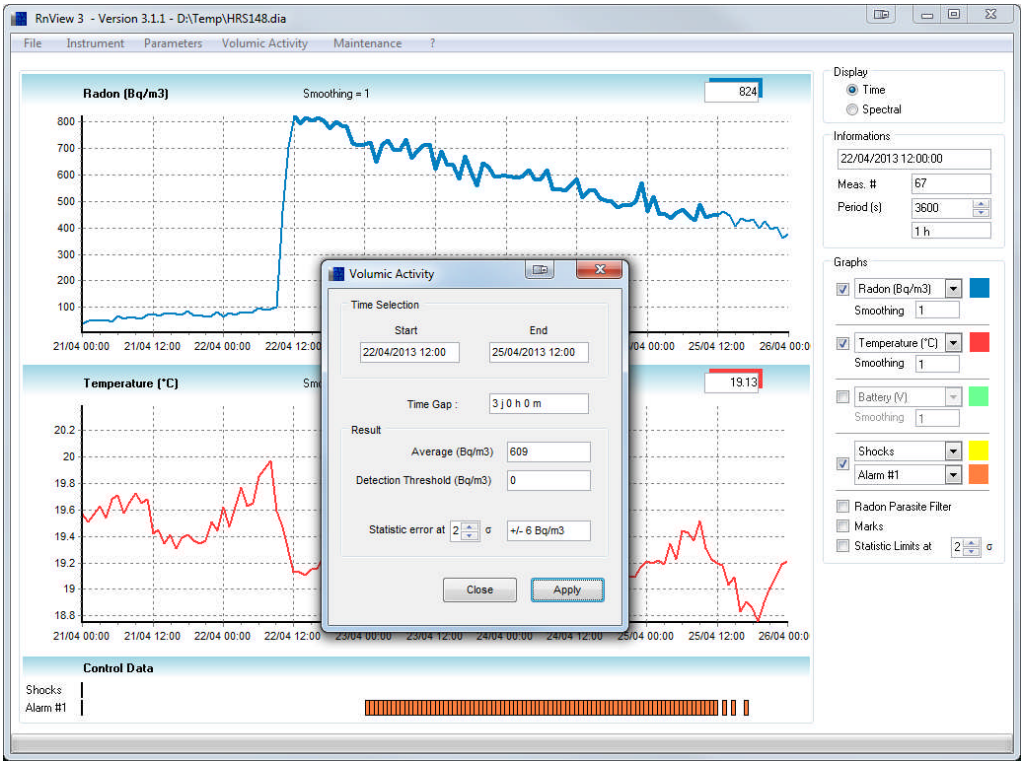
3.4.2. Volumic activity

This function calculates the radon mean volume activity measured over a given period.
The radon curve must be on display to access it. Click on the menu « Volumic Activity ».



Select a time interval and the tolerance for statistical error (2σ by default) and click on « Apply ». The time interval selected appears in bold on the curve, and the software computes:

- The average activity
- The detection threshold
- The statistical error



3.4.3. Saving and exporting

Measures obtained with the instrument can be saved in various formats.
NB: When the file obtained is a text file, Tab is used as the separator.

Menu « File >> Save as »

A proprietary file is saved with the extension *.dia*
It can be reopened at a later date via **File >> Open**.

Menu « File >> Export >> Screenshot »

For a screenshot of the current screen in jpg format.

Menu « File >> Export >> Spectrums (Lines or Columns) »

The list of spectrums is saved in a text file: the number of counts detected over the integration period is given for each channel.

Line format:

```
Meas 0        Date    Hour       Channel 0    Channel 1    Channel 2   ...    Channel 127
Meas 1        Date    Hour       Channel 0    Channel 1    Channel 2   ...    Channel 127
Meas 2        Date    Hour       Channel 0    Channel 1    Channel 2   ...    Channel 127
...           ...     ...        ...          ...          ...         ...    ...
Meas n        Date    Hour       Channel 0    Channel 1    Channel 2   ...    Channel 127
```

Column format:

```
Meas 0          Meas 1          Meas            ...          Meas n
Date            Date            Date            ...          Date
Hour            Hour            Hour            ...          Hour
Channel 0       Channel 0       Channel 0       ...          Channel 0
Channel 1       Channel 1       Channel 1       ...          Channel 1
Channel 2       Channel 2       Channel 2       ...          Channel 2
...             ...             ...             ...          ...
Channel 127     Channel 127     Channel 127     ...          Channel 127
```

Menu « File >> Export >> Raw Data »

This function saves the measures unprocessed in a text file, with the following format:

```
#Meas  #Acq  #Spec  Clock  Total count  Count #1  Count #2  Count #3  Battery  Temperature
    Humidity  Shocks  Alarm status  Battery status  Heating  Flow default
```

#Meas: Measure absolute number
#Acq: Acquisition number
#Spec: Relative number of the measure within the acquisition
Clock: Date/Time
Total count: Total number of counts during the acquisition period
Alpha: Number of counts in the radon window
Count #1: Number of counts in main window (radon)
Count #2: Number of counts in customized window 1
Count #3: Number of counts in customized window 2
Battery: Battery level
Temperature: Temperature
Humidity: Relative Humidity
Shocks: Shock sensor
Alarm status: Binary coded alarm status

Battery status: Binary coded power status
Heating: Heating system status
Flow default : Pumping system status

NB: Data obtained are only used for maintenance, and cannot be used directly by the user.

Menu « File >> Export >> Calculated Measures»

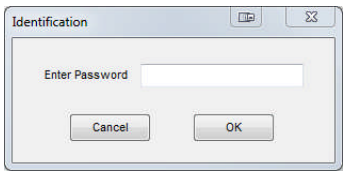
This function saves the calculated measures in SI units, in a text file, with the following format:

```
#Meas   #Acq    #Spec    Clock    Radon (Pulses/h)   Radon (Bq/m3)   Battery (V)    Temperature (°C)
   Humidity (%)   Shocks   Alarm #1    Alarm #2    Battery status    Mains     Heating     Flow default
```

#Meas: Measure absolute number
#Acq: Acquisition number
#Spec: Relative number of the measure within the acquisition
Clock: Date/Time
Radon (Pulses/h): Radon count in pulses/h
Radon (Bq/m3): Activity in $Bq.m^{-3}$
Battery: Battery level in Volts
Temperature (°C): Temperature in °C
Humidity (%): Relative Humidity in %
Shocks: shock sensor (= 1 in the event of an impact)
Alarm #1 : Radon alarm #1 (= 1 if the alarm has been triggered)
Alarm #2 : Radon alarm #2 (=1 if the alarm has been triggered)
Battery status : Binary coded power status
b7 = Unused
b6 = Unused
b5 = Unused
b4 = Mains power source
b3 = Unused
b2 = Dead battery
b1 = Low battery
b0 = Sufficient battery level
Mains: Mains power source
Heating: Heating system status
Flow default: Pumping system status (0 = OK)

3.5. Maintenance

Password protected, the Maintenance function allows modification of the instrument internal parameters.



3.6. About


About...
RnView 3
V3.1.1
ALGADE 2013
ALGADE
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Close