Table of contents

Release History :

v1.0 First Release
v1.1 FW compatibility, restitution resume
v1.2 New formula interface, profiles management, monitoring devices

1 Presentation

Newsteo™ RF Monitor software is designed to manage Newsteo™ products: token, logger and tracker.

Its main functions are:

- list all RF-devices detected in the area
- configure RF settings (channel, power)
- configure record parameters such as period
- configure sensor thresholds and alert levels
- configure measure display range and formulas
- display live measures
- record live measures to file
- download recorded measure from device
- update device firmware ...

This guide will help you with RF-Monitor installation and use, and how to manage configuration, live or recorded measures.

For any help, information or in case of error in this documentation, please contact us at **info@prominova.se**

2 Installation

2.1 Requirements

RF-Monitor software needs following environment to work properly:

- laptop or desktop Personal Computer (1GHz CPU - 500MB RAM recommended)
- 1 USB Port
- Windows XP SP2
- 7MB of available disk-space for application and drivers

2.2 Install Procedure

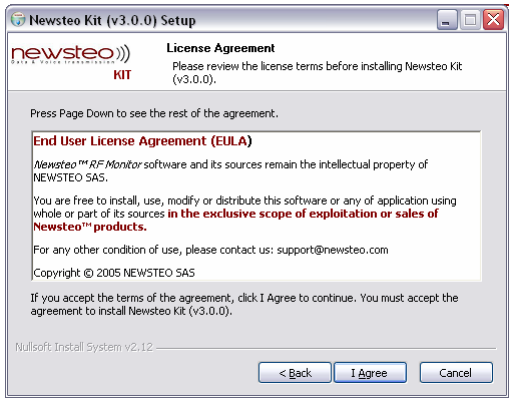
Do not insert RF-to-USB key until asked to

Insert RF-Kit CD ROM. If your CD/DVD auto-run option is not activated, or installing from downloaded version, run ***Newsteo_Kit_v3.x.x_setup.exe***

1. Installer language

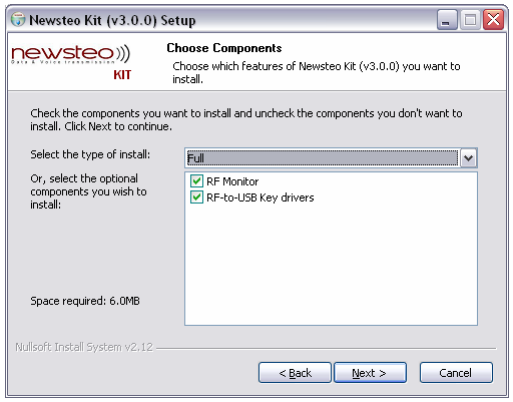
Choose installer language then valid. Setup available languages are: English, French, German, Italian and Spanish.

2. License agreement



Please read license agreement carefully, and then accept by clicking ***I Agree***.

3. Choose components



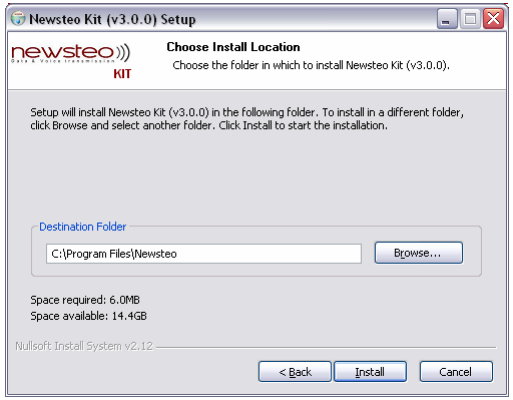
Select components you want to install:

- ***RF Monitor*** software that manages RF devices
- ***RF-to-USB Key drivers*** will install Newsteo Key drivers.

When updating software from previous version, you can select RF-Monitor only and keep key-drivers but:

Drivers must be installed at least one time and then computer reboot for RF-to-USB Key to be recognized by windows.

4. Destination folder



By default, Kit will be installed into ***Program Files\Newsteo*** folder that we advise to keep unchanged. Click on ***Install*** to perform setup into selected folder.

5. Reboot

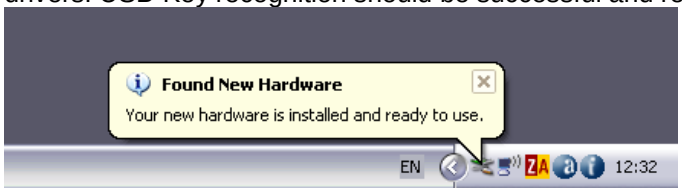
Kit setup successfully ended: click "*Finish"* to achieve and reboot your computer: this step is mandatory.

Reboot before RF-to-USB Key insertion

6. Key detection

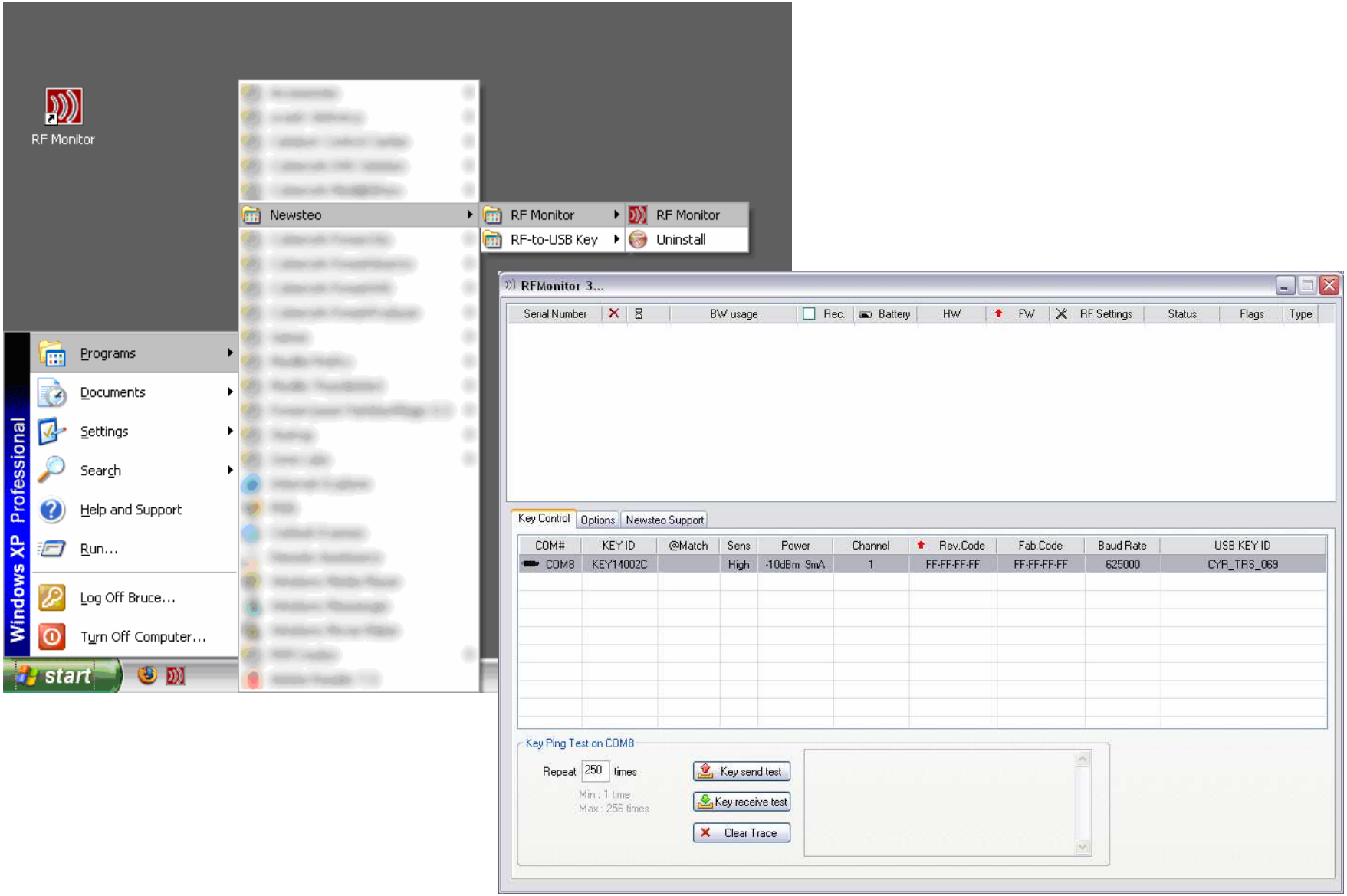
Once your computer has restarted, insert your key.

A pop-up should appear in task bar, informing that a new hardware USB device was detected: Windows will automatically find and register drivers. USB-Key recognition should be successful and ready to use.



7. Run RF Monitor

You can now run Newsteo™ RF Monitor by using desktop, start-menu or quick-launch shortcuts.



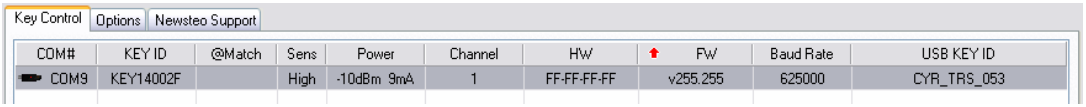
3 Quick Use for Monitoring Logger

This section is a fast description about how to use a Monitoring Logger. This Quick Use concerns the Logger 211 (Temperature sensor), Logger 221 (Temperature and Relative Humidity sensors) and Logger 231 (External PT 1000 temperature sensor). Example is given for a Logger 221.

3.1 Logger configuration

1. **Insert RF-to-USB Key**
2. **Start RF-Monitor**
3. **Check RF-to-USB Key**

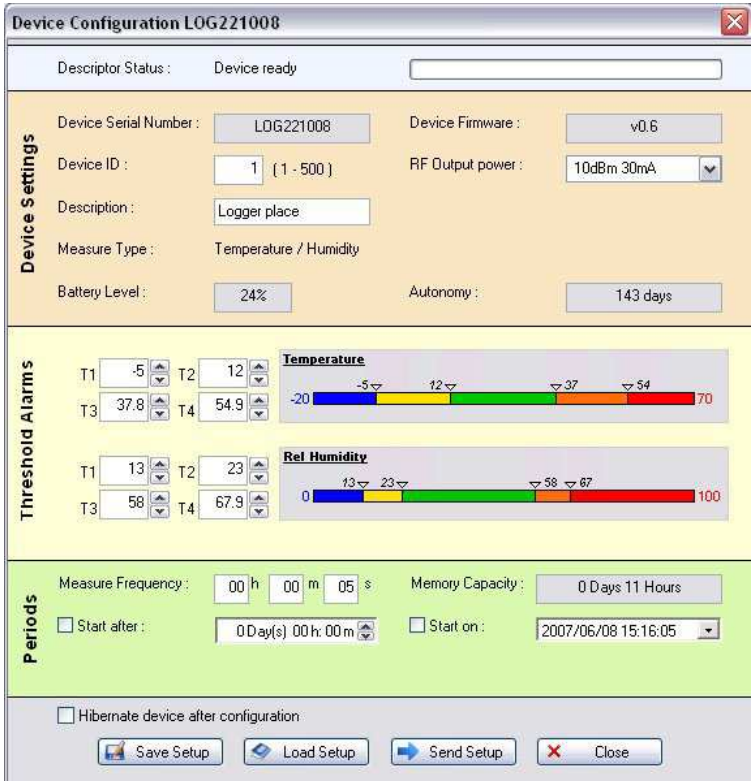
Check that you key appears in RF-Monitor ***Key Control*** list.



4. **Insert logger battery**

A new window appears automatically: **YOU HAVE TO WAIT UNTIL THE LOGGER INFORMATION IS FULLY LOADED.**

When “Device Ready” appears, you can set information for the **Logger Configuration**.



***Device Serial Number:**

Unique industrial device identifier, used for RF Communication with RF-to-USB key and RF-Monitor (can not be modified).

***Device firmware:**
Version of the firmware installed in the Logger (will not be modified unless update).

***Device ID:**
The device number that you choose to identify your Logger

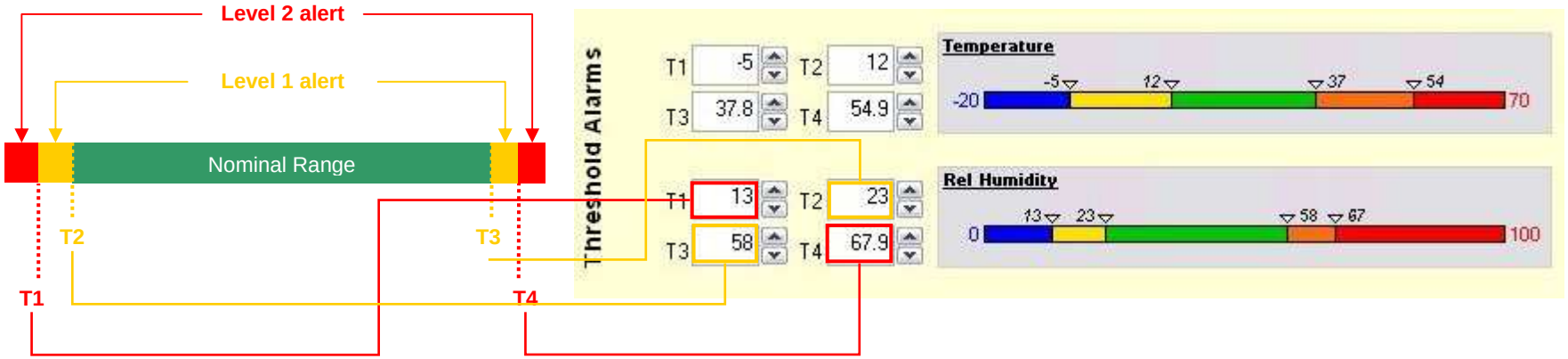
***RF Output power:**
Output power configuration for the RF range (high power→high range)

***Description:**
Name or description that you can define for your Logger (for example the place where the device is)

***Battery Level**
Remaining battery level percentage

***Autonomy:**
Estimation of the number of days that the Logger is able to work

***Threshold Alarms for Temperature and Humidity:**
You can define low and high level thresholds for temperature and humidity alarms.
Low and high level thresholds definition.



In this example, if the temperature is under 12℃ a sound will ring (alarm 1) and if the temperature is under -5℃ another sound will ring (alarm 2) .

***Periods:**
You can define the **Measure Frequency**. For example, if you choose 15 minutes, the Logger will take and send measures every 15 minutes. **We advice you to choose a frequency over 10 minutes for a better battery autonomy**
The Memory Capacity indicates the number of days and hours that the LOG is able to record in its internal memory, if it is not able to communicate its measures to the PC (depending on the measure frequency).

You can configure an automatic switching on of your logger by:

- Configuring the delay before switching on (hours, minutes and seconds)
- Configuring the starting date and time
- Selecting “Hibernate device after configuration”. The logger will be in hibernate mode: it won’t take and send measure. The logger will be switch on by **swiping the magnet near the led of the Logger.**

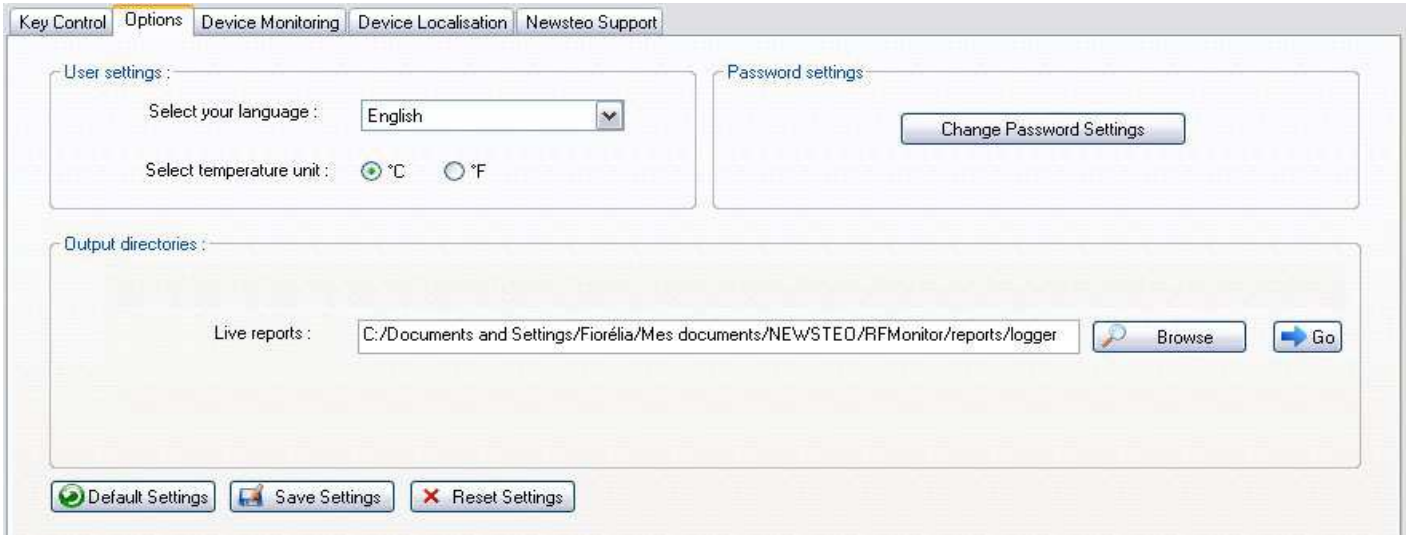
Click on “Send Setup” to send configuration to the Logger

You can save setup by clicking on “Save Setup” in order to load same setup to another Logger (by clicking on “Load Setup”).

After the configuration the RF Monitor window appears.

3.2 Options

This tab enables you to select the **application language** and the **temperature unit**.



You can also **set a password** to limit the access to the Logger setting panel. To add or change a password, click on “Change Password Settings”.

The Live Reports is the **measures report** saved in an EXCEL file. You can select the file directory by clicking on “Browse” and select your file. If you click on “Go”, the file directory will be opened.

Click on “Default Settings” if you want **to set default settings**.

You can **save your customized settings** by clicking on “Save Setting”. Click on “Reset Setting” **to erase your last modifications** on your customized settings.

Click on “Save Setup” to save your customized settings.

3.3 Device monitoring

This tab contains all devices connected to your computer. In this example, there is one Logger connected with ID001 for identification and “Logger place” for description.

You can connect up to 500 Loggers which will appear on this window.

Alarms button
Click on to enable/disable all devices alarms

Slide Show button
Click on to show different devices pages

Search Device ID
To access directly to a device from its ID

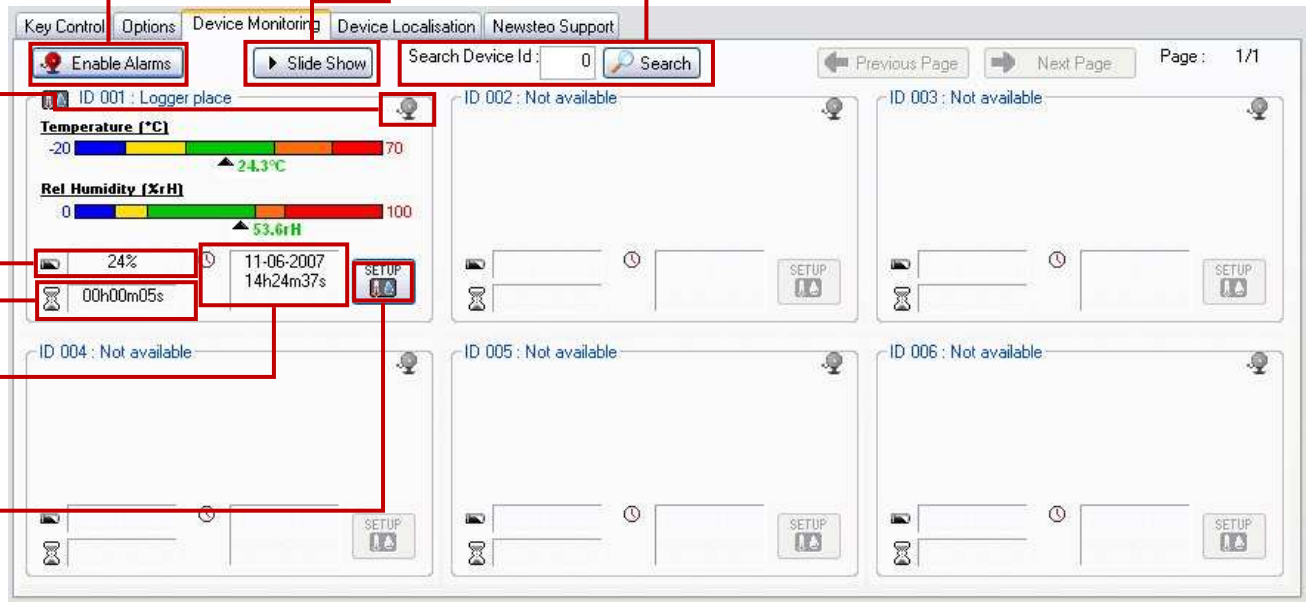
Logger 001 alarm
Grey=OFF Red=ON
Click on to enable/disable only this device alarm

Battery level
Battery level percentage

Measure frequency

Last measure
Date and time of the last measure

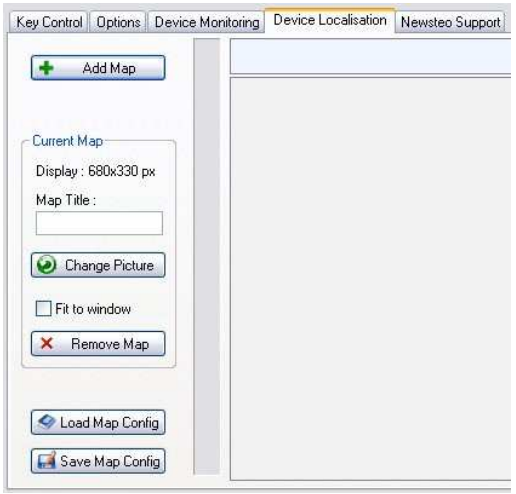
Setup Button
Click on to access to the device configuration (see 5.1)



3.4 Device localization

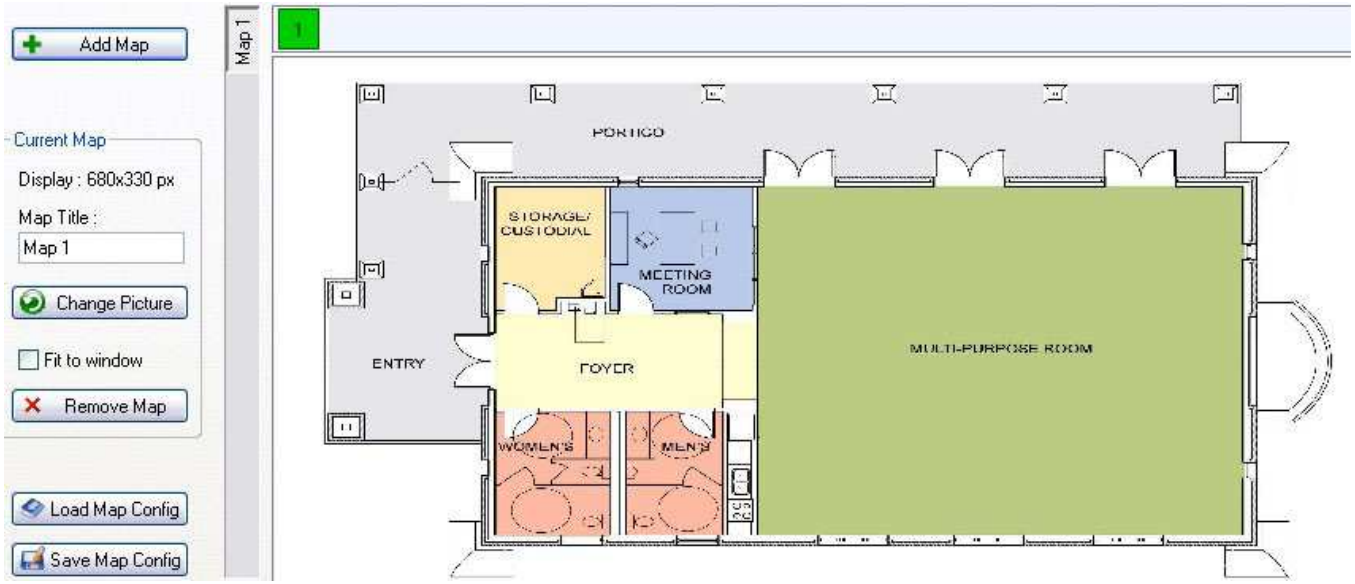
Another tab was created for a better monitoring.

You can customize this window by adding a plan, a map or a photo (files format in jpeg).



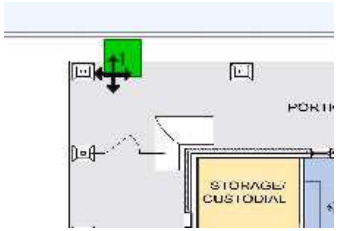
To add a picture, click on “Add Map” and click on “Change Picture” to select the picture

Your logger is represented by a square with logger identification (“1” in this example).

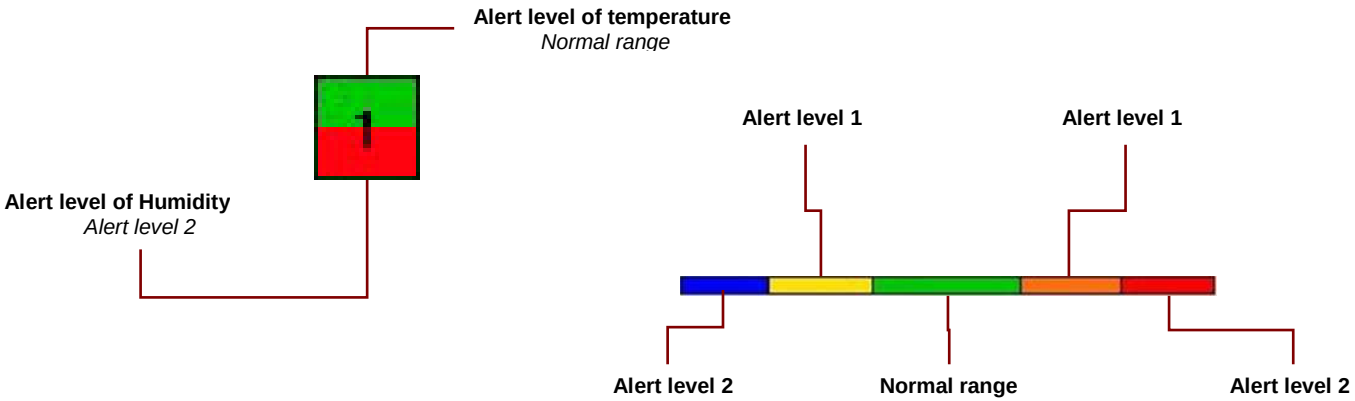


Click on the square to place it on the map.

To remove it from the map, click on the right button of your mouse.



Now, you can supervise Temperature and Humidity of each place in your industrial building. **You can double click on a square to see the measure it takes.**
The color of each square will show you the alert level:



Colors correspond to the configuration of alert levels that you made in the Logger configuration (see 5.1).

3.5 Check control function

This function enables the supervisor to notify if Temperature and Humidity are normal. When you are not in front of the monitoring computer, you can check the environment by swiping a magnet near the Logger. The led will switch on with a color depending on the alert level (see configuration 5.1):

RED	Alert level 2
ORANGE	Alert level 1
GREEN	No Alert, Nominal range

In the PC side, a new measure is added in the live report. This added measure can be used to know if the rounds man has manually checked the Logger.

3.6 Lost transmission function

If the wireless transmission is interrupted, a warning message is displayed and an alarm rings (if the alarm function has been activated).

When the Logger is not connected to the computer, the Logger is able to store measures in its embedded memory.
At the next connection with the computer, the Logger will restore all recorded measures. The device will send 9 recorded measures and the current measure at each transmission to the PC (every 10 minutes if the measure frequency is set on 10 minutes).

3.7 Application example by creating a network with Loggers

This example will show you how you can create a network with 10 Loggers.

1. **Start RF-Monitor**
2. **Insert RF-to-USB Key**
3. **Insert a battery in the first logger**
4. **When the Configuration panel of the Logger** appears, wait for the message “Device Ready” before set up. Then you can set up the first Logger which we will name as ID 001 (see 5.1).
Click on “Send Setup” to validate your Logger configuration.

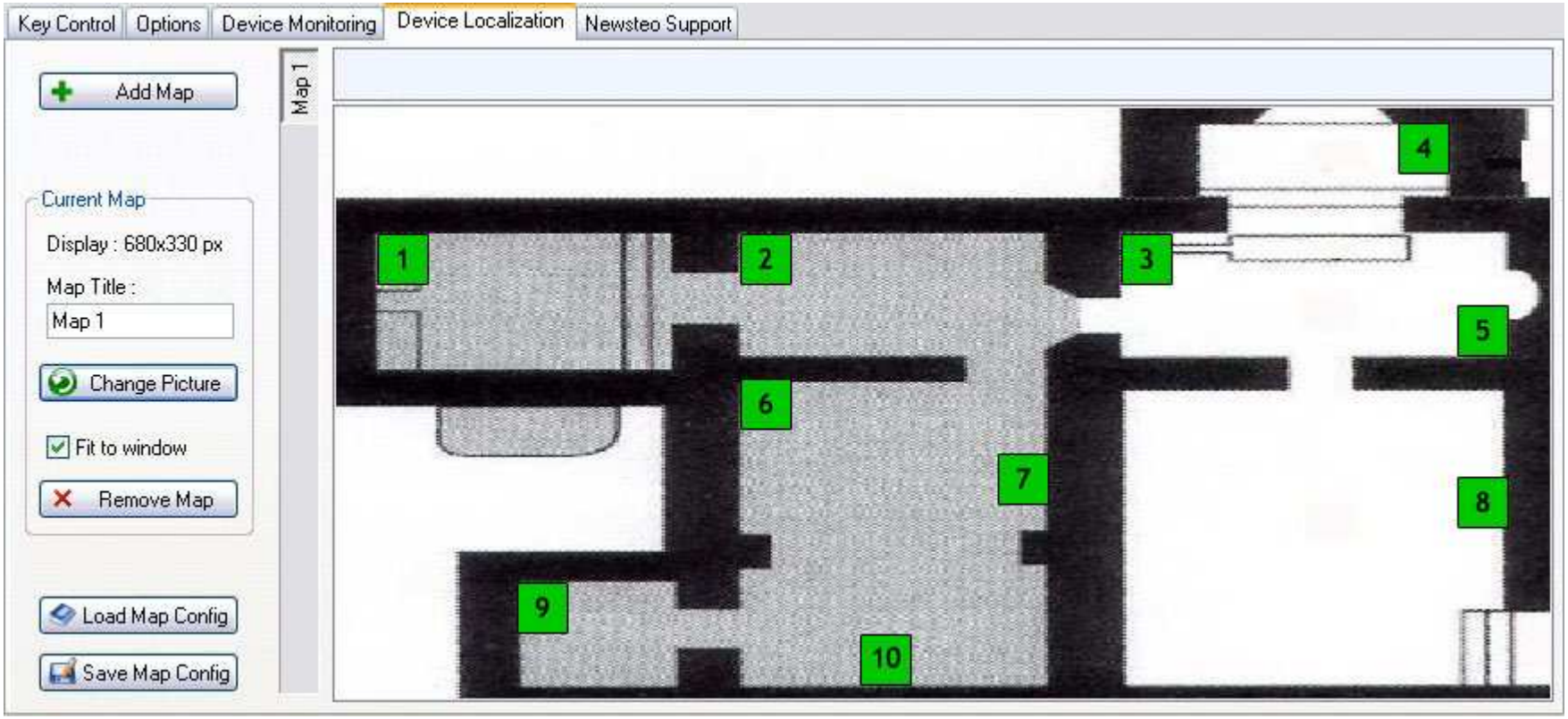
If configuration is the same for other Loggers, you can save it by clicking on “Save Setup”. Setup can be loaded for other Loggers by clicking on “Load Setup” but you must change the Logger ID (and possibly the Description).

Then, insert logger battery in another Logger. The Configuration panel of the Logger will appear.
In this example, we will set the same configuration for all Loggers and name them ID 001 to 010.

Don’t forget to click on “Send Setup” after the configuration for each Logger

5. Customize your own “Device localization”

Click on “Add Map” and click on “Change Picture” to select the picture in its file directory.
In this example, we took a building plan for picture. Loggers are represented by squares numbered with logger identification (1 to 10 in this example). These squares are placed in the different rooms where Loggers are (see part 5.4).



Now you have an ideal monitoring panel to supervise your environment.

3.8 Support

This tabs displays information about Newsteo™ support and the way to contact us for any question about the use of RF-Monitor or our products.

4 Annexes

1. Channels list

Firmware channels are here described for user which is developing its own application only. If simply using RF-Monitor, please refer to first column.

RF-Monitor channel	Firmware channels	Frequency
1	16	865.2 MHz
2	18	865.6 MHz
3	20	866.0 MHz
4	22	866.4 MHz
5	24	866.8 MHz
6	26	867.2 MHz
7	28	867.6 MHz
8	30	868.0 MHz

Important: Trackers (fw v0.5 and less) communicate on **channel 1** only. Future versions of tracker firmware will extend communication channels to full range such as for loggers.

2. Power values

Power	Byte Value
-10dBm, 9mA	0x00
-2dBm, 14mA	0x01
+6dBm, 10mA	0x02
+10dBm, 30mA	0x03

3. Device types

Device Type	Description
0	Identifier
1	ADC0
2	ADC0-1
3	ADC0-1-2
4	ADC0-1-2-3
5	Differential ADC (ref ADC0)
6	Booster VSensor + ADC
8	Logical input (6 max)
9	Logical ouput (6 max)
16	Temperature + Humidity
17	Temperature + Humidity + ADC0
18	Temperature + Humidity + ADC1
19	Temperature + Humidity + ADC2
20	Temperature + Humidity + ADC3
32	1 Flow meter
33	2 Flow meters
64	Wheastone
65	Wheastone + ADC0
66	Wheastone + Temperatures + Humidity + Vbattery