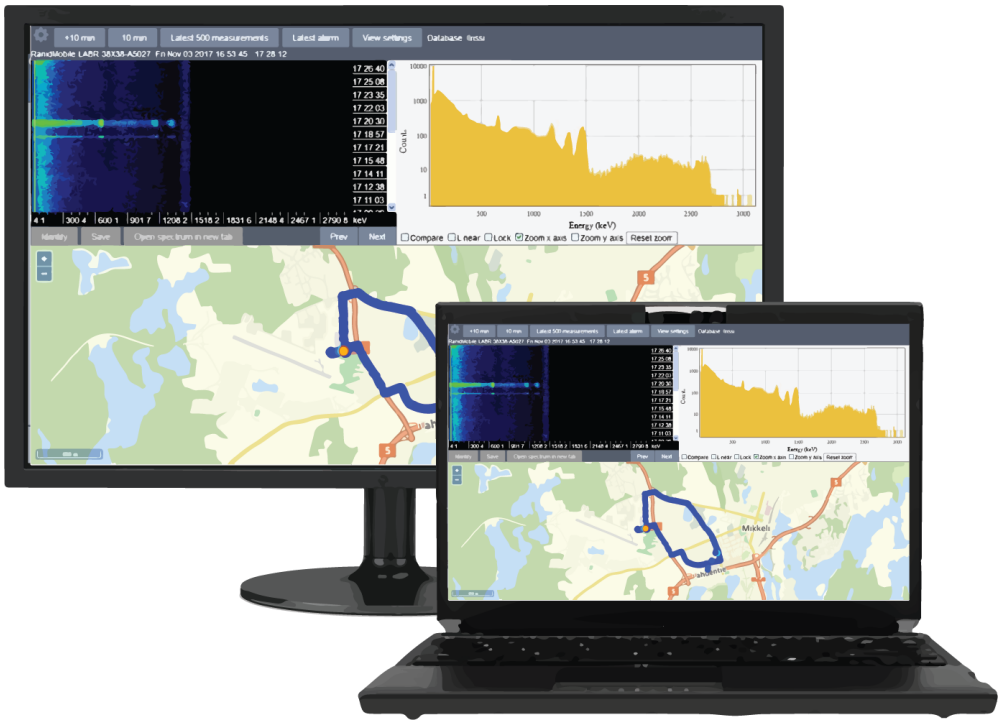


User Manual

Spartan Reachback Software

10.01.2019

Rev 1

ED28534

Table of Contents

Figures

Tables

No table of figures entries found.

1 Operation of the Spartan Reachback Software User Interface

1.1 Introduction

The purpose of this document is to describe how to operate the user interface of the Spartan Reachback Software.

The intention of the Spartan Reachback Software is to present the databases generated by the Ranid devices. User interface presents the Ranid devices' database measurements on a map with spectrum and spectrogram views.

In order for the user interface of the Spartan Reachback Software to function, a Linssi server connection is required. Installation of the Spartan Reachback Software and setting up of the Linssi server are not described in this document.

1.2 Main Window

Main window of the Spartan Reachback Software below will appear without measurement data when Reachback page is opened in an internet browser. The first step is to configure Search settings according to chapter 1-3: Search Settings.

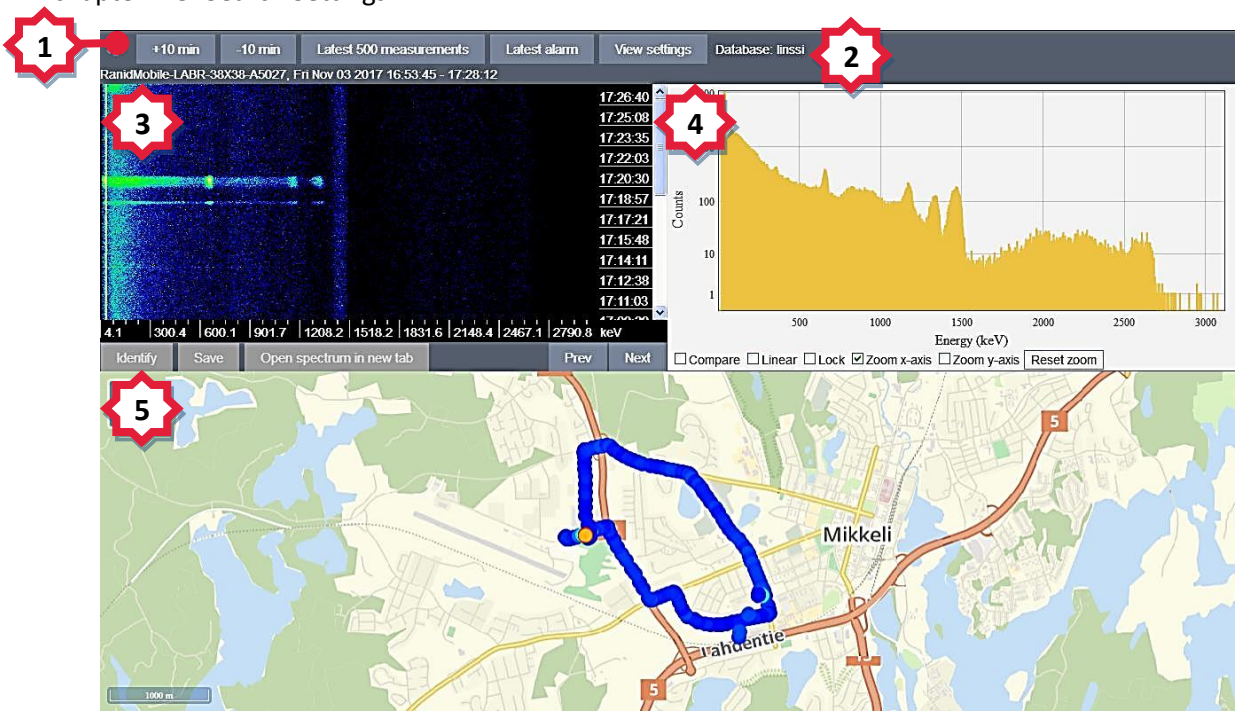


Fig. 1-1 Main window showing the last 500 measurements

Main elements of the main window:

1. Search settings
2. Search function bar
   - Used to search measurement from databases e.g. latest measurements or alarms
3. Spectrogram view and toolbar
   - Used to review measurement data
4. Spectrum viewer and toolbar
   - Used to operate and research spectra
5. Map view and zoom buttons
   - Used to view and zoom on the map

1.2.1 Search Settings Window

Search settings allow the browsing of the database data.

Setting up the Search settings:

1. Open the Search settings window by pressing the **"gear"** -symbol in the top left corner of the main window
2. Select the database to be used from **Change database** pulldown menu and press **Set** button to save the change
   - The selected database will be enabled and displayed in the Main window
   - It is also possible to import a saved database by selecting it from a file using **Browse** button and then pressing **Upload** button

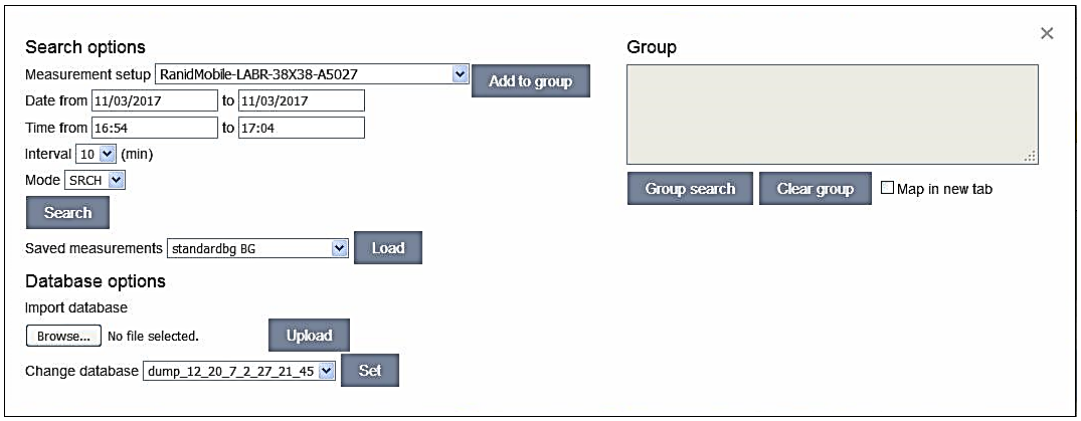


Fig. 1-2 Search settings window

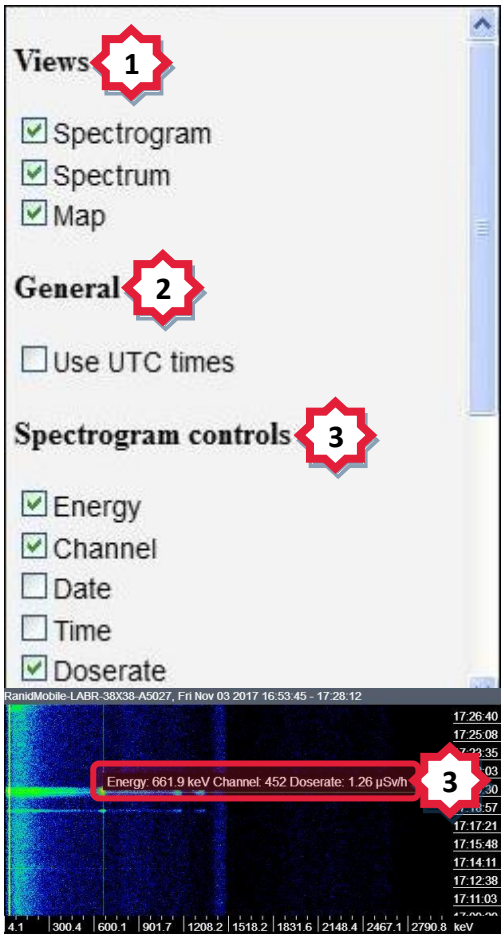
Searching measurements in Search settings window:

- Searching for measurements during a specified time period:
  1. Select the desired device from **Measurement setup** pulldown menu
  2. Select the desired date from **Date from** menu
  3. Select the desired time period from **Time from** menu
  4. Select the desired interval between measurements from **Interval** pulldown menu
  5. Select the desired monitoring mode from **Mode** pulldown menu
  6. Press **Search** button to display the measurements on the user interface
- Loading saved measurements to the user interface:
  1. Select the desired measurement from **Saved measurements** pulldown menu
  2. Press **Load** button to display the measurements on the user interface
- Group searching with multiple devices:
  1. Select a desired device and add it to the group by pressing **Add to group** button
     - Repeat this step for all desired devices
  2. Press **Group search** button to display the measurements of all group members simultaneously on the user interface

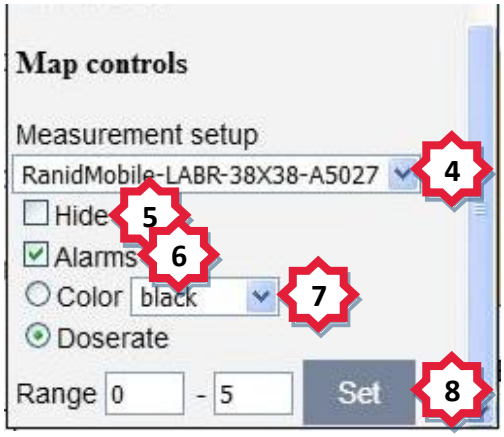
1.2.2 View Settings

Setting up the View settings:

Open the view settings window by pressing the **View settings** button in the Search function bar of the Main window



1. Choose the areas to be displayed in the Main window by using the checkboxes: **Spectrogram**, **Spectrum** and **Map**
2. Choose whether you wish to **Use UTC times** by using its checkbox
3. Choose the information to be displayed on the cursor's label in the spectrogram view by using the checkboxes: **Energy**, **Channel**, **Date**, **Time** and **Doserate**



4. Select the desired measurement device by using **Measurement setup** pulldown menu
5. Choose whether you wish to **Hide** measurement point symbol on the map by using its checkbox
6. Choose whether you wish to view **Alarms** on the map by using its checkbox
7. Select the desired **Color** for measurement point symbol on the map by using its pulldown menu
8. Set the measurement point symbol color on the map to correspond with the **Doserate** by using its checkbox. Additionally, the desired range of color needs to be set by filling in **Range** boxes and pressing the **Set** button

1.3 Operating Spectrogram View

The **Spectrogram view** displays spectra known as waterfall plot, that is a series of spectrum excerpts from the selected gamma detector. These spectrum excerpts are the horizontal lines of the waterfall and run from top to bottom with the oldest excerpts on the bottom.

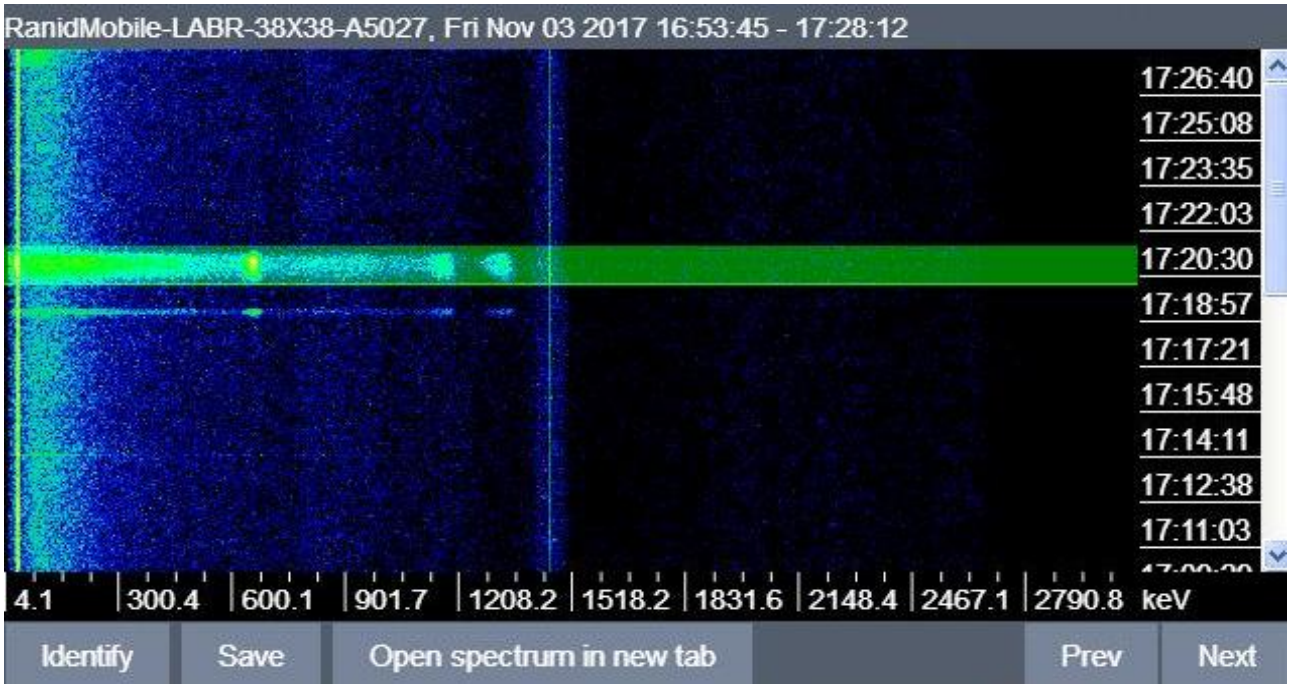


Fig. 1-3 Choose spectrum on spectrogram view to enable buttons of the spectrogram toolbar

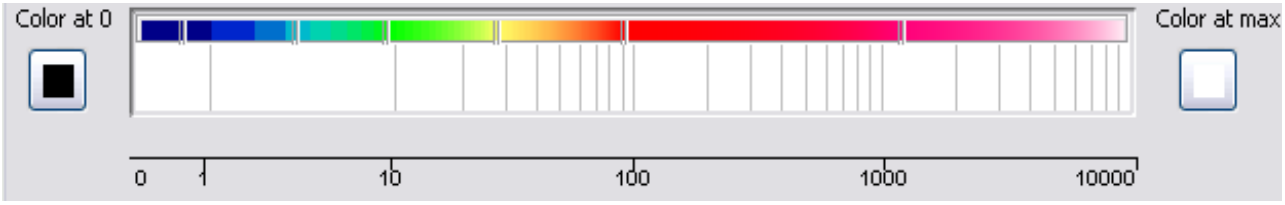


Fig. 1-4 The counts per channel for each spectrum are encoded as colours according to a color mapping

An excerpt of the spectra can be highlighted with the corresponding measuring point on the map by clicking it in the spectrogram view. Information label of the cursor can be set to display the start time of the spectrum. Further actions on the spectrum may be performed by using the mouse cursor.

Another functionality that can be performed by using the cursor is selecting a range of spectra in the spectrogram view. This is done by holding down the left mouse button and dragging it across the desired range of the spectrogram. Once a range is selected, further actions become possible.

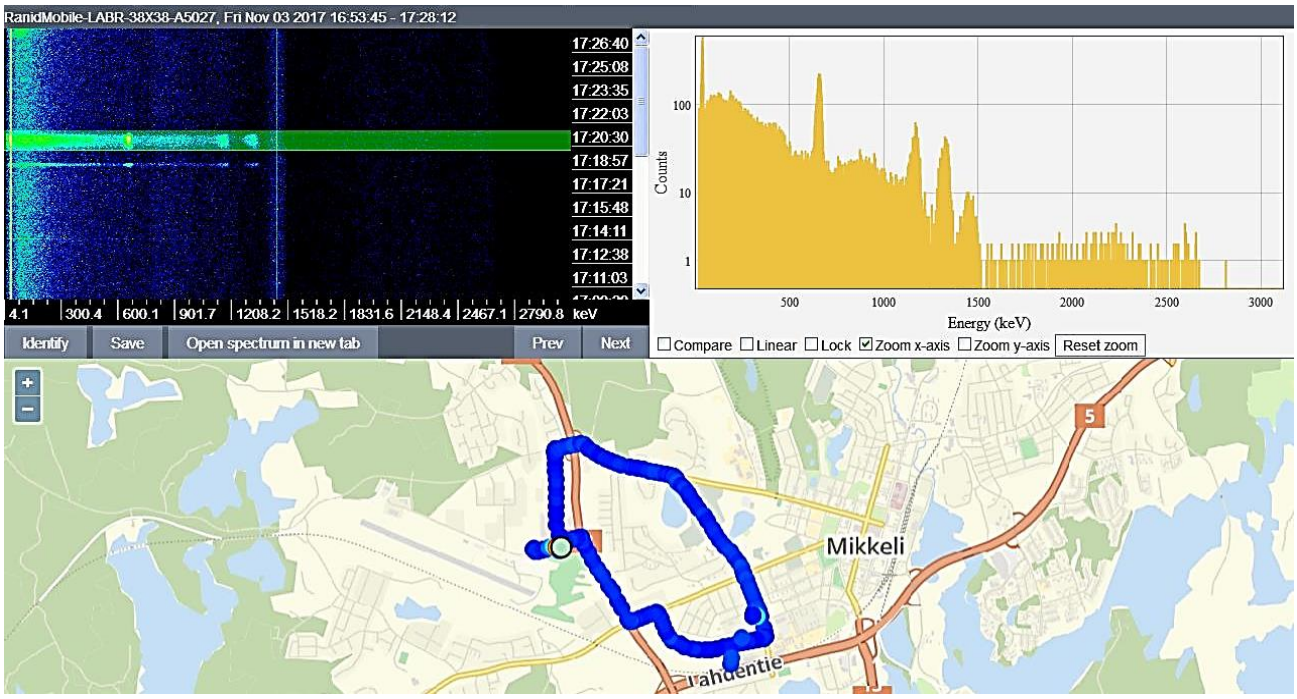


Fig. 1-5 The chosen measurement is displayed in the spectrum viewer and highlighted on the map and spectrogram view

The **Identify** button can be used to run the identification algorithm for the currently chosen measurement. The **Identification details** window will open up to how the results:

- Name of the nuclide
- Category of the nuclide
- Confidence level of the nuclide identification with the explanation and the peaks used to identify

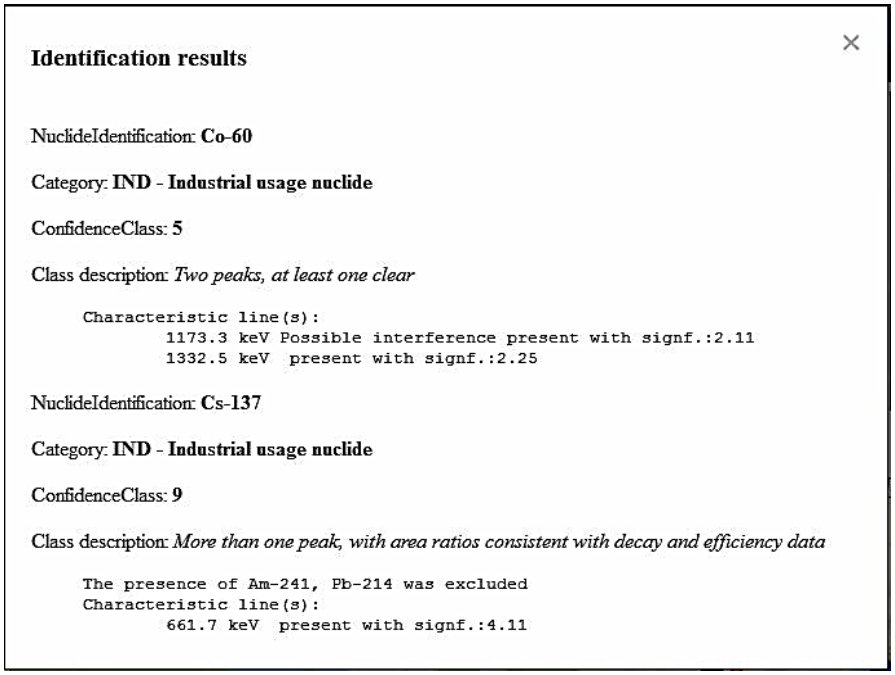


Fig. 1-6 The identification details window

The **Save** button opens up a save dialog that is used to save the currently chosen spectra of measurement to the database. All the available information must be filled before the save operation can be finished by pressing the **Save to DB** button.

Fig. 1-7 Save dialog window used to save the spectra of measurement to the database

Click the **Open spectrum in new tab** button in the **Spectrogram view** tool bar to open the spectrum viewer in a new tab.

The **Prev** button can be used to select the previous spectrum on the spectrogram view.

The **Next** button can be used to select the next spectrum on the spectrogram view.

1.4 Operating Spectrum Viewer

The **Spectrum viewer** displays the spectra in a more conventional energy vs. counts graph plot. The spectrum viewer can also be used to perform additional actions on the spectrum displayed in it.

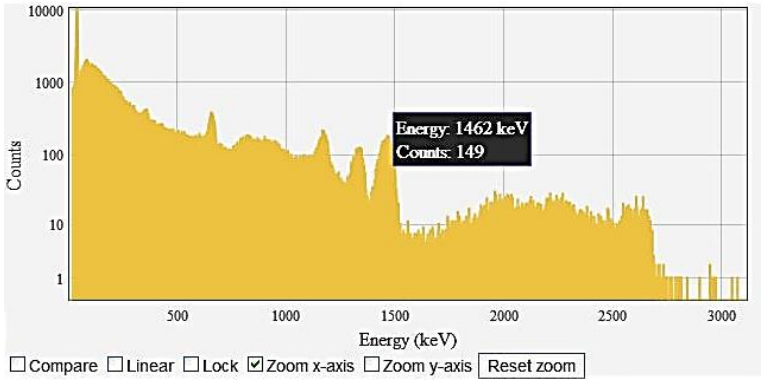


Fig. 1-8 Viewing energy values of the spectra by clicking on the spectra

The **Compare** checkbox allows comparing the currently displayed spectrum with another one. The spectra will plot differently when comparing is active. Both spectra are normalized to represent counts per second in each channel.

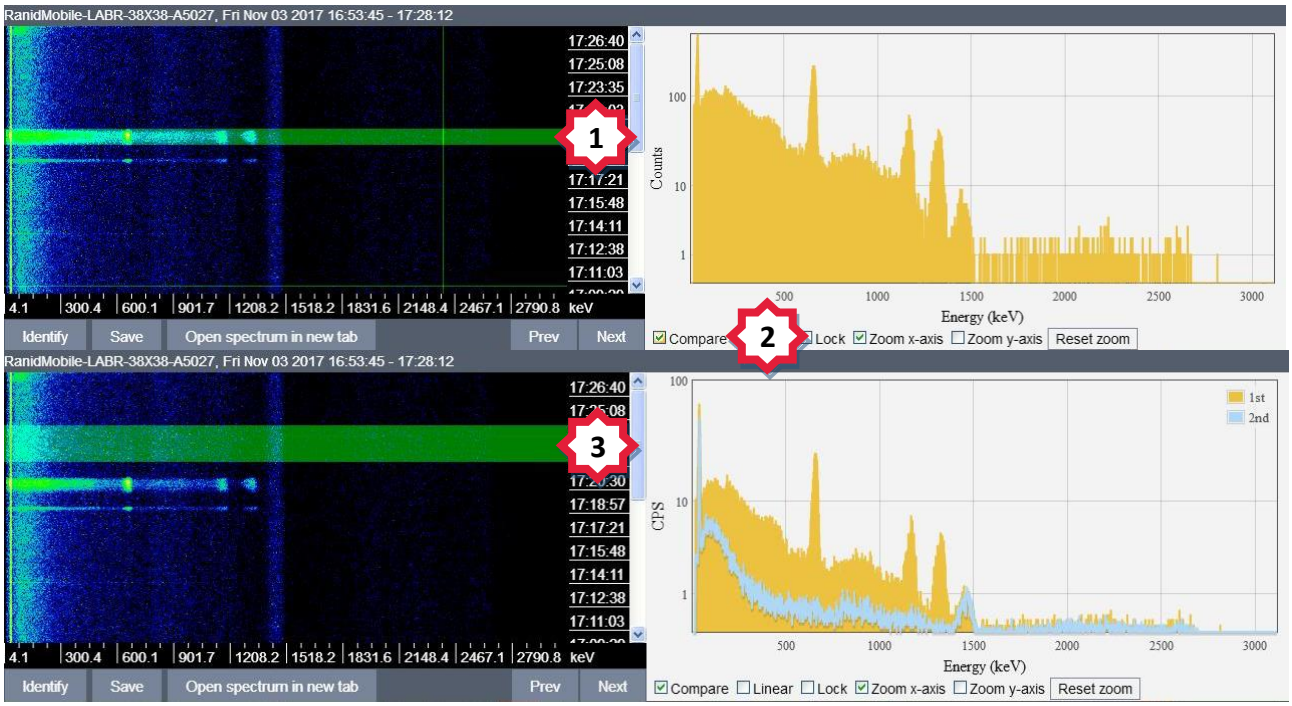


Fig. 1-9 Normal and comparison views of the Spectrum viewer

1. Choose a spectrum on the Spectrogram view
2. Check the compare checkbox
3. Choose another spectrum on the Spectrogram view

It is possible to change the view of the spectra from logarithmic presentation to linear representation by using the **Linear** checkbox.

Zooming in spectra is done by pushing either **Zoom x-axis** checkbox or **Zoom y-axis** checkbox and selecting the area of interest by dragging. The original spectra view can be restored by pushing the **Reset zoom** button.

1.5 Operating Map View

1.5.1 Pan and Zoom

Panning and zooming on the map view can be done using a mouse. To pan the map view, hold the left mouse button and drag the view to the desired direction on the map interface. To zoom in or out, scroll the mouse wheel forwards/backwards or use the **+/-** symbols on the upper left corner of the map interface.

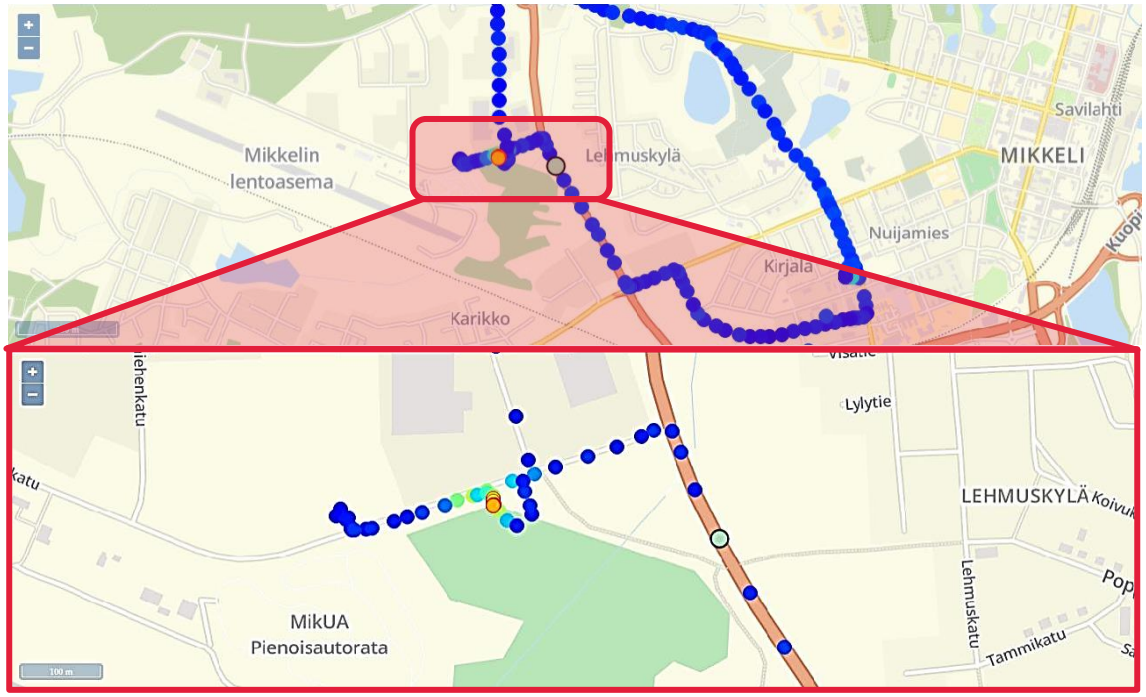


Fig. 1-10 Map interface and a zoomed area

1.5.2 Measurement Point

Fig. 1-11 Map view displaying each measurement point

Measurement points on the map have the following key elements:

- Clicking on a measurement point symbol displays information on the measurement point:
  - Name of the detector
  - Time
  - Measurement information
  - Exact GPS coordinates

This page has been intentionally left blank

This page has been intentionally left blank

4083 E 600 N
Rigby, ID 83442

Contact Details

Phone: (208) 557-6945
Fax: (208) 557-6946
sales@jradmeters.com

www.wbjohnsoninstruments.com