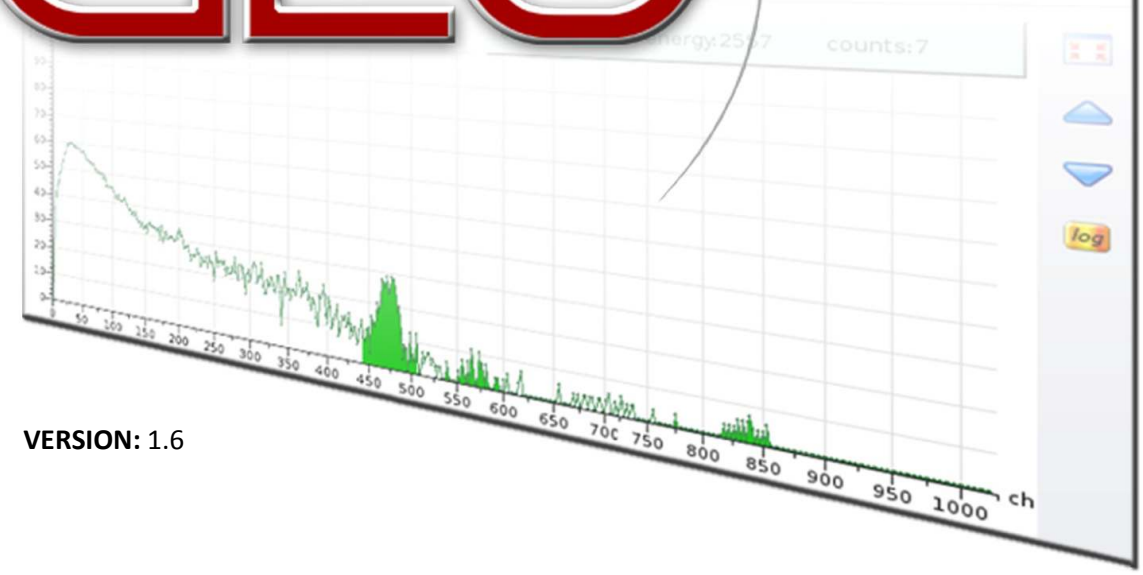
GEORADIS

GEOVIEW



VERSION: 1.6

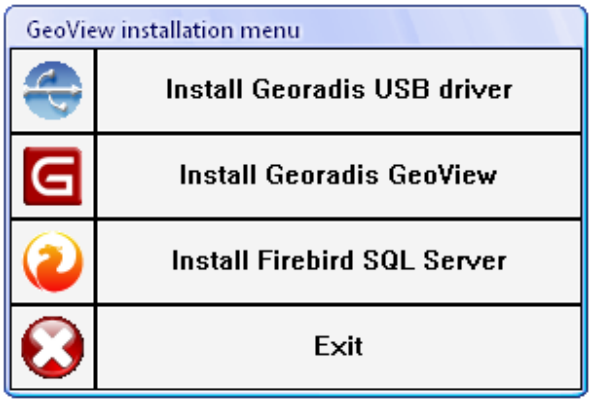
USER'S GUIDE

1. SOFTWARE INSTALLATION

Georadis products are supported by multipurpose database and browning system called GeoView. The Core of the system is a SQL database running independently and giving access to multiple users and applications. This allows the creation of to create one common storage place for a variety of our instruments (instruments can be the same or different types) and can be shared to share by many local hosts, or on just one machine using minimal configuration. If not needed such a network all works in minimal configuration on local machine. The system consists of three main components (Georadis USB driver, GeoView and Firebird SQL server). Installation is controlled from GeoView installation menu (from CD supplied or available to download from the internet).

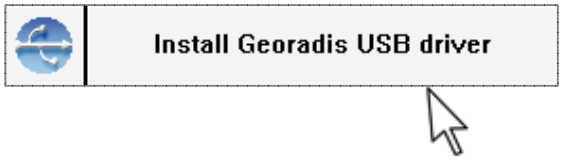
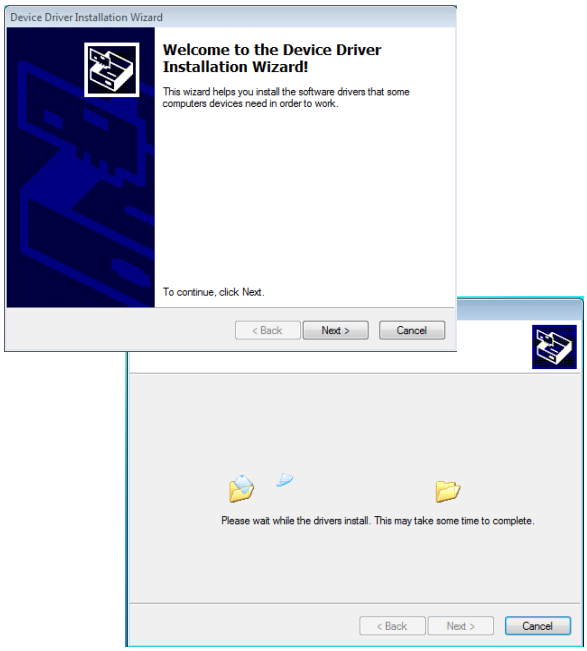
A. From CD double click on icon **setup.exe** if not started automatically after inserting CD. From any other device run setup.exe

B. GeoView installation menu will show on display.

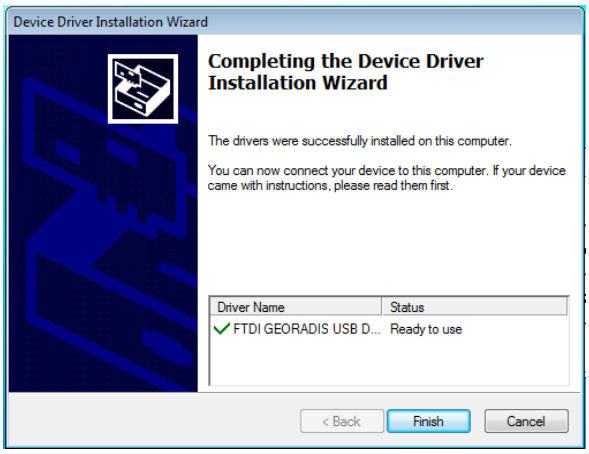


1.1 GEORADIS USB DRIVER

*** Georadis USB driver** controls communication between instrument and PC via USB.

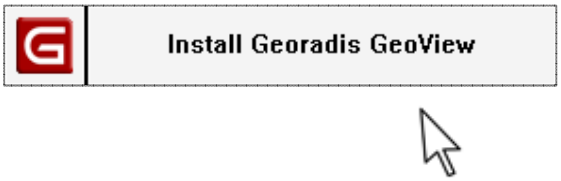
A. Start installation of the driver clicking on the appropriate button	**B.** Installation wizard will start and navigate through installation process
	

C. After successful installation touch Finish.



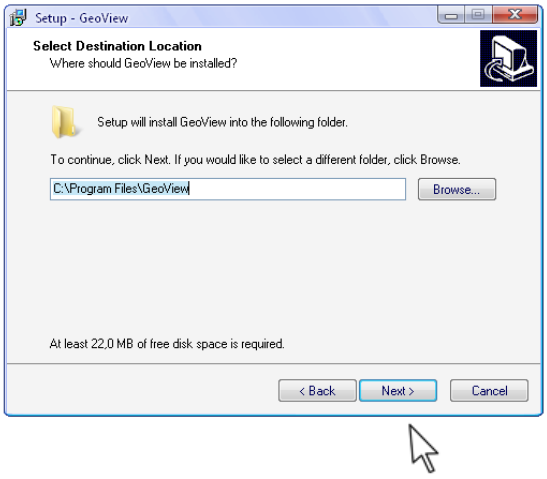
1.2 GEOVIEW INSTALLATION

A. Click the button to run installation process

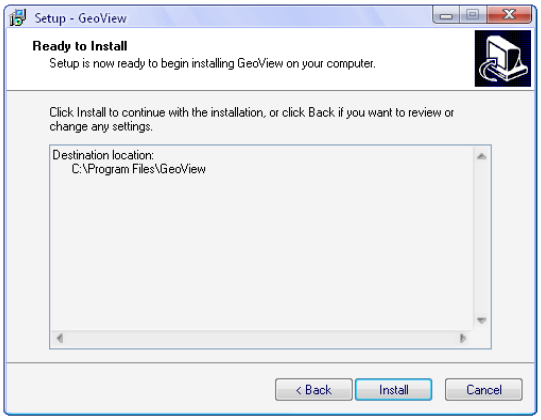


B. **Geoview Setup Wizard** will start, click button **Next >**

C. Select destination of program code.
** Requested occupied space is 22 MB*



D. Check final destination and continue with **Install**

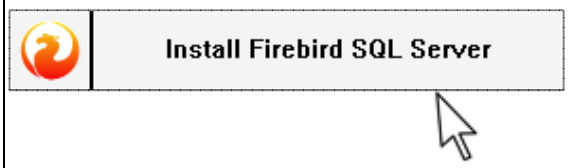


E. Successful installation is announced with following message. Click **Finish** to leave wizard.

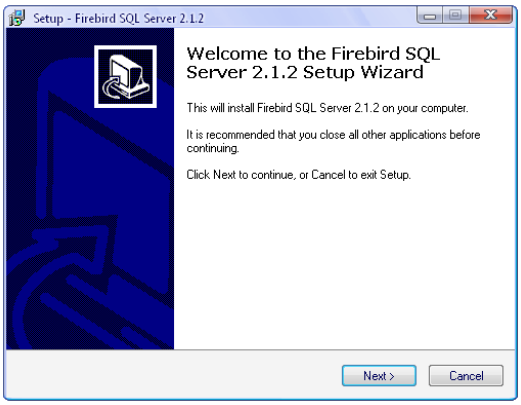
1.3 FIREBIRD SQL SERVER

*** Firebird SQL server** is data base server**.** All Georadis programs use common way of data storage. A SQL solution offers support to variety of user's application without direct interfering with GeoView. The SQL server may work as local or can be shared with more instances as remote database.

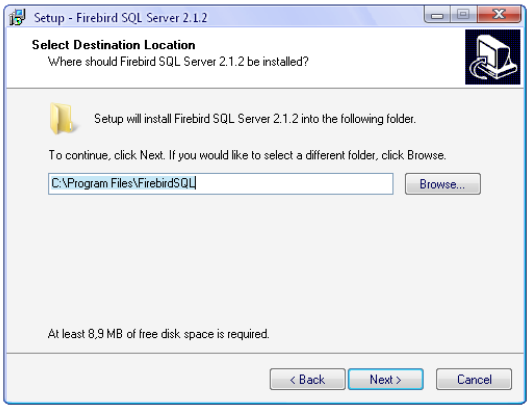
A. Click the button to run installation Wizzard



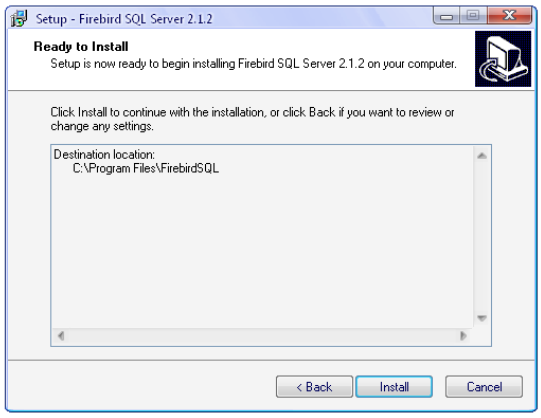
B. After opening **Firebird SQL server Setup Wizard,** click **Next >**



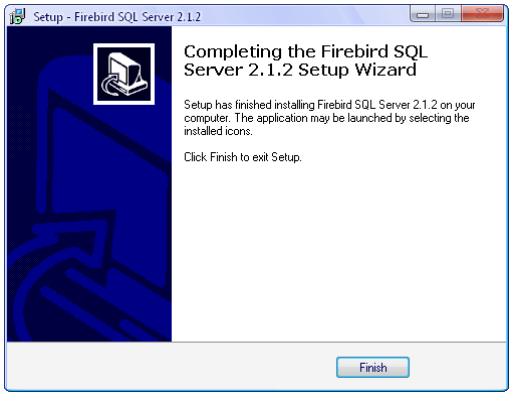
C. Select final destination of the program
* program requests 8.9 MB of memory space



D. Installation is ready. Click Install to continue.

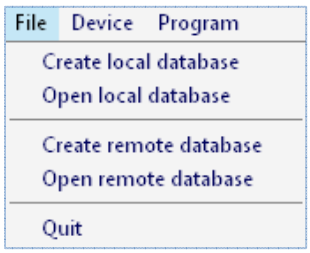


E. To leave wizard after successful installation click **Finish**



2. MAIN MENU

Tab **File**

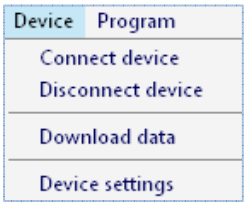


User can create a local database (only once) and open the database to work

A remote database on any remote server can be created or any existing opened

Terminating the program

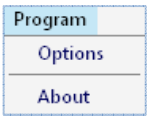
Tab **Device**



Connect or disconnect device

Download data from device and setting

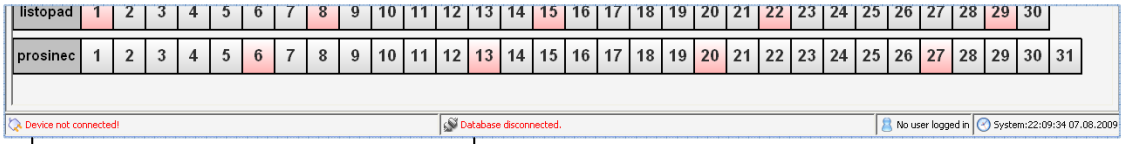
Tab **Program**

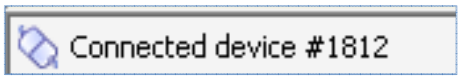


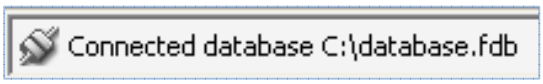
Set up options

Info about program

Status bar



	Connection status – device is not connected
	Device s/n 1812 is connected and ready

	There is no database in use
	Database in use

2.1 PROGRAM START

User can start the program :

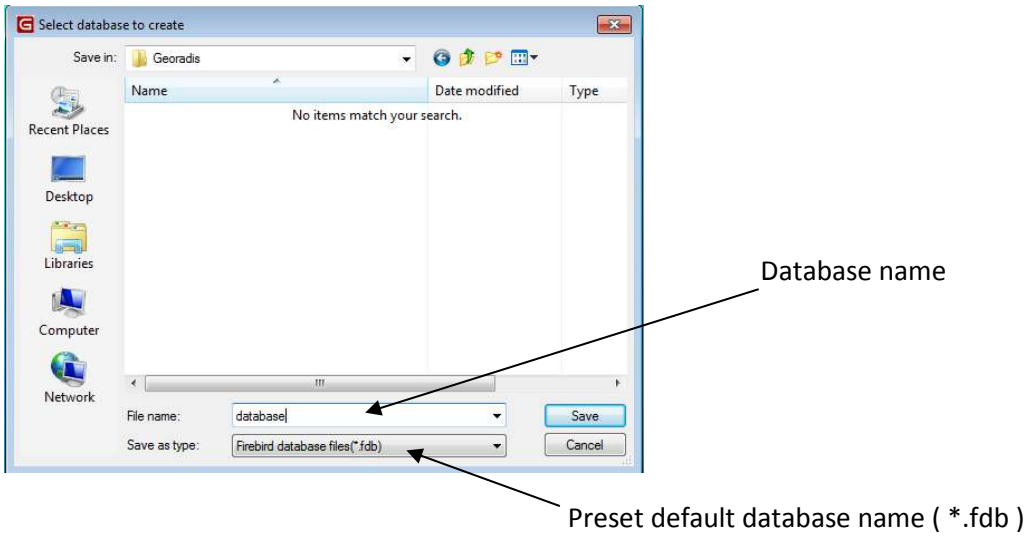
A. Double click on Icon on desktop 	**B.** From start menu **Windows (Start) > Programy > Georadis GeoView >** **GeoView**

2.2 DATABASE

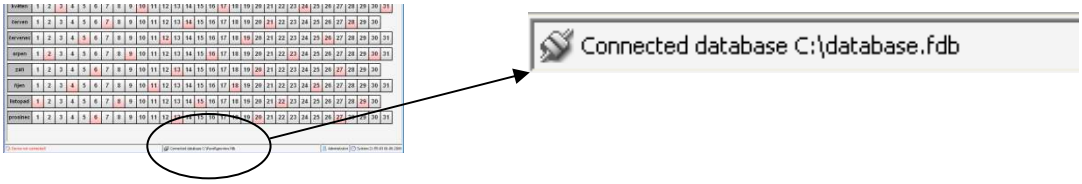
2.2.1 Creating a database after installation

Program will recognize if any database was created If not (typically first run after installation) the program will start a wizard to help create a database:

A. Creating a new database requires definition of name of the database file and its location. Windows standard interface helps to perform this job.



After database creation program connect the database and is ready for complete work**.**

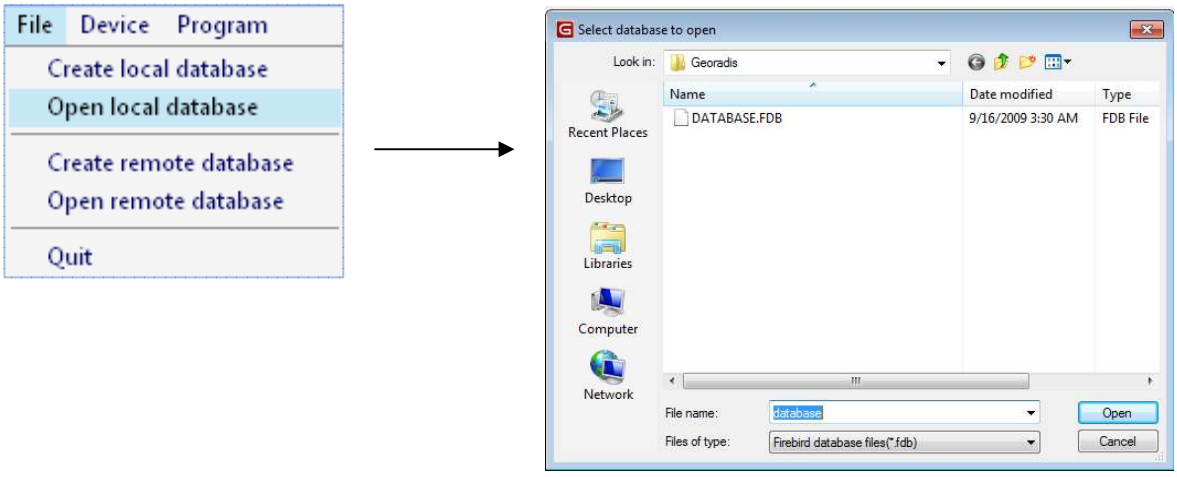


B. User can block database wizard typing NO. Program will continue but no database will be connected. A new database can be created later.

2.2.2 Local database LOGIN

A. To login in any database there must be database created (local or remote). If does not exist use **File > Create local database** and use windows user interface. (See 2.2.1 A.) Connecting to an existing database continue with B.

B. To connect existing local database click **File > Open local database** and select location and name of database file.



2.2.3 Remote database LOGIN

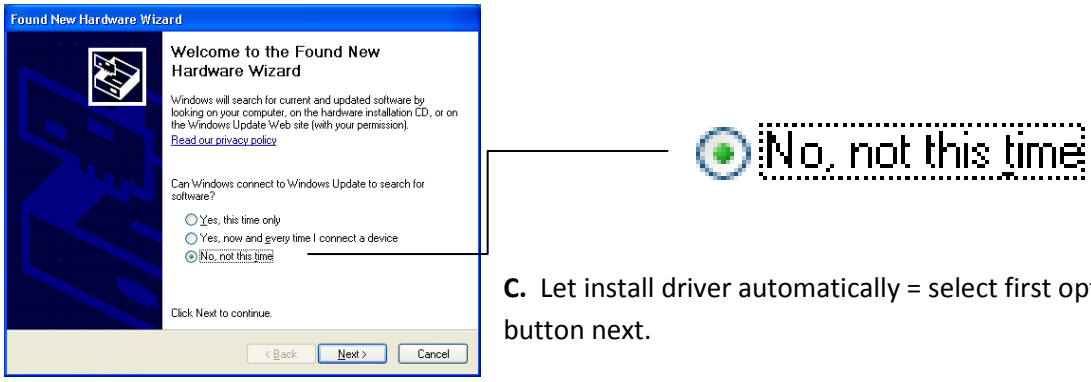
Operation with remote database (creation or login) is same as with local database (see 2.2.2.) only location of a database files in on any remote file server.

2.3 CONNECTING INSTRUMENT

***** All functions related to communication with instrument requires installed **GEORADIS USB driver** on local computer.

A. Use USB-miniUSB cable to connect instrument with local PC. Following message appears in right bottom corner:

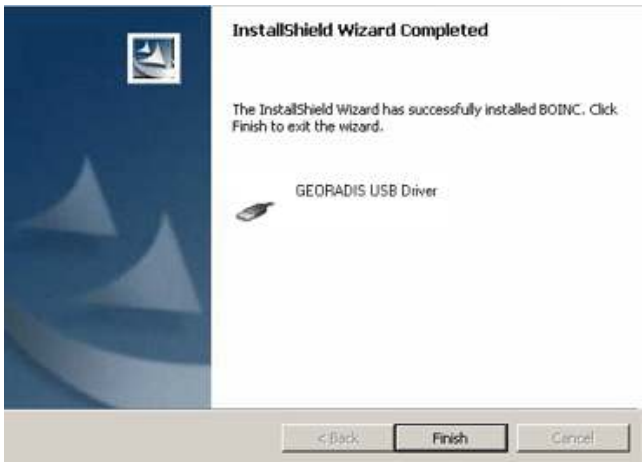
B. New **Hardware installation wizard** will start automatically. It is not required to let PC check for any suitable driver. Select **No, not this time** and button next.



C. Let install driver automatically = select first option and button next.

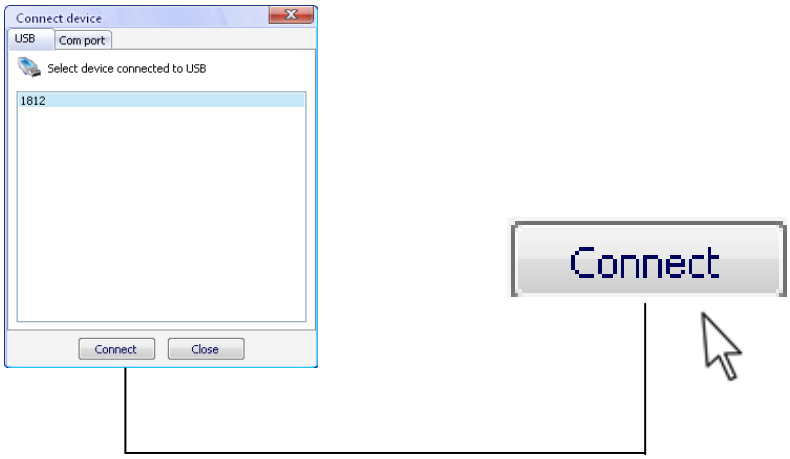
D. System will perform installation.

E. After **successful installation** press **Finish**



E. To connect instrument click on icon connect on tool bar.

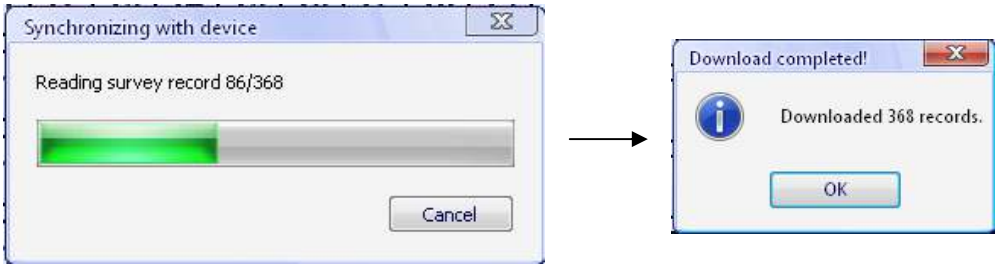
F. New pop up windows with name Connect device will show on display. The windows has two tabs (Com port and USB). Select tab USB and list of recognized instruments will be completed. There may work more instruments in parallel. All will introduce by unique serial number. To select requested instrument click on appropriate serial number on the list and click on continue.



2.4 DATA DOWNLOAD

A. To download data from selected instrument and synchronize records click on icon **Download**

B. Downloading progress is indicated by following message box. Completed, info box will announce download result. Type **OK** to continue.



2.5 INSTRUMENT LOGOFF

To disconnect instrument simply click on icon Disconnect on tool bar.

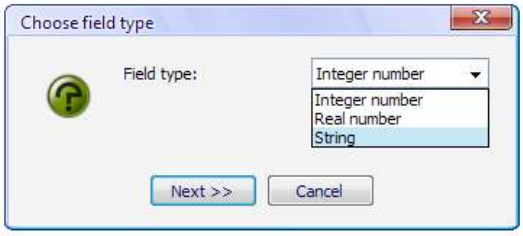
2.6 NEW ATTRIBUTE FIELD IN DATABASE RECORD

User may extend database record for fields where to write notes, additional numbers etc.

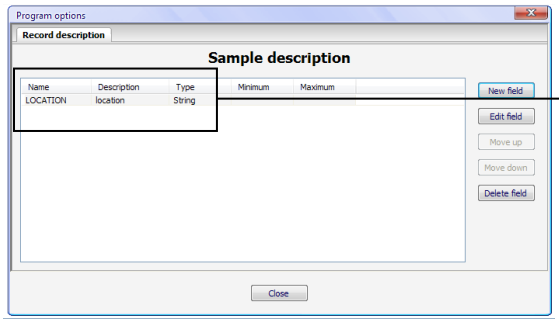
A. Click on icon **Options** on tool bar

B. Click button **New field**

C. Select suitable type of field – *Integer number* , *Real number*, *String* → click **Next >>**



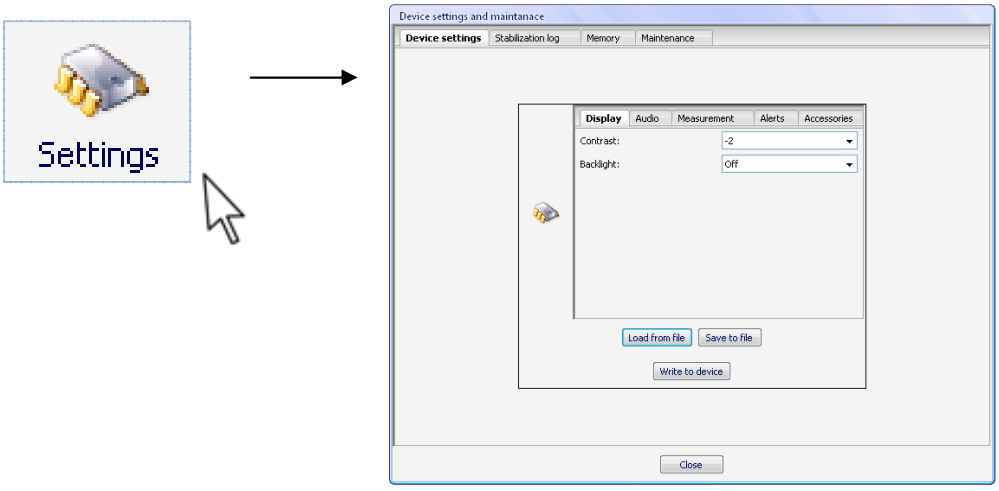
D. Insert **Field name** and **Field description.** To assign click **Add field**



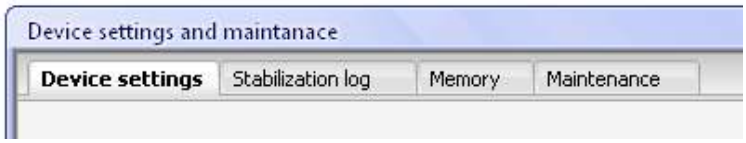
Name	Description	Type
LOCATION	location	String

2.7 INSTRUMENT MAINTENANCE

Instrument must be connected to the system (see 2.3.E.,F). To start click on icon **Settings** and following window will show on display.



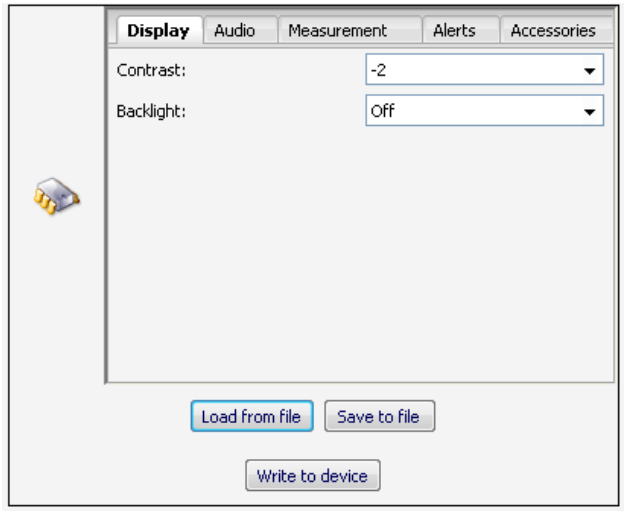
The window is structured in function groups. Each group is accessible after clicking on appropriate tab:



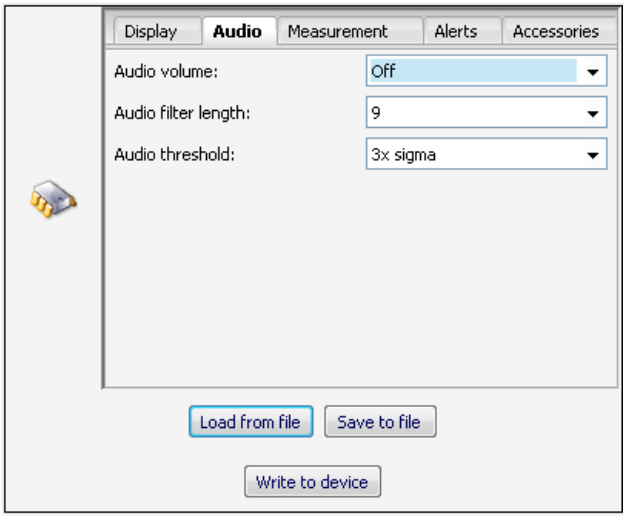
2.7.1 Device settings

Tab **Device settings** is for access to basic instrument settings and is divided next in following tabs:

- ***Display*** – contrast setup and backlight control



- ***Audio*** volume control



- ***Measurement***

Total scan period - scintilometer integration time per one display cycle, number of seconds between two readings

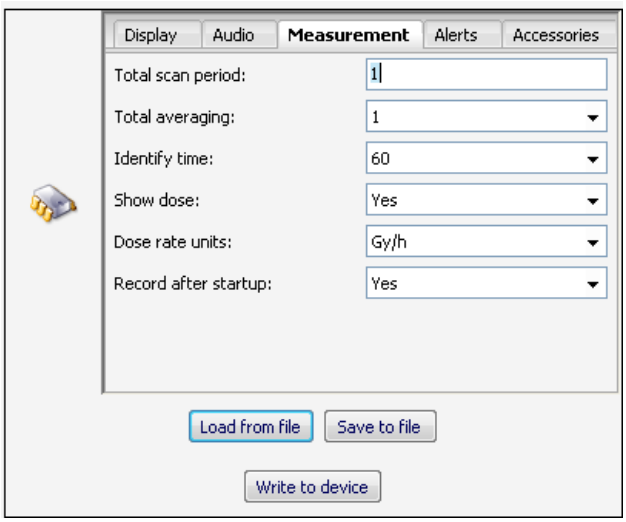
Total averaging - moving average filter length. Number of readings on filter buffer

Identify time - spectrum integration time for nuclide identification

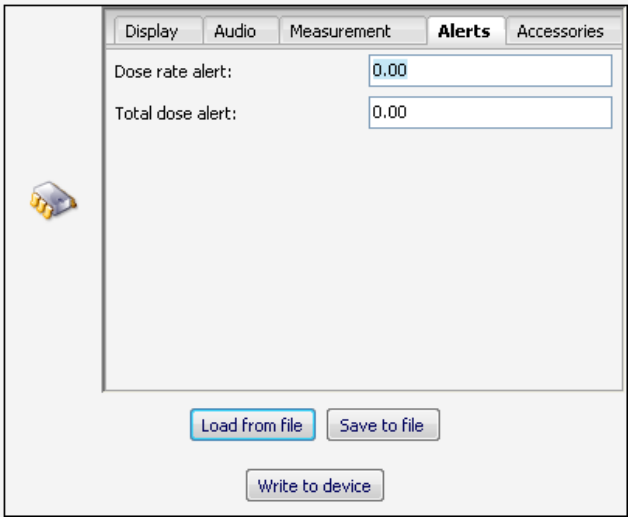
Show dose - switch ON/OFF for show dose in survey mode

Dose rate units - unit in which is dose rate displayed

Record after startup - automatic survey data recording



- ***Alerts*** – setup of alarm levels for Dose rate and for Total accumulated dose

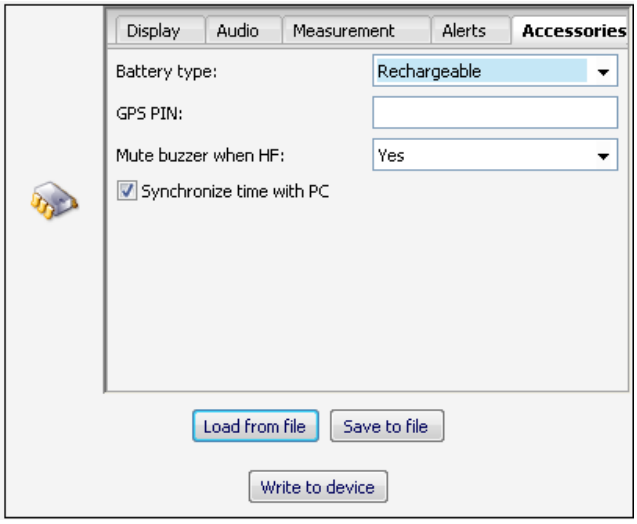


- ***Accessories***

Battery type - Rechargeable/Nonrechargeable

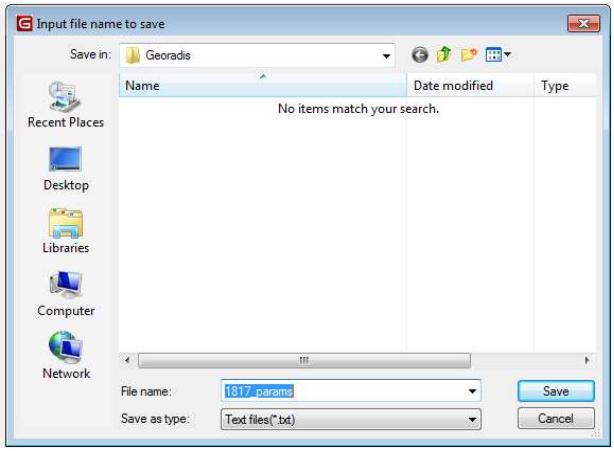
GPS PIN - some GPS units require to enter unique PIN for Bluetooth pairing between devices

Mute buzzer when HF - when used handsfree audio set there is switch to control audio of the unit

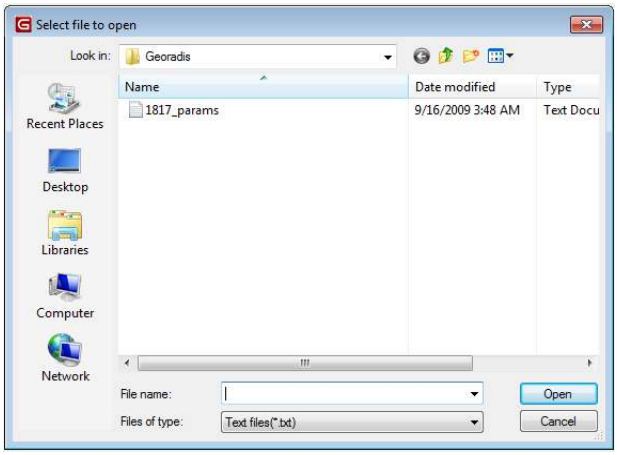


- ***Parameters control*** – to be filed, restored from a file and written to device

- **Save to file** allows user to save actual parameters setup in a file



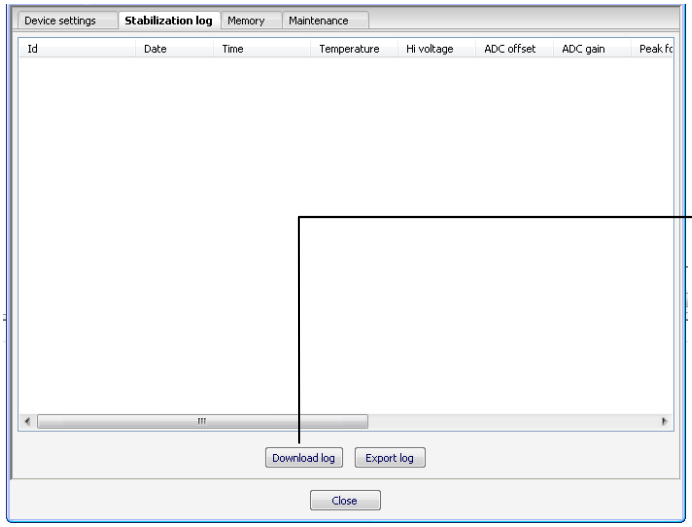
- **Load from file** refreshes local parameter configuration from a file.



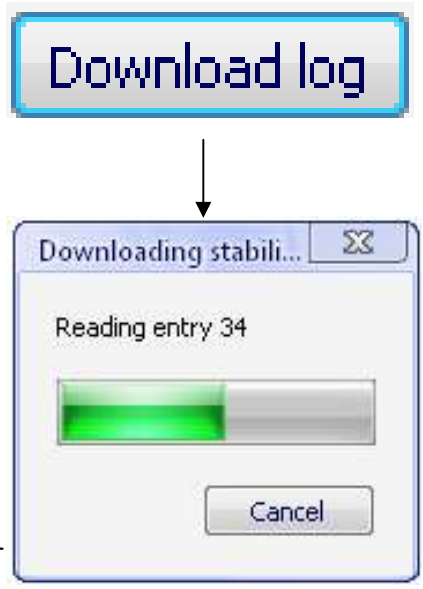
- **Write to device -** for permanent change in the instrument it is necessary to click Write to device

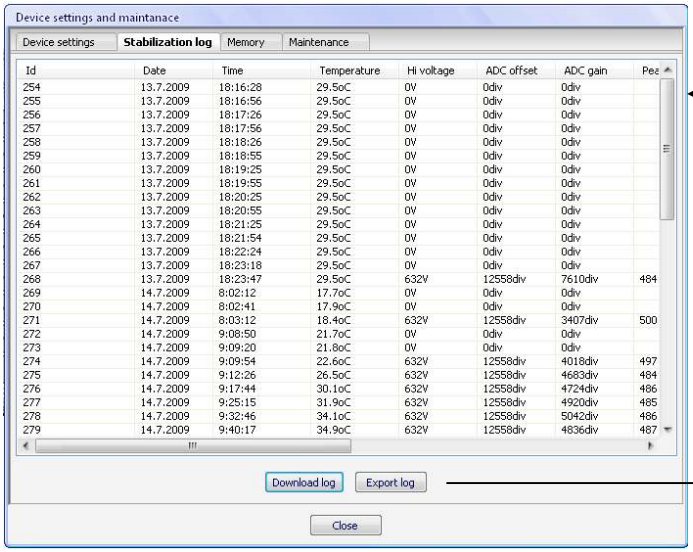
2.7.2 Stabilization log

Stabilization log is a complex record of input values and results in respect to continuous gain stabilization of the unit. Items are ordered by date and time and user can check temperature, high voltage, ADC offset and gain, expected pattern descriptors and stabilization result. This log is important for service centers in case that gain stabilization fails.



Download log after clicking button

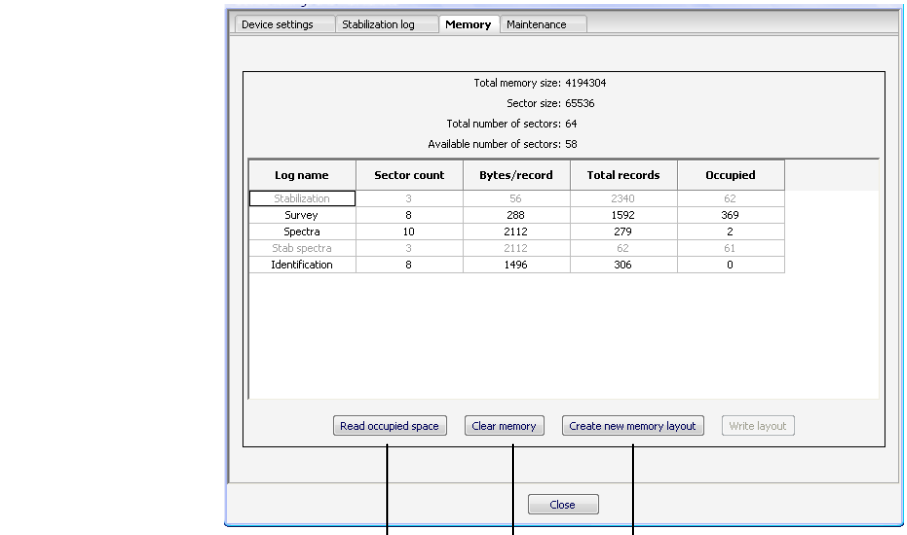




To **Export log** click the button, select output format and type name of the file and location

2.7.3 Memory

Section memory is for setting particular memory segments. Instrument has segmented memory to reserve place for different type of record. User can change this setup and change reserved space to advance it.



Read occupied space

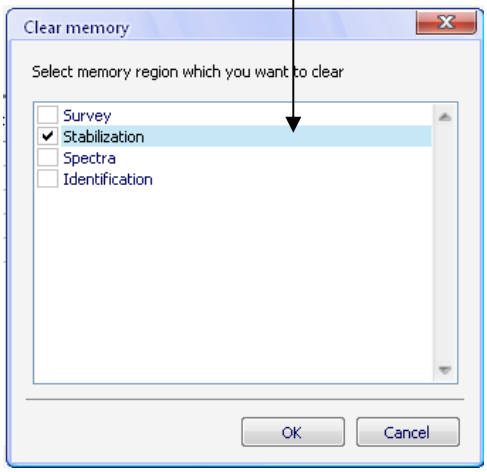
Click button to update current instrument status

Create new memory layout

Alllows to user to change memory layout

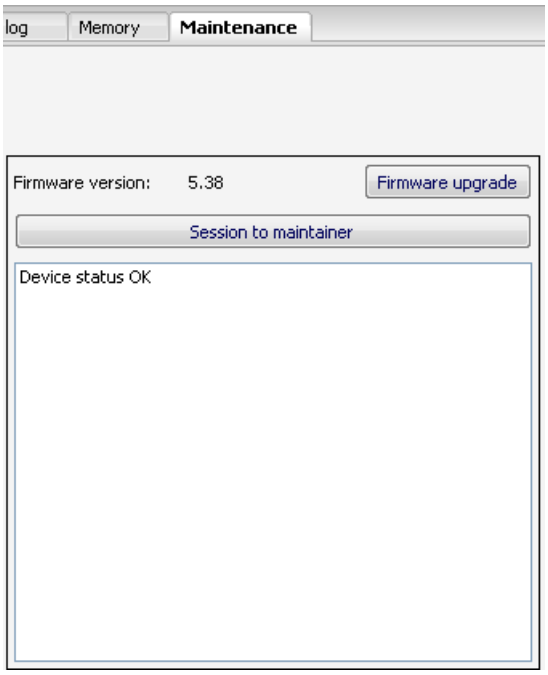
Clear memory

Use this command to clear selected memory, e.g. *Stabilization*



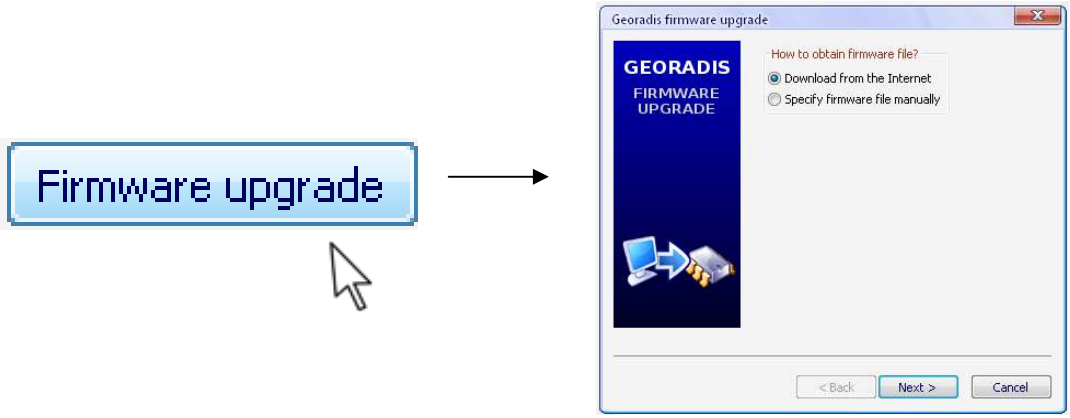
2.7.4 Maintenance

Tab **Maintenance** is for easy access to remote maintainer. Calling session to maintainer will start automated utility via internet when simple remote diagnostic will be performed. This way is also possible to upgrade firmware of the instrument.

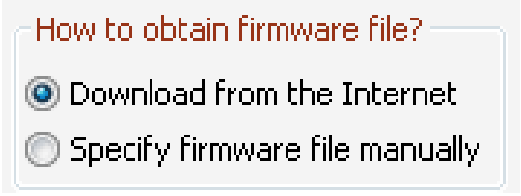


- ***Firmware actualization*** - to check a current firmware version click on icon **Settings on toolbar** → in tab **Maintenance**

  To load a new firmware click on button **Firmware upgrade**



Select a way how to obtain new firmware file

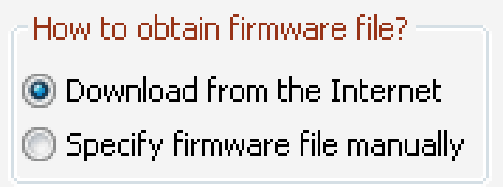


A. Need active internet connection

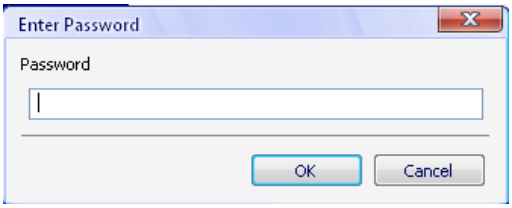
B. Read from any data media

A. Using Internet

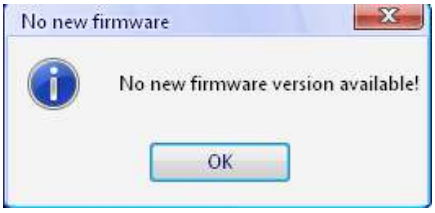
1.select **Download from the Internet** and click on button **Next >**



2. Enter password to login to the server

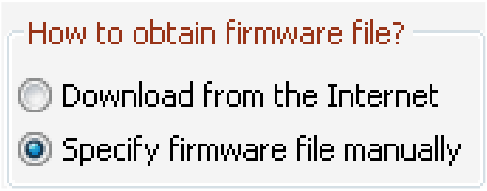


In case there is not a new firmware version available a following message appears:

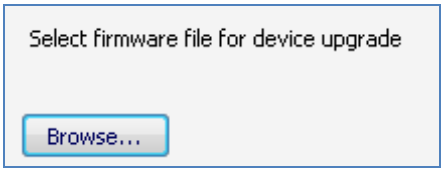


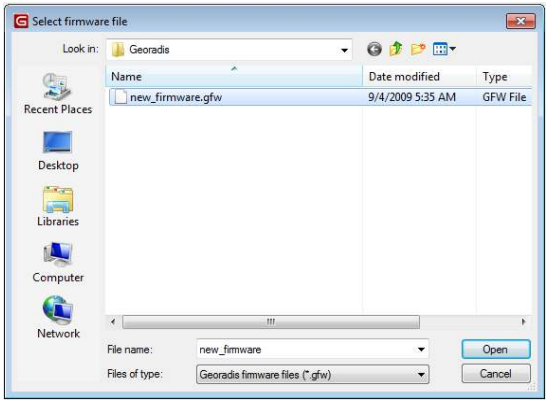
B. From any data storage media

1. Select **Specify firmware file manualy** and click on button **Next >**



2. To select firmware file click on **Browse…**

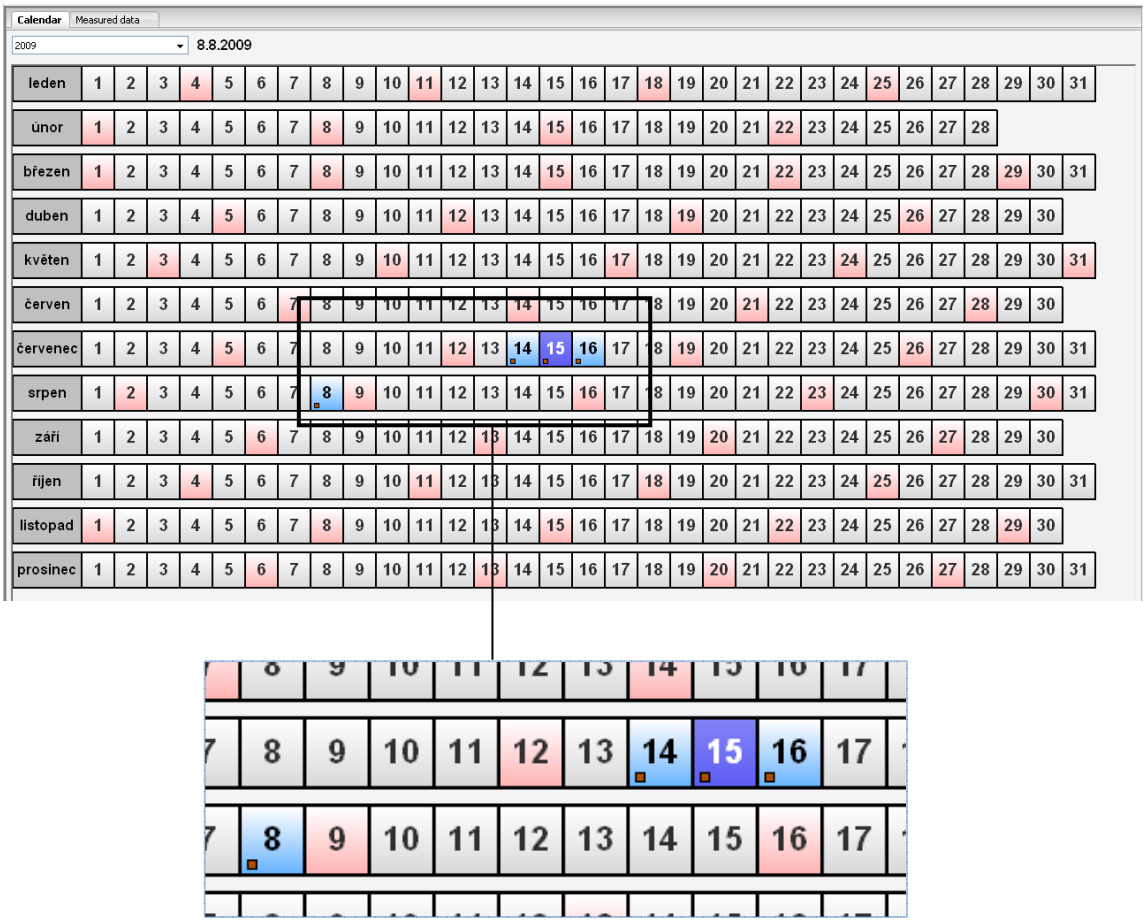




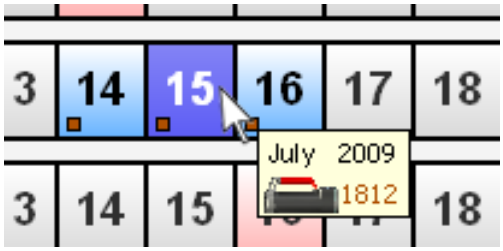
3. Click on button **Next > ,** firmware will be updated

3. DATABASE BROWSER - ACTIVE CALENDAR

The calendar is easy user interface for simple access to database. After connecting an instrument and synchronizing data between instrument and database all day bars in calendar which contains any data record will be highlighted in light blue 8 . The dark blue highlights 15 actual day selection. Entering in section **Measured data** shows all record assigned that day.



For easy orientation there are hints informing about type and serial number of instruments which data were recorded. The hint shows automatically when mouse cursor hits the day bar.



Clicking on right mouse button after selecting a day bar user gets access in section Measured data. Following items are selectable:

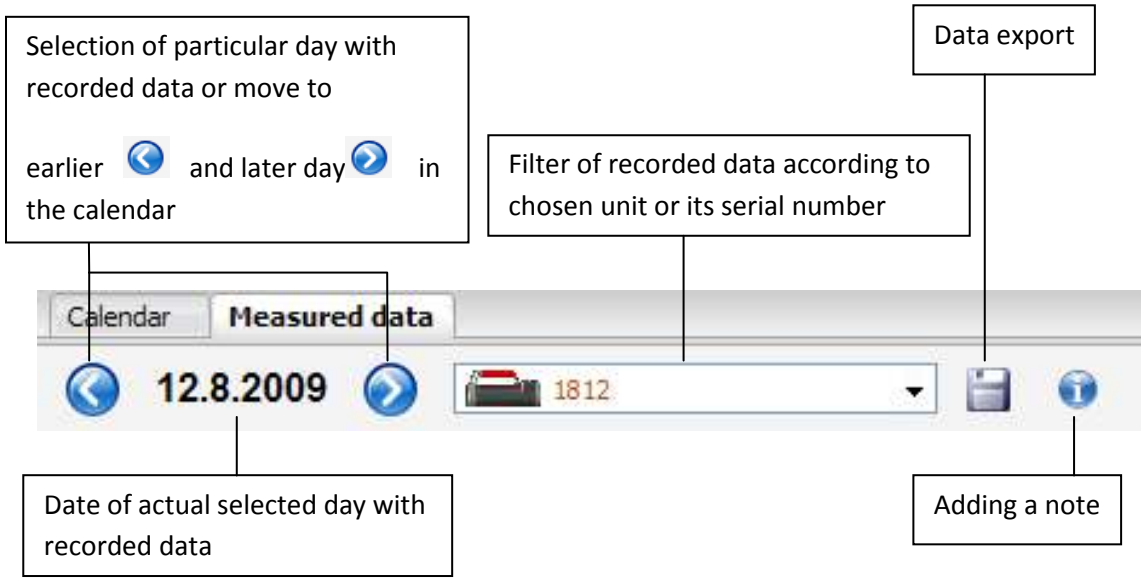
View this day – enter in **Measured data browser**

Export this day –data record export on file (see 4.2.1.)

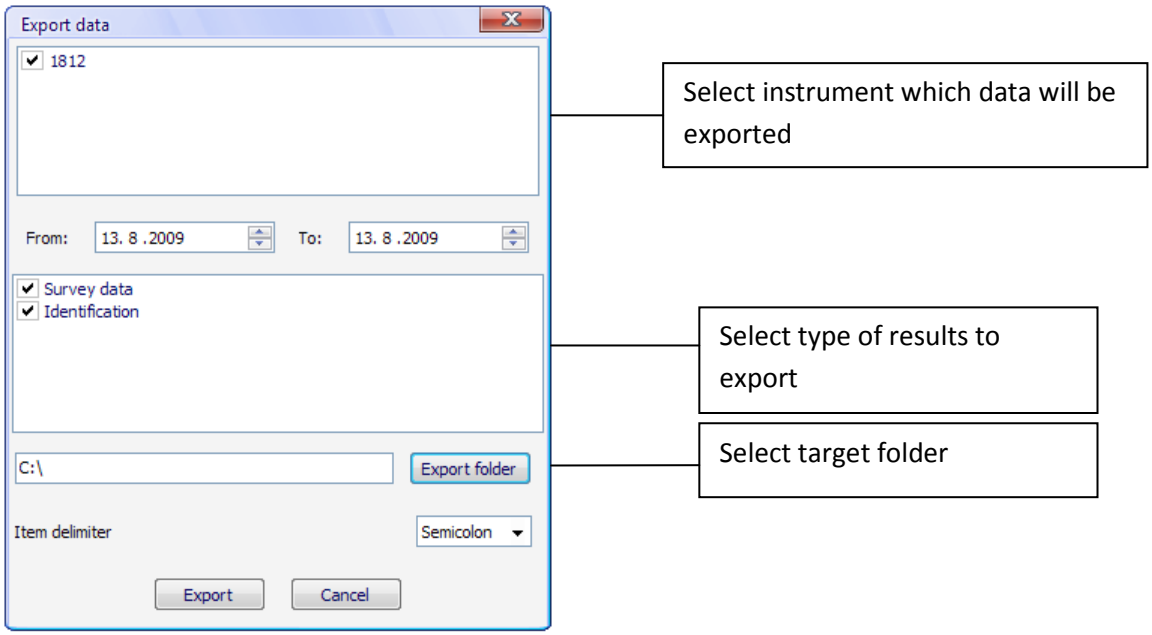
4. MEASURED DATA

Measured data is a complex recorded data browser.

4.1 MEASURED DATA TOOL BAR

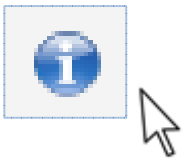
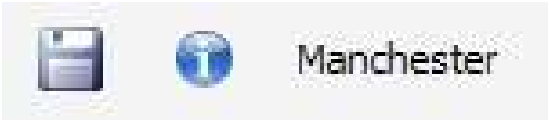


4.1.1 Data export

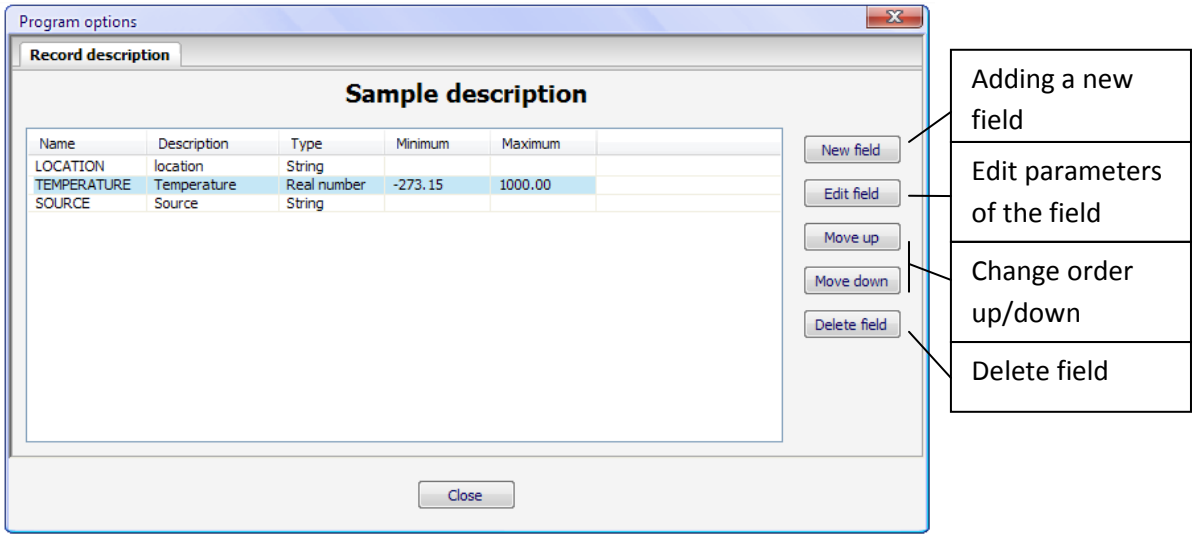


4.1.2 Adding a note

User can add a note to each day.

A. Add an attribute field (see. 2.6.) – in this example: *Field type = String, Field name = location, Field description = location*	**B.** click on **Day info** 
C. Add your note e.g.: location = Manchester 	**D.** Note has been added successfully 

4.1.3 Work with attribute arrays

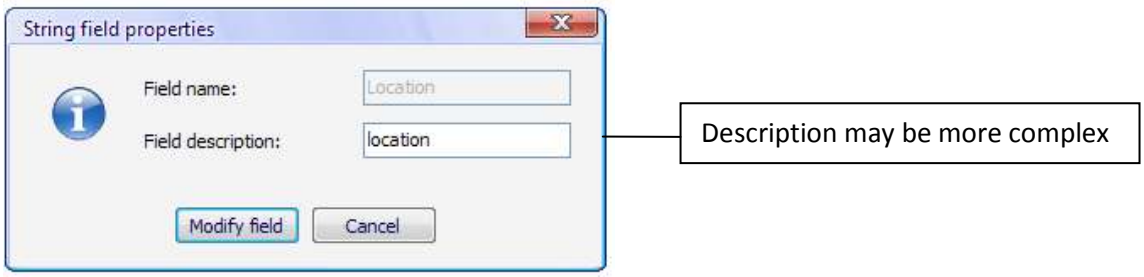


Attribute field edit

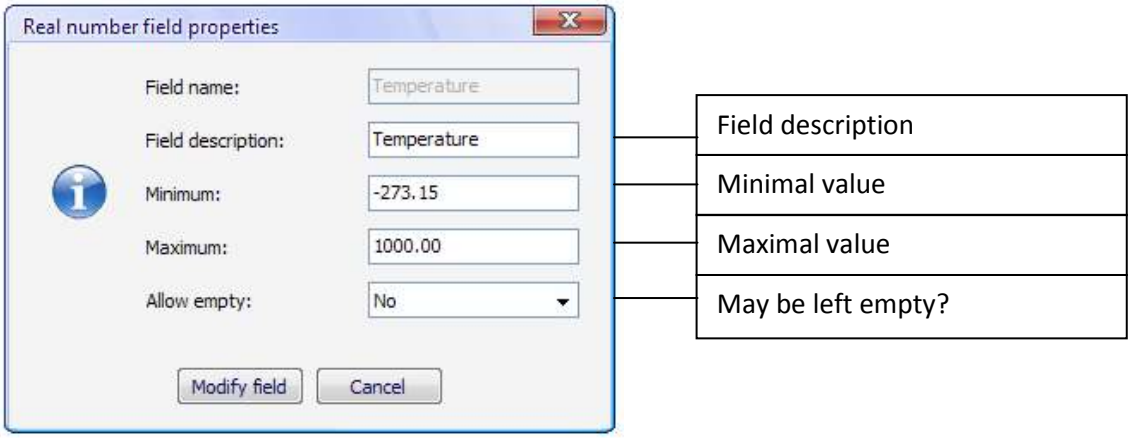
Possibilities to edit are limited by type of the used field:

*user may not edit ***Field name*** *in any of field type. It is a fix defined database variable. User can delete whole field and create a new one.*

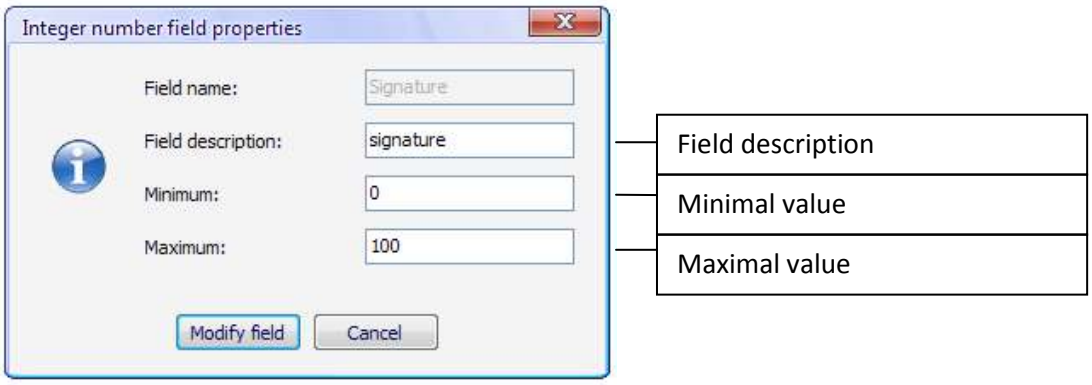
A. Type **String**



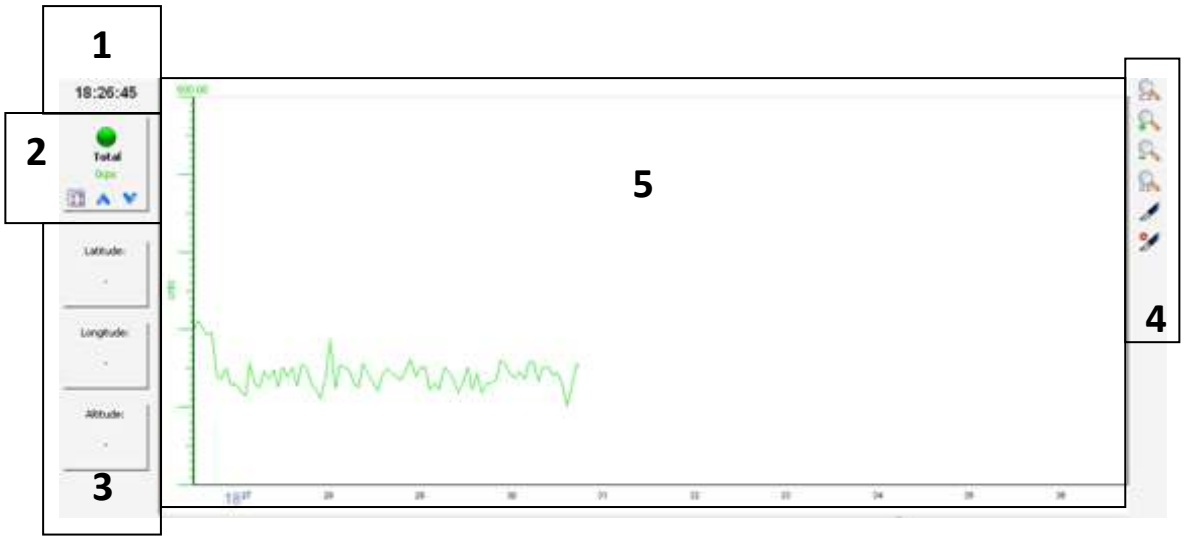
B. Type **Real number**



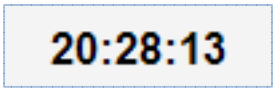
C. Type **Integer number**



4.2 TOTAL COUNTS PROFILE



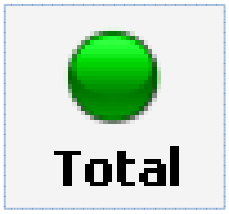
4.2.1 Time



Time indicator is bounded with x scale of profile recorder (5). Moving mouse cursor and clicking on any part of recorded profile will lead to time update.

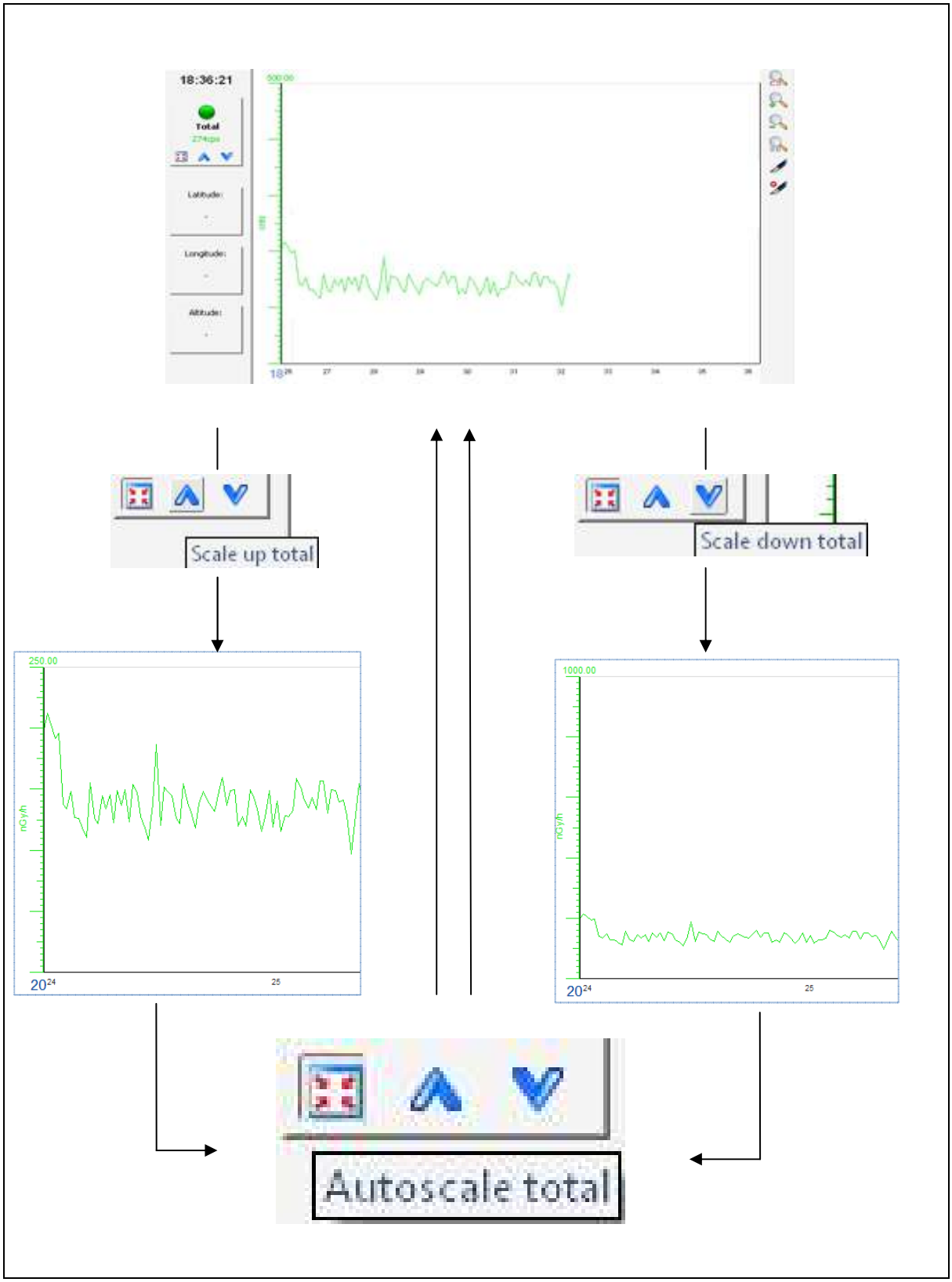
4.2.2 Total counts control button

Total – Total counts per second [cps]



Profile display control

- **To change Y scale for every profile** there are two small buttons (up/down) on each profile button. Clicking on these buttons user adjust Y scales of each profile.

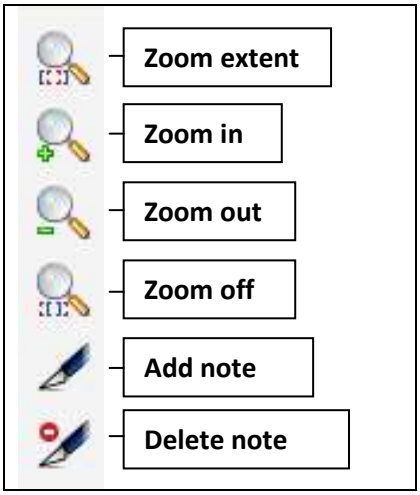


- **Reading of Current value** on profiles is joined to mouse cursor. Moving it over profile Total, Dose Rate and Neutrons are proportionally updated in respect to x position of the cursor.

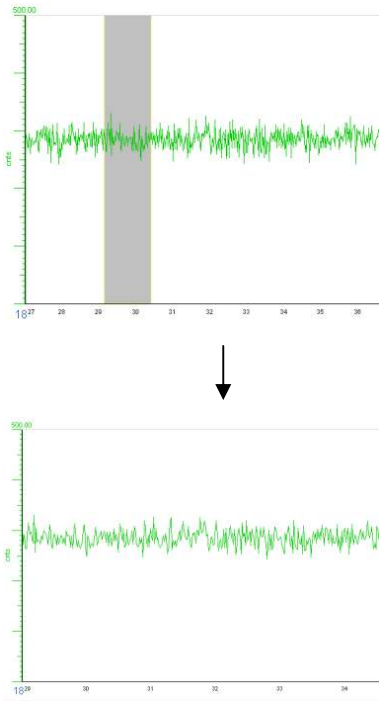
4.2.3 GPS coordinates

Latitude, Longitude and Altitude is also related to actual x coordinates of mouse cursor on profile.

4.2.4 Control tools for work with profile



- ***Zoom extent*** - this tool is for zooming a selected part of profile.

A. Click on icon	**B.** Move mouse cursor on location on profile where you want to start selection. Click and hold left mouse button and drag the mouse cursor over profile to the right until you reach last point of expected selection. Release the mouse button. Selection will be zoomed in window.
	

- ***Zoom in*** – zooms displayed profile stretching profile from center to sides.

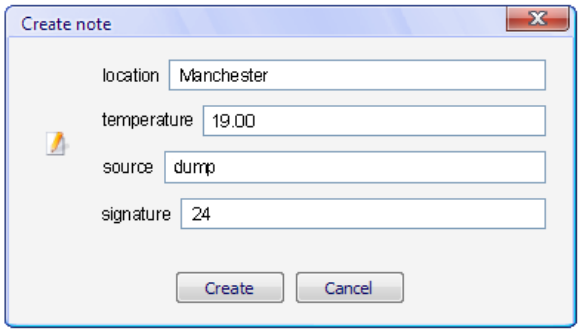
- ***Zoom out*** – opposite function.

- ***Zoom whole day*** back to the basic scale – 24 hour x scale window.

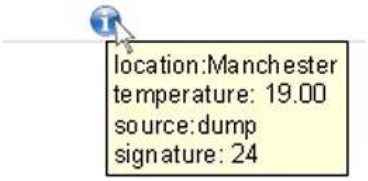
- ***Add note*** active note can be add also to any place of the profile. This can highlight any important part of the profile. Creating note requests also defined attribute fields (see 2.6.).

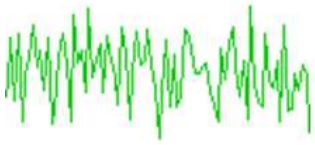
A. Select icon

B. Move mouse cursor on particular profile place where you expect your note and click left mouse button. Edit note regarding requirements.

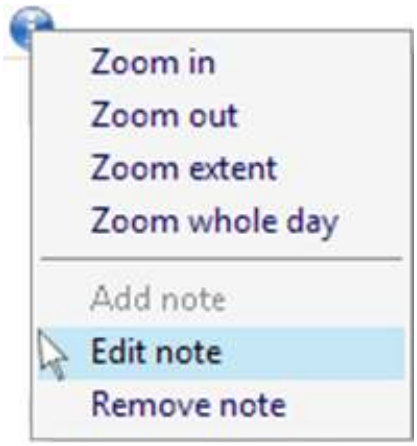


C. Existence and location of the note is indicated with icon on top line of the profile recorder window. Active hint helps to easy reading and orientation in profile.





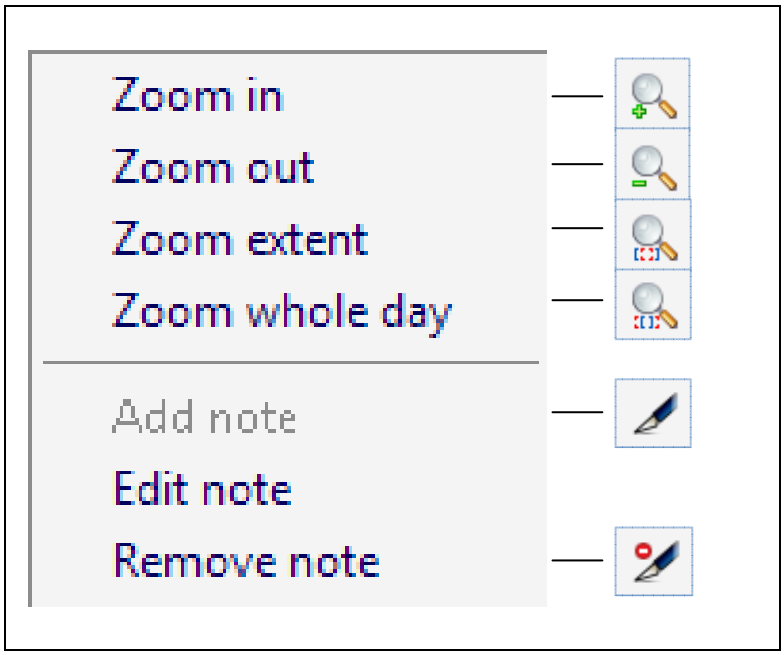
- ***Edit note*** – To edit note select Edit note item from popup window.



- ***Remove note*** – selecting Remove note item.

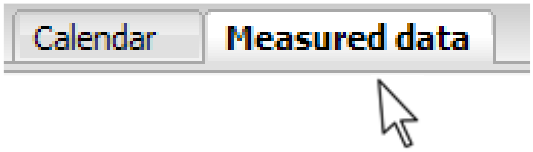
4.2.5 Profile recorder - other way to control profile

Following popup menu is accessible any time after clicking right mouse button while mouse cursor is over profile recorder window. Accessible are all tools like from direct buttons except **Edit Note**. (See *4.2.4.*)



5. IDENTIFICATION DATA

Measured data is a complex recorded data browser.

A. Select day bar in calendar → and select tab **Measured data**  	**B.** Click on right mouse button after selection of day bar → select item **View this Day** 

C. Doubleclick on selected day bar

Measured data tool bar

List of identification results

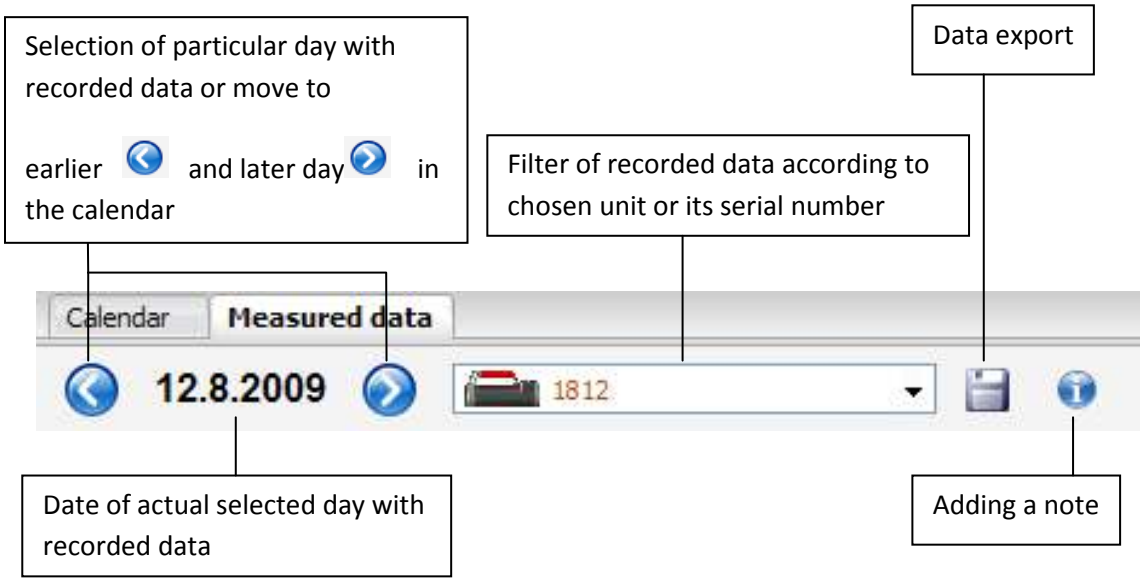
Measured spectrum

Survey profile

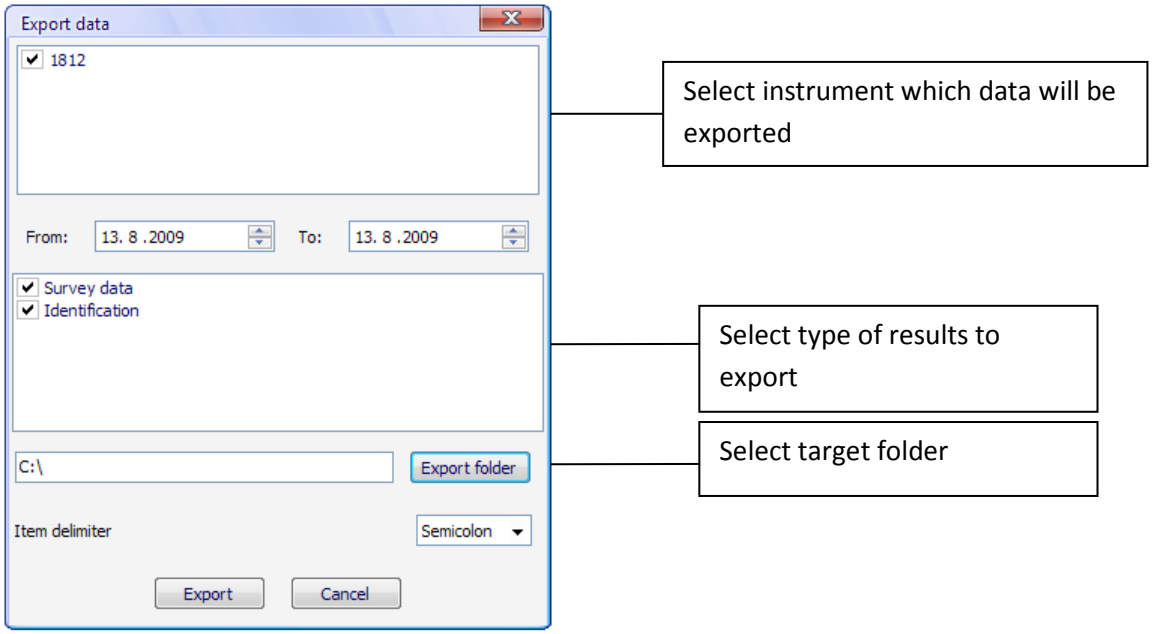
GPS coordinates

Control buttons of particular profiles

5.1 MEASURED DATA TOOL BAR

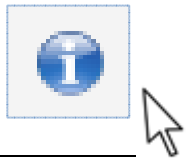


5.1.1 Data export

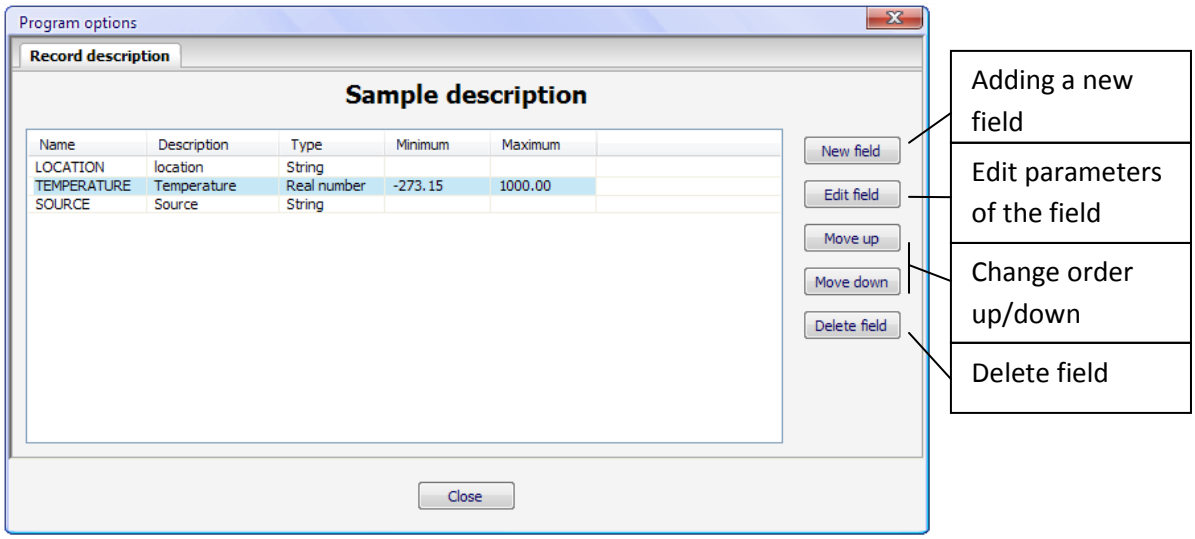


5.1.2 Adding a note

User can add a note to each day.

A. Add an attribute field (see. 2.6.) – in this example: *Field type = String, Field name = location, Field description = location*	**B.** click on **Day info** 
C. Add your note e.g.: location = Manchester 	**D.** Note has been added successfully 

5.1.3 Work with attribute arrays

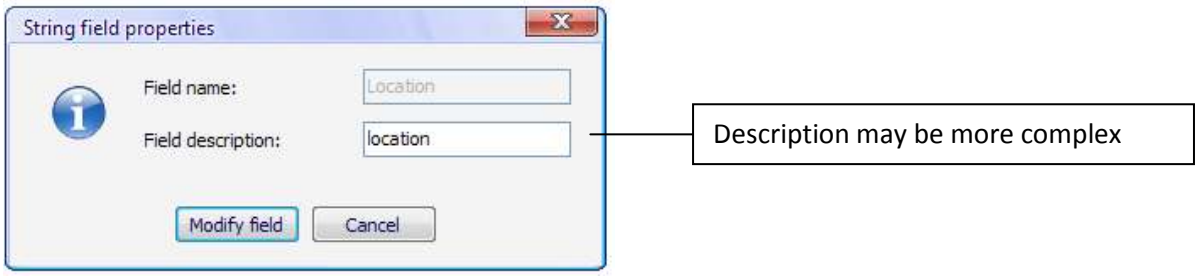


Attribute field edit

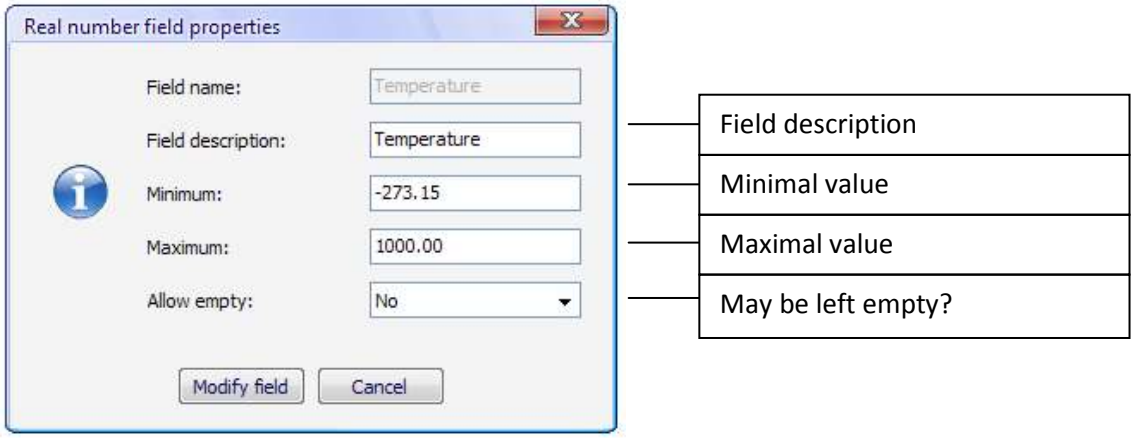
Editation possibilities are limited by type of the used field:

*user may not edit ***Field name*** *in any of field type. It is a fix defined database variable. User can delete whole field and create a new one.*

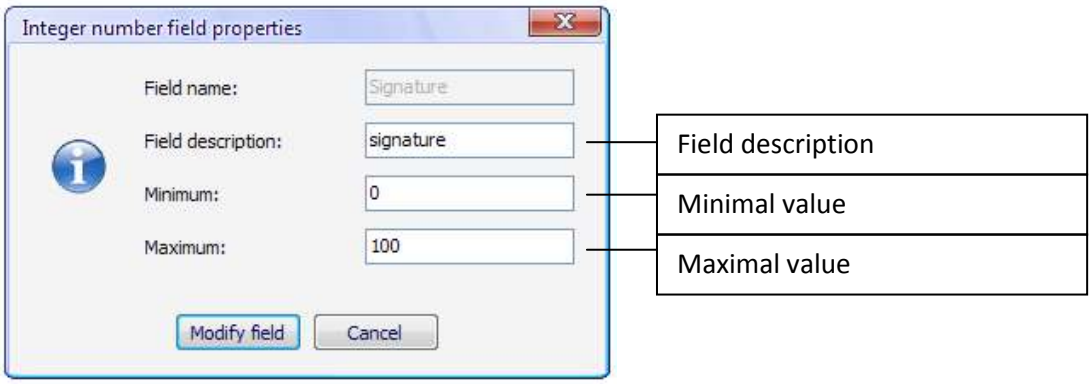
A. Type **String**



B. Type **Real number**

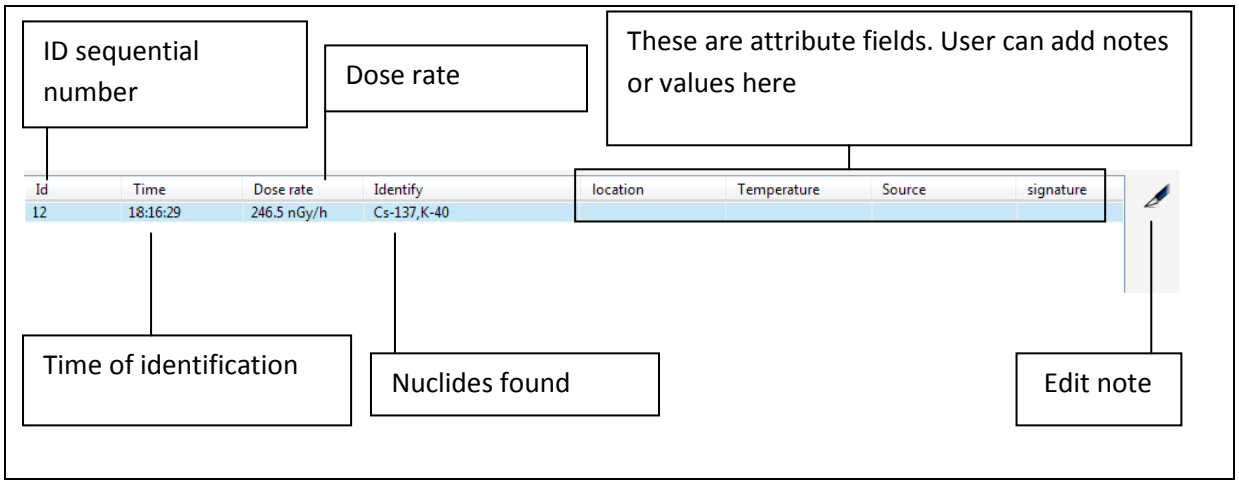


C. Type **Integer number**



5.2 NUCLIDE IDENTIFICATION RESULTS

All saved nuclide identification done on selected day will be shown here.

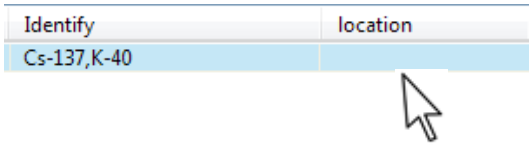


5.2.1 Nuclide identification results – adding note

** it is necessary to define attribute fields before first enter. Go through* ***Options on tool bar*** *(see 2.6.)*

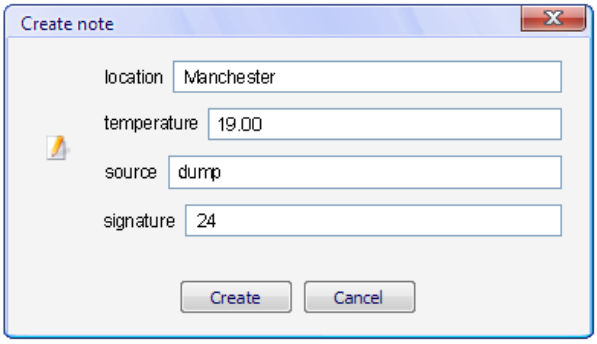
There are two ways how to add a note:

A. Double click on selected cell



B. Click on button **Edit note**

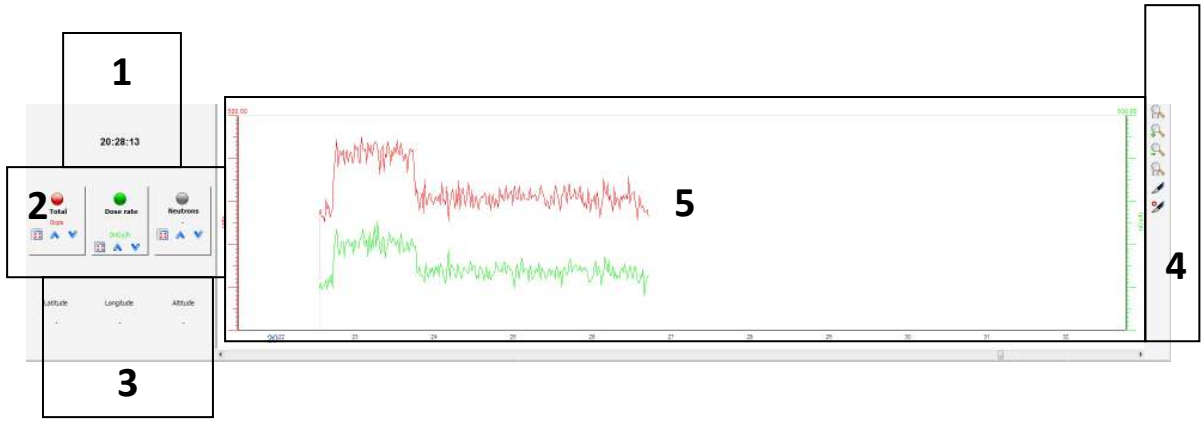
C. Editing will be finished clicking on buton **OK**



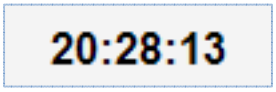
D. Note has been added

Identify	location	Temperature	Source	signature
Cs-137,K-40	Manchester	19.00	dump	24

5.3 SURVEY PROFILE



5.3.1 Time



Time indicator is bounded with x scale of profile recorder (5). Moving mouse cursor and clicking on any part of recorded profile will lead to time update.

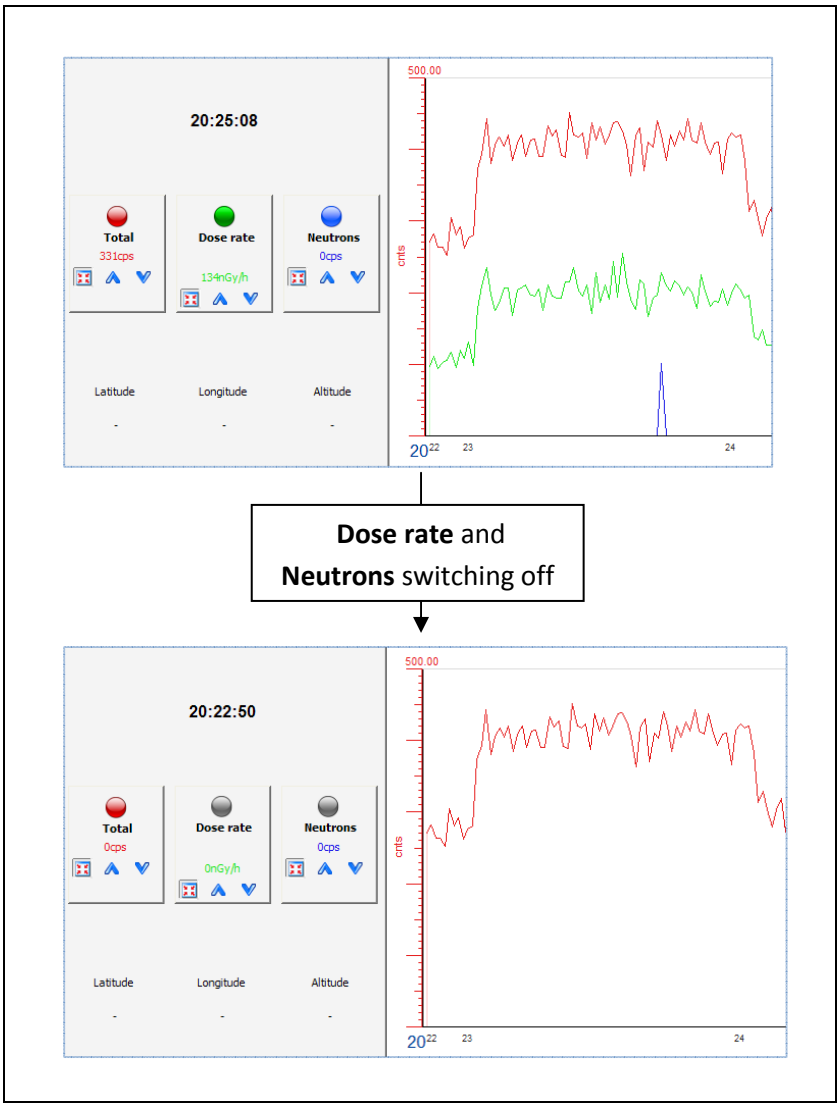
5.3.2 Profile viewer – control tools

There are three types of recorded profiles: Total gamma impulse rate, gamma dose rate and neutrons rate

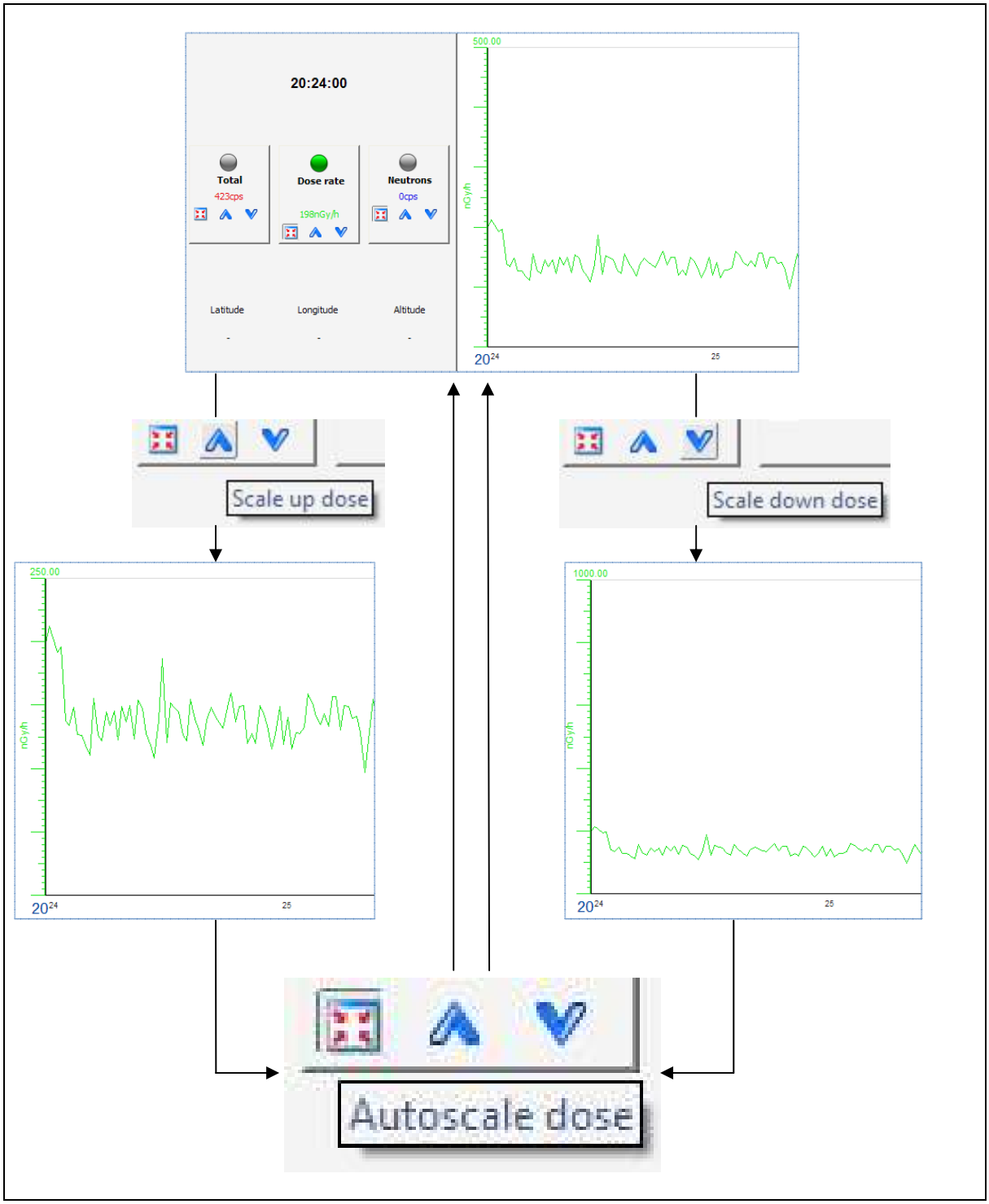
Total – registered gamma impulses per second [cps]	**Dose rate** – dose rate [Gy/h]	**Neutrons** – registered neutrons per second [cps]
		

Profile display control

- **Particular profile can be** switched on/off. Click on appropriate button to switch OFF. Status light on the button gets gray what indicated status OFF. To switch ON click on the button one more time (mode flip/flop).



- **To change Y scale for every profile** there are two small buttons (up/down) on each profile button. Clicking on these buttons user adjust Y scales of each profile (here is the example of this function on Dose rate profile).

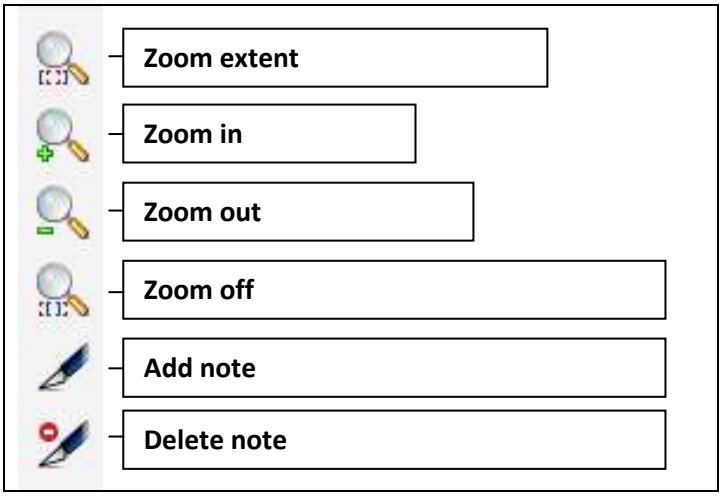


Reading of Current value on profiles is joined to mouse cursor. Moving it over profile Total, Dose Rate and Neutrons are proportionally updated in respect to x position of the cursor.

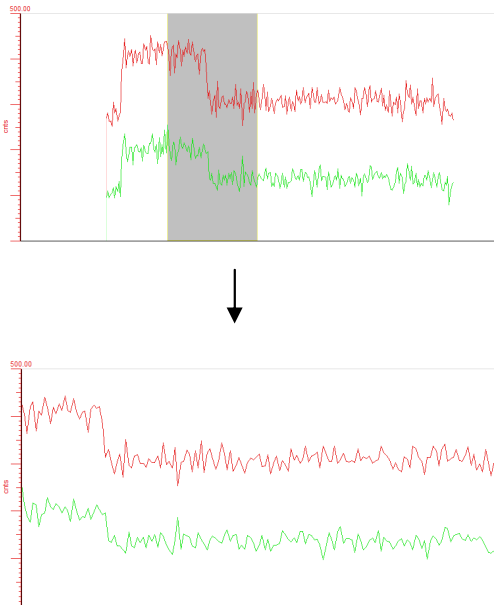
5.3.3 GPS coordinates

Latitude, Longitude and Altitude is also related to actual x coordinates of mouse cursor on profile.

5.3.4 Control tools for work with profile



- ***Zoom extent*** – this tool is for zooming a selected part of profile.

A. Click on icon	**B.** Move mouse cursor on location on profile where you want to start selection. Click and hold left mouse button and drag the mouse cursor over profile to the right until you reach last point of expected selection. Release the mouse button. Selection will be zoomed in window.
	

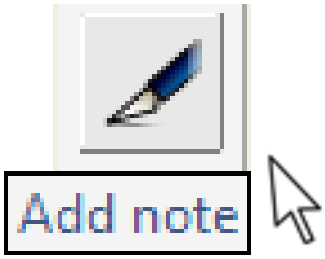
- ***Zoom in*** – zooms displayed profile stretching profile from center to sides.

- ***Zoom out*** – opposite function.

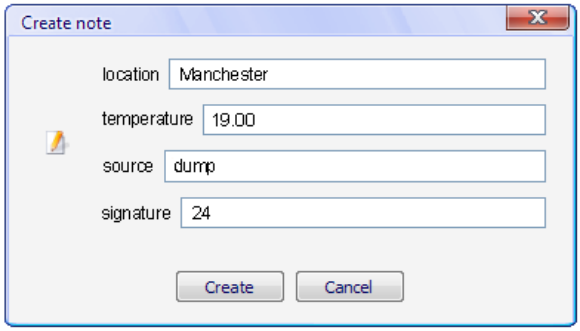
- ***Zoom whole day*** back to the basic scale – 24 hour x scale window.

- ***Add note*** active note can be add also to any place of the profile. This can highlight any important part of the profile. Creating note requests also defined attribute fields. (See 2.6.)

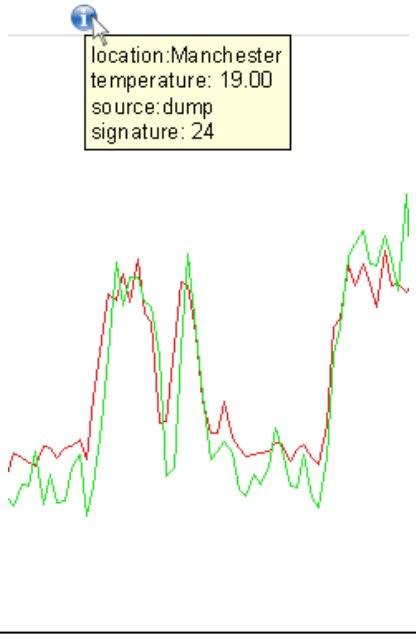
A. Select icon



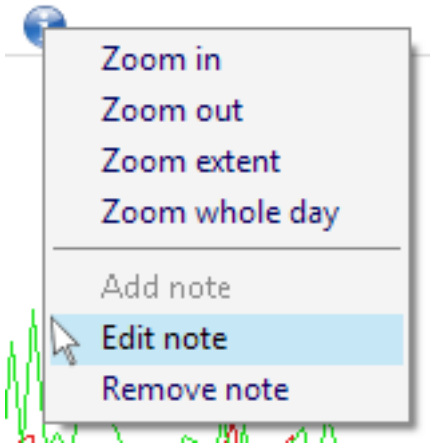
B. Move mouse cursor on particular profile place where you expect your note and click left mouse button. Edit note regarding requirements.



C. Existence and location of the note is indicated with icon on top line of the profile recorder window. Active hint helps to easy reading and orientation in profile.



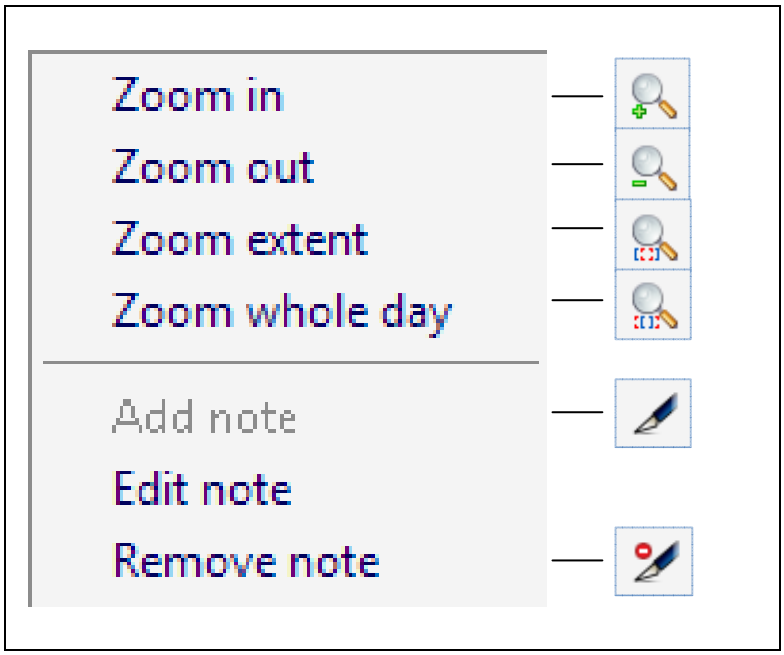
- ***Edit note*** – To edit note select Edit note item from popup window.



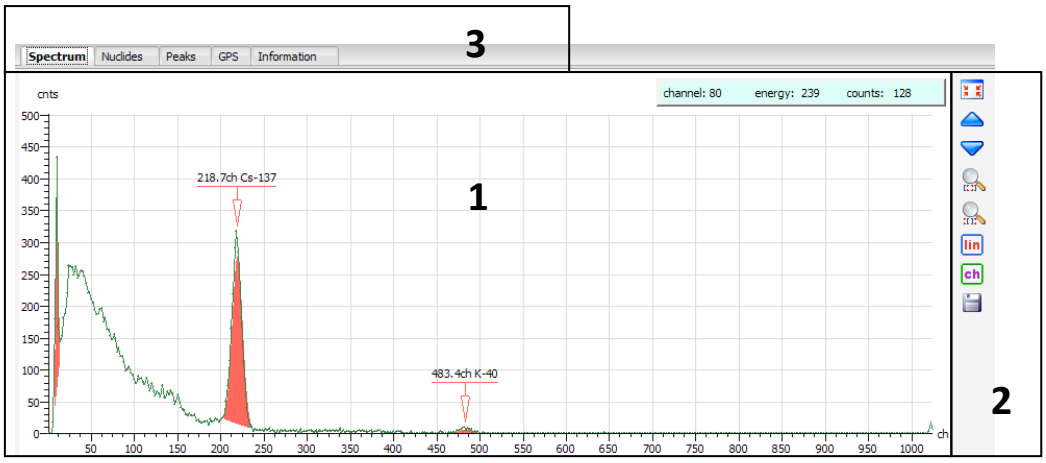
- ***Remove note*** – selecting Remove note item.

5.3.5 Profile recorder - other way to control profile

Following popup menu is accessible any time after clicking right mouse button while mouse cursor is over profile recorder window. Accessible are all tools like from direct buttons except **Edit Note**. (See *4.2.4.*)

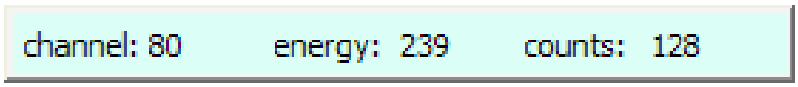


5.4 GAMMA SPECTRUM AND NUCLIDE IDENTIFICATION

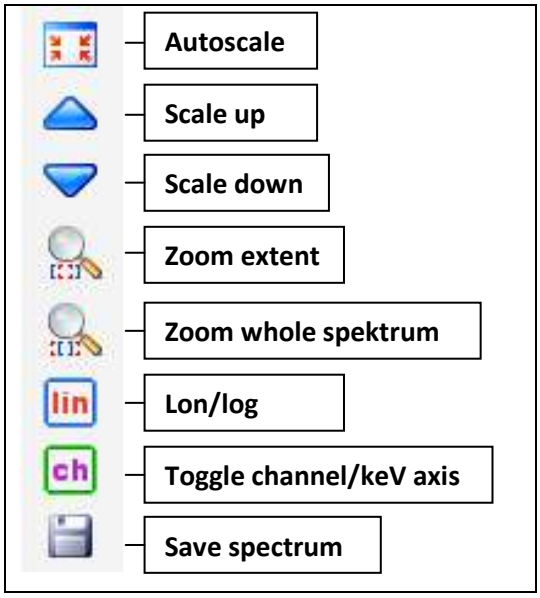


5.4.1 Spectrum

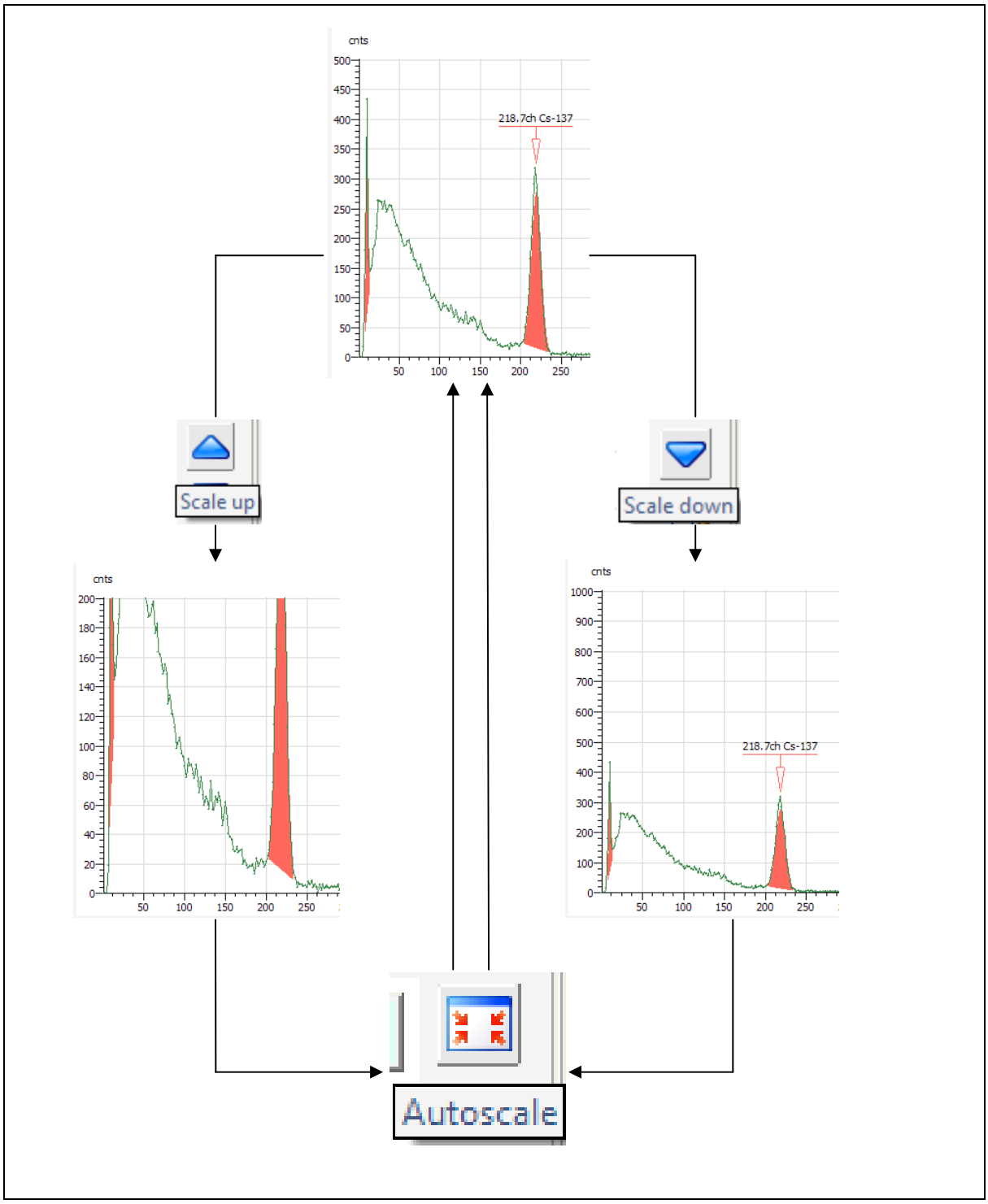
Measured and analyzed spectrum is plotted in spectrum window (1). Highlighted are found peaks with their location in keV or channels and assigned radionuclides. Exact channel location in spectrum and measured counts are displayed in blue window on right top. Moving mouse cursor over the spectrum counts, energy and channel position are displayed proportionally.



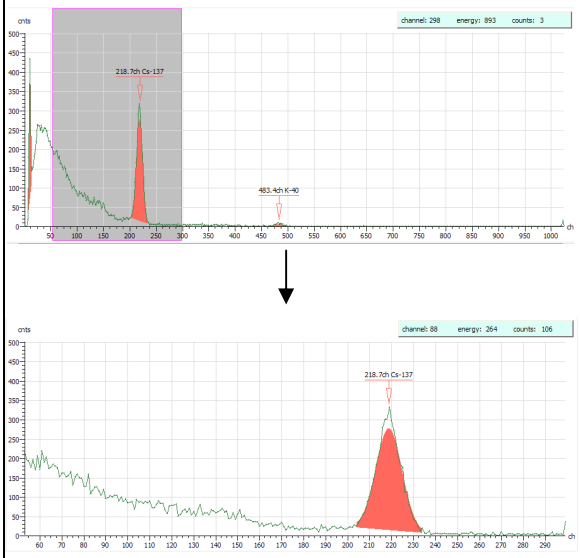
5.4.2 Control tools



- ***Autoscale, Scale up, Scale down*** – to control Y scale for display.

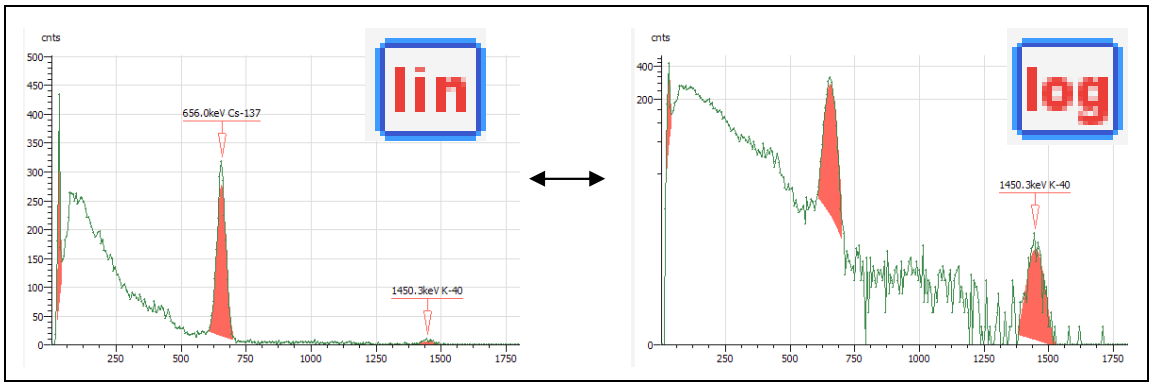


- ***Zoom extent*** – zooming of selected spectrum part

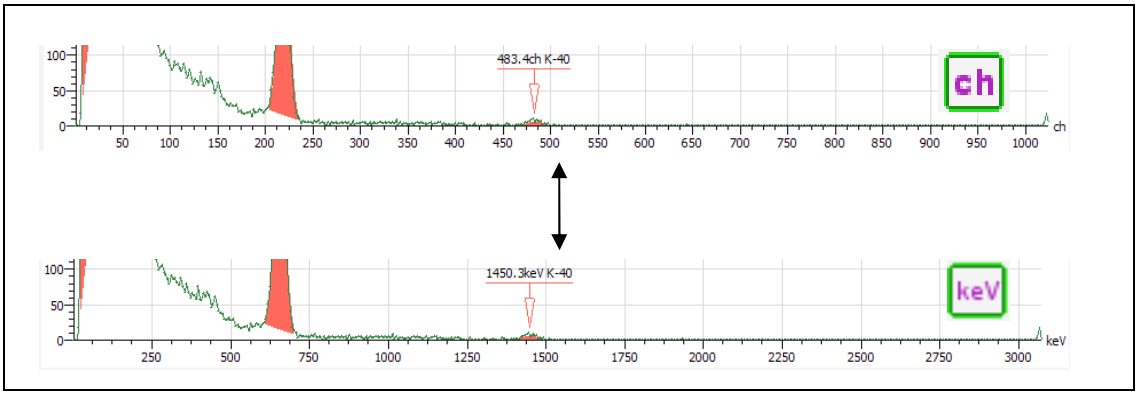
A. Click on button	**B.** Move mouse cursor on location on spectrum where you want to start selection. Click and hold left mouse button and drag the mouse cursor over profile to the right until you reach last point of expected selection. Release the mouse button. Selection will be zoomed in
	

- ***Zoom whole spectrum*** to cancel all zooms and return to basic display use this tool

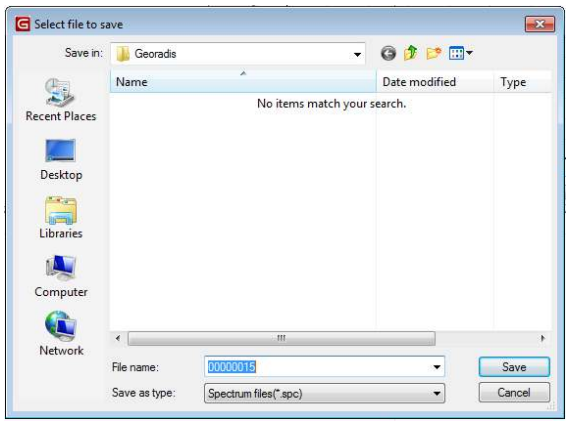
- ***Toggle linear/logarithmic scale*** – switch between linear and logarithmic scaling of Y scale



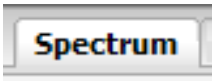
- ***Toggle channel/keV axis*** – switching between keV and channel units of X scale



- ***Save spectrum*** – to save spectrum click on button, define target location and spectrum file name and click **OK**



5.4.3 Tab identification

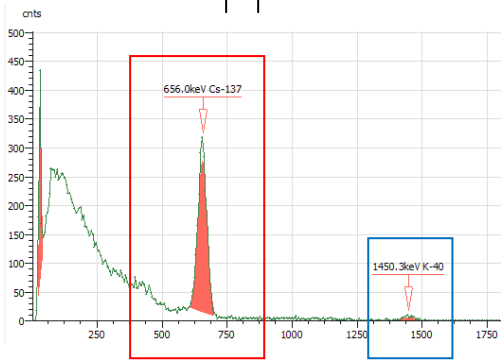


– spectrum window

Nuclides – list of identified nuclides

Nuclide	Area	Amount
Cs-137 IND	4983	100%
K-40 NAT	153	3%

Area of the peak



GPS – coordinates list

* *only with GPS option*

Information – measured spectrum details

Parameter	Value
Entry number	372
Dose rate	246.5nGy/h
Stabilized	yes
Rel FWHM	6.8%
Measure time	60s
Live time	57179ms
Clock time	57480ms
Temperature	25oC
High voltage	632div
ADC gain	4994div
ADC offset	12558div