Software for
Dynablot

Operating manual

Rev. 0

The knowledge imparted by this manual is required for the operation of the software. Therefore please make yourself familiar with contents of this manual.

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1 Introduction

1.1 SW description

Blot Editor is a comfortable application which enables assays handling of the Dynablot instrument. New assays can by created, old ones edited. Transfer of assays between PC and the instrument via serial COM or USB port enables to create desiderative assay order in the instrument assay menu.

1.2 System hardware and SW requirements

The following equipment is required to run the program :

- IBM PC-compactible computer
- 20 MB of free RAM available
- 20 MB of free hard disk space available
- CD-ROM drive
- Free serial COM or USB port for instrument connection

One of following version of the operating system is required :

- Windows 2000
- Windows XP Service Pack 2

1.3 Instrument SW requirements

The versions of the instrument control system software must be

- Display D2.0_071108 and higher
- Main board V09_6_080123_1 and higher

2 Installation of software

Blot Editor software is ditributed on CD.

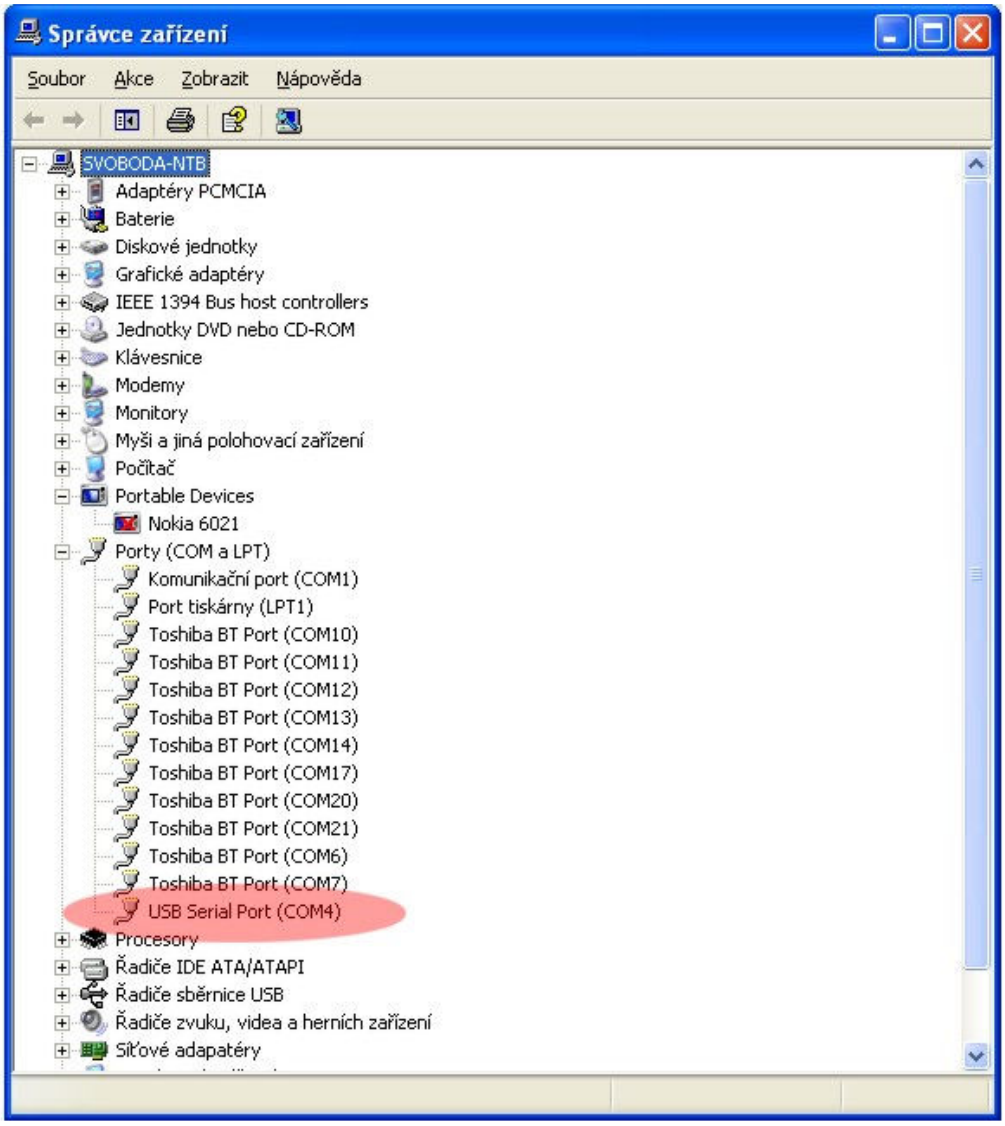
2.1 Blot Editor

1. Exit all opened applications and insert the CD into your drive.
2. Run file **setup.exe** from the CD directory BlotEditor
3. Follow the instructions in setup windows. Files of Blot Editor will be installed to directories Program Files\BlotEditor and Program Files\National Instruments. The icon/shortcut is generated automatically onto the desktop and Start menu/All programs.

2.2 FTDI USB drivers

In the case of the USB port using for communication with the instrument, installation of FTDI USB drivers is needed.

1. Make connection between PC and the instrument by USB cable. Switch the instrument ON
2. If the system find out the new hardware the driver will be required. Follow instruction in setup windows, drivers are placed at the Blot Editor instalation CD in FTDI_USB_DRV_2.02.04 directory. In the case of any problems, please, refer FTDIWindows_XP_Installation_Guide.pdf
3. If the new hardware is installed correctly the number of USB Com port has to be found out in the system information. Open the Device Manager (located in "Control panel\System" then select "Hardware tab and click "Device manager"), the device appears as a "USB Serial Converter" with an additional COM port with the label "USB Serial port". Write down or remember the number of the additional COM port for the next Blot Editor setting. In the next example the COM port number is 4.



3 Run the Blot Editor

For the Blot Editor running click the icone BlotEditor onto the desktop or in Start menu/All Programs. Introductory window will be opened. There are four possibilities to choose in the top menu line :

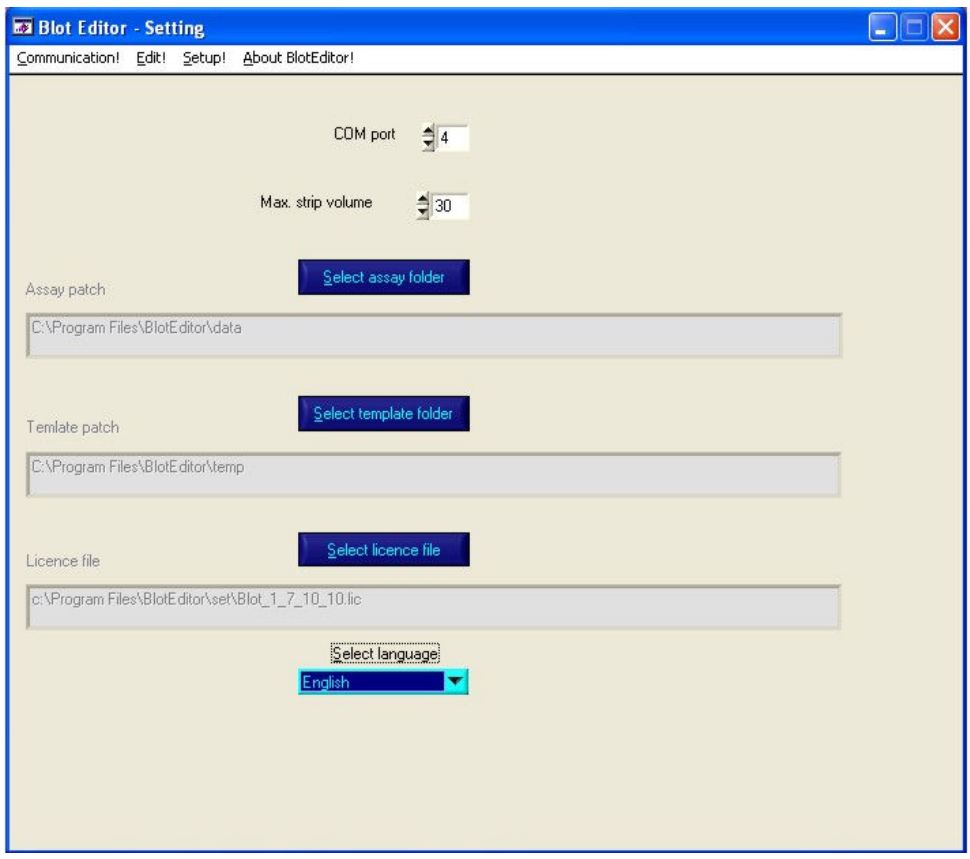
- Communication!
- Edit!
- Setup!
- About BlotEditor!

3.1 About BlotEditor menu

Window contains information about SW version.

3.2 Setup menu

The menu is used for the basic parameters and appearance setting.



COM Port Number of COM port used for communication with the instrument.

Max. strip volume The constant limiting maximal dispensed volume which can be set during assay step editting. The unit of this constant is 0,1 ml. Set the value according to maximum useful capacity of your strip plate well.

Assay path Show the path to the folder where assay files are saved by default. You can change the setting. Click on "Select assay folder" button and choose your favorite folder.

Template path Show the path to folder where assay template files are saved by default. You can change the setting. Click on "Select template folder" button and choose your favorite folder.

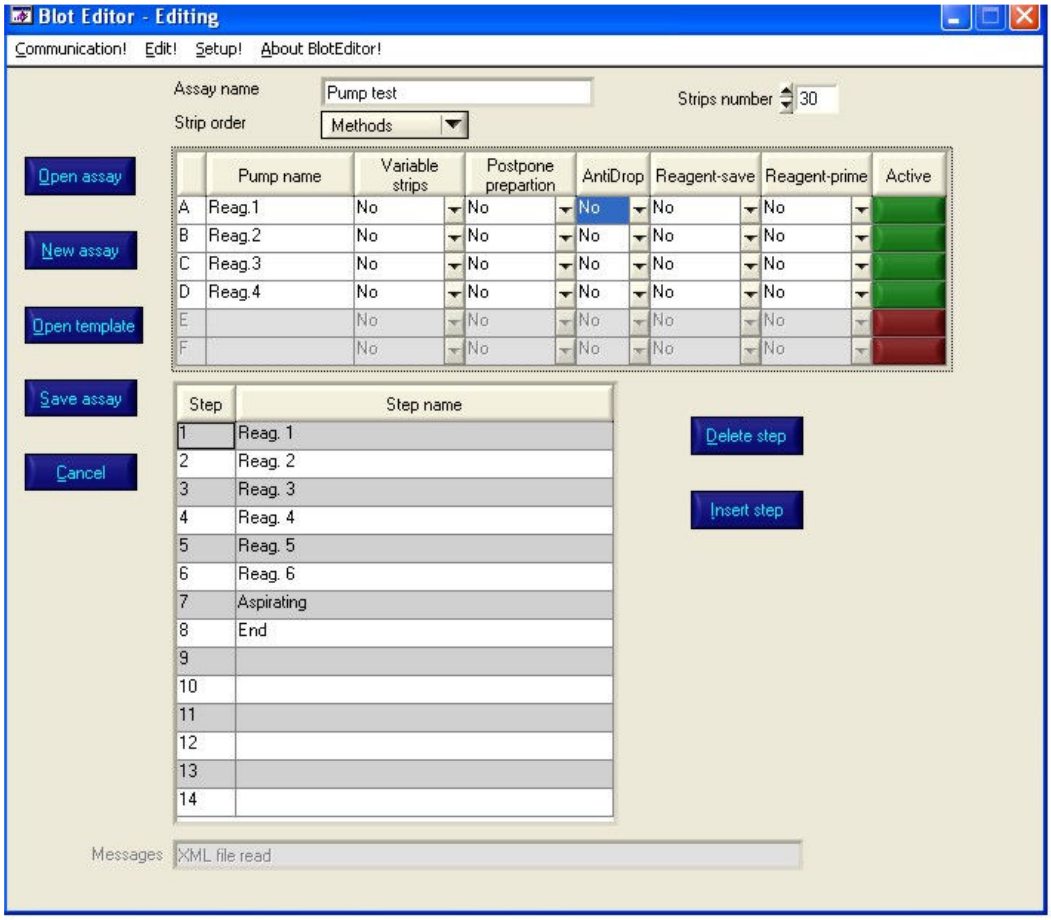
Licence file Show the selected licence file. This is the security feature of Blot Editor. Blot Editor will communicate with an instrument only in the case when the instrument serial number (written on type label at the instrument back and appeared on the display after the instrument switch ON) and the selected licence file fit together.

For example : The instrument serial number you want to connect to Blot Editor is 0207-1010. Licence file "Blot_2_7_10_10.lic" has to be saved in "C:\Program Files\BlotEditor\set" directory. Click to "Select licence file" button and select the appropriate licence file.

Select language This item enables to select Blot Editor texts language. There are two possibilities : English and Customer defined. Kind of the customer defined language depends on version of "Loader Text.lng" file saved in "C:\Program Files\BlotEditor\set" directory.

3.3 Edit menu

Edit menu is used for creating and editing assays according to method requirements. Assays are saved to HDD formated as .xml files.



Assay handling buttons:

Open assay The button makes access to the directories structure. Existing assay .xml file can be loaded. Its parameters are displayed in tables and can be edited.

New assay The button clears and prepares tables for new assay creating

Open template Button makes access to the template directory. Template assay .tmp file can be loaded. Its parameters are displayed in tables and can be edited. Then there is possibility to save assay as .xml file. Tmp files can not be overwritten and they can be used as a fixed library.

Save assay The button makes access to the directories structure. Displayed assay can be saved as a .xml file. Name of file is automatically created and it is the same as the Assay name. There is no possibility to change the file name.

Cancel The button closed edited assay without saving.

Fields and tables :

Assay name The field for an assay name inserting. Number of name characters is up to 19.

Strips number This field contains maximal number of strips on the plate. This value owerwrite value saved in the instrument memory in Plate setting. Value in the field is ussualy equal as the instrument Plate setting. But in the case of creating an assay which uses a strip plate with less strip, **maximal** number of strips can be decreased.

Strip order In the case of dispensing by pumps with variable strips in some step, dispensing order can be selected. According to Methods or according to Patients. Please refer Dynablot operating and maintenance manual.

Pumps table

Table contains parameters of used pumps

	Pump name	Variable strips	Postpone prepartion	AntiDrop	Reagent-save	Reagent-prime	Active
A	Waschpuffer	No	No	No	No	Yes	
B	Probenpuffer	No	No	No	No	Yes	
C	Konjugat	No	No	No	Yes	Yes	
D		No	No	No	No	No	
E	Substrat	No	Yes	No	No	Yes	
F	DIH2O	No	No	No	No	Yes	

Table columns description:

Active The active (used) pumps are marked by green colour of fields in this column. Red colour means not used pump. Status changing is done by clicking to the appropriate field in this column.

Pump name Names of pump (reagent) are inserted to this column. These texts are displayed at the instrument during assay run.

Variable strips Pumps with "Yes" in this field can be used simultaneously in one step. This feature is usually used for conjugates dispensing. Up to 3 pumps can be marked "Yes" at the same time.

Postpone preparation Reagent inserting at the beginning of an assay run can be postponed for pumps marked "Yes". Inserting is later asked (5 minutes before their dispensing). These feature can be used for in time unstable reagents.

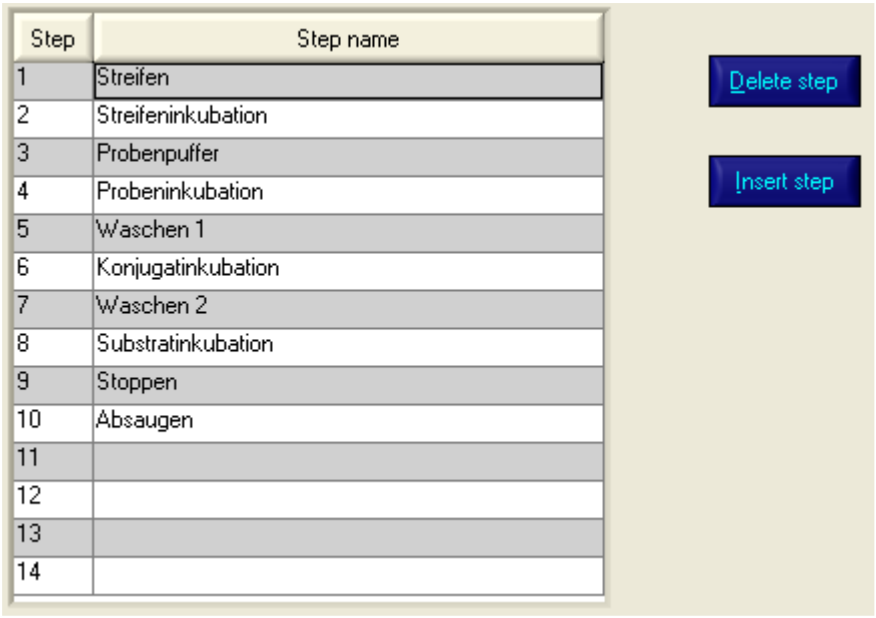
AntiDrop If this function is activated by marking "Yes", pump moves slightly back after every strip dispensing. It prevent making drops at dispensing tubes outputs. Useful to use this function for simultaneous 2 or 3 type conjugate dispensing especially with Strip order according to Patients.

Reagent-save If this function is activated by marking “Yes”, content of dispensing tube is returned to the bottle after the last dispensing step.

Reagent-Prime If this function is activated by marking “Yes”, small amount of reagent is dispensed to the priming bowl every time before strip plate dispensing.

Step overview table

Table contains the overview of all assay steps.

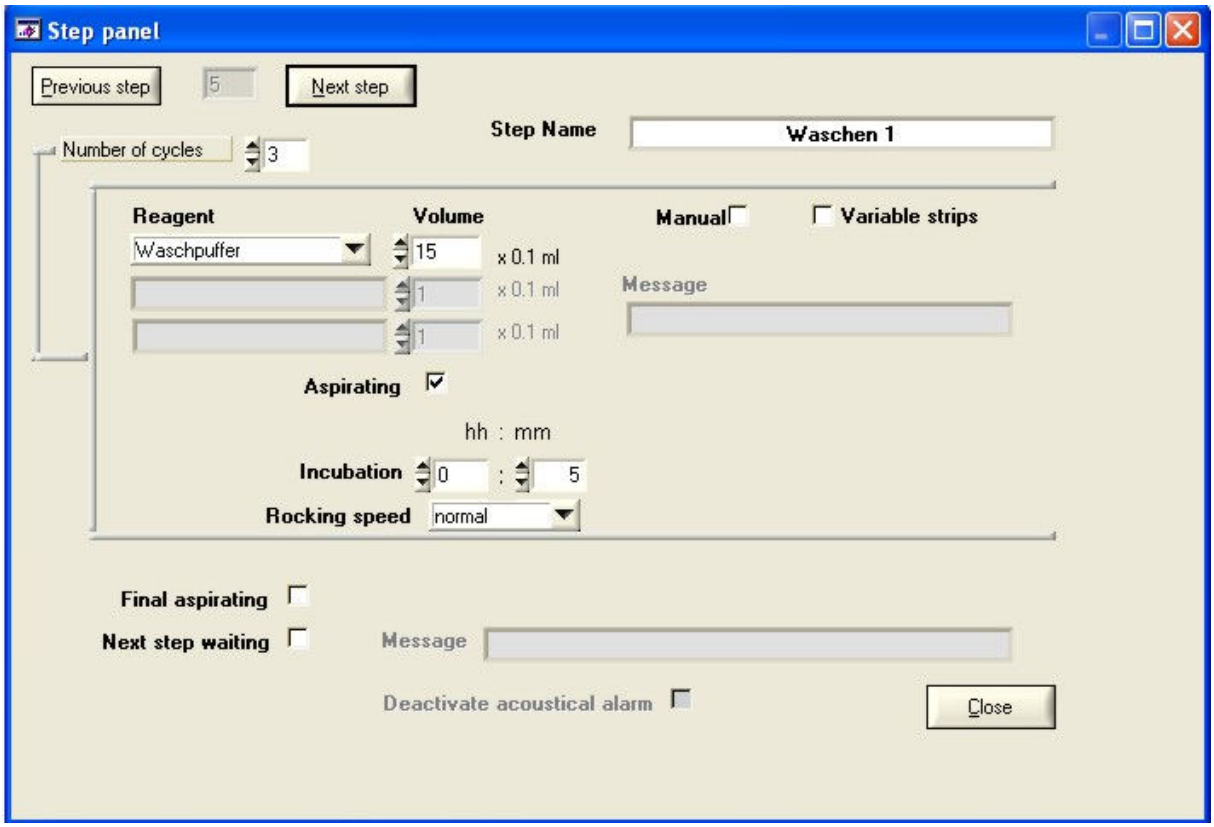


Delete step The button deletes selected step. Step is selected by single clicking to the appropriate table row. Before deleting Warning window is displayed.

Insert step The button inserts New step to selected or the first empty table row. Note, all assay steps before their editing must be inserted by using of this button.

Step panel window

Step panel window is opened by double clicking to some step row in the previous table. It contains all step attributes.



Previous and **Next step** buttons gradually change display of all assay steps. The field between them contains number of displayed step.

Step Name The field for a step name inserting. Number of name characters is up to 20. These texts are displayed at the instrument during assay run.

Number of cycles Number of the step part repetition can be set. This part contains the reagent dispensing and the incubation.

Manual If this field is marked no pump is used for dispensing. The instrument is waiting for manual dispensing during an assay run.

Message This field is active when "Manual" is marked. Inserted text is displayed in the instrument during waiting for manual dispensing. (for example : "Dispense samples!"). Number of message characters is up to 20.

Variable strips Marking this field means that pumps with Variable strips attribute "Yes" will be used in the step. Names of all these pumps will appears in fields Reagent.

Reagent The field is used for selecting of a dispensed reagent in the step. Selection can be made from roll menu in the first line. In the case of "Variable strips" marking all reagent with "Variable strips" attribute "Yes" are displayed.

Volume The fields for dispensed volume setting. The unit is 0,1 ml. (for example, if you want to dispense 1,5 ml set number 15). Note that maximal value which can be written to this fields is limited by "Max. strip volume" value from "Setup" menu.

Aspirating When this field is marked the simultaneous aspirating before dispensing is activated.

Incubation The fields for hours and minutes of incubation time setting.

Rocking speed The field for the rocking speed during incubation setting. The speed can be selected from the roll menu – None, Slow, Normal, Fast

Final aspirating When this field is marked strips content is aspirated before the step end.

Next step waiting When this field is marked assay run is paused at this point. Alarm is activated and the operator confirmation is required.

Message This field is active when "Next step waiting" is marked. Inserted text is displayed in the instrument during waiting for the operator confirmation. (for example : "Chek the strip bands!"). Number of message characters is up to 20.

Deactive acoustical alarm When this field is marked the alarm is not switched On during Next step waiting.

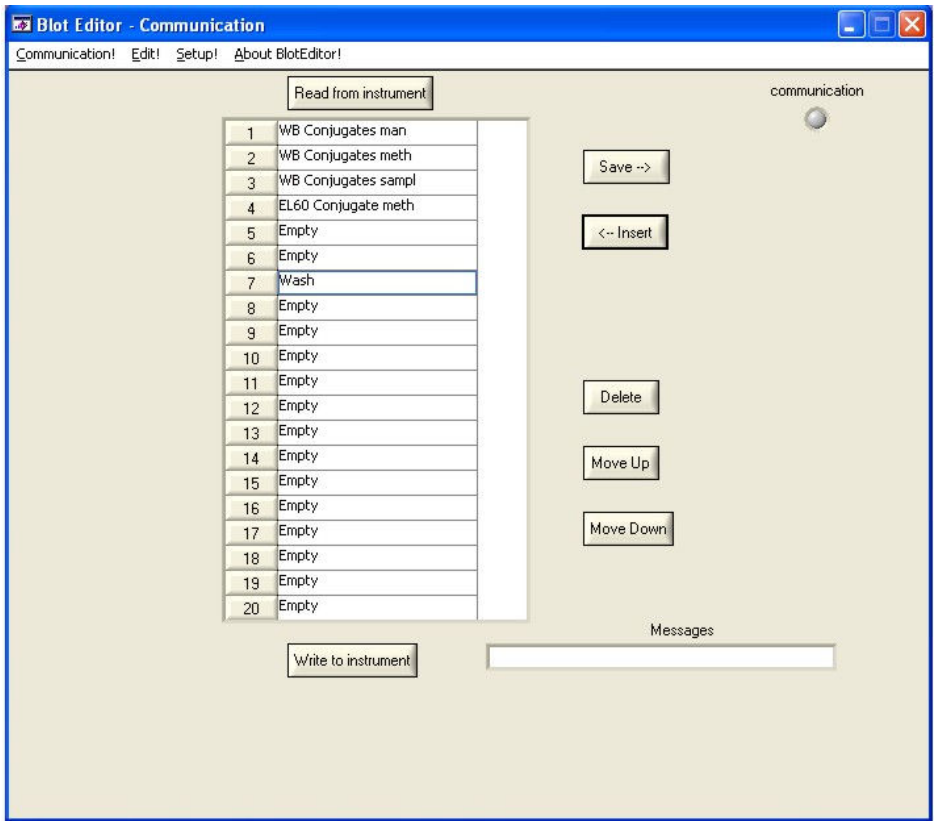
3.4 Communication menu

The communication menu is used for assay transfer between PC – Blot Editor and the instrument internal memory.

Before this menu opening :

- Connect the PC and the instrument by an serial USB or COM cable
- Set the correct number of COM port and the appropriate ID file in the Setup menu
- Switch the instrument on
- Set the instrument to "Connection waiting" condition in Communication menu.
- If all conditions are OK message "Instrument connected" will appear after activating Communication menu. Click "OK" and Communication window will be opened. In opposite case some error message will appear.
    - "Failed connection with instrument, Check if the USB cable is connected" means problem in a connection hardware or number of COM port setting
    - "Check if the instrument is waiting for connection" means that the instrument is not ready for communication

- "Bad instument ID" meand that the instrument serial number does not fit with selected ID file in Setup menu



The table in the window center mirrors the instrument assay memory with 20 positions.

Function of the buttons :

Read from instrument Transfer of the instrument memory content to table.

Write to instrument Transfer of the table content to the instrument memory.

Save → Saving the selected assay from table to a PC directory as a .xml file. The name of .xml file equals the assay name and it can not be changed. The assay selecting in the table is done by clicking on the appropriate row. Its colour change to blue.

← Insert Inserting the assay from a PC directory to the selected row in the table. If the selected row is not "Empty" warning with question "Overwrite the file" will appear. So, before "Insert" button activating select a required target row in the table.

Delete Deleting content of a selected row. An assay name is replaced by "Empty".

Move Up Moving the content of a selected row by one position up.

Move Down Moving the content of a selected row by one position down.

3.5 Tips

If you want to change only some parameter of an assay in the instrument memory do next :

- Connect the instrument and read the instrument memory content to the table
- Save the required assay as the .xml file
- Open Edit window and open the .xml file. Make changes and save it
- Connect the instrument again. (Note that table content has not changed, so a new Reading from instrument is not needed)
- Insert the changed .xml assay file to required position. Probably the old one will be overwritten.
- Write content of table to the instrument

If you want to copy the instrument assay memory content to another one do next:

- Connect the source instrument and read the instrument memory content to the table
- Reconnect the cable to the target instrument
- Change ID file setting in Setup menu according to the serial number of the target instrument and connect it. (note that the table contains the source instrument assays yet)
- Write content of table to the target instrument