# INTEGRA



# VIALINK Operating instructions

**INTEGRΛ**

**Document Change History**

| Vers. | Status: | Name: | Date: | Change: |
|-------|---------|-------|-------|---------|
| V00 | Released | MBe | 25.8.2011 | Document issued |
| V01 | Released | IMe | 30.08.2011 | New name with part number |
| V02 | Released | IMe | 02.09.2011 | Description compatibility pipettes & FW update |
| V03 | Released | MBe | 01.06.2012 | Update for new VIALINK version 2.0 |
| V04 | In work | MBe | 07.06.2013 | Update for VIAFLO 384, other improvements |
| V04 | Released | IMe | 06.12.2013 | Update for V3.0.x and VIAFLO ASSIST |

**Table of Contents**

# 1 Introduction

## 1.1 Purpose

VIALINK connects an INTEGRA VIAFLO (II) electronic pipette, VIAFLO 96/384 and VIAFLO ASSIST to a computer. It allows creating and exchanging custom programs, uploading custom pictures for the start up screen, creating a service history and upgrading pipettes with the newest firmware.

VIAFLO 96 and VIAFLO 384 are separate instruments but for the purpose of these operating instructions they will be abbreviated with VIAFLO 96/384.

## 1.2 Scope

These operating instructions describe the installation and operation of VIALINK V3.0.0 or higher.

# 2 System requirements

## 2.1 Personal computer / Laptop

CPU:                  INTEL or AMD (not older than 5 years)
USB port:             2.0 / 3.0
Bluetooth:            optional
Memory:               > 2GB
Internet access:      highly recommended for installation and updates
Operating system:     MS Windows XP (SP2 or later), MS Windows 7, MS Windows 8.x
Framework:            Microsoft .NET 2.0 (or later)

## 2.2 Connectable device

| | VIALINK / Compatibility | | | |
|---|---|---|---|---|
| | Not connectable | Connectable to VIALINK V3.0.x | | |
| Device firmware: | No firmware update | Firmware update only | | Full VIALINK functionality |
| VIAFLO electronic pipette (1st generation) | 1.x    < 2.24 | 2.24    2.44    2.77 | | 2.78    2.8x |
| VIAFLO II electronic pipette (2nd generation) | | | | ≥3.02 |
| VIAFLO 96 / 384 Control unit | | 2.79    2.81    2.83 | | 2.9x |
| VIAFLO 96 / 384 Base unit | | 1.02    1.07 | | 2.xx |
| VIAFLO ASSIST | | | | 1.xx |

## 2.3 VIAFLO Programming Stand for electronic pipettes

The VIAFLO Programming Stand (PN 4211) can be connected to the USB port of your PC.
The Programming Stand can be used to charge the pipette battery and enables the communication between the PC and the pipette.

## 2.4 VIAFLO Bluetooth module for electronic pipettes

For a wireless communication the Bluetooth pipette module (PN 4221) and the Bluetooth PC module (PN 4225) can be used instead of the USB Programming Stand.

# 3 Installation

## 3.1 Preparation

- Download VIALINK from http://www.integra-biosciences.com/sites/vialink.html in the Download section.
- Unzip "VIALINK_3_X_X.ZIP" into a temporary folder on your local drive (e.g. C:\temp\vialink or your desktop).

## 3.2 First time installation

- Log in to your computer with administrator log in.
- Run "setup.exe" and chose a directory where VIALINK should be installed (e.g. C:\Programs\Integra Biosciences AG\VIALINK). If you are not logged in as administrator, you may be prompted for the administrator login.
- VIALINK can also run from a network drive. Choose your network drive during installation.

## 3.3 Update VIALINK

- You can check for updates directly in the VIALINK application (Menu "Update") or you can reinstall by executing the "setup.exe" of a new VIALINK version.
- Your actual pipette and custom program database are resumed.

## 3.4 Running VIALINK without installation

- VIALINK can be run from a USB drive or any other program folder. Simply copy the installed/extracted directory (e.g. C:\Programs\Integra Biosciences AG\VIALINK) to your specific drive.

# 4 Establishing a connection

## 4.1 Connect VIAFLO Electronic pipettes to your PC

- Connect the USB cable to the stand and a free USB port on your computer or establish a Bluetooth connection to your computer.
- Start VIALINK.
- Activate the communication mode on your pipette: Go to the "Toolbox" and enter the menu "Communications". Select either USB-Stand or Bluetooth ("Serial" for previous models).
- When USB-Stand is selected hang the pipette onto the Programming Stand. Upon establishing the connection successfully, the connector symbol turns green.

- To disconnect an active pipette, click on the green connector symbol and confirm.

Note:

- Before first use, drivers for the Programming Stand will be downloaded from the internet and installed automatically. If you do not have access to the internet, you need to install the drivers manually. The required USB driver is packed in the setup ZIP file and is extracted to \Driver of your VIALINK installation directory.
- The Programming Stand can work without power supply. The power supply is required if the pipette is charged with the Programming Stand. To avoid a pipette shutdown due to low battery during work with VIALINK, we recommend to always connecting the Programming Stand to the power supply.
- Do not connect / disconnect the power supply during the use of VIALINK.

## 4.2 Connect VIAFLO 96 / 384 to your PC

- Connect the VIAFLO 96/384 with a standard USB cable (type A to type B) to a free port on your computer.
- Start VIALINK.
- Activate the communication mode: Go to the "Toolbox" and enter the menu "Communications". Turn "Serial" to "ON".
- A successful connection is indicated by the green connector symbol.
- To disconnect VIAFLO 96/384, click the green connector symbol or simply switch off the unit.

Note:

- Before first use, drivers will be downloaded from the internet and installed automatically. If you do not have access to the internet, you need to install the drivers manually. The required USB driver is packed in the setup ZIP file and is extracted to \Driver of your VIALINK installation directory.

## 4.3 Connect VIAFLO ASSIST to your PC

- Connect the VIAFLO ASSIST with a standard USB cable (type A to type B) to a free port on your computer.
- Start VIALINK.
- Switch the VIAFLO ASSIST on.
- A successful connection is indicated by the green connector symbol.
- To disconnect VIAFLO ASSIST, click the green connector symbol or simply switch off the unit.

# 5 Operation

## 5.1 Main screen
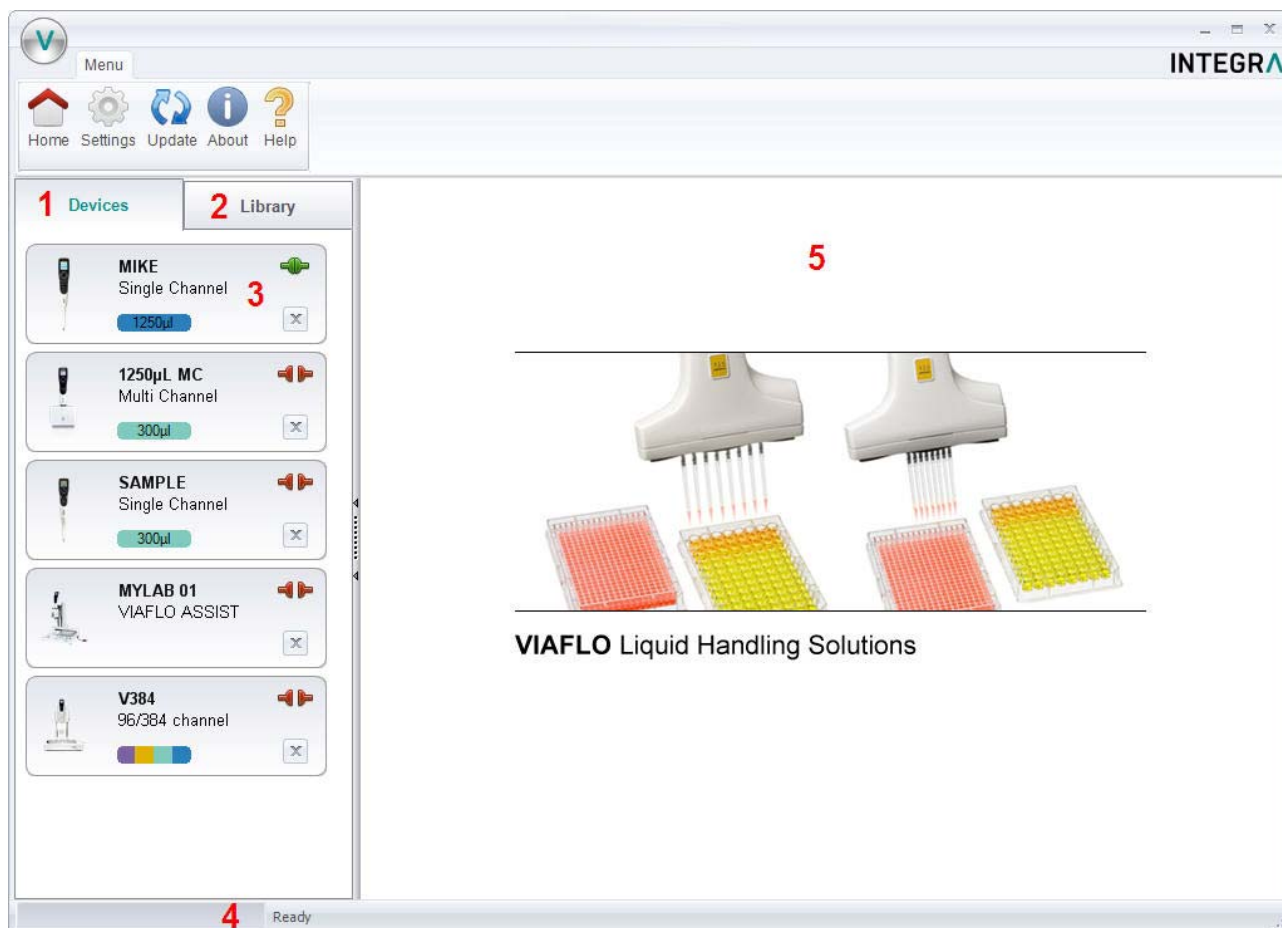


| | |
|---|---|
| **1** | Pipettes: Here you will see all pipettes that have been connected to VIALINK. A green symbol indicates an actively connected pipette, the red symbol a disconnected pipette. |
| **2** | Library: This is the custom program library on your computer. New programs can be created or existing programs can be modified. |
| **3** | Click on the pipette field to see all pipette menus. |
| **4** | The status bar indicates the progress of an ongoing process. |
| **5** | Main window: Showing all pipette menus. You have to select a pipette from the left before menus are shown. |

## 5.2 Create and edit custom programs

VIALINK allows you to create and store pipetting programs on your computer. The number of programs that can be stored on your computer is limited only by your hard drive's capacity.
You can then transfer up to 20 custom programs to your pipette or VIAFLO 96/384.

### 5.2.1 Local program library

▪ The "Library" tab opens the custom program and picture library.
▪ Select the appropriate library: VIAFLO Pipettes or VIAFLO 96/384.

# INTEGRA

- Use "Add" to create a new custom program, "Remove" to delete a custom program from the library, "Copy" to duplicate an existing program or "Edit" to change parameters of an existing program.
- "Export" allows to export a custom program as *.xml file and "Import" lets you import a custom program from a *.xml file.
- "Convert" allows converting a custom program from one library to the other. E.g. a VIAFLO Pipettes program to a VIAFLO 96 program.

Note:

- VIALINK does not distinguish between VIAFLO 96 and VIAFLO 384 programs. The programs are compatible with both units and are stored in the combined VIAFLO 96/384 program library.

## 5.2.2 Program organizer

Alternatively to setting up a program in the local program library, a program can also be created in the "program organizer" of the pipette and VIAFLO 96/384. The instrument needs to be actively connected (green plug symbol) to allow editing in the program organizer (green box).
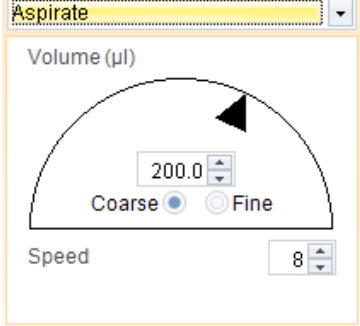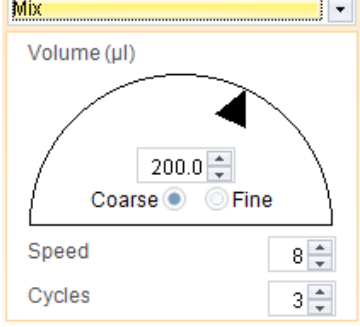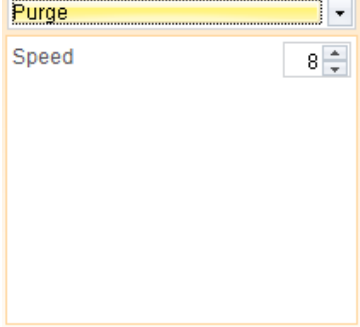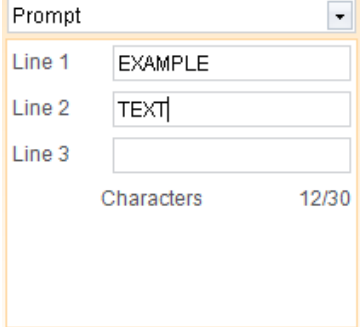
Note:

- Creating programs for VIAFLO 96 and VIAFLO 384 is easier using this method because it allows active teaching of pipetting heights and positions (e.g. Z-height).
- Programs created in the program organizer (green box) can easily be copied into the local library (orange box) using the arrow buttons.
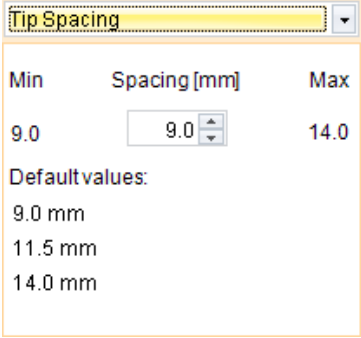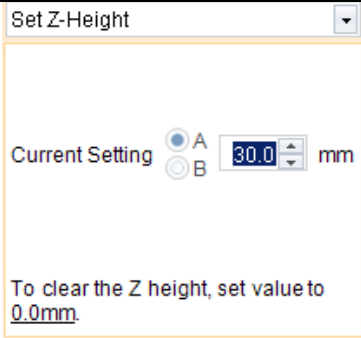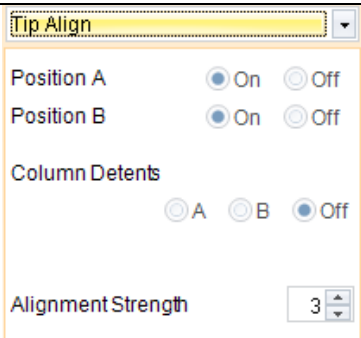
# INTEGRA
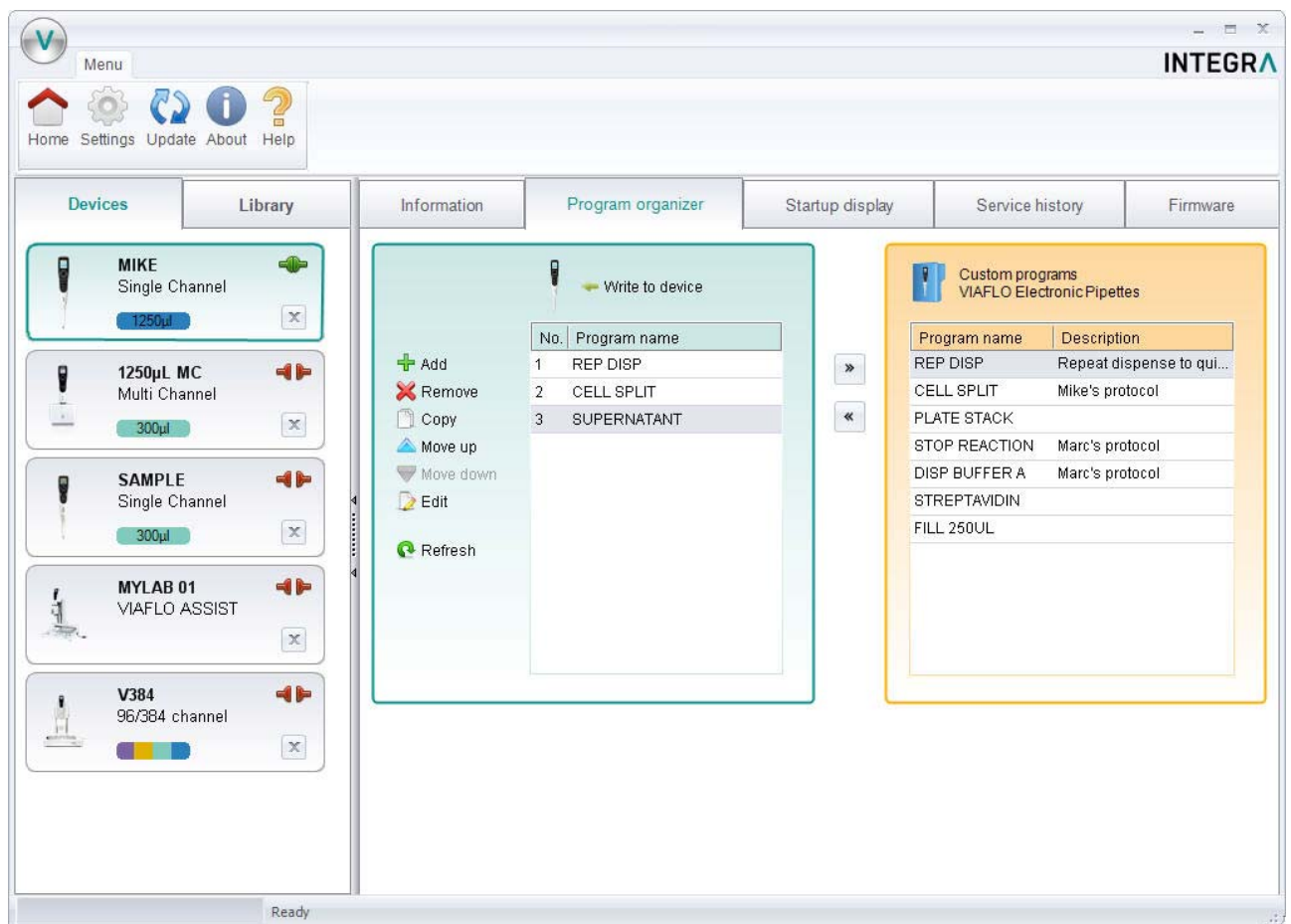
## 5.2.3 Setting up a custom program
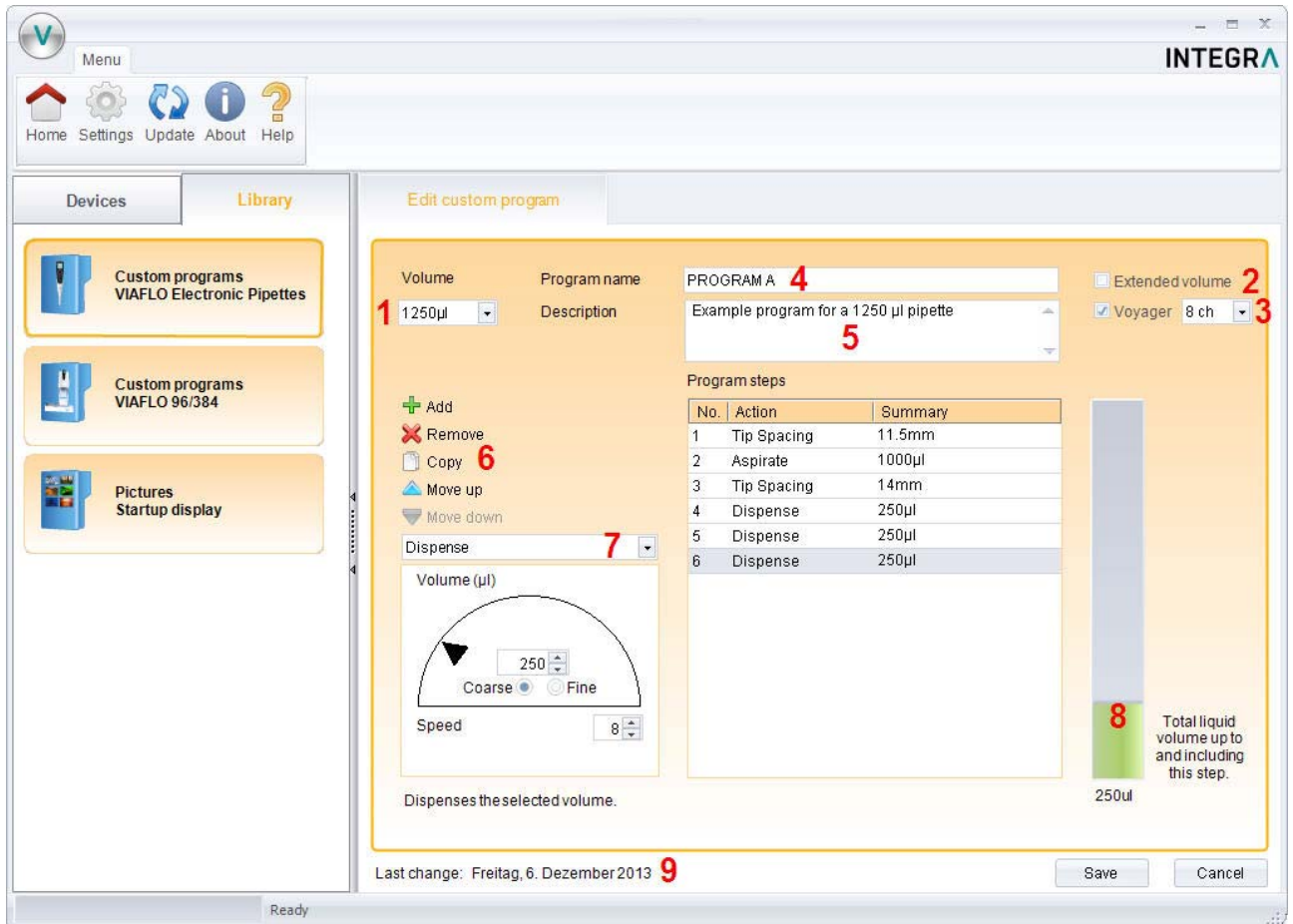


| | |
|---|---|
| **1** | Chose the working volume of the pipette. |
| **2** | Tick the box if you want to work with the extended volume range. See the pipette manual for more details. |
| **3** | Tick the box "Voyager" and chose the number of channels if you set up a program using tip spacing. |
| **4** | Enter the name of the program. |
| **5** | You can add a description. The description is displayed only in VIALINK but not on the pipette itself. |
| **6** | Add, Remove or Copy program steps. You can change the order of steps using "move up" or "move down". |
| **7** | Select a programming step from the drop down menu. |
| **8** | The green bar shows the amount of liquid in the tip up to and including the selected step. |
| **9** | Shows the date when the program was last modified. |

# INTEGRA

| Programming step | Description |
|---|---|
| **Aspirate and Dispense** | |
|  | Use the dial to change the volume. To increase the volume in smaller increments, select "fine". Alternatively, you can enter the volume directly. <br><br> Use the arrow keys to change the aspiration speed (1-10) or enter the number directly. |
| **Mix** | |
|  | Select the mixing volume using the dial or enter the volume directly. <br><br> You can also change the mixing speed and the number of mixing cycles. |
| **Purge** | |
|  | Empties the tip, regardless of the amount of liquid in the tip. |
| **Prompt** | |
|  | The Prompt step will display a message during a pipetting protocol before continuing with the next step. <br><br> Three lines with a total of 30 characters are available. |

| Tip Spacing | |
|---|---|
|  | Spacing is available for VIAFLO voyager pipettes. It allows changing of the tip spacing. If you include a "Spacing" step into your program, VIALINK will tag the program automatically for voyager pipettes.<br><br>The maximum and minimum width of the spacing depends on the number of channels and the nominal volume of the pipette. |

| **Steps available only for VIAFLO 96 and VIAFLO 384** | |
|---|---|
| Set Z-Height | |
|  | This will set a minimal Z-Height that limits vertical movement to that height. The Z-Height will be active when this step is reached in the pipetting program.<br><br>Chose on which position the Z-Height should be active and set the desired height. Setting the height value to 0.0 mm will deactivate it. |
| Tip Align | |
|  | Activates tip align for the selected position. Tip align is an active positioning help to guide the pipette tips into the microplate wells.<br><br>Chose on which position Tip Align should be active. Both positions can be activated/deactivated at the same time.<br><br>For serial dilutions, Colum Detents can be activated. Chose the position on which the target plate is.<br><br>Then select the strength of the tip alignment: 1=weak, 2=moderate, 3=rigid. |

### 5.2.4 Creating an Automatic Mode program

The Automatic Mode is available only for VIAFLO 96/384. It automatically performs a number of predefined liquid handling operations.

To create an Automatic Mode program, connect your VIAFLO 96/384 with VIALINK, go to the "Program organizer" and create a new program by clicking "Add". Click "Edit" to set it up now.
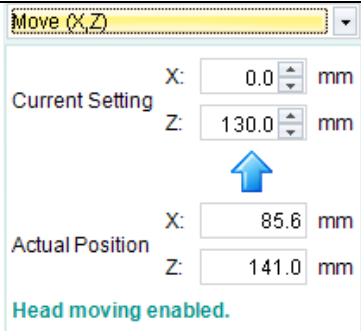
- Define the volume range and tick the box for "Automatic Mode" (1). Name your program.
- The first step in an automatic program is always the "Move(X/Y)". It defines your starting position. Move the pipetting head to the desired position as you would do when pipetting. "Actual Position" (2) shows the current coordinates. Clicking the blue arrow (3) applies these coordinates. "Current Setting" (4) are the coordinates going to be used by the program.
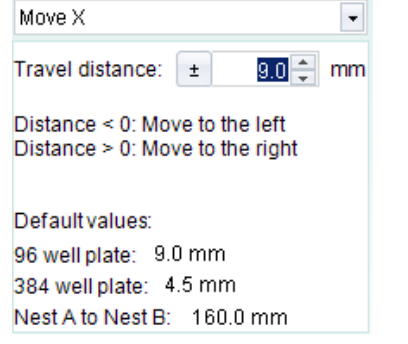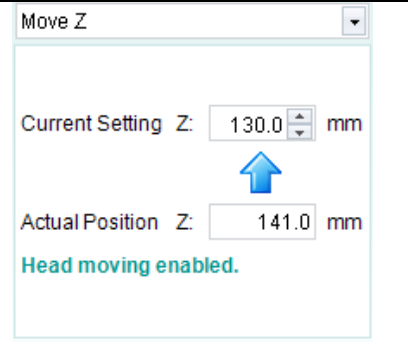- Click "Add" to add new steps.
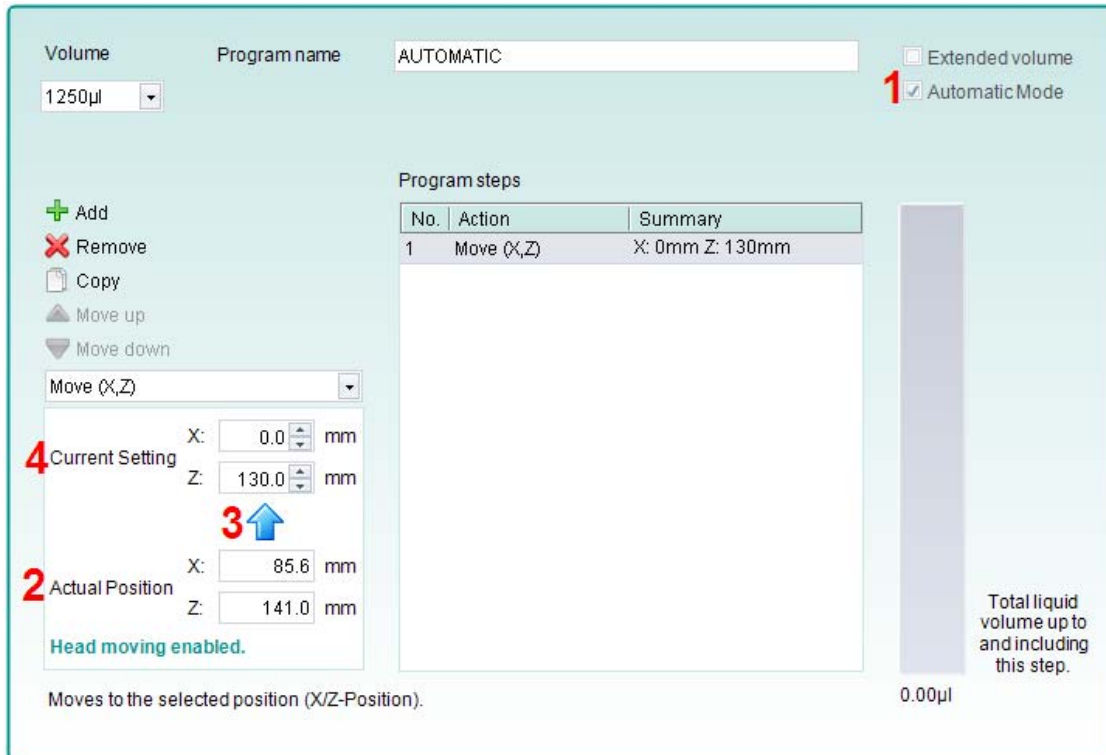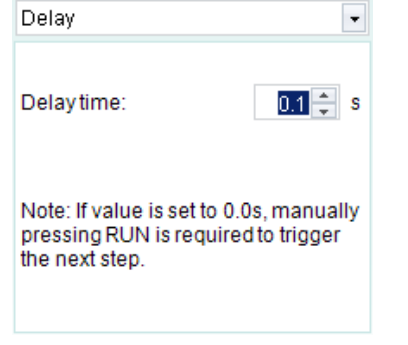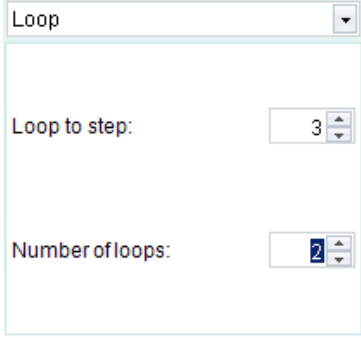
Note:

- Automatic Mode programs can also be created when VIAFLO 96/384 is not connected. In this case, programs can be created in the library as described in section 5.2. This mode does not allow active teaching of heights; instead the numbers are entered manually.

**Automation Mode specific programming steps:**

| Programming step | Description |
|---|---|
| Move(X/Z) | |
|  | Move (X/Z) can also be used as a regular step. |
| | The pipetting unit moves to a desired position in X and Z direction, saved as "Current Setting". |
| | Teach the position by moving the pipetting unit to the desired position and clicking the blue arrow. |

# INTEGRA

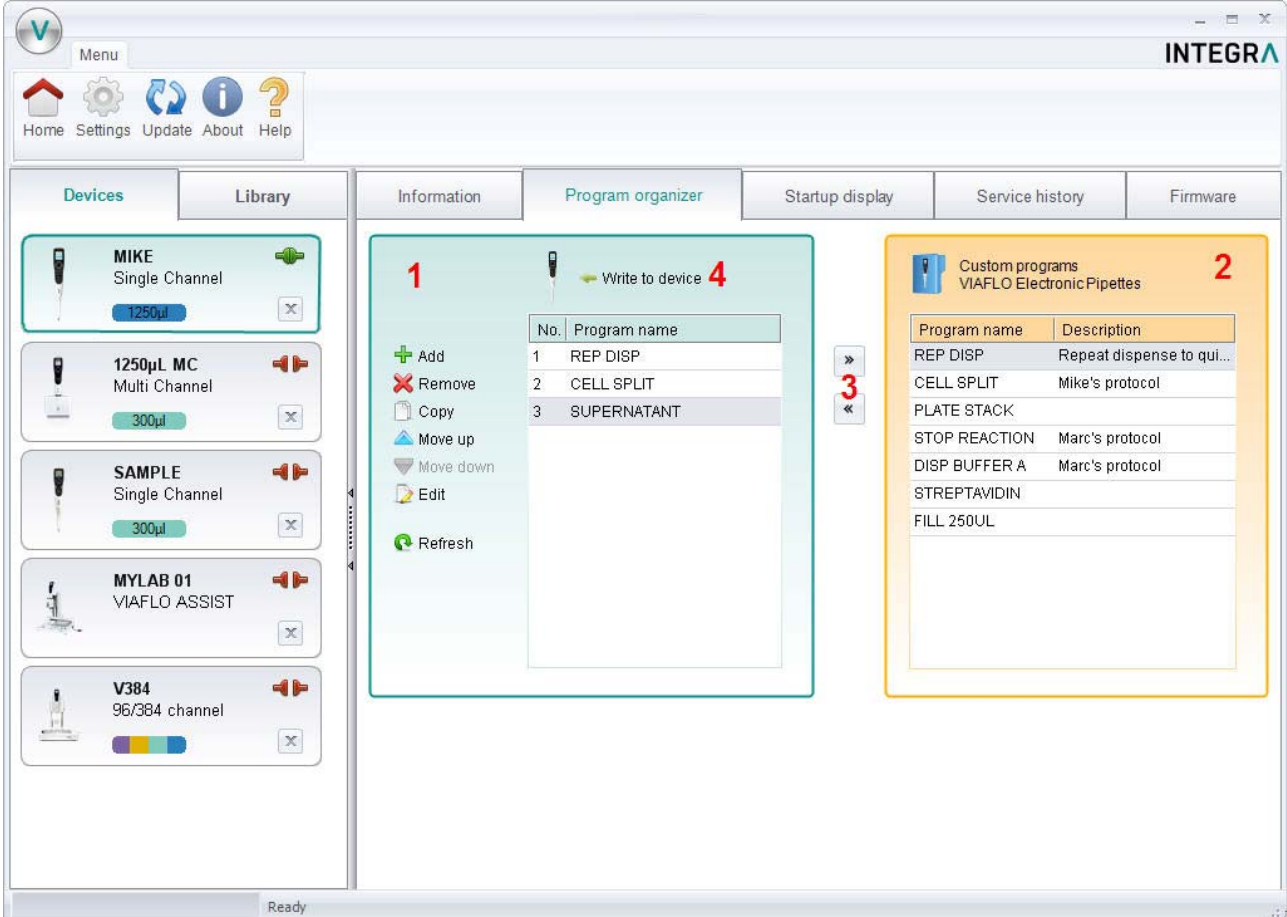| Move X | |
|---|---|
| Move X ▼<br><br>Travel distance: ± **9.0** ▲▼ mm<br><br>Distance < 0: Move to the left<br>Distance > 0: Move to the right<br><br>Default values:<br>96 well plate: 9.0 mm<br>384 well plate: 4.5 mm<br>Nest A to Nest B: 160.0 mm | The pipetting unit travels the set distance in X-direction relative to the current position.<br><br>Setting a negative value moves the unit to the left, setting a positive value moves the unit to the right. |
| **Move Z** | |
| Move Z ▼<br><br>Current Setting Z: 130.0 ▲▼ mm<br><br>⬆<br><br>Actual Position Z: 141.0 mm<br>Head moving enabled. | The pipetting unit moves to the selected Z-Height.<br><br>Teach the Z-Height by moving the pipetting unit to the desired height and clicking the blue arrow.<br><br>The value of "Current Setting" will be used by the program. |
| **Blow out / Blow in** | |
| | In automatic mode, the blow out and blow in need to be programmed after the last dispense.<br><br>After a blow out, a blow in has to follow at some point. It does not have to follow immediately and can have steps in between. E.g. after the blow out a move step can be programmed to move the tips out of the liquid, and is then followed by the blow in.<br><br>Note: When using "Purge" to empty the tips, a blow out/blow in is performed automatically and does not need to be programmed. |
| **Delay** | |
| Delay ▼<br><br>Delay time: **0.1** ▲▼ s<br><br>Note: If value is set to 0.0s, manually pressing RUN is required to trigger the next step. | A delay is a pause between the last and the next step.<br><br>If it is set to 0.0 s, pressing the run button is required to trigger the next step. |

![INTEGRA logo]

| Loop | |
|---|---|
|  | A loop repeats the steps between the selected step and the loop command. |
| | E.g. if the program reaches the loop step, it goes back to step 3 and repeats the steps until there 2 times. |
| | The number of steps can often be shortened by adding a loop. |
| | Note: Nested loops (loops inside loops) are not allowed. |

The VIAFLO 96/384 library of VIALINK includes examples of automatic programs. Parameters can easily be adjusted to your protocol in the program organizer of VIALINK.

## 5.3 Uploading new custom programs to the pipette



**1**    Program organizer: Shows programs that will be transferred to the pipette.

**2**    Custom program library: Shows custom programs from the library on your computer. Only programs that are compatible with the connected pipette are displayed. In this case only programs that work with a 125 µl hand held pipette.

**3**    Use the arrow keys to copy the selected program to the program organizer or the library.

**4**    Click "Write to Pipette" to write all programs from the program organizer to the pipette.

1. Chose a program from the library (2).
2. Copy it to the program organizer (1) by pressing the arrow key (3).

3. If you like, you can edit the programs also directly in the program organizer without having or changing them in the library on your computer.
Note: To create/edit programs in the library, select the "Library" tab.
4. If you've made changes in program organizer, like adding new programs or modifying programs, ALWAYS press "write to pipette" (4). Otherwise the changes will not be applied to the pipette. The program organizer reflects a temporary image of the pipette content.
5. Do not disconnect the pipette until the transfer is completed. Check the status bar.

## 5.4 Uploading custom pictures

Two custom pictures can be defined for each VIAFLO pipette. Note that the custom pictures are not available for VIAFLO 96/384.

- To upload a new picture, go to the "Startup display" tab.
- Select the desired picture and use the arrow keys to copy it to the pipette organizer (green).
- Click "write to pipette" to upload the picture to the pipette.
- You can download a picture from the pipette into your library by clicking "read from pipette" and use the arrow key to copy it into the library.
- To actually set the startup screen on your pipette, go to the "Toolbox" -> "Preferences" -> "Display" -> "Start up Screen". Scroll down to "Custom 1" or "Custom 2". By clicking "view" you can preview the picture and to select it click "save".

## 5.5 Service history

The service history allows you to save information about maintenance of the pipette.

- Go to the "Service history" tab and click "New entry" to add a new entry. Enter the text into the pipette screen in VIALINK. Click "Write to pipette" to save it. After writing it to the pipette, an entry cannot be deleted. It is permanent. The option to delete a new entry is only available before saving it to the pipette.
- This is intended to secure an authentic service history.

## 5.6 Updating firmware

New firmware can be installed on your pipette. This adds improvements and new features to the software.

➔ Please first read the "Software and firmware history" found in the Update menu tab.

### 5.6.1 VIAFLO (II) electronic pipettes

- Go to the "Firmware" tab and click "Select".
- Chose the newest firmware file "Firmware_VIAFLO_XX_Pipette_XXX.vdl"
- Click "Start installation"
- Follow the instructions on the screen. After a while you are prompted to turn on the pipette using the Run key and turn on serial communication again (Toolbox->Communications).

Note: It is recommended to use the Programming Stand for firmware upgrades.

### 5.6.2 VIAFLO 96 / 384

- Go to the "Firmware" tab and select either "Control unit" or "Base unit" to update. If a new firmware is available for both, update the Base unit first!



- Click "Select" and chose the corresponding firmware file:
  - Firmware_VIAFLO_96_384_ControlUnit_XXX.vdl
  - Firmware_VIAFLO_96_384_Base_unit_XXX.vdl
- Click "Start installation" to begin.
- Carefully follow the instructions given on the screen:
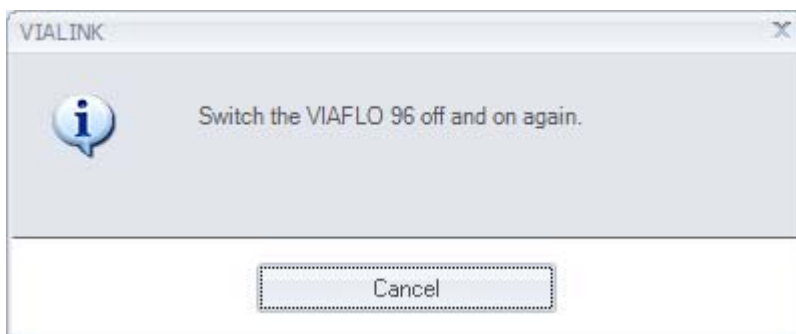




### 5.6.3 VIAFLO ASSIST

- Go to the "Firmware" tab and click "Select".
- Chose the newest firmware file "Firmware_VIAFLO_ASSIST_XXX.vdl"
- Click "Start installation"

Follow the instructions on the screen.

## 6    Settings

The Settings menu allows you to change the interface language of VIALINK and specify which COM ports VIALINK is using.



VIALINK will check the selected COM ports if a Programming Stand or VIAFLO 96/384/ASSIST is connected.

If the connection between a pipette and VIALINK cannot be established (make sure the pipette is in communication mode), click the "Refresh" button on the "Settings" menu. This might be necessary if the Programming Stand or VIAFLO 96 have been connected to the computer when VIALINK was already running.

Options under "Service functions" are intended for service personnel only and require a password.

# 7 Trouble Shooting

| Topic | Issue | Remedy |
|---|---|---|
| Connection between pipette and computer | I can't get a connection between pipette and VIALINK. | Make sure the pipette is in communication mode (see chapter 4). |
| | | Make sure the Programming Stand or device is connected to the computer. |
| | | Try to refresh the COM ports (see section 6). |
| | | Make sure the drivers for the Programming Stand or VIAFLO 96/384 have been installed correctly. While the Programming Stand or VIAFLO 96 is connected, go to your System Settings -> Device Manager. Check under Ports (COM & LPT) if there is an entry "USB Serial Port (COM X)". If there isn't, reinstall the drivers manually. |
| Custom programs | I'm in the program organizer and can't edit my programs in the library. | Programs in the library cannot be edited here. Exit the program organizer and select the Library tab. You can however copy a program from the library to the program organizer and edit the program in the organizer. This will not affect the original program in the Library. |
| Start Up Pictures | I've uploaded a new start up picture but the pipette does not show it on start up. | You need to activate the desired start up picture, see section 5.4. |
| Service History | I can't delete my entry. | This is on purpose. Once written onto the pipette, the entry cannot be deleted. |