

20 Firmware

20.1 Firmware Update for SVM 3000

The FlashUpdate for SVM 3000 requires "Microsoft .NET" (dot NET), version 2.0 or higher installed on your PC. Version 2.0 is supplied on the SVM 3000 customer CD-ROM or you can download it from the Microsoft website, category "downloads".

Required equipment:

- Interface cable SVM 3000 - PC, RTS/CTS (Mat. No. 12455)
- PC (Windows 98 or higher) with RS-232C or USB interface
if USB: USB-RS232C adapter required; recommended National Instruments NI 778472-01, AP Mat. No. 15446)
- Installer package of the latest firmware including the FlashUpdate program and the current firmware files for SVM 3000. This package includes also the firmware files for all available "Xsample" sample changers available for SVM 3000. The package can be downloaded from the Anton Paar Extranet online.

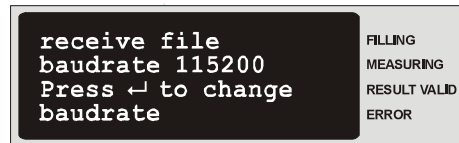
One main difference on the firmware for the CPU3 is the MD5-checksum test. The installer package contains a MD5-checksum file. At every start up and after each firmware update the SVM 3000 calculates the MD5 checksum of the program file and compares it to the enclosed MD5-checksum file. Thereby a 100% check of the program integrity is ensured. So if you perform an update you can be sure that the SVM 3000 firmware is correctly installed in the Flash-ROM.

If an error occurs after the instrument is switched on and the checksums do not match, an error number is shown and the instrument starts in "firmware loader". In this case, repeat the firmware update.

Working steps:

1. Ensure that the continuous protocol is deactivated (menu: **"instrument settings - PC interface - continuous protocol"**). The activated protocol function may cause problems when updating, as the SVM sends a data set every second via the PC interface.
2. Connect the SVM 3000 (PC interface) to your computer (RS-232C or USB using the above listed adapter).
3. In the menu **"user level"** enter either the admin. password to set the SVM 3000 to the user level "administrator" or enter the service password to change to the user level "service".

4. In the menu **"firmware update"**, select **"SVM3000 CPU"** and press ENTER.



In case of problems with the serial connection the baudrate can be changed to 19200.

5. Double-click the downloaded installation package to start the FlashUpdate. You see the following screen on your PC. In this screen you can view the FlashUpdate license document (arrowed).



The FlashUpdate program (see screenshot above) is self-explanatory and leads you through the update procedure step by step. The progress of the update is displayed by a graph bar for each update section and a graph bar for the overall process.

6. Click "Next" to continue the update procedure and follow all instructions given by the FlashUpdate program. Click on the "Help" button for further information.

First a communication check is performed. Then you get information about the instrument serial number, the currently on the SVM 3000 installed firmware version and the firmware version which will be installed.

Note:

In case you want to "downdate" your firmware to an older version compared to the currently installed one, the FlashUpdate program will show the following warning message:



Nevertheless you can downdate to an older version. But keep in mind, that this may lead to a loss of calibration and adjustment data.

Click to "Update" to proceed with the update procedure.

To exit the program, click on the "Cancel" button. When the update has finished, the instrument boots to the "measuring window".

7. Quit the FlashUpdate program.

20.2 Firmware Update for SVM 3000 with Built-in Xsample

Requirements:

- Same as for the Firmware Update for a SVM 3000 without Xsample (Chapter 20.1).

Working steps:

Carry out the same steps as described for the SVM 3000 without Xsample (Chapter 20.1).

After the firmware update from the PC to the SVM 3000, the SVM transfers the Xsample related firmware files internally to the Xsample. This needs several minutes. The SVM 3000 shows the following display:



When this update is completed, the SVM 3000 boots to the "measuring window".

20.3 Fixing Problems

20.3.1 Problems with FW Update ≤2.0W8 to 3.2.1

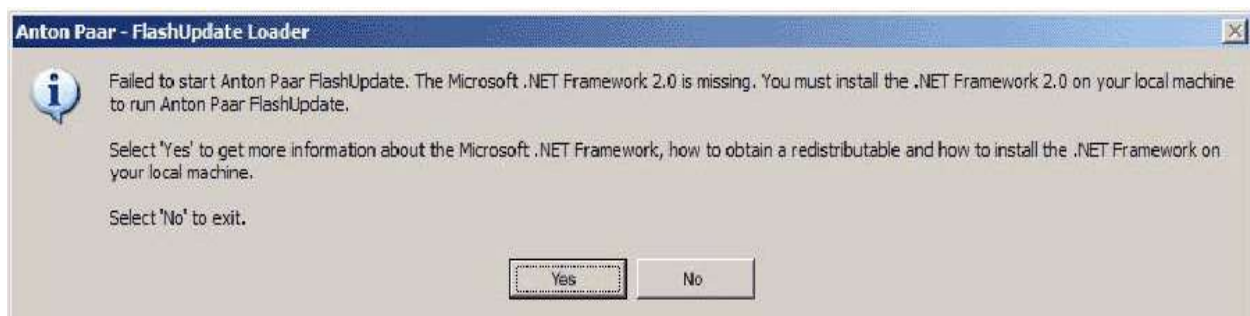
After a firmware update from these old versions to the current firmware, problems in combination with the adjustment can come up. The instrument can display the following messages:

- "Calibration Error" after update to firmware versions 3.0.0, 3.0.1 or
- "Adjustment Warning" after update to firmware versions 3.1.0 and higher

For solutions refer to Chapter 26.6.6.

20.3.2 Microsoft .NET 2.0 is Missing

If you want to start the FlashUpdate program and the following screen comes up, "Microsoft .NET Framework 2.0" is not installed on your PC.



1. Click the button "No" to exit.
2. Install "Microsoft .NET Framework 2.0" from the SVM CD-ROM (folder: Windows Software) or from the Microsoft homepage on your PC.
3. Start the update procedure again.

20.3.3 Problems with the Serial Communication

After the communication test the FlashUpdate shows the following screen:



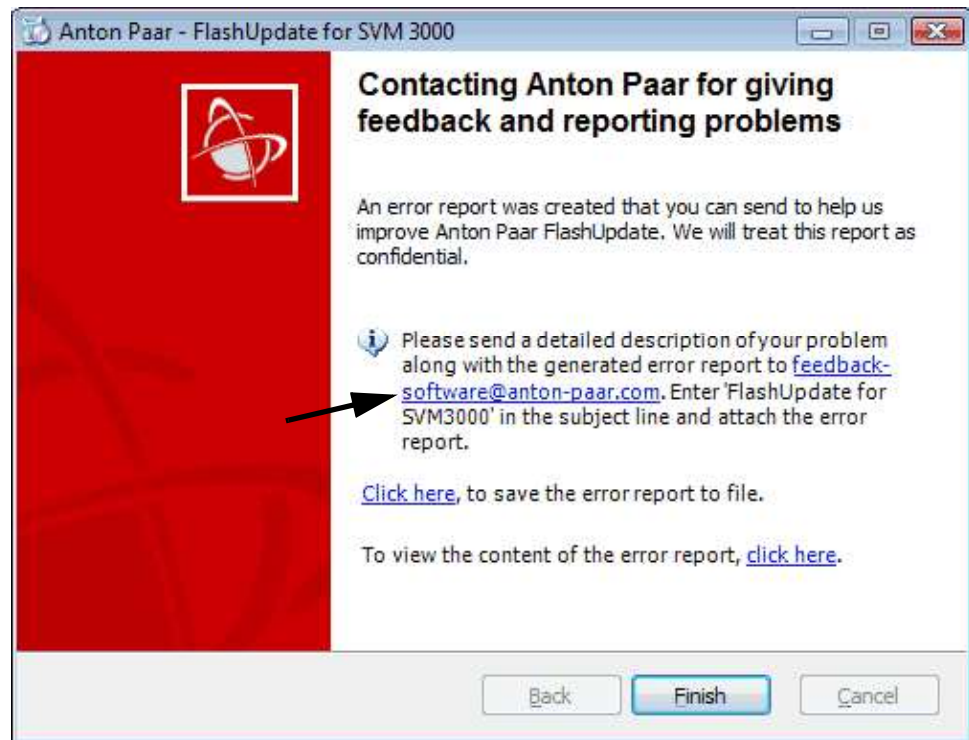
1. Check besides the above mentioned points the following things:
 - Is the serial cable OK? (damage, correct cable)
 - Is the used COM (or USB) port on the PC selected correctly?
 - If used: does the USB-RS232 adapter work properly?
2. Exit the program, disconnect and reconnect the cable connection and restart the firmware update procedure.

20.3.4 Other Problems

If an error or problem occurs during the update procedure, e.g. the update is interrupted (the bar showing the progress stops moving) or the serial connection is interrupted, a window with an error message appears.

1. Check the serial connection (correct interface? cable connected correctly? cable damaged? does the serial port on the PC work correctly?) and repeat the update.
2. If the error occurs again, contact Anton Paar GmbH: Therefore mark the option "I want to give feedback or report a problem" on the bottom of this window. Then click on "Next".
3. FlashUpdate generates an error report. Save this error report by clicking the arrowed line. Send the error report to Anton Paar GmbH: Click on the

address feedback-software@anton-paar.com. You are requested to attach the error message generated by the system (FlashUpdate.apl).



4. Write a detailed description of the error and what you have done up to now to fix the problem and send the mail with the attached log file.

20.4 Send File - Receive File

This firmware feature allows reading out the mode settings from the CPU3 and transferring these settings again to a CPU3. This might be helpful e.g. in case of replacing a CPU3 board where it was possible to read out the customer's mode settings. Or if a customer has more than one SVM 3000, the settings can be transferred.

Before replacing the CPU3 board or before performing the firmware update, read out the settings file from the SVM.

A firmware update resets all mode settings to default state. In case a customer has defined his own instrument modes and these data can be read out from the CPU3, you can save time for re-establishing his settings.



Information:

In case of an update from an old firmware version to the current firmware 3.2.1 (or higher), the mode settings may not be transferred completely. If there are changes in the menu structure (e.g. a new menu item) the internal object list of the firmware changes too. That's why the settings transfer may be incomplete.

This option is available only in the user level "service" and not intended to be performed by the customer.

Required equipment:

- Interface cable SVM 3000 - PC, RTS/CTS (Mat. No. 12455)
- PC (Windows 98 or higher) with RS-232C or USB interface; f USB: USB-RS232C adapter required; recommended National Instruments NI 778472-01 AP Mat. No. 15446)
- Gender changer DB9M/DB9M (Mat. No. 302592); only required for direct transfer from SVM to SVM
- Terminal program (recommended: TeraTermPro)

Reading out mode settings from the SVM 3000 to a log file:

1. Connect the PC interface of the SVM 3000 to a free COM port or USB port on your PC.
2. Start the terminal program and change the settings of the serial port to: 115200 baud, 7 data bits, even parity, 1 stop bit, no handshake.
3. Set the SVM 3000 to the user level "service".
4. Create a log file in your terminal program (TeraTerm Menu: "File - Log...") to save the data from the SVM.
5. On the SVM 3000, select the menu item **"firmware update - send file"** and confirm with ENTER.

In the upcoming screen you can select also a lower baudrate (19200) by pressing the ENTER key, if your PC requires this. In this case you must also change the baudrate in the terminal program.

After data transfer the SVM shows a checksum. Compare this checksum with the checksum shown on the PC.

6. If the checksum is OK, save the data. If not, repeat the procedure.

Sending a mode settings file from the PC to the SVM 3000:

1. Connect the PC interface of the SVM 3000 to a free COM port or USB port on your PC.
2. Start the terminal program and change the settings of the serial port to: 115200 baud, 7 data bits, even parity, 1 stop bit, no handshake.
3. Set the SVM 3000 to the user level "service".

4. On the SVM 3000, select the menu item **"firmware update - receive file"** and confirm with ENTER.

**Information:**

The file can also be transferred to the instrument in the user level "administrator". Therefore go to the menu "firmware update - SVM 3000 CPU" and send the file as described below. This way also the customer can send a settings file to his SVM 3000.

In the upcoming screen you can select also a lower baudrate (19200) if your PC requires this. In this case you must also change the baudrate in the terminal program. In this case also the serial port of the PC must be set to the lower baudrate.

5. Open the settings file (*.txt) you have read out before and you want to send to the SVM 3000 (Tera Term Menu: "File - Send File...")

After data transfer the SVM shows a checksum. Compare this checksum with the checksum shown on the PC.

6. Press the ESC key to restart the SVM 3000.
7. Check, whether all settings have been transferred correctly.

Transferring mode settings directly from one to another SVM 3000:

Therefore you need besides the above mentioned equipment a gender changer. All instruments should have the same firmware version.

1. Connect the PC interfaces of the two SVM 3000 using the serial cable and the gender changer.
2. Set the instrument, which should receive the settings file to **"firmware update - receive file"** and the second instrument, which should send the settings file to **"firmware update - send file"**. Ensure that the baud rates are the same (115200 or 19200) on both instruments.
3. When the data transfer has been finished, compare the checksums displayed on both instruments. If they are matching, the transfer is completed successfully. Restart the SVMs by pressing the ESC key on each instrument.
4. Check whether all settings have been transferred correctly.