User Manual

Firmware Update NBE-BU

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1. Content

2. Change history

Rev	Date	Author	Remarks
A	29-04-2011	Peter Mycock, 3790	First draft. Copied from document "Usermanual_FU_HBC_MCS0608291422_E.doc" Rev. E and changed for NBE

Changes to former version are marked blue.

3. Terms and definitions, Abbreviations

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ACS	Application control software
BU	Basic Unit
HBC	Heating and Burner control
HMI	User control Unit connected to the BU
OCI FU	SBT Firmware update interface USB to FT1.2
PC	Personal computer
RG	Room control unit connected to the BU
USB	Universal serial bus

4. Introduction

This user manual describes the process of how to update the firmware on the Basic Unit (BU). The complete firmware of the µController on the BU is updated.
The update sets all non protected parameters back to the default factory settings. If you want to save individual settings, do it before starting the update process (point 5). It is possible to save the parameter setting by means of the ACS700 (OCI700) tool or uploading to the HMI, room unit.

The firmware update tool is delivered in a service tool case containing the necessary hardware components and a CD with the tool software and this user manual on it.

4.1 Hardware components
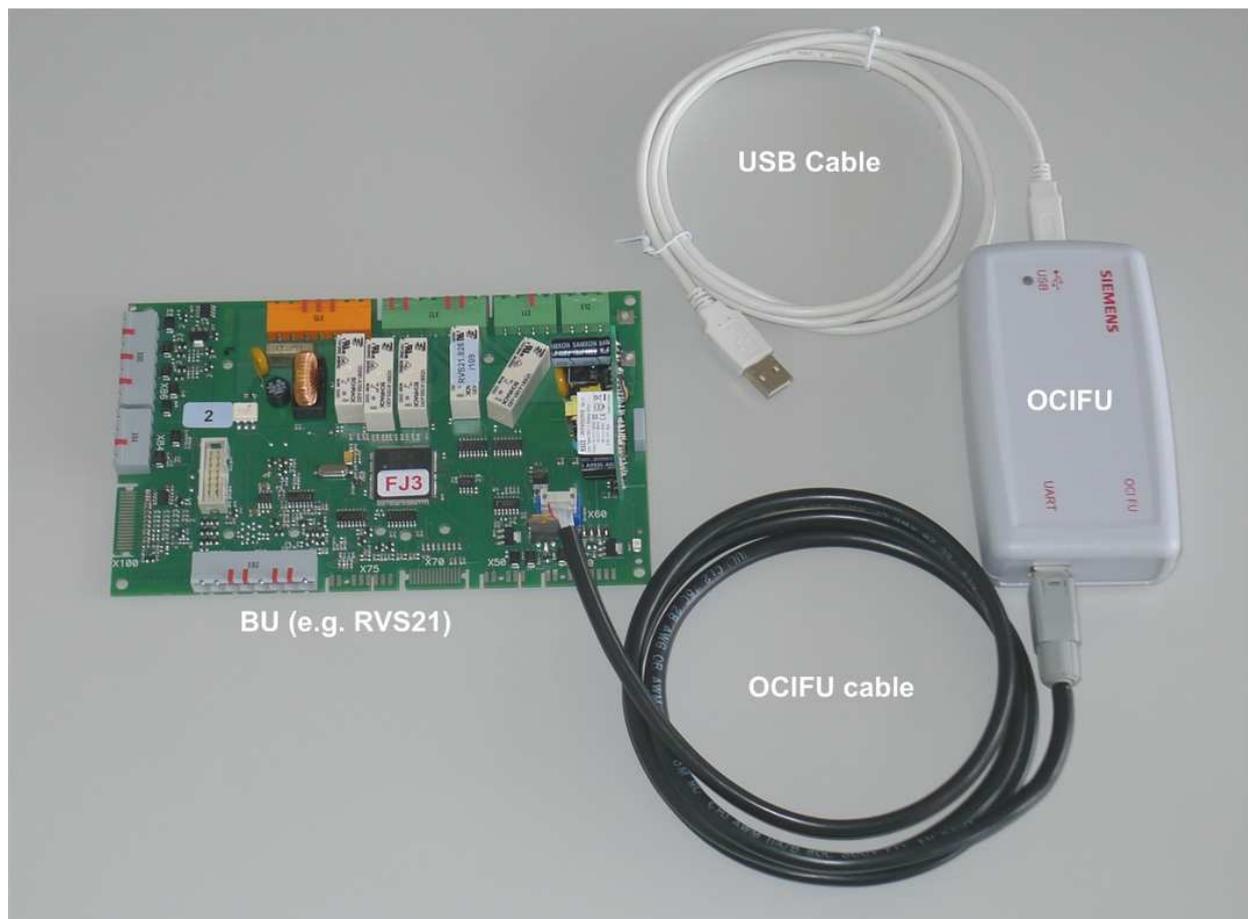
CD: Compact Disc containing Tool Software
BU: Basic Unit
OCI FU: Firmware update interface.
OCI FU cable: Cable to connect the OCI FU to the BU
USB cable: Cable to connect the OCI FU to a personal computer.

4.2 Firmware Update Tool Software

The firmware update application software is named HVAC_FirmwareUpdate.exe.
This program leads the user to the firmware update and controls the communication and the dataflow between the PC and the OCI FU.
Normally the tool version does not vary with every firmware update version.
So far the following versions were released:

HVAC_FirmwareUpdate.exe version	Compatible to OCI FU version
0.4	0.2
0.5 – 1.1	0.3

4.3 Firmware and Version Control

Each time a new firmware version is released, the following set of files is delivered:
- firmware update file (*.fmw)
- issue control with valid version set number
- device descriptions (for the ACS7xx tool)

The firmware update file is named RVS21.82X-nnn_vvvv.fmw. (eg. RVS21.826-109_1001.fmw)
This file contains the new software for the BU µController and the new parameter settings for the BU EEPROM. The 'X' in the filename represents the version number of the valid version set. The valid version set number identifies the content of a software package. This number is stated in the issue control file.
The device descriptions files are an optional part of the firmware update to enable access to all data points via the ACS7xx tool.

5. Update process

The following steps describe the detailed update process. **It's important to follow this update process step by step.**

5.1 Actual Boot Loader Version

The Boot Loader is part of the software in the BU which manages the firmware update process. The Boot Loader Version can be found in menu 'configuration' on operating line 6228 using the control units (Room Unit or HMI) or the ACS.

5.2 Preparation

1. Store the individual parameter settings (if required)
2. Connect the OCI FU with the USB cable to the PC.
3. Connect the BU with the OCI FU cable to the OCI FU.
4. Connect the BU with the power supply

   ➔ Now the green LED on the BU starts to flash. The BU is now in 'Boot Loader Mode' and ready to communicate with the OCI FU.

5.3 Update the BU

5.3.1 Start the PC Program 'HVAC_FirmwareUpdate.exe'

The 'HVAC_FirmwareUpdate.exe' shows following window after start up:
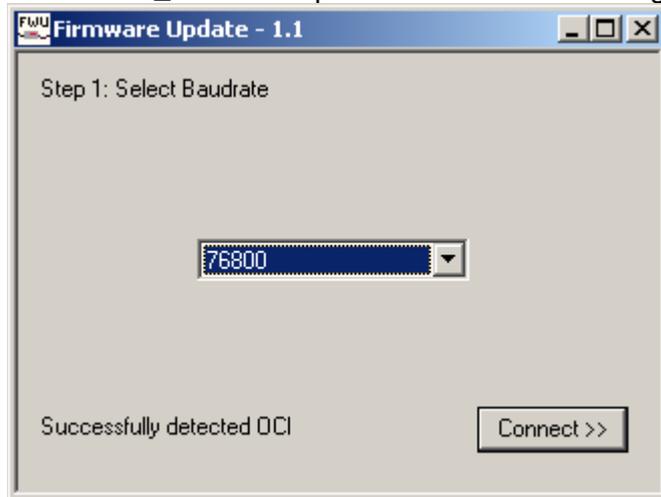
The version of the Firmware Update program is displayed in the bar at the top of the window, in this case '1.1'.
On the left lower corner the message '**Successfully detected OCI**' confirms the proper communication between the PC and the OCI FU.

5.3.2 Choose Baud Rate

The baud rate between the OCI FU and the BU depends on the Boot Loader version. The following table lists the correct baud rate for the given Boot Loader version:

Boot Loader Version	Baud Rate	HVAC_FirmwareUpdate.exe version	OCI FU version
4.0	76'800	1.0 or higher	0.3 or higher

Choose the correct baud rate.
Click 'Connect'.

### 5.3.3 Choose the File with the New Firmware
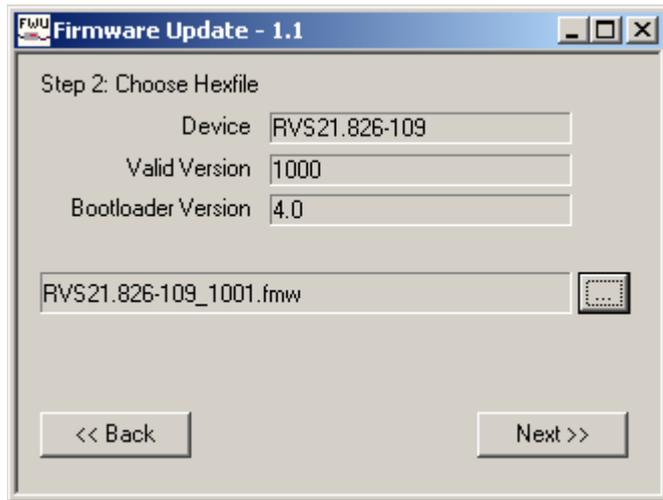
The window above shows information that has been read out of the BU:
Device: Device identification (Siemens order code)
Valid Version: Valid version set number
Bootloader Version: Boot Loader Version

Select the file with the new firmware package. The filename of the *.fmw file must start with the correct ASN shown in the field "Device", otherwise it will not be accepted as a valid file to update the device. Nb. It is possible to perform a downgrade of the software to a lower valid version set number, however, confirmation of a warning is required.

Click next to continue with the update.
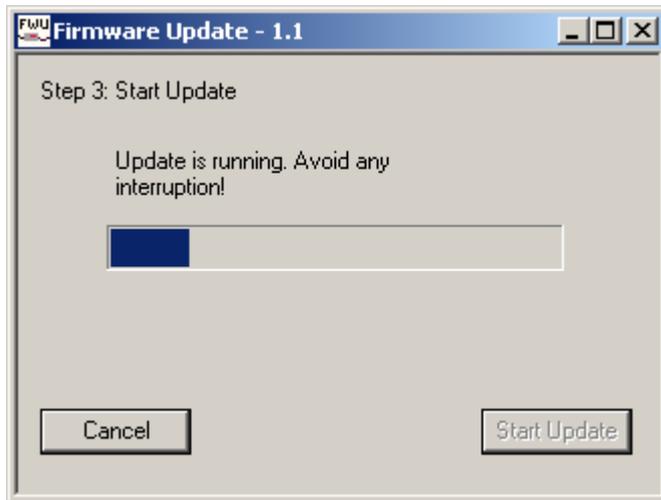
5.3.4 Start update
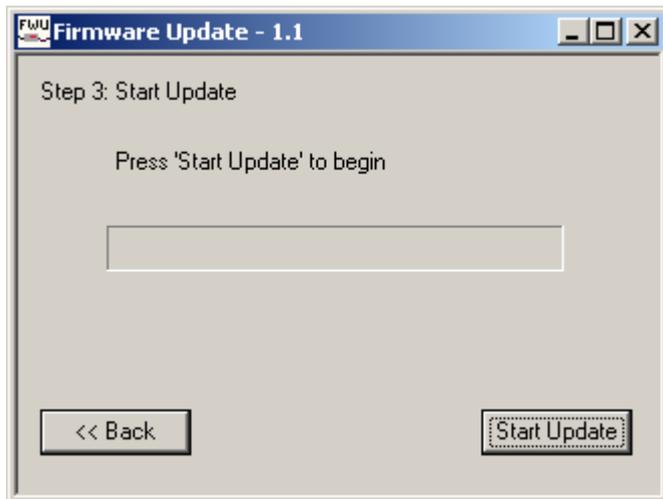
Click 'Start Update' and confirm the following message:
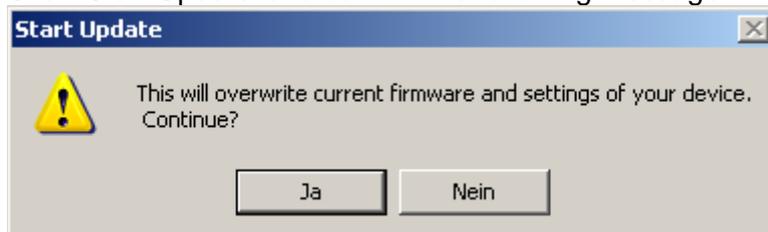
5.3.5 Update progress

Now the update process is started and all data in the concerned memory will be overwritten. The update progress is shown with the blue bar:

<u>Do not stop the update process</u>. The green LED on the BU flashes fast every time data is written to a memory location.

5.3.6 Update is finished

After successfully writing the memory you will see the following message:

Disconnect the OCI FU cable from the BU. The device will now restart with the new software.

➔ Download the individual parameter settings (if required)

5.3.7 To consider

➔ If the update process is interrupted, disconnect the power from the BU and start again at section 5.3 of this documentation.
➔ The Boot Loader software is written first. If the update process was aborted, it's possible that the Boot Loader software has already been updated. In this case you will have to select the correct baud rate for the new Boot Loader version.
➔ If the update process is stopped before its end, the device will always start in the 'Boot Loader-Mode'.
➔ When the online DD version was changed by a firmware update, or a new service device was connected to the BSB, any data point queries (incl. user reset) are only executed after completion of the online DD update.