

SIGMA Firmware Upgrade Using FlashTool 3

Users Manual

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1 Preface

The firmware (system software) of the SELCO SIGMA modules can be upgraded using a standard PC. The PC must be equipped with at least one RS232 port (COM port).

You will first need to establish the RS232 link between the PC COM port and the SIGMA module.

- 1. Boot the PC into Windows. Please make sure that the RS232 cable is not attached to the SIGMA module during start-up of the PC.
- 2. Attach the RS232 cable (delivered with the module) between the RS232 plug of the SIGMA module and the chosen serial port on the PC (e.g. COM1 or COM2).
- 3. Connect at least the primary supply of the SIGMA module to a 24 V DC supply. Switch on the supply (please make sure that the supply can provide at least 1 A of current).

NOTICE: Before updating the firmware you need to read <u>SIGMA</u> <u>HyperTerminal guide</u> on how to make a configuration backup file before continuing. This guide is also provided by SELCO A/S by request or can be downloaded from SELCO A/S homepage.

2 Installing the firmware upgrade tool

The firmware upgrade tool is called *PYTECH FlashTool 3 Beta*. The tool is delivered as a compressed file (a ZIP-file) named *SIGMAFLASHTOOL3BETA.ZIP*. The tool can be obtained by request from SELCO or downloaded from SELCO A/S's webpage (www.selco.com).

The firmware upgrade tool is installed as follows.



1. Right-click on the SIGMAFLASHTOOL3BETA.ZIP file



2. Choose *Extract All*... from the drop-down menu

Extraction Wizard	\mathbf{X}				
Select a Destination Files inside the ZIP archive will be extracted to the location you choose.					
	Select a folder to extract files to. Files will be extracted to this directory: C:\SIGMA_FLASH_TOOL_3 Browse Password				
	< Back Next > Cancel				

- 3. Click on the Next button of the Extraction Wizard dialogue
- 4. Type the path *C:\SIGMA_FLASH_TOOL_3* into the directory filed (at the top of the dialogue)
- 5. Click on the *Next* > button
- 6. Click on the *Finish* button



The content of the *SIGMA_FLASH_TOOL_3* directory is now shown. The next step is to install the tool.

- 1. Double click on the *Setup.exe* file (using the left mouse button)
- 2. Left-click on the *Run* button to accept the Security Warning (if applicable)
- 3. Left-click on the *Next* > button to accept the Welcome dialogue
- 4. Left-click on the *Next* > button to accept the default Destination Location
- 5. Left-click on the *Next* > button to accept the default Program folder
- 6. Wait for the installation to complete
- 7. Left-click on the *Finish* button to end the application and start the tool

A window showing an icon short-cut might appear after clicking the *Finish* button. Close this window if it is shown.

3 Firmware upgrade

Firmware upgrades are provided as .hex files. There is one separate hex file for each SIGMA module. The following files are currently applicable:

S6000 Firmware: *io_p_modul.hex* S6100 Firmware: *s_ls_modul.hex* S6500 Firmware: *ui_modul.hex* S6600 Firmware: *pm_modul.hex*

Please be careful not to load the wrong firmware into the module (e.g. S6000 firmware into an S6100 module etc.).

This is the procedure for upgrading the firmware of a SIGMA Module.

The tool starts automatically after the installation has been complete. Alternatively the tool can be started from the Windows *Start* menu (*Start->Programs->Phytec->FlashTool3*).

- 1. Connect the RS232 link cable between the module and the PC COM-Port (see above).
- 2. Copy the .hex file(s) to a location of your choice (e.g. the Windows Desktop)

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	🕞 Back 🝷 🌍 🔸 🗗	🏂 🔎 s	earch 😥 Folders 🛄 🗸		
	Address 🛅 C:\Firmware S6	000 ver 060	516		💌 🄁 Go
	File and Folder Tasks	۲	060516 3-2-24 56000 86 KB	io_p_modul.hex HEX File	
	Make a new folder Publish this folder to Web Share this folder	the			
	Other Places	۲			
	 Local Disk (C:) My Documents My Computer My Network Places 				
	Details	۲			

- 3. Start the FlashTools 3 BETA program
- 4. Left-click on the *OK* button to accept the Copyright message



- 5. Left-click on the + sign next to *KITCON* on the *Connect* tab (not the *Connect* button)
- 6. Left-click on *KITCON-167* of the expanded list (to select *KITCON-167*)

FlashTools 3 BETA		
File Connection Config ?		
Connect	ed Areas Info PHYTEC kitCON-167 How to enter the Bootstrap Loader Mode: - turn switch 1 of DIP Switch S3 ON - push button S1 to perform a reset The Bootstrap Loader is now waiting for connection.	
Ready		

- 7. Left-click on *Config* of the menu
- 8. Left-click on Protocol

FlashTools 3 BETA File Connection Config ?	
Connect FlashInfo Download Protecte COMBI-MODUL COMBI-MODUL GRABBMODUL KITCON-161CS_JC_JI KITCON-161CS_JC_JI KITCON-161 KITCON-165 KITCON-165 KITCON-166 KITCON-166 MICROMODUL MINIMODUL PhyCORE	d Areas Info PHYTEC kitCON-167 How to enter the Bootstrap Loader Mode: - turn switch 1 of DIP Switch S3 ON - push button S1 to perform a reset The Bootstrap Loader is now waiting for connection.
Connect	

- 9. Select *RS232* from the drop-down list box
- 10. Left-click on *Properties*

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COMBI-MODUL Combined Dipmodul GRABBMODUL KITCON KITCON-161CS_JC_JI KITCON-161RI_PI KITCON-165 KITCON-165 KITCON-166 KITCON-167 MICROMODUL	Network settings for RS232	
 MINIMODUL NANOMODUL PhyCORE 		
Connect		
configure protocol.		

- 11. Select the desired RS232 port from the Interface drop-down list box
- 12. Select the desired baudrate (e.g. 9600) from the Baudrate drop-down list box
- 13. Left-click on the OK button to close the Network settings for RS232 dialogue
- 14. Left-click on the *Close* button to close the *Communication Setup* dialogue

- 15. Make sure that the supply to the SIGMA module is switched off
- 16. Press and hold the red RESET button of the SIGMA module (the button is located next to the RS232 plug). Use the tip of a pencil or a paper clip.
- 17. While holding the RESET button depressed, switch on the supply to the SIGMA module. You can let go of the button after the module has been switched on.

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KITCON-166 KITCON-167 ■ MICROMODUL ■ MINIMODUL ■ NANOMODUL ■ phyCORE Connect	

- 18. Left-click on the *Connect* button
- 19. Left-click on the *Download* tab

FlashTools 3 BETA	
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Connect FlashInfo Download Protected Areas Info	
File information	
File loaded: C:\Firmware and progs\Firmware\S6000\io_p_modul.hex	
File size: 301.233 kBytes	
File date / time : 05/16/06 10:36:00	
Download size: 124.484 kBytes	Open
Download	
✓ Erase chip	
✓ Erase needed sectors	
V download	Start
Ready	

- 20. Put a tick mark in the *Erase Chip* check box (left-click on the box)
- 21. Put a tick mark in the *Erase needed sectors* check box (left-click on the box)

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Connect FlashInf - File information File loaded: File size:					
File date / time : Download size:	File name: Files of type:	io_p_modul (extended) HexFiles (*.h86, *.he □ Open as read-only	ex) 💌	Open Cancel	Open
Download C Erase chip C Erase neede C download	d sectors				Start
Ready					

- 22. Left-click on the *Open* button
- 23. Select the desired .hex file (from the chosen location) and left-click on the Open button

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File information	
File loaded: C:\Firmware and progs\Firmware\S6000\io_p_modul.hex	
File size: 301.233 kBytes	
File date / time : 05/16/06 10:36:00	
Download size: 124.484 kBytes	Open
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- 24. Left-click on the *Start* button to initiate the upgrade
- 25. Wait for the upgrade procedure to complete

FlashTools 3 BETA		
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Connect FlashInfo Download Protect	PHYTEC kitCON-167 How to enter the Bootstrap Loader Mode: - turn switch 1 of DIP Switch S3 ON - push button S1 to perform a reset The Bootstrap Loader is now waiting for connection.	
Disconnect	Disconnect and software reset	

- 26. Left-click on the *Connect* tab
- 27. Put a tick mark in the Disconnect and software reset check box (left-click on the box)
- 28. Left-click on the *Disconnect* button
- 29. Close the tool

To verify that the firmware has been downloaded, disconnect and reconnect.

🍓 sigma com4 - Hyper Terminal	
File Edit View Call Transfer Help	
SELCO S6000 IO/P Module FW 060516 CAN ADDR = 3 >enable Password = ***** Write Enabled	×

The HyperTerminal prompts a welcome message which indicates what unit it is and what firmware version is installed on it.

4 Defaulting the Configuration

It is <u>very important</u> to reset the configuration to factory default after the firmware upgrade has been completed. The reason is that newly added configuration parameters may occupy memory locations previously used by existing parameters. This may cause parameters to have invalid values.

Configuration reset is done by first issuing the following command through the RS232 interface of the upgraded module (Configuration reset can also be done from the system menu of the UI interface).

First enable write mode by entering

ENABLE

Password is 0000 (default) and press enter.

🗞 sigma com4 - HyperTerminal
File Edit View Call Transfer Help
SELCO_S6000 IO/P Module
IFW 060516 CAN ADDR = 3
>enable
Write Enabled
FN

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	<u> </u>
SELCO S6000 IO/P Module FW 060516 CAN ADDR = 3 >enable Password = ***** Write Enabled	
E>write sys setupdefault yes E>	

WRITE SYS SETUPDEFAULT YES

Type the above command and press ENTER. Then disconnect both power supplies (primary and backup), wait a few seconds, and then reconnect the power supplies. The configuration is now back to factory default. The original configuration can be restored by following the procedure described in the SIGMA HyperTerminal guide.