

How to update the firmware of the JOHB-SMP3 multi-protocol ethernet option via web browser?

Topic

Frequently Asked Question

Restricted

Document Type

Confidentiality

JOHB-SMP3

Related Products

Date	Version History	Author	Summary of Changes
12-Jan-23	Initial	DMe	-
25-Jan-23	1.1	DMe	- Added instructions for package firmware update - Revised DIP-switch settings and LED behavior
24-Aug-23	1.2	DMe	- Updated Table 1 up to package version 8206
Restrictions or Applicable Products			
Firmware for all available ethernet-based protocols can be updated individually with this method.			
The firmware for the web server can only be updated on cards with package firmware 8202 or later.			
The complete package firmware that contains all protocols can only be updated with this method on cards that already have package firmware 8203 or later.			

The firmware of the JOHB-SMP3 multi-protocol option card can be updated using a web browser, over the embedded RJ-45 ethernet ports of the card. In this article the procedure is described in detail.

Pre-requisites

To update the firmware of the option card, the following is necessary:

- JOHB-SMP3 Multi-Protocol Ethernet option card
- Yaskawa drive that supports the JOHB-SMP3 option (i.e., GA500, GA700, etc.)
- Windows PC with either Microsoft Edge, Google Chrome, or Firefox browser
- Available ethernet port on PC and RJ-45 CAT5e (or higher) 8-pin ethernet patch cable
- Firmware binary file (with *.bin or *.mot extension)
- Label to mark the option card with the new package firmware number

Update Procedure

1. Verify the JOHB-SMP3 package firmware version according to the following table, to ensure that it's necessary to update the firmware of the individual protocol. The protocol firmware can be found on the label placed on the ethernet ports of the option card, or on the option card packaging (PRG).



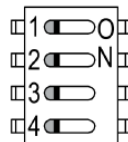
If firmware for a specific protocol is not available for the corresponding package firmware number, it can be added using the procedure in this article.

Table 1: Correspondence Between Package Firmware Number and Protocol Firmware Version

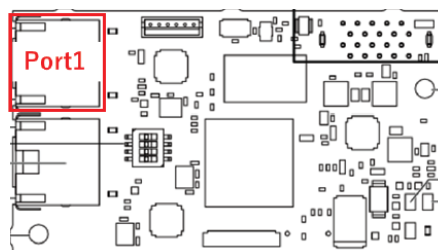
Package Firmware No.	Protocol Firmware Version			
	Modbus TCP	Ethernet/IP	EtherCAT	ProfiNET
8200	2000	N/A	N/A	N/A
8201	2000	3000	N/A	N/A
8202	2000	3000	4101 ^{*1}	N/A
8203	2000	3000	4102	N/A
8204	2001	3001	4104	5000
8205	2002	3001	4202	5001
8206	2003	3002	4202	5002

^{*1} When using EtherCAT, please use protocol firmware version 4102 or later.

- Set all DIP-switches on the JOHB-SMP3 option card to the OFF position.



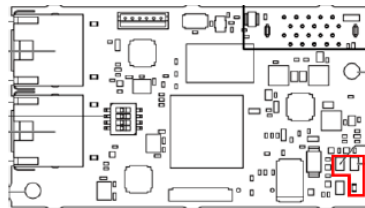
- Install the JOHB-SMP3 option card in a drive that supports it, for example the GA500, GA700, etc. Ensure that the drive is powered OFF (both mains and +24Vdc supply) and follow the installation instructions in the JOHB-SMP3 manual.
- Connect an Ethernet port on your PC to Port 1 of the JOHB-SMP3 option card with a standard ethernet patch cable.



The IP address of the option card is set to 192.168.1.20 for the firmware update procedure. To establish the connection between PC and option card, the ethernet adapter on the PC must have an IP address in the same subnet and the subnet mask must be configured accordingly.

For example, the PC network adapter could have the IP address 192.168.1.1 and subnet mask 255.255.255.0 to connect. For more information see the TCP/IP settings of the PC ethernet adapter.

5. Replace any covers that were removed and apply power to the drive. Either main power or +24Vdc input can be used to update the option card firmware. If the drive presents a *PSE* or *oFAXx* fault, please disregard it and continue to the next step.
6. Confirm drive parameter settings. F7-14 (Duplex Mode Selection) must be set to 1 (Auto/Auto).
Note: if F7-14 is changed, power to the drive must be cycled for the change to take effect.
7. Confirm that the NS, MS, and ERR LEDs of the JOHB-SMP3 option card are flashing red with a 1 second interval. IF LEDs are not lit correctly, verify DIP-switch settings. Note that the link and speed LEDs on Port 1 of the option card will not be lit.



8. Launch a supported web browser on your PC, and navigate to the following address:
<http://192.168.1.20/fwupdate.html>
9. You will be prompted for a username and password to access the firmware update page. Enter the following credentials:
Username: *mpe*
Password: *setup*
10. Once the firmware update page loads, select the firmware file which you would like to use (*.mot or *.bin extension) and click *Upload&Write&Verify*.

Select File to Write

Choose File VST908204_00.mot
Upload&Write&Verify ☒ Automatic

If *Automatic* is selected, then steps 11 through 14 can be skipped.

11. Once the file upload is completed, verify that the *Version* of the firmware file is correct for the desired update. If the flash file is not supported, no version information will be visible.

Status

Uploaded 100 %

Select File to Write

Choose File No file chosen
Upload ☐ Automatic

Uploaded File Information

Protocol	Version
PACKAGE	8204
ModbusTCP/IP	2001
EtherNet/IP	3001
EtherCAT	4104
PROFINET	5000
BACnet/IP	7000
ShippingTest	1003
SBL	0001
WEB DATA	9002

Verify Result

Protocol	Version	Result
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In this step it is also possible to verify which versions are currently on the JOHB-SMP3 option card and compare them to the flash file. If there is a mismatch the verification will fail with a result of *NG*.

Status

Verify failed

100 %

Select File to Write

Choose File

No file chosen

Upload

☐ Automatic

Uploaded File Information

Protocol	Version
PACKAGE	8204
ModbusTCP/IP	2001
EtherNet/IP	3001
EtherCAT	4104
PROFINET	5000
BACnet/IP	7000
ShippingTest	1003
SBL	0001
WEB DATA	9002

Verify Result

Protocol	Version	Result
PACKAGE	8203	NG
ModbusTCP/IP	2000	NG
EtherNet/IP	3000	NG
EtherCAT	4102	NG
PROFINET	65535	NG
BACnet/IP	65535	NG
ShippingTest	1002	NG
SBL	0001	OK
WEB DATA	9000	NG

12. Click *Write* to initiate the update process. This could take up to 2 minutes.

Write

Verify

13. Once the update is complete, the *Status* of the File Information pane changes to *Write Successful*.

Status

Write successful

100 %

14. Verify that the protocol has been updated correctly by clicking on *Verify*.

Status

Verify successful

100 %

Select File to Write

Choose File

No file chosen

Upload

☐ Automatic

Uploaded File Information

Protocol	Version
PACKAGE	8204
ModbusTCP/IP	2001
EtherNet/IP	3001
EtherCAT	4104
PROFINET	5000
BACnet/IP	7000
ShippingTest	1003
SBL	0001
WEB DATA	9002

Verify Result

Protocol	Version	Result
PACKAGE	8204	OK
ModbusTCP/IP	2001	OK
EtherNet/IP	3001	OK
EtherCAT	4104	OK
PROFINET	5000	OK
BACnet/IP	7000	OK
ShippingTest	1003	OK
SBL	0001	OK
WEB DATA	9002	OK

15. Power OFF the drive (both mains and +24Vdc supply). If a USB cable is connected to the drive, disconnect it as well.

Note: wait until the drive is completely discharged before removing the covers.

16. Label the JOHB-SMP3 option card according to the package firmware version in Table 1.



If the JOHB-SMP3 option card will be stored back in the original packaging after the firmware update, the package firmware number on the box (PRG) should also be modified.

17. Set the DIP-switch of the option card to the desired protocol.

Table 2: JOHB-SMP3 DIP-Switch Settings for Ethernet Protocols

Protocol	DIP-Switch Setting			
	1	2	3	4
EtherCAT	OFF	OFF	ON	OFF
Ethernet/IP	OFF	ON	OFF	OFF
Modbus TCP	ON	OFF	OFF	OFF
ProfiNET	OFF	OFF	OFF	ON

The firmware number can be verified using monitor U6-97 on the digital operator or through Drive Wizard. If the DIP-switches are all set to OFF, this monitor will display the package firmware version. Otherwise, it will display the firmware version of the selected protocol.



In case the package or protocol firmware version needs to be verified during operation, the web server of the option card can be accessed through a browser.

Drive

Model	GA500
Full Model	CIPR-GA50CB001
Version	20975
Serial Number	J0194G509910022

Option Card

Model	JOHB-SMP3
Version	VST908204
Protocol	PROFINET-Ver5000
Serial Number	20473083024

The method to access the web server depends on the configuration of the drive/option card (DHCP, Static IP), and in the case of EtherCAT (EoE function) on the configuration of the connected PLC. For more information consult the Technical Manual of the respective communication protocol.