



## Upgrading from the 1785-PFB/B to the SST-PFB-PLC5

### About this Technical Note

This technical note is intended for users who are replacing their current 1785-PFB PLC-5 ProfiBus modules with SST-PFB-PLC5 modules.

#### This technical note assumes:

- You know how to swap out your old ProfiBus PLC-5 module with SST's ProfiBus Coprocessor
- You have installed SST's ProfiBus Configuration Tool on your PC
- You have the most up-to-date copy of the SST-PFB-PLC5 manual (V1.1) and firmware (V1.0)

### Upgrade Overview

There are differences between Allen Bradley's 1785-PFB/B modules and SST's ProfiBus PLC-5 module that require changes to your control logic. The following table summarizes the differences:

Characteristic	SST-PFB-PLC5	1785-PFB/B
Arrangement of Slave I/O	Automatically arranges slave I/O in Normal mode, meaning words are guaranteed to be word-aligned. Also, same slave I/O offsets can be set if the normal addressing mode was used in ProfiBus manager	Had the option of Compact or Normal arrangement of slave I/O
Uploading Speed of DP master configurations	9K6 to 115K2	Fixed 9K6
PLC display order of I/O bytes transmitted along DP	Proper bit Order DI0 -> N[X]:0/0 DI15 -> N[X]:0/15	Same order for bytes and words DI0 -> N[X]:0/8 DI15 -> N[X]:0/7
DP Transfer modes (Synchronous/Asynchronous)	Synchronous only	Synchronous and asynchronous
Location of status information	In a separate integer file	Appeared at end of input table
Location of command register	In status file at offset N[X]:56 X = Integer file #	Appeared at end of output table



# Upgrading from the 1785-PFB/B to the SST-PFB-PLC5

Characteristic	SST-PFB-PLC5	1785-PFB/B
Location of slave diagnostics	End of status file N[X]:59 (122 words)	End of input table
Number of ProfiBus channels	1 for DP or FMS	Port 1 FMS, Port 2 DP

### Action Required

1. Record the integer files and I/O offsets for each slave used in your existing application. To do this easily in your Allen-Bradley ProfiBus Manager software, choose *DP/Address Assignment/Display AAT*.
2. Save your existing PLC-5 program with a new name so that you have a copy of the old program for reference.
3. Turn the power off on the PLC-5 and remove the old co-processor. Replace it with the SST co-processor.
4. The following steps explain how to reconfigure your DP master with SST's ProfiBus Configuration tool. To open the configuration tool, open the Windows Start Menu and choose *Programs/5136-PFB/Configuration tools/ SST Profibus Configuration*.
5. Drag the SST-PFB-PLC5 Master from the device list to a location underneath ProfiBus-DP (in the top right of the window).
6. Specify the Station address of the DP master and the PLC-5 Files for input, output, and status (must be in a separate integer file).
7. Begin adding slaves.
8. If you used Normal Addressing mode in your existing configuration, you can order modules exactly at the same offsets for slave I/O. If you used Compact mode, you have to specify different I/O offsets in the configuration and in your ladder program.
9. After configuring slaves, double click on ProfiBus-DP (at the top of the right tree) to configure your baud rate and network options.
10. Choose *File/Export Binary* to export your configuration to a .BSS file.
11. Upload this .BSS file through the serial port using any terminal program (for example, HyperTerminal).
12. Connect the serial cable between the co-processor serial port and the PC COM port.
13. Verify the PLC-5 is on and in program mode.
14. Press SHIFT + \* several times until you get a prompt in your communication software window.
15. Type RECBSSXMODEM and press [Enter].



## Upgrading from the 1785-PFB/B to the SST-PFB-PLC5

16. Transfer the file through an Xmodem send.
17. Update the flash by typing EXIT and answering Yes when asked to update Flash or type UPDFLASH to update immediately.
18. While still in program mode, verify integer files exist for your I/O and create a new integer file for status (minimum size is 181 words). Change your ladder logic to reference status information correctly and I/O offsets if you had configured your I/O in compact mode. Save the new program and download it to PLC-5.
19. Switch to run mode.

### Comparison of Status Blocks

1785-PFB Block Offset (Word) Starting from end of input table	1785-PFB Length (Word)	1785-PFB Description	SST-PFB-PLC5 Description /Location X = Status File
0	1	Module Status	Not in integer status file. Use Processor status file at S:1/0 –15
1	1	Port 1 Status	Ignore. Used for FMS
2	1	Port 2 Status (DP Line Status)	PFBMasCntrlCfg  Offset N[X]:03/00-07 Bit1=1 = Run Bit1=0 = Clear
3	1	Acknowledge of Commands	No Equivalent
4	2	Error Codes	No Equivalent
6	1	Reserved	
7	8	List of configured reporting diagnostics on DP line (1 bit per slave)	Slave Diagnostics present when MasDiagUpdate N[X]:46 has non-zero value and MasDiagStn N[X]:47 contains slave station number that has updated diagnostics



## Upgrading from the 1785-PFB/B to the SST-PFB-PLC5

1785-PFB Block Offset (Word) Starting from end of input table	1785-PFB Length (Word)	1785-PFB Description	SST-PFB-PLC5 Description /Location X = Status File
15	8	List of configured slaves not exchanging data on DP line (one bit per slave)	PfbActStnList Offset N[X]:27 –34 Bits set if slaves configured and returning no errors
23	122	Slave Diagnostics	VarBufer N[X]:59 (Variable length 122 words max.) MasDiagUpdate N[X]:46 & MasDiagStn N[X]:47 registers can be used to indicate slave diagnostics present. MasDiagStn would be written first to coProcTransArg and then 0x01h would be written to CoProcTransCmd to read slave diagnostics
N/A	N/A	Status of Communication with processor was only indicated by status LED on coprocessor	PfbOndTranfers must be used to ensure communication between PLC/5 and SST-PFB-PLC5 Offset N[X]:26 On demand transfer counter and Coprocessor heartbeat. See the manual for details.



## Upgrading from the 1785-PFB/B to the SST-PFB-PLC5

1785-PFB Block Offset (Word) Starting from end of input table	1785-PFB Length (Word)	1785-PFB Description	SST-PFB-PLC5 Description /Location X = Status File
N/A	8	Command Block Located at end of output table (Change DP Operating mode)	PfbCommand N[X]:56 Run Mode = 0x01h Clear mode = 0x02h Clear status counters = 0x03h No command present = 0x00h

### *If you need more help*

#### SST-PFB-PLC5 Technical Support

SST

50 Northland Road  
Waterloo, Ontario  
N2V 1N3  
Canada

Voice: (519) 725-5136

Fax: (519) 725-1515

Email: [techsupport@sstech.on.ca](mailto:techsupport@sstech.on.ca)

Web site: [www.sstech.on.ca](http://www.sstech.on.ca)

SST-PFB-PLC5 is a trademark of Woodhead Canada Limited. SST is a trademark of Woodhead Industries, Inc. All other trade names are trademarks or registered trademarks of their respective companies.